Bulletin: Western Michigan University Undergraduate Catalog 1969-1970

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WESTERN MICHIGAN UNIVERSITY is located in Kalamazoo, midway between Chicago and Detroit. It is served by the New York Central Railroad, by Lake Central and North Central Airlines. Three major highways and numerous bus routes connect the city with other midwestern cities. The population of greater Kalamazoo is more than 100,000.

**DIRECTIONS FOR CORRESPONDENCE**

Director of Admissions  
Admissions, University Literature, Credit Acceptance  

Controller  
Business and Financial Arrangements  

Dean of the School of Applied Arts and Sciences  
Matters Relating to Vocational Education  

Dean of the School of Business  

Dean of the School of Education  

Dean of the School of General Studies  

Dean of the School of Graduate Studies  

Dean of the School of Liberal Arts and Sciences  

Director of Housing  

Director of Counseling  

Director of Continuing Education  
Adult Education, In-Service Courses and Credits, Consultative Services to Schools, Speakers for Special Occasions  

Director of the Department of Military Science  
R.O.T.C.  

Director of Placement  
Teacher Placement, Business and Industrial Placement  

Director of Records  
Credits, Provisional and Permanent Certification, Transcripts, Records  

Director of Registration  
Registration, Course Time Schedules, Space Allocation  

Director of Honors  
Honors Program  

Office of Financial Aid  
Scholarships, Loans and Part-time Employment
Copies of the complete Western Michigan University Undergraduate Catalog are available for examination at most high schools, libraries, other State universities, community colleges and State government offices. Each entering student, freshman or transfer, is entitled to one copy without charge. Additional copies are available at Western's Campus Bookstore at $1 each.

VOL. 64, NO. 4 JUNE 1969

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1969-70 UNIVERSITY CALENDAR

FALL SEMESTER

September 2, Tuesday .................................. Orientation and Drop-Add
September 3, Wednesday ................................ Classes Begin
October 24, Friday ...................................... Classes Dismissed (2:00 p.m.)
October 25, Saturday .................................... Homecoming
November 26, Wednesday ................................ Thanksgiving Recess (12:00 noon)
December 1, Monday ...................................... Classes Resume
December 20, Saturday .................................... Semester Ends
December 20, Saturday .................................... Commencement (2:00 p.m.)

WINTER SEMESTER

January 3, Saturday ....................................... Final Registration
January 5, Monday ......................................... Classes Begin
March 5, Thursday ......................................... Semester Recess (8:00 a.m.)
March 9, Monday .......................................... Classes Resume (8:00 a.m.)
March 27, Friday .......................................... Good Friday Recess (12-noon)
April 18, Saturday ......................................... Semester Ends
April 18, Saturday ......................................... Commencement (2:00 p.m.)

SPRING SESSION

April 25, Saturday ......................................... Final Registration
April 27, Monday .......................................... Classes Begin
May 30, Saturday .......................................... Memorial Day Recess
June 17, Wednesday ....................................... Session Ends

SUMMER SESSION

June 22, Monday ........................................... Registration, Graduates
June 23, Tuesday ........................................... Registration, Undergraduates
June 24, Wednesday ....................................... Classes Begin
July 4, Saturday ............................................ Independence Day Recess
August 14, Friday .......................................... Semester Ends
August 14, Friday .......................................... Commencement (6:30 p.m.)
BOARD OF TRUSTEES

Fred W. Adams, Grosse Pointe
Charles H. Ludlow, Kalamazoo
Dorothy Upjohn Dalton, Kalamazoo
John R. Dykema, Grosse Pointe Farms
Dr. Julius Franks, Jr., Grand Rapids
Philip N. Watterson, Wyoming
Mildred Swanson Johnson, Muskegon
Robert D. Caine, Hickory Corners

Term Expires
December 31, 1970
December 31, 1970
December 31, 1972
December 31, 1972
December 31, 1974
December 31, 1974
December 31, 1976
December 31, 1976

James W. Miller, Ex-Officio, Chairman
Fred W. Adams, Vice Chairman
Peter R. Ellis, Secretary
Robert B. Wetnight, Treasurer
Administrative Officers

James W. Miller, Ph.D., LL.D., President
Russell H. Seibert, Ph.D., Vice President for Academic Affairs
Robert B. Wetnight, M.B.A., C.P.A., Vice President for Finance
Paul L. Griffeth, Ph.D., Vice President for Student Services
Myron L. Coulter, Ed.D., Vice President for Institutional Services
Robert Beecher, J.D., Controller
Frank H. Bentz, M.A., Director of Scholarships
Foster S. Buchtel, B.A., Director, Office of Research Services
Samuel I. Clark, Ph.D., Director, Honors College
Thomas E. Coyne, M.A., Administrative Assistant to the President
Philip S. Dennenfeld, Ph.D., Associate Dean, School of Liberal Arts and Sciences
Sid Dykstra, Ph.D., Assistant Dean, School of Graduate Studies
Peter R. Ellis, Ed.D., Secretary, Board of Trustees
Leonard Gernant, M.A., Director, Academic Services
James H. Griggs, Ed.D., Dean, School of Education
William F. Hamill, Director, Plant Extension
Fred V. Hartenstein, Ph.D., Associate Dean, School of Business
George E. Kohrmann, Ed.D., Dean, School of Applied Arts and Sciences
William J. Kowalski, M.A., Director, Campus Planning
Robert M. Limpus, Ph.D., Dean, School of General Studies
Cornelius Loew, Ph.D., Dean, School of Liberal Arts and Sciences
Vern E. Mabie, M.A., Director of Placement
George G. Mallinson, Ph.D., Dean, School of Graduate Studies
Clayton J. Maus, M.S., Dean of Admissions and Records
Arthur J. O'Connor, B.S., Director, University Information
James Zietlow, Ph.D., Associate Dean, School of Liberal Arts and Sciences
Arnold E. Schneider, Ph.D., Dean, School of Business
Marie L. Stevens, M.A., Dean of Students
Leo C. Stine, Ph.D., Associate Dean, School of Graduate Studies
Peter Spyers-Duran, M.A.L.S., Director of Libraries
Robert H. Williams, B.S., Director, Physical Plant
Morvin A. Wirtz, Ed.D., Assistant Dean, School of Education
Administrative Groups

THE ADMINISTRATIVE COUNCIL

The Council meets bi-weekly to keep its members informed on University affairs, to consider general administrative policies, and to coordinate and unify administrative decisions, practices and services designed to promote the educational program of the University.

The members of the Council are: the President, the four Vice Presidents, the six Deans of the Academic Schools, Controller, Deans of Admissions and Records, of Students, and of Continuing Education; Directors for Academic Services, of Libraries, of Placement, of University Information, of the Office of Research Services; Administrative Assistant to the President, Assistants to the Vice President for Academic Affairs and the Vice President for Student Services, President of the Faculty Senate and President of the Student Association.

THE SENATE

The Senate is composed of members elected by the faculty to represent the departments of the University and the University at large and others appointed by the President. It meets each month to promote the common interests of the University and to give the faculty a share in the determination of institutional policy.

Officers for 1968-1969:

- Milton Greenberg President
- Robert R. Fink Vice President
- Alan S. Brown Treasurer
- Robert C. Nagler Recording Secretary
- Edward Galligan Corresponding Secretary

UNIVERSITY COUNCILS

The University Councils are composed of members elected by the Senate for three-year terms and certain ex officio members. The terms of elected members expire in September of the year indicated.
EDUCATIONAL POLICIES COUNCIL

Ex Officio
Russell H. Seibert, Chairman
James H. Griggs, Dean
George E. Kohrman, Dean
Robert M. Limpus, Dean
Cornelius Loew, Dean
George G. Mallinson, Dean
Arnold E. Schneider, Dean
Peter Sypers-Duran, Director of Libraries

Elected
Donald J. Brown 1969
Edward T. Callan 1969
Robert R. Fink 1969
Roger L. Cole 1970
Raymond Dannenberg 1970
Jean M. Lawrence 1970
Clara R. Chiara 1971
Alan H. Leader 1971
Jerome Manis 1971

GRADUATE STUDIES COUNCIL

Ex Officio
George G. Mallinson, Dean, Chairman
James H. Griggs, Dean
George E. Kohrman, Dean
Cornelius Loew, Dean
Arnold E. Schneider, Dean
Russell H. Seibert, Vice President

Elected
Nathan L. Nichols 1969
Roy Olton 1969
Robert Jack Smith 1969
Graham P. Hawks 1970
Ralph N. Miller 1970
Dean R. Tyndall 1970
J. Michael Keenan 1971
Cameron Lambe 1971
Jochanan Stenesh 1971

RESEARCH POLICIES COUNCIL

Ex Officio
Foster Buchtel, Director of Research Services
George G. Mallinson, Dean
Russell H. Seibert, Vice President

Elected
Don Iffland 1969
Haym Kruglak 1969
Claude S. Phillips 1969
Gene S. Booker 1970
Robert B. Day 1970
Morvin A. Wirtz 1970
Charles T. Brown 1971
Otto Grundler 1971
Donald Horning 1971

STUDENT SERVICES COUNCIL

Ex Officio
Paul L. Griffeth, Vice President, Chairman
Louise Forsleff, Director, Counseling
Marie L. Stevens, Dean of Students

Presidential Appointees
Edward Harkenrider, Director of Student Financial Aid
Rodger Pruis, Assistant Director, University Student Center
Norman Russell, Assistant to the Vice President for Student Services

Elected
William O. Haynes 1969
James W. McIntyre 1969
Charles Starring 1969
Frank E. Heger 1970
James E. Nadonly 1970
Richard W. Pippen 1970
Lindsay G. Farnan 1971
E. Thomas Lawson 1971
Lewis Walker 1971
Administrative Groups

CAMPUS PLANNING COUNCIL

Ex Officio
Myron L. Coulter, Vice President for Institutional Services, Chairman
William F. Hamill, Director of Plant Extension
William J. Kowalski, Director of Campus Planning
Robert H. Williams, Director of Physical Plant

Presidential Appointees
Harold O. Bahlke, Area Chairman, School of General Studies
Cornelius Loew, Dean, School of Liberal Arts and Sciences
Maurice Seay, Professor of School Services

Elected
Lee O. Baker 1969
Jon M. Henderson 1969
Glade Wilcox 1969
Joseph T. Hoy 1970
Ken Macrorie 1970
Carl B. Snow 1970
John T. Burke 1971
Nicholas Hamner 1971
Orval L. Ulry 1971

CONTINUING EDUCATION COUNCIL

Presidential Appointees
Russell Gabier, Director of Admissions
Theodore Marvin, Administrative Assistant to the Dean of General Studies
Leo C. Stine, Associate Dean, School of Graduate Studies

Elected
Richard T. Adams 1969
Kenneth B. Engle 1969
Gilbert Hutchings 1970
George Miller 1970
Owen Middleton 1971
Frank VanVoorhees 1971

THE ATHLETIC BOARD OF CONTROL

Ex Officio
John S. Lore, Director of Alumni Relations

Presidential Appointees
Leo C. Vanderbeek, Chairman
Joseph T. Hoy
Clayton J. Maus
Robert B. Wetnight
Roger Pulliam
Patrick Nichols
G. Gordon Niles
Tom Randolph

Elected
William Morrison 1970
Roland S. Strolle 1971

Faculty Representative in MAC
Director of Athletics
Dean of Admissions and Records
Vice President for Finance
Assistant to the Vice President for Academic Affairs
Student Representative
“W” Club Representative
Student Representative
Western Michigan University

Western Michigan University, created by the Legislature in 1903, ranks fourth among the State's institutions of higher education in number of students, diversity, complexity and level of programs. Organized as a school to educate men and women for the teaching profession, Western has developed into a multi-purpose university, yet it continues to meet its original obligation. In 1966, Western ranked second among all colleges and universities in the nation in the number of its graduating seniors who were certified as teachers.

In 1918, Western was authorized to grant degrees. Master's and specialist degrees have been added; and in 1968, half a century later, Western awarded its first doctoral degrees. The history of the University is one of growth—first of all academic growth which inspired enrollment growth and physical growth.

Western occupies a unique place in Michigan's system of higher education. It fills a special niche capably with quality programs in all its areas and with certain programs offered only at Western. It is the intent of Western to send into society students who will serve well Michigan's industries, schools, hospitals, businesses, libraries, colleges and universities.

Educational goals of Western Michigan University are: to develop in each student the ability to think objectively and critically so that he may be capable of assessing the validity of the information with which he is confronted and his own response to his environment—to introduce him to the world in which the educated and responsible citizen must live—to provide him with a foundation for tenable values—to provide each student with sufficient knowledge in a discipline, or a group of related disciplines, so that he will have an understanding of its methodology, some initial competence in the field and an appreciation of the vastness of knowledge still to be explored.

Under the Michigan Constitution of 1963, Western has Constitutional status with its own Board of Trustees appointed by the Governor. The chief administrative officer of Western is President James W. Miller, the University's third president. With a rich academic experience in higher education and state government, President Miller has continued to build on the firm foundations laid by his predecessors, President Dwight B. Waldo (1904-1936) and President Paul V. Sangren (1936-1960).

Academic organization of Western includes the Schools of Applied Arts and Sciences, Business, Education, General Studies, Liberal Arts and Sciences and Graduate Studies.

The Honors College offers to students of exceptional ability maximum opportunity for independent study, research and self direction.

Operating on a year-round basis, Western has Fall and Winter semesters, Spring and Summer sessions. The two sessions combined equal one semester.
Program of Study

PROGRAM OF STUDY

The program of study years is organized:

1. to provide the student with a general education which includes an integration of knowledge, skill, and perspective with regard to the process of communication, the social sciences, the natural sciences and the humanities; and

2. to prepare the student for undertaking the more advanced and specialized work embraced in the curricula of the third and fourth years or for more advanced work elsewhere.

This program represents sixty semester hours of work, at least half of which must fall in General Studies, Languages and Literature, Science, and Social Science. The student must complete during the first year one semester each of College Writing and Freshman Reading.

Admission to the program of the third and fourth years is based upon the satisfactory completion of the work outlined above or upon evidence of equivalent work done satisfactorily elsewhere. In addition, in the teaching curricula, the student must satisfy such special tests or examinations as may be prescribed to determine his general intelligence, scholastic aptitude and fitness for the teaching profession.

The program of study for the third and fourth years is organized:

1. to provide intensive cultivation of the fields of the student's special or professional interest; and

2. to broaden his general education.

The University offers the following degrees:

Bachelor of Arts
Bachelor of Business Administration
Bachelor of Music
Bachelor of Science
Bachelor of Science in Engineering (Industrial)

Western Michigan also conducts graduate programs leading to the Master of Arts, Master of Business Administration, Master of Music, Master of Occupational Therapy, Master of Science, Master of Science in Accountancy, Master of Science in Librarianship and Master of Science in Technology degrees. Degrees of Specialist in Arts and Specialist in Education are offered upon completion of a sixth-year program. A Doctor of Education degree is offered in Educational Leadership. Doctor of Philosophy degrees are offered in Chemistry, Mathematics, Sociology and Science Education.

ACCREDITATION

In 1915 the University was placed on the approved list of the North Central Association of Colleges and Secondary Schools. The following
year it was approved by the organization which in time evolved into the present National Council for Accreditation of Teacher Education. Western's Department of Librarianship is accredited by the American Library Association, its Department of Music by the National Association of Schools of Music, its Department of Occupational Therapy by the American Medical Association in collaboration with the American Occupational Therapy Association and its Department of Chemistry is accredited by the American Chemical Society. The Department of Speech Pathology and Audiology is accredited by the American Boards of Examiners in Speech Pathology and Audiology.

Western Michigan University is a member of the American Association of Colleges, the American Association of Colleges for Teacher Education, and is on the approved list of the American Association of University Women.
Admission, Degrees and Certificates

ADMISSION

Qualified students may apply for admission to any semester or session and will be admitted until quotas have been filled. Currently the most reliable single factor used to predict college success is a satisfactory high school or transfer record. The college preparatory subjects are given maximum weight in the admissions process. In addition personal characteristics and special abilities are given careful consideration.

Transferring and re-entering students may be admitted for any semester or session provided their records are satisfactory and evidence presented indicates that they should expect to meet with academic success.

Enrollment in the University carries with it the responsibilities of meeting the standards of scholarship and conduct established by the students, faculty and administration. Therefore, matriculation may be canceled for any student who does not meet these standards.

Methods of Admission

Students may be admitted in the following ways:

1. Admission by certificate: A graduate of a high school, academy or equivalent may be admitted upon presentation of an acceptable written record.

2. Admission by examination: A person who does not qualify for admission by certificate may be admitted by passing examinations prescribed by the University provided he meets all other requirements.

3. Admission by advanced standing: A student wishing to transfer from another accredited college, university, community or junior college, may be admitted upon presentation of an acceptable written transcript of credit showing honorable dismissal. This transcript must be official, and mailed directly from the institution previously attended to the Director of Admission of this University. Transferred credits, except those from Michigan county normals, will be acceptable only when they have been earned at a college which at the time was accredited by the North Central Association of Colleges and Secondary Schools, an equivalent organization or by the Michigan Commission on College Accreditation. Each transfer case is handled individually, with separate evaluation of credit.

4. Admission as a special student: (a) A person who does not plan to work toward a degree or certificate may be admitted as a
special student if he presents evidence that he can profit by the instruction; (b) A person who holds a Bachelor's degree or a higher degree for which it is prerequisite, may be admitted to the University as a special student upon presentation of credentials showing that he holds such degree or degrees. A person twenty-one years of age or older who wishes to study at this University may be admitted by the Director of Admissions, provided he is unable to furnish other credentials upon which his admission might be based. Before any special student can receive a degree or certificate from this University, he must have met the requirements for admission prescribed under the other admission procedures numbered 1-3 above.

5. Admission as a guest: One who is regularly matriculated at another college may be admitted as a guest student. The student assumes full responsibility for determining whether or not the courses he takes at this University will apply to his program of study. A guest matriculant is urged to have the courses to be taken approved in advance by the Registrar of the University to which the credits are to be transferred. The appropriate form may be secured at the office of the Registrar at any Michigan college.

Application for Admission

FRESHMEN

1. A prospective freshman should request an official application form from the Director of Admissions or his high school principal or counselor, and complete that part as directed in the application.

2. The application should then be returned to the high school principal, or counselor, who will be responsible for including his high school personal data and academic record.

3. The completed application will be sent to the Director of Admissions by the principal. It is not acceptable if presented by the student.

4. The above three steps must be completed before the student can be considered for admission.

5. The student must be officially admitted before he can be counseled or enrolled, therefore all credentials must be in the admissions office in advance of registration for any course.

6. Applications for admission may be sent to the University any time during or after the seventh semester in high school.

TRANSFERS

1. An application form must be secured from the Director of Admissions and completed according to instruction.
2. The applicant must request an official transcript be sent to the Director of Admissions directly from each of the colleges he has attended. These transcripts will not be accepted if presented by the student. The record must be complete.

3. The student must be officially admitted before he receives an official evaluation of credits, is counseled or enrolled.

AMERICAN COLLEGE TEST

The American College Testing program (ACT) is required of all new freshmen. The results of this test must be on file in the Admissions Office prior to enrollment. Applicants with marginal records will often be asked to submit test results before a final decision is reached relative to their admission status. Prospective applicants should take the test late in their junior year in high school or early in the senior year. While all test results recorded on an application are considered by the Admissions Staff in the evaluation process, no other achievement or aptitude will substitute for the ACT requirement.

All applicants intending to participate in intercollegiate athletics must complete either the ACT or the Scholastic Aptitude Test (SAT).

ADVANCED PLACEMENT PROGRAM

A number of high schools and preparatory schools offer selected students the opportunity to accelerate and to take in the senior year one or more subjects which are taught at the college level and cover the materials of a college course. Each year in May the College Entrance Examination Board administers a series of Advanced Placement examinations covering this advanced work.

Western Michigan University cooperates with the Advanced Placement Program, granting college credit for Advanced Placement courses passed with a score of 3 or better. Individual departments of the University have formulated policies concerning those college courses which are bypassed through such advanced placing. Entering freshmen with acceptable Advanced Placement scores will be given Advanced Placement credit. They should also explore the University Honors Program.

DEGREES

The Board of Trustees on recommendation of the President and faculty of Western Michigan University, confers degrees as follows:

BACHELOR OF ARTS

The student who regularly completes a curriculum conforming to the degree requirements and embracing at least 70 hours of General Studies, Language and Literature, Science and Social Science, including at least
eight hours in one foreign language, is eligible for the degree of Bachelor of Arts. If two or more units of one foreign language are presented for entrance, the requirements for foreign language may be waived.

BACHELOR OF BUSINESS ADMINISTRATION

BACHELOR OF MUSIC

BACHELOR OF SCIENCE

The student who regularly completes a curriculum conforming to the degree requirements and embracing 40 hours or more of General Studies, Language and Literature, Science, and Social Science is eligible for the degree of Bachelor of Science.

BACHELOR OF SCIENCE IN ENGINEERING (Industrial)

SECOND BACHELOR'S DEGREE

A graduate of Western Michigan University with the degree of Bachelor of Music or Bachelor of Science who subsequently becomes a candidate for the degree of Bachelor of Arts, or vice versa, is required, in addition to the credits he already has, to complete 30 hours of resident credit and to satisfy any other specific requirements for the degree. The 30 hours need not be taken subsequent to the first degree.

MASTER OF ARTS

MASTER OF BUSINESS ADMINISTRATION

MASTER OF MUSIC

MASTER OF OCCUPATIONAL THERAPY

MASTER OF SCIENCE IN ACCOUNTANCY

MASTER OF SCIENCE IN LIBRARIANSHIP

MASTER OF SCIENCE IN TECHNOLOGY

MASTER OF SOCIAL WORK

SPECIALIST IN ARTS

Sixth-year programs are offered primarily for the preparation of Community College teachers in Business, English, History, Mathematics
Degrees

and Librarianship by the departments indicated and the School of Graduate Studies.

The Department of Librarianship and the School of Graduate Studies also offers Specialist in Arts programs for public school and public library administrators.

SPECIALIST IN EDUCATION

A sixth-year program offered through the School of Education and School of Graduate Studies, with specialization in Educational Administration or School Psychological Examiner.

DOCTOR OF EDUCATION

A degree program offered by the Department of School Services and the School of Graduate Studies designed for educational leaders in schools, business and government.

DOCTOR OF PHILOSOPHY

Programs leading to the Ph.D. degree are offered in Chemistry, Mathematics, Science Education and Sociology.
DEGREE REQUIREMENTS

Any curriculum leading to a bachelor’s degree consists of at least 124 hours of credit which may include only four hours of general physical education.

The student must meet the following requirements or their equivalent:

General Requirements

a. Each student must complete four semester hours of general physical education. Persons 30 years of age or older are not bound by this requirement. Such a waiver applies only to general physical education and not to specific curricular requirements nor to total hours required for graduation. Credit earned in general physical education may apply toward the requirement in general physical education only. It may not be used as academic elective credit. The general physical education requirement is waived for male students who enroll and complete the basic course (two years) of Military Science (R.O.T.C.). Veterans of Military Service (minimum of one year continuing active duty) shall, upon request, be granted two hours of general physical education credit. The remaining two hours must be completed with emphasis on the lifetime sports.

b. Courses must be selected so that the requirements in at least one of the curricula are fulfilled before graduation.

c. The student must complete a major with a minimum of 24 hours and a minor with a minimum of 15 hours (30-hour subject major or 36-hour group major is required of students in Elementary and Secondary Education, with a minor or minors of at least 20 semester hours. For further details see under Curricula for Teachers.) In Elementary Education the student may complete two minors or group minors of 20 or 24 hours each; or one major or group major of 30 or 36 hours. All students in Electrical Engineering Technology and Mechanical Engineering Technology and Metallurgical Engineering Technology, Industrial Engineering and Industrial Supervision, including any available options within these curricula may be excused from the requirement of declaring a regular major and/or minor field if they satisfy the requirements of their curriculum as set forth in the catalog or that curriculum as modified by substitutions approved through normal channels.

d. A minimum grade point average of 2.0 must be attained in any major or minor(s) presented for graduation.

e. Minimum residence requirements:

It is expected that all candidates for the Bachelor’s degree or full certification will have earned at least 15 hours of credit on the campus of Western Michigan University or one of its established off-campus centers at Muskegon, Grand Rapids or Benton Harbor. A minimum of 30 hours of credit must be taken through Western Michigan. Ten
(10) of the last 30 hours must be taken through Western. Correspondence credit may not be used to satisfy any of the minimum residence requirements.

f. A maximum of 15 semester hours of credit in correspondence courses may be applied to a degree program.

g. Students transferring from a two-year community or junior college must complete a minimum of one-half of the academic work required in their curriculum at an accredited four-year, degree-granting institution (exclusive of the general physical education requirement).

h. No student may be graduated under a catalog which is more than ten years old.

Exceptions may be made for:
   a. Life certificate holders.
   b. Students progressing regularly toward a degree (6 hours or more a year).

For these exceptions, students must either earn the degree by September 1, 1970, or be held to the general requirements.

Appeals for exceptions must be approved by the appropriate academic dean.

General Studies Program

I. Freshman-Sophomore Level

Both

College Writing 116 ........................................ 4 hrs.
Freshman Reading 140 ..................................... 2 hrs.

Either

Early Western Civilization 100 .......................... 4 hrs.
(Greeks to 17th Century)
or
Modern Western Civilization 101 .......................... 4 hrs.
(17th Century to Present)

One course from the following:

Man and Society 202 ........................................ 4 hrs.
Social Bases for Human Behavior 203 .................... 4 hrs.
Comparative Social Institutions 204 ..................... 4 hrs.
Race and Culture 205 ...................................... 4 hrs.

Two courses from the following:

Physical Geography 105 or Geological Science 112 4 hrs.
Biological Science 107 ...................................... 4 hrs.
Physical Science 108 ...................................... 4 hrs.
Aims and Achievements of Science 110 ........................ 4 hrs.
Admission, Degrees and Certificates

Either
Arts and Ideas 222 ........................................ 4 hrs.
or
Non-Western Arts and Ideas 224 ........................................ 4 hrs.

II. Junior-Senior Level
Introduction to the Non-Western World 304 ............. 4 hrs.
Plus one broad, inter-disciplinary course to be selected from following courses:

Human Communication 400 ........................................ 4 hrs.
Science in Intellectual History 401 ........................................ 4 hrs.
American Culture 402 ........................................ 4 hrs.
Molders of Thought 405 ........................................ 4 hrs.
Social and Cultural Change 408 ........................................ 4 hrs.
Seminar in Contemporary Issues 497 ........................................ 4 hrs.
Criticism of Mass Media 503 ........................................ 4 hrs.
Business and Society 504 ........................................ 4 hrs.

III. Additional work to be selected from the above General Studies courses or from non-professional courses in the School of Liberal Arts and Sciences. Technical courses in applied music, art, and speech, and courses given in Liberal Arts departments in methods of teaching are excluded from this category. ........................................ 6 hrs.

In the areas of social science and science, in Arts and Ideas, and in the Junior-Senior level courses, alternatives may be approved and incorporated in subsequent announcements.

1. The Dean of the School of General Studies, in consultation with the committee established to administer the General Studies program, is empowered to make such adjustments and substitutions in the program of individual students and groups of students as seem desirable in order to accomplish the goal of encouraging the student to acquire a broad competence in his study of general education courses. In making such decisions, the Dean will consider:

a. The high school record of the student;
b. Any college entrance examinations that he has taken or is required to take;
c. The student's own attitude toward his preparation.

Furthermore, the student is encouraged to study in those areas of General Studies in which he displays the least competence. The Dean may grant credit for the successful completion of examinations designed to determine the competence of the student in an individual area, provided that in doing so the broad objective as stated above will be accomplished.
2. Because of the special purposes of the General Studies program, it is expected that the courses contained in it will normally not be considered part of any academic major or minor sequence. In certain specialized professional curricula, exceptions to this rule may be made in appropriate areas by joint agreements between the Dean of the School of General Studies, those persons responsible for the administration of curricula, and appropriate department heads.

**General Studies Equivalents**

In determining the extent to which the General Studies (general education) requirements of Western Michigan University have been met by credits earned at other colleges the following rules shall apply:

1. **College Writing—Freshman Reading Area**
   a. For a full waiver a student must present at least 5.5 semester credits in a freshman writing or communication course or present proof that he has fulfilled the Freshman English requirement at some other four-year degree granting institution.
   b. If he presents less than 2 semester credits, he will be required to take both College Writing (unless exempted by examination) and Freshman Reading.
   c. If he presents a minimum of 2 semester credits but less than 3 he will be required to take College Writing.
   d. If he presents a minimum of 3 semester credits but less than 5.5 he will be required to take Freshman Reading.
   e. If the institution from which he transfers has granted a waiver for the Freshman English requirement or any part of it, this waiver will be honored by Western Michigan University.

2. **Science Areas**
   a. A student who presents a minimum of 8 semester credits in General Physical Science or in any combination of two or more of the following: physics, chemistry, biological science or earth science, will not be held for the general education requirements in the science area. Courses acceptable under the sciences include:
      Biological Science:
      - Biology
      - Botany
      - Nature Study
      - Physiology
      - Zoology
      Chemistry:
      - General College Chemistry
      - Industrial Chemistry (if taught by the Chemistry Department)
Earth Science:
Conservation
Geography (physical)
Geology and Meteorology

Physics:
Astronomy
General College Physics
Technical Physics (if taught by the Physics Department)

b. Regardless of the number of credits he presents in one area of science, he must present credits in more than one to receive a full waiver. If all his credits are in one area, he must take a course bearing at least 4 hours of credit in another.

c. If he presents less than 2.5 semester credits in science, he will be expected to complete the entire General Studies science requirement at Western.

3. Social Science Area

a. A student who presents a minimum of 4 semester credits in General Social Science or in any combination of two or more of the following subjects will be considered to have met his Freshman-Sophomore level general education requirements in social science:
   - History of Modern Europe or American History
   - Cultural Anthropology
   - Economics (Principles)
   - Sociology (Principles)
   - Political Science (except that American Government may not be used with American History)

b. Regardless of the number of credits he presents in one field, he must present credits in more than one to receive a full waiver. If all his credits are in one field, he must take a course bearing at least 2 hours of credit in another.

c. If he presents less than 2 semester credits, he will be expected to meet the General Studies social science requirement at Western.

4. Western Civilization—Arts and Ideas Areas

a. A student must present a minimum of 8 semester credits in at least two of the following fields to receive a full waiver:
   - Western Civilization (history of culture)
   - Art Appreciation or Art History
   - Music Appreciation or Music History
   - Literature (including drama)
   - Philosophy or Religion (non-doctrinal)
   - Theatre (introduction or history)
b. If he presents less than eight semester credits, he may complete the requirements by taking a course approved in consultation with the office of the Dean of the School of General Studies.

5. Junior-Senior Areas

All students who transfer to Western Michigan University with fewer than 90 semester credits must complete the 8 hours of Junior-Senior General Studies described on page 21 of the catalog, except that a student who has taken a minimum of 3 hours of work in studies in the Non-Western World may receive an exemption in that area. Students who transfer 90 or more semester credits should consult with the office of the Dean of the School of General Studies about the possibility of waiver.

Exemptions and Comprehensive Examinations

1. Comprehensive examinations in some General Studies areas are available for well-prepared students. Information about them can be obtained from the office of the Dean of the School of General Studies.

2. Exemptions from all or part of the General Studies science requirements are made for students who, because of choices of majors or minors or because of curricular requirements, must take a considerable amount of departmental science. However, a student must acquire a knowledge of more than one departmental area.

Schools and Curricular Offerings

SCHOOL OF GENERAL STUDIES

SCHOOL OF APPLIED ARTS AND SCIENCES

- Agriculture
- Distributive Education
- Engineering and Technology
  - Electrical Engineering Technology
  - Industrial Engineering
  - Industrial Supervision
  - Mechanical Engineering Technology
  - Metallurgical Engineering Technology
- Home Economics
  - Dietetics
  - Home Economics in Business
  - Home Economics Education
Admission, Degrees and Certificates

Industrial Education
  Industrial Arts
  Vocational-Technical Education
  Printing Management
Occupational Therapy
Paper Technology
Transportation Technology
  Automotive Engineering Technology
  Aviation Engineering Technology

Two-year Terminal Curricula
  Food Distribution
  Petroleum Distribution
  Drafting and Design Technology
  Electronics Technology
  Aircraft Technology

SCHOOL OF BUSINESS
  Business Administration
    Accounting
    Business Education (The teaching of business subjects, secretarial administration, cooperative secretarial program)
    General Business (Including finance and insurance)
    Management (Personnel, industrial, office management)
    Marketing (Sales management, advertising, retailing and purchasing)

SCHOOL OF EDUCATION
  Teacher Education
    Elementary
    Rural Life and Education
    Junior High School
    Secondary
    Librarianship
    Music
    Elementary Music
  School Services
    Guidance and Personnel
  Special Education
    Crippled and Homebound
    Emotionally Disturbed
    Mentally Handicapped
    Speech Pathology and Audiology
    Blind Rehabilitation
  Physical Education for Men (Health, physical education, recreation)
  Physical Education for Women (Health and physical education)
SCHOOL OF LIBERAL ARTS AND SCIENCES

Liberal Arts
  Anthropology
  Art
  Biology
  Chemistry
  Economics
  English
  Geography
  Geology
  History
  Mathematics
  Language (French, German, Latin, Spanish. Limited courses are available in Greek, Russian.)
  Linguistics
General
  The same areas of concentration are available in the General curriculum as are found in the Liberal Arts curriculum.

Medical Technology
Social Work
Speech Pathology and Audiology

Pre-Professional (The student must transfer to a professional school to complete requirements)
  Christian Ministry
  Dentistry
  Engineering (except for industrial)
  Forestry
  Journalism
  Law
  Librarianship
  Medicine
  Mortuary Science
  Nursing
  Pharmacy

For graduates of the University with outstanding records a number of graduate research fellowships are available in chemistry, sociology, biology, psychology, and education. Many fellowships and assistantships are also available through other colleges and universities.

The Center for Sociological Research, a division of the Sociology Department, is provided to instruct graduate and undergraduate students in research procedures and to assist in faculty research. Data processing equipment is available to qualified students.

For students in any area of aviation technology, there is provided ample airport facilities and flight instruction.
Major and Minor Requirements

A major is a sequence of related courses totaling a minimum of 24 hours (30 hours in Elementary and Secondary Education or 36 in a group major in Elementary or Secondary Education); a minor is a sequence of related courses totaling a minimum of 15 hours (20 hours in Elementary and Secondary Education).

1. The student's major and minors will be his subject specialization, such as: mathematics, accounting, biology or chemistry.

2. His curriculum may be general or specific preparing him for a specialized career or profession such as business, medicine, law, auto mechanics or engineering.

3. Departmental requirements for majors and minors are listed elsewhere in this catalog. Where requirements are not specified, students should consult the departmental advisers for approval of their major and minor programs as soon as it is known what they are to be and by the last semester of the junior year.

4. The candidate for a degree must complete a major and a minor. A candidate for the Elementary Provisional Certificate may elect, instead, two minors or group minors of 20 or 24 hours each; or one major or group major of 30 or 36 hours.

5. In certain cases “group” majors totaling a minimum of 30 hours and “group” minors totaling a minimum of 20 hours are permitted. (Excluding students in Elementary and Secondary Education.) They usually consist of courses selected from the related departments of a division (see the Division of Social Sciences and the Division of Science and Mathematics).

6. Under certain conditions General Education courses are partially acceptable toward major and minor requirements. (See Departmental requirements.)

7. Minors may often be related to majors, so as to recognize naturally or closely related fields; for example, mathematics and physics, history and geography, literature and history, etc.

8. It is not permissible to use education as a major or minor in any undergraduate curriculum.

9. The following courses are not to be counted as satisfying major and minor requirements:
   a. Required courses in College Writing or Freshman Reading
   b. Required courses in education
   c. Required courses in general physical education
   d. Basic R.O.T.C. courses

10. A combination of foreign languages, or of English or American Literature with a foreign language, is not permissible. A major or minor must be in one language only.

11. Mathematics may not be combined with science (physics, geography, or chemistry, biology) for any major or minor sequence.
12. A minimum grade-point average of 2.0 must be attained in any major or minor presented for graduation.

**MAJORS**

Accounting
Agriculture
Anthropology
Art
Automotive Engineering Tech
Aviation Engineering Tech
Biology
Business — General
Business — Education
Chemistry
Cooperative Occupation Education
Earth Science
Economics
*Engineering & Technology:
  Electrical Technology
  Electrical Engineering Tech
  Drafting and Design
  Industrial Engineering
  Industrial Supervision
  Mechanical Engineering Tech
  Metallurgical Engineering Tech
English
Geography
Geology
History
Home Economics:
  Dietetics
  Home Economics in Business
  Home Economics in Education
Industrial Arts
Language:
  French
  German
  Latin
  Spanish
Linguistics
Management:
  Administrative Services
  Electronic Data Processing
  Industrial Management
  Personnel Administration
Marketing:
  Advertising
  General Marketing
  Industrial Marketing
  Purchasing
  Retailing
Mathematics
Music
*Occupational Therapy
  *Paper Technology
  Philosophy
  Physical Education — Men
  Physical Education — Women
  Physics
  Political Science
  Printing Management
  Public Administration
  Psychology
  Religion
  Sociology
  Special Education:
    Blind and Visually Impaired
    Crippled and Home Bound
    Emotionally Disturbed
    Mentally Handicapped
    Speech Pathology & Audiology
Speech
  Speech Education

*Curricular offerings only

**MINORS**

Accounting
Agriculture
Anthropology
Art
Automotive Engineering Tech
Aviation Engineering Tech
Biology
Business:
  Education
  General
  Finance
  Insurance
  Law
Chemistry
  Cooperative Education:
    Cooperative Occupational Education
      (Secondary Ed only)
    Food Distribution
    Petroleum Distribution
Earth Science
Economics
  Engineering Technology:
    Drafting and Design
    Electrical Technology
    Electrical Engineering Tech
    Mechanical Engineering Tech
    Metallurgical Engineering Tech
English
Geography
Geology
History
Home Economics
  Dietetics
  Home Economics in Business
  Home Economics in Education
Industrial Arts
Language:
  French
  German
  Latin
  Spanish
Linguistics
Management:
  Administrative Services
  Electronic Data Processing
  Industrial Management
  Personnel Relations
Marketing:
  Advertising
  General Marketing
  Industrial Marketing
  Purchasing
  Retailing
Mathematics
Music
Philosophy
Physical Education — Men
Physical Education — Women
Physics
Political Science
Psychology
Religion
Social Work
Sociology
Speech
  Speech Education
CERTIFICATES

Teacher Certification — Provisional

The following types of teaching certificates are granted:

1. State Elementary Provisional
   This certificate qualifies the holder to teach for a period of approximately five years in the elementary grades (kindergarten through eighth grade) in any public school in Michigan. The candidate must meet the requirements for a degree as defined above.

2. State Secondary Provisional
   The secondary provisional certificate is valid for teaching all subjects in grades 7 and 8, and in subject matter fields in grades 9 through 12 in which the applicant has completed a major or minor. The candidate must meet the requirements for degree as defined above.

Teaching certificates will be granted only to candidates who are eighteen years of age or older.

A candidate presenting credits as a graduate of a Michigan county normal school will be granted a maximum of 25.7 semester hours credit toward the Provisional Certificate.

Certificate Renewal

A person who holds an expired provisional certificate may renew such certificate and restore it to good standing by completing 10 hours of acceptable college work. Application for reinstatement must be made through the institution upon whose recommendation the certificate was issued. For an application for reinstatement, please write to the Certification Officer, School of Education, Western Michigan University.

Teacher Certification — Permanent

1. Requirement to be fulfilled:
   a. Application must be made to the University within one year following the expiration of the Provisional Certificate.
   b. The candidate must have taught successfully during the life of the certificate for not less than three years in schools of the level indicated on his provisional certificate.
   c. The candidate must have earned, in addition, 10 semester hours of acceptable* college credit. Credit completed in correspondence courses, community or junior college courses, or in courses for which the candidate has previously received credit may not be used for permanent certification.

*For further definition of acceptable college credit, see the Certification Officer, School of Education, Western Michigan University.
2. Procedure for certification:
The candidate must obtain an application blank from the Registrar, complete this blank and return it to the University, accompanied by his provisional certificate and his Teacher's Oath.

3. The University will investigate the qualifications of the candidate, ascertain if he satisfies the requirements for permanent certification and make appropriate recommendation to the State Board of Education.

**EXPENSES**

**Undergraduate and Graduate Student Fees**

<table>
<thead>
<tr>
<th>Semester Hours</th>
<th>Resident Fees</th>
<th>Non-Resident Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Undergrad</td>
<td>Graduate</td>
</tr>
<tr>
<td>1-2</td>
<td>$60</td>
<td>$65</td>
</tr>
<tr>
<td>3-4</td>
<td>95</td>
<td>105</td>
</tr>
<tr>
<td>5-6</td>
<td>125</td>
<td>135</td>
</tr>
<tr>
<td>7-8</td>
<td>160</td>
<td>170</td>
</tr>
<tr>
<td>9-10</td>
<td>190</td>
<td>205</td>
</tr>
<tr>
<td>11 or more</td>
<td>215</td>
<td>235</td>
</tr>
</tbody>
</table>

For the spring and summer sessions, the above schedule will apply up to the maximum of $108 for Michigan undergraduate residents and $118 for Michigan graduate residents and $250 for non-Michigan undergraduate residents and $275 for non-Michigan graduate residents.

Student fees are subject to change by action of the Board of Trustees. Partial payments will not be accepted.

APPLICATION FEE: A non-refundable payment of $10 must accompany each new application for admission as an undergraduate student or for admission to the School of Graduate Studies.

ADMISSION DEPOSIT (*Entering students*): A $50 deposit applies to all new, transfer and beginning students who have been admitted to the Fall semester. The deposit will be applied toward the student fees in each case and must be paid on or before May 1 or within three weeks after notification of acceptance of admission, whichever is later. Deposits received in the Business Office after May 1 are non-refundable.

FEES DEPOSIT (*Returning students*): All students pre-registering for the Fall semester prior to the date of billing for student fees are required to make a deposit of $50 at the time of pre-registration. The deposit will be applied towards the student fees. Refunds will be made only if requested on or before May 1.

APPLIED MUSIC FEE: A special departmental fee of $75.00 for 60 minutes, or $38.00 for 30 minutes of private instruction per week is charged for applied music each semester. Each credit hour of applied music normally requires 30 minutes of private instruction.
AUDITORS' FEES: Auditors (students who attend classes but do not desire credit) are governed by the same regulations as students desiring credit.

GRADUATION FEE: A Graduation Fee of $10 is due and payable at the time a diploma request is filed with the Records Office.

PILOT TRAINING FEE: A special fee of $400.00 is payable with the written consent of the Department Head, at the Business Office prior to registration for the Pilot Training Course.

ROOM AND BOARD: The residence halls, with the exception of Vandercook Hall, furnish board and room at $455.00 per person each semester. Vandercook Hall for Men, East Campus, is the only residence hall where board is not furnished. The rate, for room only, is $155.00 a semester per person.

All prices quoted are on the basis of two or more students per room or suite. Due to the unsettled condition of prices for food and labor, the University reserves the right to increase the charge during the year, if in its opinion, such an increase is necessary.

Address requests for housing reservation to the Director of Housing. A first payment of $50 to be applied toward room and board payment will be required with the signed contract before a housing assignment is made.

It is the responsibility of each student to file his application for resident housing. This is not automatic upon acceptance by the University.

REFUNDS

STUDENT FEES AND APPLIED MUSIC FEES: A student who withdraws from the University or who reduces his credit hour load, resulting in lower fees, will be granted a partial refund (see schedule) of the total paid—subject to the following conditions:

1. A refund will not be granted for reducing the current hour load after the final day for adding a course as established by the Registrar.

2. Pre-registered students who have paid student fees prior to the last day of registration and who subsequently reduce their load during the drop-add period shall be entitled to a refund of 100 per cent of any difference in the assessments.

3. A refund will not be given for withdrawal from the University after the last calendar day as stated below:

Refund Schedule:

100 Per Cent  Prior to beginning of classes
50 Per Cent  Through the fifth week of classes in a semester or second week in a session
Refunds

a. Fall semester refunds may not exceed the total amount of all fees paid minus $50.00.

b. Changes in student loads prior to the end of the final day for adding a course are reassessments.

NOTE: The refund date will normally be determined by the date that the Registrar receives a Change of Enrollment request form or an Appeal to Withdraw form.

MILITARY SERVICE: A special refund schedule is applicable to students involuntarily called to active duty in the military service and is on file in the Controller's Office.

FLIGHT TRAINING FEES: Refund of flight training fees will be made in accordance with the policy established by the Controller of the University.

Residency:

The following policy adopted by the Board of Trustees of Western Michigan University applies to all students:

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 Trustees.

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. The residence of a wife follows that of her husband, except that a woman student who is a resident under paragraph 1 or 2 may continue to register as a resident of this state although subsequently marrying a non-resident student or other non-resident.

4. No person is deemed to have gained or lost 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, 3 or 5.

5. A person in the service of the United States, and his wife or minor children, who have met the six months residence requirements in paragraph 2, may register as residents of this state.

6. 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.
Admission, Degrees and Certificates

7. A member of the University staff and his dependents may register as resident of this state.

It shall be the duty of every student at registration, if there are any possible questions as to his right to legal residence in Michigan under the rules stated above, to raise the question with the Controller and have such questions passed upon and settled prior to registration.

SCHOLARSHIP REGULATIONS

Unit of Credit

The unit of credit is the semester hour; the number of semester hours credit given for a course generally indicates the number of periods a class meets each week.

Grading System

The student receives one grade in each course that he takes. This grade combines the results of class work, tests, and final examinations. Grades are indicated by letters, to each of which is assigned a certain value in honor points per hour of credit, as shown in the table below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Significance</th>
<th>Honor Points per hour credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Fair</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>Passing</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>Failure</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td>0</td>
</tr>
<tr>
<td>CR.</td>
<td>Credit</td>
<td>0</td>
</tr>
<tr>
<td>NC.</td>
<td>No Credit</td>
<td>0</td>
</tr>
</tbody>
</table>

"I" Incomplete

This is a temporary grade given for work which is passing in quality but lacking in quantity to meet course objectives. It is assigned when illness, necessary absence, or other reasons satisfactory to the instructor prevent completion of the course requirements by the end of the semester. This grade may not be given for unsatisfactory work.

A grade of "I" may be removed only by the instructor who gave it, or, in exceptional circumstances by the department head or his ap-
pointed representative. If the "I" is not removed within a period of two calendar years, the Incomplete remains a part of the student's permanent record. When the "I" is removed, a permanent grade will be recorded. Students who receive an incomplete grade in a course must not re-register for the course in order to remove the "I".

An instructor who assigns a grade of "I" will submit to the Department Chairman and to the Registrar a statement of remaining requirements for removal of the incomplete grade for each student concerned.

Pass/Fail

A student who has achieved a standing of sophomore or higher and who is not on scholastic probation may elect to enroll for credit in designated courses on a pass/fail basis. Such courses must be outside the student's major-minor areas and may not include required courses.* Letter grades will not be granted in courses taken on a pass/fail basis. A student who does D or better in such a course will receive a "pass" grade.

The pass/fail system provides that:

1. One pass/fail course a semester may be counted towards a degree, but the total may not exceed 12 hours of pass/fail work.
2. When a pass/fail course has been elected, a letter grade may not be given in the course.
3. Pass/fail courses will not be used in determining the over-all grade-point average.
4. All course prerequisites must be maintained by students electing pass/fail courses.

Repeated Courses

Any course in which a student may have been enrolled more than once is considered a repeated course. A grade must be presented for each course. The grade earned the final time in the course will count toward curricular or degree requirements and will be counted instead of the previous grade and/or credit earned.

Honors in course is based upon cumulative grade-point average only and not on an adjusted average.

For purpose of re-entry, academic review, and graduation the adjusted grade-point average is used.

Honor Points

The number of honor points earned in a course is the number of semester hours credit given by the course multiplied by the number of

*Directed Teaching, a required course, is taken on a pass/fail basis and is not included in the 12-hour limitation.
To gain a place on the Dean's List for a semester, a student must:

1. Have taken at least fourteen semester hours of work during the semester.
2. Have a grade-point average of at least 3.50 for the semester.

Admission, Degrees and Certificates

honor points per hour of credit corresponding to the letter grade received, as shown in the preceding table. For example, a grade of B in a four hour course gives 4 x 3, or 12 honor points.

Grade-Point Average

A grade-point average is obtained by dividing the total number of honor points earned by the total number of semester hours of work for which the student is officially enrolled during any period. For example, a total of 32 honor points earned in a semester by a student officially enrolled for 16 hours of work gives a grade-point average of 32/16 or 2.0 for that semester.

Dean's List

To gain a place on the Dean's List for a semester, a student must:

1. Have taken at least fourteen semester hours of work during the semester.
2. Have a grade-point average of at least 3.50 for the semester.

Low Scholarship

A student must earn an over-all grade point average of at least 2.0 to satisfy degree requirements. The low scholarship policy is intended to encourage satisfactory progress toward that end. The policy operates as follows:

1. Good Standing
   A student is in good standing whenever his over-all grade point average is at least 2.0.
2. Warning
   Whenever the grade point average for any enrollment period is less than 2.0, but the over-all grade point average is 2.0 or above, the student will be warned.
3. Probation
   The student will be placed on probation whenever his over-all grade point average falls below 2.0.
4. Probation Removed
   Whenever the conditions of Good Standing are restored, Probation will be removed.
5. Continued Probation
   If the over-all grade point average increases, although still below 2.0, the student may be continued on Probation for one additional enrollment period.
6. Dismissal
The student who fails to increase his over-all grade point average at the end of an enrollment period of Probation, or whose over-all grade point average fails to reach 2.0 at the end of one enrollment period of Continued Probation, will be asked to withdraw from the University. Exceptions may be granted, at the discretion of the Registrar, where the increase has been substantial but still falls fractionally short of the minimum 2.0 requirement.

CLASS ATTENDANCE

Students are responsible directly to their instructors for class and laboratory attendance as well as for petitions for excuses for absences. Students who anticipate being absent or who have had prolonged periods of absence should confer with the appropriate dean and give explanation concerning their cases. But such "explanations of absences" are not to be construed by instructors as constituting "excuses for absences." The "cut system" is not recognized.

CLASS LOAD

A first semester freshman may not enroll for more than eighteen hours of work except by special permission, which is seldom granted unless the curriculum demands it. This regulation applies to total credit for work taken by extension or in some other institution, in addition to credit desired in residence at Western.

The normal maximum load for the Spring and Summer sessions is nine hours.

Students employed part-time should reduce their class loads proportionately. If a student works full time, his academic load should not exceed eight to ten hours.

Full time teachers will be limited to a maximum of six hours each semester either on campus, through Field Services, or both.

No full time teacher may enroll at any time in more than two courses offered by the Field Service Division.

CHANGING COURSES (Drop-Add)

Students may enroll in (Add) any course through the first six days of classes, including Saturday. The final date for adding courses will be published in the Time Schedule of Classes.

Students may withdraw (Drop) from courses without grade through the first Saturday past mid-semester. The final date for dropping will be published in the Time Schedule of Classes. Students who withdraw (Drop) after this date, without approval will be graded "E" in each course dropped.

Students who believe they must withdraw after this date without
penalty because of genuine hardship must appeal to a Faculty-Student Committee. Documented justification must be presented to the Office of the Dean of Admissions and Records on appropriate forms to be secured at the Records Office. The student is expected to follow the outlined steps in making this appeal. The action of the Committee will be final. Each student is encouraged to visit with his instructor before deciding to withdraw from class. The above policy applies to students who withdraw from any or all of the courses for which they are registered. For additional regulations governing complete withdrawals, see section under “Withdrawal From the University.”

WITHDRAWAL FROM THE UNIVERSITY

Any student who wishes to withdraw completely from the University must initiate this action through the office of Standards and Procedures in the office of Dean of Students.

CLASSIFICATION

Students at Western Michigan University are classified officially as follows:

Freshmen—Students credited with 0-25 hours inclusive.
Sophomores—Students credited with 26-55 hours inclusive.
Juniors—Students credited with 56-87 hours inclusive.
Seniors—Students credited with 88 hours or more.

COURSE NUMBERING SYSTEM

The course numbering system is limited to three digits. The first digit indicates the level of work. The second digit indicates an area of study within the series or level. The third digit indicates the specific course number in each area and each series. Undergraduate courses are numbered from 100 through 599. Graduate courses are numbered 600 through 799. If the course number has been changed within the past three years, the former number is shown in parentheses following the current course number.

<table>
<thead>
<tr>
<th>Course Numbers</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 89</td>
<td>Non-credit courses</td>
</tr>
<tr>
<td>90 - 99</td>
<td>Terminal course credit that may not be applied toward degree programs</td>
</tr>
<tr>
<td>100 - 199</td>
<td>Courses primarily for Freshmen</td>
</tr>
<tr>
<td>200 - 299</td>
<td>Courses primarily for Sophomores</td>
</tr>
<tr>
<td>300 - 399</td>
<td>Courses primarily for Juniors and Seniors</td>
</tr>
<tr>
<td>400 - 499</td>
<td>Courses primarily for Seniors</td>
</tr>
<tr>
<td>500 - 599</td>
<td>Courses for advanced undergraduates and graduate students</td>
</tr>
</tbody>
</table>
Graduation

600 - 699 Courses for graduate students only
700 - 799 Graduate Seminars, Theses, Independent Research, etc.

Generally speaking, an even numbered third digit is the first half of the course and an odd numbered third digit is the second half of the course. Courses that terminate at the end of one semester and may not be divided into two courses in the immediate future may be assigned an odd numbered third digit to protect the system from becoming overloaded with even numbered third digits. Frequently, applied music has variable credit and will be two digits with a prefix of either "H" or "Z".

The number of a course which has been discontinued is not to be reassigned for a period of five years. It is the responsibility of the Registrar to approve course numbers and keep an accurate file of all courses and assigned numbers.

EXAMINATIONS

1. A final examination is given in every course at the end of each semester.
2. Students are required to take examinations in all courses in which they are enrolled.
3. Students may not request an examination at any other than the scheduled time. Any unavoidable conflict should be reported to the Registrar as soon as known so that special arrangements can be made.
4. Failure to meet the schedule due to illness is to be reported to the appropriate dean immediately.

GRADUATION

The candidate for degree is expected to make application for graduation during the first semester of his junior year so that his record may be audited before his senior year.

Standard for Graduation

A student must have a grade point average of 2.00 or higher to be graduated in any curriculum.

To be granted a degree or certificate at the end of a semester during which he has been on academic probation, a student must have a grade-point average of 2.0 or higher for the semester.

If a student goes on academic probation or is dismissed as a result of the work taken in his final semester, he will be required to remove the low scholarship status before being granted a degree or certificate.
Final Date for Completion of Work

All work taken either on or off the campus must be completed by graduation day. Transcripts of completed work earned off the campus will be received after the end of the semester only in cases where there are extenuating circumstances.

Courses taken or completed after the summer session will not count toward bachelor's degrees or teaching certificates granted at the close of the summer session. Students who take or complete such courses will receive their degrees and certificates at the close of the fall semester.

Correspondence courses must be completed, examinations taken, and the grades received in the Registrar's Office on the following dates, as applicable, for degree considerations:

a. December graduation, November 15
b. April graduation, March 15
c. June graduation, May 15 (No Commencement Program)
d. August graduation, July 15

Students who fail to meet the above standards will be removed from graduation lists automatically and placed in the class of the succeeding semester or session, assuming other requirements can then be met. When a student fails to meet requirements for graduation resulting from failed courses, incomplete work, or for any reason for which the student accepts responsibility or has control. Responsibility in these cases rests with the student to reapply for the next regular graduating class following completion of his requirements.

HONORS IN COURSES

Honors in Courses are offered upon graduating students who have displayed a high level of performance during their university course. Such honors are announced at a special convocation.

Recipients of honors receive their degrees:

Cum laude—when their grade-point average is 3.50 to 3.69, inclusive
Magna cum laude—when their grade-point average is 3.70 to 3.89, inclusive
Summa cum laude—when their grade-point average is 3.90 to 4.00, inclusive

In computing grade-point average for honors in course, the following rules will apply:

1. Credits and honor points earned during a student's second to seventh semester, inclusive, only will be counted toward honors.
2. Credits and honor points earned in correspondence and extension classes as well as those transferred from other duly accredited institutions will be considered toward honors.

3. No student will be eligible for an honor in course who has not earned at least 160 honor points in this University during the interval mentioned in Rule 1.

TRANSCRIPTS

A student desiring a transcript of his record in this university should write to the Registrar, giving dates of attendance and, if a graduate, the date of graduation. He should give all names under which he may have been enrolled. Each student is entitled to one transcript of his record without charge, but all additional copies are charged for at the rate of one dollar a copy. No transcript will be released except upon written authorization of the student.

FOREIGN STUDENTS

Enrollment of select students from other countries, meeting usual admission requirements or under special sponsorship, is encouraged at Western for the broad purpose of promoting intercultural exchange, international understanding and friendship through both formal and informal learning experiences on campus and in the community.

IDENTIFICATION

Each student on campus is required to have an identification card on which is located his validating label and on which are embossed his student number, social security number and name.
Miscellaneous Information

ALUMNI

The Alumni Office serves as liaison between Western Michigan University and former students. Through its publications it keeps alumni abreast of Western's academic and physical progress. It serves also to encourage among former students continuing interest in the University.

The Alumni Office serves in an advisory capacity to the student group which organizes the annual Homecoming, a time when all alumni are invited to return to the campus. It has a vital role in the Annual Giving Campaign which provides financial support for many W.M.U. activities.

All members of the Western Michigan University Alumni Association receive the Western Michigan University Magazine, a quarterly publication, and the Newsletter, published eight times a year.

The Alumni Association is governed by a President, two Vice Presidents, a Board of Directors and an Executive Secretary. Alumni Clubs throughout the nation participate in scholarship, grant, loan fund programs and social events.

Alpha Beta Epsilon, a sorority with 19 chapters and about 700 members, is a group of dedicated Western alumnae whose chief project is to provide a number of scholarships for outstanding students.

ATHLETICS

Athletics consists of two major programs; intercollegiate athletics and intramural athletics.

INTERCOLLEGIATE—The University is represented by teams in football, baseball, basketball, indoor and outdoor track, cross country, tennis, wrestling, swimming, gymnastics, and golf. Representative teams from all parts of the country are scheduled in these sports with the emphasis on mid-western teams.

Western Michigan University has been a member of the Mid-American Conference since 1947. The other members of the Conference are Bowling Green, Kent State, Marshall, Miami, Ohio and Toledo. The athletics are governed by an Athletic Board which adheres to the Athletic Code of the Mid-American Conference and the policies and principles established by the National Collegiate Athletic Association. The teams winning Mid-American Conference championships in basketball and baseball qualify automatically for the annual NCAA playoffs.

Western Michigan University is a member of the Central Collegiate Conference. Participation in this conference furnishes competition with a number of the stronger track teams in the middle west.
INTRAMURAL—An extensive intramural program provides opportunity for students to engage in competitive sports on campus as members of clubs, fraternities or independent teams. Sports offered for men include archery, badminton, basketball, billiards, bowling, cross country, free throw shooting, golf, gymnastics, handball, paddleball, soccer, softball, swimming, table tennis, tennis, touch football, track, volleyball, wrestling. Any sport in which a sufficient number of students indicate an interest and for which facilities are available may be set up in the intramural schedule.

AUDIOVISUAL CENTER

The Audiovisual Center, located in Waldo Library, is organized to serve the students and faculty of Western Michigan University through the use of audiovisual media and equipment. Besides the operation of a library of films, filmstrips, and recordings, there are additional functions of production of transparencies and photographs, lettering, tape recording, and picture mounting. A staff of student employees is trained to operate audiovisual equipment for classroom instruction and student campus activities.

SPEECH AND HEARING CLINIC

Among the services provided students are those of the Speech and Hearing Clinic. Diagnosis and therapy are provided for individuals with voice, articulation, stuttering, hearing, cleft palate, or foreign accent problems. Individuals unable to carry on their classroom activities or to achieve adequate results in the general speech courses or to do their practice teaching because of speech or hearing difficulties may be referred for treatment in this modern clinic. Student clinicians use the facilities of the clinic in preparing for their careers.

CONDUCT AND DISCIPLINE

The rules and regulations covering student conduct are developed by student-faculty committees under the Student Services Council of the Faculty Senate. The policies, when approved, are published in The Code of Student Life. The rules and regulations appearing in this Code are developed under the philosophy reflected in this statement:

"The individual student of Western Michigan University, as a part of the University society, should be encouraged to help develop a responsible, intelligent community. He should be encouraged to maintain his own integrity through sound self-discipline. The University should adopt only such reasonable rules and regulations as are necessary for the orderly, harmonious, and beneficial functioning of the whole community."
The Dean of Students has the responsibility for student conduct and discipline. When infractions of rules and regulations occur, violators will be referred to the appropriate student discipline committee. Decisions of student boards may be reviewed by the University Discipline Committee.

COUNSELING SERVICES

The services of the Counseling Center are offered to all undergraduate and graduate students, their spouses and their children.

Many new and important decisions and situations will face students while they are at Western Michigan University. They will need to make decisions regarding courses, curricula and vocational choice. They may become involved in social and personal situations about which they feel confused and upset. The University provides highly trained counselors to assist students with these concerns.

The services of the Counseling Center include: academic advising, vocational-educational planning, personal counseling, testing and group counseling. Reading material is available in the Counseling Center Occupational Information Files concerning various aspects of employment, occupations and qualifications.

The services of the Counseling Center are committed to a profound faith in the worth, dignity and great potentiality of each individual. Confidentiality is considered paramount in the realization of this commitment.

DEBATING — FORENSICS

The Western Michigan University forensics program attempts to develop the “whole speaker” by providing varied speaking experiences in both competitive and non-competitive environments on and off the WMU campus. Students may become involved in any or all facets of the program which includes: (1) intercollegiate debate, discussion, oratory, extemporary speaking, rhetorical criticism, interpretative reading; (2) the WMU All-University Forum; (3) the Forensic Speaker’s Bureau; and (4) the Forensic Judging Service.

It is not necessary to enroll for classes or be a speech major or minor. However, students may receive academic credit for their participation by enrolling in Speech 236.

DRAMA

All students in good academic standing, regardless of academic major or minor, may participate in the University Theatre program of the Department of Speech. Housed in the excellent and spacious new Laura V. Shaw Theatre complex, the theatre opportunities each year include acting or technical work on five or six productions in the Shaw Theatre,
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five or more in the Arena Theatre, as well as a number of student-directed "laboratory productions" each semester. Both adult and children's drama are performed. In addition, opportunities for intensive, concentrated study and practice in the theatre arts are available through the newly established Summer Ensemble Theatre.

EDUCATIONAL RESOURCES CENTER

The award-winning Educational Resources Center, located in Sangren Hall, is a unique instructional organization serving students and faculty in the School of Education. The ERC is concerned with virtually the total range of instructional media. The center provides students and faculty a representative collection of public school textbooks, professional books, pamphlets, periodicals, curriculum guides, courses of study, resource units and reference materials. The ERC also houses a collection of commercially made instructional devices: films, filmstrips, recordings, teaching machines and graphic materials as well as audio-visual equipment. The Center serves further as a focal point for a variety of audio-visual courses, leading to the Master's degree in Audiovisual Media.

DIVISION OF CONTINUING EDUCATION

The Division offers educational opportunities to persons who do not participate in the regular full-time undergraduate or graduate program of the University.

Serving primarily the sixteen counties of Southwestern Michigan, Western's offerings provide a variety of courses through extension class and correspondence enrollments. A variety of courses is offered to benefit teachers in the field and other interested adult students. Course offerings in the sixteen counties are planned in conference with county superintendents, public school superintendents and their teacher committees. Courses are offered on both the undergraduate and graduate levels.

There are also correspondence courses available which may be taken for credit and applied toward an undergraduate degree within the limitations described in this bulletin.

In the field of adult education the office provides advisory services, speakers, discussion leaders, and persons qualified to handle leadership training programs. Upon request, such services are available to farm, business and industrial groups, labor unions, schools, churches, and other organizations.

In-service education programs are planned with schools, business, professional and civic groups. Advisory services are offered, as well as actual training programs.

For details write the Division of Continuing Education.
HEALTH SERVICE

Western Michigan, through its Health Service, provides medical, surgical and psychiatric care that may be needed by students. These services are available to both undergraduate and graduate students.

Scheduled for opening in the Fall of 1969 is a three-level Health Service facility, located on the West campus near Goldsworth Valley. The new building includes an expanded out-patient clinic, X-ray and laboratory facilities with the third level having a 72-bed capacity.

All undergraduate students are required to have on file with the Health Service a record of a physical examination performed by a physician of the student's choice. NO PHYSICAL EXAMINATIONS ARE GIVEN AT THE STUDENT HEALTH SERVICE. Registration is not considered complete until the health examination report has been received. In order to assure uniformity of records, the University Health blank is sent to each student by the Admissions Office along with notification of acceptance as a student. Graduate students who intend to use the Health Service while at the University must have a physical examination report on file at the Health Service. If a student should have an illness which will require further treatment while attending the University, such information should accompany the physical examination report and a letter from the family physician is advisable.

Undoubtedly during the four years the student is on campus he will encounter some illness, accident or injury which will require medical attention. The Health Service is open 24 hours a day, seven days a week during the Fall, Winter and Spring terms for treatment of such illnesses and injuries. Clinics are held daily, Monday through Friday, from 8 A.M. to 4:30 P.M. with a physician present to advise medical care and treatment. Saturday morning clinics are held from 9 A.M. to 12 noon for only emergent or urgent cases. Students who are found to be more seriously ill and require medical care and laboratory examinations which cannot be performed at the Health Service will be transferred to a local hospital. Admission to a hospital is not the financial responsibility of the University nor of the Health Service, but is the financial responsibility of the student or parent. Where a student is transferred to a local hospital, it is expected that the parents will be notified at the earliest possible convenience. No admissions or operative procedures will be performed on these students without permission of the parents, except in cases of extreme emergency or life-threatening situations. In addition, if consultation is sought from other physicians who are not directly employed by the University, such expense for their consultation is the responsibility of the student or parents. It shall not be the responsibility of the University to pay for such hospitalization or consultation. To cover such expenses, it is advisable that the student apply for the accident and illness insurance policy at the University on enrollment or that insurance benefits be carried by the parents through the parent's employer. Minimal charges are made by the Health Service for medication, X-rays, laboratory examinations, and inpatient care.
Students who are receiving allergy injections may have their vaccine stored at the Health Service and may have the vaccine administered as scheduled by their family physician. The allergy vaccine is administered by the nurses and can only be given when the doctors are in attendance. A minimum fee of 50¢ is charged for allergy injections.

The fees which are charged by the Health Service for out-patient clinic visits are based on the number of hours the graduate or undergraduate student is taking. Undergraduate students and graduate students with seven semester hours or more a semester or four hours or more a session are charged no fee for out-patient clinic visits. Undergraduate or graduate students with one to six semester hours a semester or one to three hours a session are charged a minimum fee per office call.

**HOUSING POLICIES**

All undergraduate students, except those living with a spouse or parent while attending Western or those who will reach 21 years by the specified date for Fall and Winter Semesters and/or Spring and Summer Sessions, must live in University approved housing. For Freshmen, University approved housing is limited to residence halls, if space is available.

University approved housing includes residence halls, fraternity and sorority houses, and those facilities which appear on the approved housing list on file in the Off-Campus Housing Office, Room 2010, Administration Building. This list may be obtained by written request.

Fall and Winter Semesters—Undergraduate students who will reach 21 years during the academic year ending with the close of the Winter Semester may live in housing of their own choosing, provided that no breach of housing contract with the University or a private householder is involved.

Any student carrying eight (8) hours or less during the Fall and Winter Semesters will be considered a part-time student and may live in housing of their own choosing regardless of age, provided that no breach of housing contract with the University or a private householder is involved.

Spring and Summer Session—Undergraduate students who will reach 21 years of age before the first day of classes for Fall Semester may live in housing of their own choosing, provided that no breach of housing contract with the University or a private householder is involved.

Any student carrying four (4) hours or less during the Spring and Summer Sessions will be considered a part-time student and may live in housing of their own choosing regardless of age, provided that no breach of housing contract with the University or a private householder is involved.

Requests for special permission to occupy housing other than that for which a student is eligible may be submitted to the Off-Campus Housing Office.
All students must file their current local address while attending the University (not preferred mailing address) at the time of registration. All changes of address, or corrections, must be filed promptly at the Off-Campus Housing Office.

Information about residence hall accommodations or married student housing may be obtained from the Housing Office, Room 160, University Student Center Building, Western Michigan University.

UNIVERSITY LIBRARIES

Collections of the University Libraries have reached a size and complexity that will begin to gratify the mature scholar, and perhaps alarm and intimidate the beginner. To the latter, we extend special assurances that our staff of librarians appreciate the special difficulties under which you labor, and will always be pleased to assist you personally in solving your library problems. Beginners (and others, too) have no reason to be ashamed of their ineptitude in using the library, and should not let their timidity restrain them from asking our staff the questions they need to have answered.

Our main collection is housed in the Waldo Library, named after a former president of the University. Our library system presently contains more than a half-million volumes, and we currently subscribe to 4,500 periodicals, and 100 newspapers. In recent years we have acquired a number of outstanding special collections in microform—such as complete runs of the New York and the London Times on microfilm—and our staff are prepared to assist you both in locating these special collections, and in teaching you to use the equipment necessary for reading microforms.

In 1968 the University Libraries became a member of the Center for Research Libraries, a special collection of nearly three million items to which we have virtually immediate access via teletype connection with the Center. Our teletype facilities also permit us to communicate rapidly with other research libraries throughout the country. We now employ teletype routinely to expedite loan requests to and from other libraries. Any student or faculty member may obtain interlibrary loan service by requesting it at the Reference Desk of Waldo Library.

The University Library system includes three branch libraries:

The Business Library, located in North Hall, has a collection of some 15,000 books, supplemented by special microform collections, and currently subscribes to 500 periodicals and newspapers.

The Music Library is on the second floor of Maybee Music Hall. In addition to a book collection of some 10,000 volumes, and 75 periodical subscriptions, this branch also contains a collection of 6,000 phonograph records, and a special room where you may listen to them.

The Educational Resources Center-Library in Sangren Hall comprises some 40,000 volumes and presently receives 180 periodicals.
There are a number of Special Collections worth noting. The Regional History Collection has a strong interest in Michigan history. The C. C. Adams Ecological Collection consists of the personal library of the pioneer American ecologist Charles C. Adams.

The Randall Frazier Collection has a wealth of material on the history and culture of black America. The Map Library is the second largest map collection in the State of Michigan.

To assist in exploiting fully the various collections and services available in the University Libraries, a series of descriptive and explanatory pamphlets is available, without charge, in any of the Libraries.

**MOTOR VEHICLES**

Detailed regulations covering the use of motor vehicles on campus are available from the Office of Safety and Security. In general, only upper-class students (Juniors or above) are eligible to operate or park a motor vehicle on University property. Students living at home or commuting, or students with other unusual circumstances, may apply for special privileges. The operation and parking of motor vehicles are restricted to certain areas. All students who qualify for motor vehicle privileges must register their cars (or motor bikes, motorcycles, etc.) and pay a registration fee. Since penalties for infractions includes fines from $5 to $25, all students should become acquainted with the regulations.

**MUSIC**

Numerous music activities and organizations at Western Michigan University are available for the cultural enrichment of the student. Faculty members, students, and guest artists provide a schedule of more than one hundred recitals every year, to which all University students are invited.

Students may participate actively in the music life on campus by joining one of the many ensembles—the Marching Band, Symphonic Band, Wind Ensemble, Orchestra, Men's and Women's Glee Clubs, the University Choir, the Campus Chorale, the Varsity Choir, Opera Workshop, and University Singers. The University also offers opportunities for participation in small ensemble groups for strings, woodwinds, brass, and percussion, including Jazz Lab Band and Madrigal Singers.

**PLACEMENT SERVICE**

Western Michigan University has operated a free centralized placement service for many years. No graduating student can be guaranteed employment; but all graduates have the opportunity to meet prospective employers from the public and parochial schools, institutions of higher
education, business, industry, social agencies, and governmental services. Active communication is maintained between the University and hundreds of employment officials. Career counseling is provided for students at all levels. The office maintains a library of information concerning employment trends, employer needs, and job opportunities. Alumni are always welcome to use the placement service. Summer employment contacts for students are also maintained. The Placement Office is located on Knollwood Avenue, one block south of West Michigan Avenue. Contact the Director of Placement for further information.

PUBLICATIONS

The Western Herald, the student newspaper, is published Tuesdays, Wednesdays and Fridays during the Fall and Winter semesters, and once a week during the Spring and Summer sessions. It is distributed free. Policies governing the operation of the Western Herald are set by the newspaper's student-faculty committee. The positions of editor, business manager, departmental editors, circulation and advertising managers are paid positions. Staff jobs are open to all university students.

The Western Herald offices are located in the Bigelow Hall annex located on the lower floor of the residence hall's east wing. The paper is printed in the University's print shop.

The Brown and Gold yearbook is written and edited by university students. It is distributed in the spring to all students who have paid a $3 reservation fee. A student-faculty committee handles the policies and control of the publication. The positions of editor, associate editor, business manager and photographers are paid jobs. More than 20 staff posts are open to university students each fall. Offices are in Bigelow Hall annex.

The Western Way is published by the Student Association and distributed free to all new students as a guide to campus life, social activities and university organizations. It is prepared and edited by a student-faculty committee.

Reading Horizons, a quarterly devoted to the study of reading problems, is sponsored and published by the staff of the Psycho-Educational Clinic at Western Michigan University. Subscriptions for the journal are received from the United States and from three foreign countries.

Peripatos, a student mimeographed literary publication, is distributed throughout the school year. Supervision is provided by the English faculty.

The Occasional Papers of the C. C. Adams Center for Ecological Studies are scholarly contributions in the field of ecology. The series is published by the School of Graduate Studies and editorial responsibility lies with the staff of the Center. Issues appear irregularly, but the general rate has been three or four a year since the series was initiated in 1960.
RADIO

WMUK is the FM voice of Western Michigan University. Through the generosity of the Kalamazoo Foundation, alumni and listeners, the station improved its facilities in 1965, with an increase in power to 39,000 watts and stereophonic broadcasts.

The station provides an educational and cultural extension of the campus through its broadcasts of many University events and brings to its listeners programs from the community and leading cultural centers of the world.

WMUK began official broadcasts in April, 1951, with a power of 400 watts. In 1954, a Kellogg Foundation grant made possible a power increase, enabling the station to serve an area sixty miles in radius. WMUK broadcasts at 102.1 megacycles. The station is a member of the National Association of Educational Broadcasters, the Broadcasting Foundation of America, and The National Association of Broadcasters.

WIDR services residence hall complexes, carrying student oriented contemporary programming. The station, network affiliated, is a full time operation. Founded in 1953, WIDR, is one of the oldest institutions of its type in the nation. WIDR is owned and operated by the students and has offices and studios in the University Student Center. It operates on a frequency of 750-AM.

R.O.T.C.

The U. S. Army Reserve Officer Training Corps (R.O.T.C.) Program at Western Michigan University offers the student an opportunity to prepare for military service in the status of a commissioned officer.

The normal, complete R.O.T.C. program consists of a basic course and an advanced course. The basic course includes four semesters of classroom instruction and drill. While the student pursues this course, the Government furnishes all required uniforms, equipment, and textbooks. During the fourth semester of the basic course, a student may apply for acceptance in the advanced course. If accepted, he will be deferred from military service until he graduates and receives his commission. The advanced course includes an additional four semesters of classroom instruction and drill and six weeks of field-type instruction at a summer encampment normally taking place between the second and third semester of the advanced course. A student enrolled in the advanced course receives a monthly allowance of $50 and a single allowance of $149 for the purchase of a uniform. Students attending summer camp are fed and quartered at the expense of the Government, paid at the rate of approximately $170.00 monthly while in camp, and are given a travel allowance of six cents per mile from the university to the summer camp and return.

A sophomore who has not participated in the basic course may pursue an alternative, two-year program. If participating in this program, the
student attends a basic, six-week camp prior to his junior year in lieu of the basic course and then pursues the advanced course just as those electing the four-year program.

Upon completing either of these programs and fulfilling all requirements for graduation, a student may receive a commission as a Second Lieutenant in either the U. S. Army Reserve or the Regular Army. Department of the Army has provided a limited number of scholarships for students participating in the four-year program.

The Military Science Department sponsors the Scabbard and Blade Society, the Pershing Rifles, A Ranger Unit, the Cadet Rifle Team, and the Cadet Band. The Scabbard and Blade Society not only plans and conducts the annual, formal Military Ball for members of the Cadet Brigade and their guests but also conducts both formal and informal orientation sessions on the R.O.T.C. program for male high school seniors. The Pershing Rifles' drill team not only competes intercollegiately with drill teams from other universities but also supplies the honor guard for various campus ceremonies. The Ranger Unit specializes in small-unit and counter-guerrilla tactics with emphasis on practical, field training. The Cadet Rifle Team competes intercollegiately in small-bore matches. The Cadet Band provides the music for the Annual Review and for other campus ceremonies. To be a member of any of these organizations, a student must be enrolled in the R.O.T.C. program.

Additional information on any facet of the R.O.T.C. program may be obtained from the Professor of Military Science.

TELEVISION SERVICES

In its role as one of the mass media services provided by the WMU Broadcasting Department, the facilities support over a dozen courses with televised instructional materials over a closed-circuit network of five channels, reaching 136 classrooms as well as various non-academic areas. These telelessons are produced in a modern, four-camera television studio utilizing broadcast quality equipment and systems. Television materials may be preserved on videotape, using one of the four studio or nine “portable” recording systems. Supporting the facility is a staff of Producer-Directors, engineers, a graphics artist, cinematographer/photographer, and various other part-time, special-skills personnel.

The Television Services was started in 1960 and its use is continually being broadened to meet growing academic needs. In addition to preparing instructional materials for classroom use, the Services produce educational programs on film and videotape for use by local commercial stations and occasionally for the networks.

The University has won two national awards for television production. The program “The Nature of Perception” received one of twenty-three Ohio State Awards from a field of three hundred and sixty entries, and the program “On His Blindness” received a Certificate of Merit from the National Foundation for the Blind.
Planning is underway for a complete, new television facility to be in operation by the Fall of 1970.

TESTING SERVICES

The facilities of Testing Services are open to all students, faculty, alumni and their families. Testing Services can provide many guides for the student in his quest for self understanding. It would like to help students help themselves and its services were founded with this in mind. Virtually all services are free.

There are aptitude test batteries, achievement tests, vocational interest inventories and personal preference schedules available to all students and their families.

Through the use of available tests, it is possible to get valuable assistance. Testing Services can also be useful in career planning. Since Testing Services work is essentially counseling, all meetings and interviews are kept confidential.

Testing Services is located in West Hillside Apartments.
Student Activities and Organizations

In order to meet the needs of students, opportunity is afforded for participation in many extra-curricular activities. All campus organizations must be chartered by the Charters and Constitutions Committee. This committee, consisting of students with a faculty adviser, will charter petitioning groups when stated prerequisites are met.

The University forbids any type of discrimination that denies equal rights and privileges on the basis of race, religion, color or nationality.

Nothing in the above statement of policy is to be interpreted to prevent a religious organization from requiring affiliation with its particular church as a qualification of membership.

Information concerning University policies relating to the activities of student groups may be obtained from the Office of Student Activities.

Organizations on Western's campus are active in such areas as:

- Departmental and Professional
- Honorary (all university)
  - Alpha Lambda Delta, Phi Eta Sigma, Omicron Delta
  - Kappa, and Mortor Board
- Publications and Communication
- Religious
- Residence Halls
- Service Organizations
- Social Fraternities
- Social Sororities
- Special Activity & Interests
- Student Association (all students)
- Associated Women Students (all women students)
- Men's Union Board (all men students)

STUDENT HOUSING

Thomas J. Carr
Director of Housing

EAST CAMPUS RESIDENCE HALLS

LAVINA SPINDLER HALL—202 women
HENRY VANDERCOOK HALL—208 men
WALWOOD HALL—117 men

WEST CAMPUS RESIDENCE HALLS

HUGH M. ACKLEY HALL—271 men
HOWARD BIGELOW HALL—428 men
LEOTA C. BRITTON HALL—249 women
ERNEST BURNHAM HALL—247 women
SMITH BURNHAM HALL—258 women
BERTHA DAVIS HALL—241 women
BLANCHE DRAPER HALL—254 women
EDITH EICHER HALL—271 women
ROBERT J. ELDREDGE HALL—281 men
FRANK ELLSWORTH HALL—428 men
ANNA FRENCH HALL—285 women
JOHN E. FOX HALL—245 men
WALLACE GARNEAU HALL—257 men
THEODOSIA HADLEY HALL—271 women
LUCIA C. HARRISON HALL—281 women
LeROY H. HARVEY HALL—271 men
JOHN C. HOEKJE HALL—418 men
THEODORE HENRY HALL—384 women
ALICE L. LeFEVRE HALL—257 women
GRACE AND MARY MOORE HALL—290 women
D. C. SHILLING HALL—268 men
LYDIA SIEDSCHLAG HALL—247 women
BESS L. STINSON HALL—245 women
ZIMMERMAN HALL—253 women

MARRIED STUDENT HOUSING

ELMWOOD APARTMENTS—192 units for married students
GOLDSWORTH VALLEY APARTMENTS—96 units for married students
STADIUM DRIVE APARTMENTS—200 units for married students
Overlooking Kalamazoo, the East Campus comprises 70 acres which include 15 devoted to physical education and recreation. The 20 acres which comprised the original site of the University are a part of the East Campus. Principal buildings in this area, exclusive of student housing and athletic facilities, are:

CAMPUS SCHOOL—The University Elementary School is housed here.

EAST HALL—This building, originally the Administration Building and later the Education Building, now provides a gymnasium, natatorium, and classrooms for various departments.

HEALTH SERVICE—The University Health Service, Department of Speech Pathology and Audiology, and Psycho-Educational Clinic are housed here.

PRINTING SERVICES—The Industrial Technology Building has been remodeled and is now the home for the University print shop and mimeographing service.

NORTH HALL—The former general library building, now completely remodeled for the School of Business. A Business Library for East Campus classes is included.

PHYSICAL PLANT—The Industrial Education Building has become a part of the Physical Plant space with the completion of the new Industrial and Engineering Technology Building on the West Campus. Most of the trades maintenance shops are in this area; the grounds crew and University garage are also in this area. The Campus Planning Department and Plant Extension Department are also housed in the Physical Plant Building.

PSYCHOLOGY RESEARCH—The Psychology Department is using this building for research purposes.

SAFETY AND SECURITY BUILDING—This structure was constructed as the University power plant, later it provided quarters for the campus garage, electronics classrooms for the Department of Engineering and Technology, and has now become the home for the Safety and Security Department.

OAKLAND RECITAL HALL—Office, classroom, and practice space are provided for the Music Department. Included is a 300-seat auditorium for recitals and other musical programs.

WALWOOD UNION—East Campus student center provides a snack bar, cafeteria, meeting rooms and the ballroom. The Alumni Association has offices here.

WEST HALL—Occupied by the School of Business and Department of Agriculture.
WEST CAMPUS

The West Campus of more than 400 acres is the location of current and anticipated University expansion. This area has grown steadily since purchase of the first parcel of 180 acres during World War II. Hilly terrain and attractive landscaping provide an interesting setting for the charm of the past, exemplified by Oaklands, home of the University President, and the look of tomorrow as shown by the modern buildings just completed and under construction. Principal buildings, other than student housing and athletic facilities are:

ADMINISTRATION—Opened in 1952, this structure houses administrative offices.

ARCADIA—The Department of Occupational Therapy is housed here.

WILLIAM R. BROWN HALL—A separate building but connected to Sprau Tower, Brown Hall provides classroom facilities for the English, Language and Speech Departments.

DISTRIBUTIVE EDUCATION—This building, completed in 1966, is the permanent home of the Distributive Education Department.

HEALTH SERVICE—An air-conditioned, 75 bed student health service building is scheduled to open in the 1969 fall semester.

INDUSTRIAL ENGINEERING AND TECHNOLOGY—The largest classroom building on the campus, opened in the fall of 1966, houses the departments of Home Economics, Industrial Arts, Engineering and Technology, and Transportation Technology.

KANLEY MEMORIAL CHAPEL—This is the campus religious center. It was made possible through a gift from the estate of the late William Kanley, an alumnus, and was opened in 1951.

HARPER C. MAYBEE MUSIC HALL—Besides housing all music activities, studios for WMUK-FM are located here.

WILLIAM McCracken HALL—Erected in 1949, this building is the home for the Departments of Chemistry and Physics. In 1957 and 1959 there were added to it other structures for paper technology, and the Paper Industry Laboratories. At the present time an addition is being constructed about equal in size to the present building and a complete remodeling of the existing structure is contracted. When completed, McCracken Hall will be a completely air-conditioned modern facility for the departments of Chemistry and Paper Technology.

PHYSICAL SCIENCE BUILDING—The building now under construction will provide, when completed, a modern air-conditioned home for the Physics, Geology and Mathematics departments. The Computer Center will also have space there.
AIRPORT—At the local airport, new construction has doubled Western’s Aviation Technology facilities. The just-completed building houses shops, toolroom, classroom, and library. Courses in engine and air frame mechanics are taught here.
KLEINSTUCK NATURE PRESERVE—Given in 1922 by Mrs Caroline Hubbard Kleinstuck, this 50-acre tract provides instructional space for biological sciences near the campus and inside the city of Kalamazoo.

ATHLETIC FACILITIES

GARY PHYSICAL EDUCATION CENTER:

a. Physical Education Building:
   Includes a regulation swimming pool, 9 handball courts, a gymnasium floor 90 feet by 120 feet, a wrestling room, special purpose rooms, classrooms, locker facilities, and offices for the men's physical education department. Dressing rooms for women are available adjacent to the pool. Read Fieldhouse and the intramural building connect to this building.

b. Intramural Building:
   Includes a multipurpose gymnasium 120 feet by 235 feet which can accommodate four basketball courts, 6 volleyball courts, 10 badminton courts, 4 tennis courts, and a gymnastics area. A dirt floor area 140 feet by 160 feet is also included in this building. These two areas are used for intramural and recreational sports activities, physical education classes, and various intercollegiate athletic programs.

READ FIELDHOUSE:
Provides indoor facilities for intercollegiate athletic programs of basketball, and track. It has a spectator seating capacity of 9,500. The hard surface main floor area is 160 feet by 312 feet. A 220 yard rubber-asphalt indoor track is provided.

WALDO STADIUM:
Includes a regulation football field and an eight-lane quarter mile rubber-asphalt track.
Seating capacity is approximately 20,000.

HYAMES FIELD:
An excellent collegiate baseball layout. Permanent seating is provided for 2,500 people. Immediately adjacent to Hyames Field is a second baseball diamond for baseball practice and physical education classes.

KANLEY FIELD:
Includes two practice football fields and a landscaped picnic area.
Used for intercollegiate athletics.

INTRAMURAL FIELDS:
Three multipurpose recreation fields are located in Goldsworth Valley adjacent to Goldsworth Apartments.
Buildings and Grounds

These fields are used by physical education classes and the Intramural-Recreational Sports Program.

TENNIS COURTS:
Twenty asphalt courts are available in the Ellsworth Hall-Goldsworth Valley area. These courts accommodate physical education classes, intramural and recreational sports as well as the intercollegiate tennis program.

BOWLING ALLEYS:
Twenty bowling alleys are available for physical education classes and recreation in the Student Center.
Scholarships and Student Financial Assistance

The scholarship program at Western Michigan University is designed to reward academic excellence and to alleviate financial need. Students in all curricula may apply for scholarships ranging from $100 to $1,000 a year.

Students at Western also have the opportunity to apply for scholarships in their special fields of interest through the several academic departments. These scholarships are offered by individuals and by local and national industries in recognition of Western's unique contribution to certain fields of learning.

Scholarship application forms are available at the office of Director of Scholarships. They may also be obtained from the principals of most Michigan high schools.

Scholarship applications must be completed by March 1. For further information please contact the Director of Scholarships, Western Michigan University, Kalamazoo, Michigan 49001.

In determining financial assistance, Western utilizes the recommendations of the College Scholarship Service. An entering student who plans to apply for a scholarship, a National Defense Student loan, the College Work-Study Program, or the Educational Opportunity Grant program must submit a copy of the Parents Confidential Statement to the College Scholarship Service, designating Western Michigan University as one of the recipients. For further information on Student Financial Assistance, see page 69.

Information concerning fellowships may be obtained from the School of Graduate Studies.

SCHOLARSHIPS

DWIGHT B. WALDO AND PAUL V. SANGREN SCHOLARSHIPS—These distinguished scholarships honor the first two presidents of Western Michigan University. They carry stipends ranging to $1,000 per year and are offered annually to a limited number of juniors and seniors whose academic record and promise merit special recognition.

General

ALPHA BETA EPSILON SCHOLARSHIPS—Each of the 18 chapters of the sorority gives one or more scholarships each year. A student who receives a scholarship must fill the requirements set by the chapter. Apply to the chairman of the sorority chapter in your community.
ALVIN M. BENTLEY FOUNDATION SCHOLARSHIP AWARD FOR EXCELLENCE—The Alvin M. Bentley Foundation grants three $500 Awards for Excellence to incoming freshmen who are graduates of Michigan high schools. The scholarships are awarded for one year but may be renewed three times upon recommendation of the University Scholarship Committee. Apply to the Scholarship Office.

BOARD OF TRUSTEES SCHOLARSHIPS—The Western Michigan University Board of Trustees has provided funds to continue and to enlarge the scholarship program that was formerly offered under arrangement with the State Board of Education. These scholarships apply toward student fees and are subject to yearly review.

THE CLIFFORD AND ELLA CHAPMAN SCHOLARSHIP FOUNDATION AWARD—These scholarships are provided from funds of the foundation established in 1964 by Clifford and Ella Chapman, long time friends of Western Michigan University. The number of scholarships and the amount of each will be determined by the University Scholarship Committee in consultation with the Trustee of the Foundation.

COMMUNITY COLLEGE SCHOLARSHIPS—Western Michigan University offers two Community College Scholarship programs to supplement the general program in which all qualified students may compete. For detailed information see the Administrative Office of the Community College, or write the Scholarship Office, Western Michigan University.

CONSUMERS POWER COMPANY SCHOLARSHIP—Open to incoming freshmen with good scholastic ability, character, personality, and citizenship. The applicant should be active in extra-curricular activities, have financial need, and be from an area serviced by the Consumers Power Company. The amount of the award is $300 per year and is not renewable. Apply to the Scholarship Office.

CROWN ZELLERBACK FOUNDATION—The Crown Zellerback Foundation grants two $500 awards for excellence for upperclass students. The final selection is made by the Foundation after preliminary screening is done by the scholarship committee. The scholarships are awarded for one year only.

DETROIT EDISON COMPANY SCHOLARSHIP—Open to freshmen entering Western from an area serviced by the Detroit Edison Company. Award is made in accordance with general qualifications provided by the company, including scholastic ability, financial need, and interest in extra-curricular activities. Amount of the award is $370 per year and is renewable once. Apply to the Scholarship Office.

THE FORD MOTOR COMPANY FUND maintains a scholarship program for the sons and daughters of Ford Motor Company employees. Apply to the Ford Motor Company.

GENERAL MOTORS FOUNDATION SCHOLARSHIP—Two four-year scholarships are awarded annually to prospective freshmen with
outstanding scholastic and extra-curricular records who show promise of continued success. The amount is based on need which is determined by the College Scholarship Service and Western Michigan University. Apply to the Scholarship Office.

O’DELL, HEWLETT and LUCKENBACH ASSOCIATES SCHOLARSHIP—O’Dell, Hewlett and Luckenbach Asociates offers one $500 award for excellence. The scholarship is awarded for one year only upon recommendation of the University Scholarship Committee.

PAUL V. SANGREN ALUMNI DISTINGUISHED STUDENT SCHOLARSHIP—These distinguished scholarships honor the second president of the University. The awards range from $100-$500 and the funds are provided by the Alumni Association. Students are considered with outstanding scholastic records and who have been active in extra curricular activities.

UNIVERSITY SCHOLARSHIPS—Western Michigan University annually awards a number of cash scholarships to academically outstanding freshmen and upperclass students. The scholarships range in value from $100 to $500 per year and are renewable.

Departmental

ACCOUNTING

DOW CHEMICAL CORPORATION SCHOLARSHIP—The Dow Chemical Corporation offers one annual award to a student majoring in Accounting. Consult the head of the Accounting Department.

ALEXANDER GRANT & COMPANY SCHOLARSHIP—Alexander Grant & Company, Certified Public Accountants, offers one annual award for student fees. It is open to students majoring in accounting who have completed or are completing their junior year. Both need and scholarship must be demonstrated. Contact the Department of Accounting, School of Business, Western Michigan University.

KALAMAZOO ACCOUNTANTS ASSOCIATION SCHOLARSHIP—One award for student fees and automatic membership in the Kalamazoo Accountants Association for the period of the scholarship is open to juniors or seniors majoring in accounting. Contact the Department of Accounting, School of Business, Western Michigan University.

SCHOOL OF BUSINESS

BUSINESS—Epsilon Omicron Chapter, Delta Sigma Pi, professional business fraternity, awards annually a scholarship key to the male senior student pursuing a degree in business administration, who has attained the highest scholastic average for four years of work at Western Michigan University.
Scholarships and Student Financial Assistance

CLARAGE FAN COMPANY EDUCATION FOR BUSINESS SCHOLARSHIP—This scholarship is limited to students entering Western from junior or community colleges who intend to specialize in the accounting or data processing areas. The stipend is $250 per year. Apply to School of Business, Western Michigan University.

FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION SCHOLARSHIP—An annual award to any student enrolled in the Business Administration Curriculum. The student must exhibit scholastic ability and financial need. Preference is given to students who are residents of western and southwestern Michigan. Apply to the School of Business.

MICHIGAN ASSOCIATION OF MUTUAL INSURANCE AGENTS SCHOLARSHIPS—An annual scholarship of $370 is available to Insurance majors with senior status. Apply to Dr. W. L. Burdick, Department of General Business.

MICHIGAN NATIONAL BANK SCHOLARSHIP—An annual award to any student enrolled in the School of Business who is interested in a career in banking.

REAL ESTATE SCHOLARSHIP—This scholarship is open to any student enrolled in the School of Business who will commit himself to the Real Estate Certificate program. The student must exhibit a definite need as well as scholastic ability. The amount of the award is $250 per semester for a total of $1,500, including a year towards a master's degree. Apply to Dr. E. A. Grossnickle, School of Business, Western Michigan University.

BUSINESS EDUCATION

CLARAGE FAN COMPANY SECRETARIAL SCHOLARSHIP—This scholarship in the amount of $150 per year is open to students in the Secretarial Internship program. Summer employment is also available for recipients while on the scholarship. Inquiries should be directed to Mr. T. W. Null, Business Education Department, School of Business, Western Michigan University.

NATIONAL SECRETARIES ASSOCIATION SCHOLARSHIP—Applicants must submit an essay stating "Why I am Preparing to be a Secretary (or Teacher)." Open to any student in the secretarial curriculum having an academic average of B and the recommendation of the faculty based on character, scholastic aptitude, endeavor and financial need. Contact Mr. T. W. Null, Coordinator, Cooperative Secretarial Training Program, School of Business, Western Michigan University.

MARKETING

GILMORE BROTHERS RETAILING SCHOLARSHIPS—Two scholarships each covering full tuition and fees for two semesters are annually available to retailing majors in the Marketing Department. These schol-
Scholarships

Scholarships are granted on the basis of need, scholastic ability, good character, a pleasing personality, and an interest in retailing as a career. Contact the coordinator of the retailing program in the Marketing Department.

MUSIC THERAPY

SIGMA ALPHA IOTA ALUMNAE AWARD—This award will pay the tuition of a music therapy student who meets the requirements. Preference will be given to junior students. Recipients will be selected on the basis of scholarship, personality, musicianship, financial need, and faculty recommendation. The award is renewable provided scholastic and other qualifications are met. Apply to the Music Department.

EDUCATION

THE MICHIGAN CONGRESS OF PARENTS AND TEACHERS SCHOLARSHIP—This scholarship, made available by the Michigan Congress of Parents and Teachers, is in the amount of $250 per year. Applicants must have completed two years at Western Michigan University, and recipients of this scholarship must commit themselves to at least three years of teaching. Parents and recipients must be citizens of the United States and residents of the State of Michigan. Requirements are the same as for the Board of Trustee Scholarships.

MICHIGAN ASSOCIATION FOR EMOTIONALLY DISTURBED CHILDREN SCHOLARSHIPS—Scholarships of $100 (or more) per year are open to promising undergraduate and graduate students who are preparing to teach emotionally disturbed and brain-injured children. Scholarships are renewable for those who show continued high performance. Apply to Kalamazoo Area Chapter, M.A.E.D.C., 2615 Stadium Drive, Kalamazoo.

SPECIAL EDUCATION

Scholarships are offered by the University in cooperation with the United States Department of Health, Education, and Welfare for juniors, seniors, and graduate students enrolled in special education. They include stipends ranging from $300 to $2,200 per year. Payment of student fees for the academic year are also included. Scholarships are available in the following areas of special education: Mentally Handicapped, Emotionally Disturbed, Physically Handicapped, and Visually Handicapped.

The Michigan State Department of Education, in conjunction with the University, also offers scholarships for juniors, seniors and graduate students who are enrolled in special education. The stipends vary according to the students needs and the availability of state funds. State scholarships are available in the following areas: Mentally Handicapped, Emotionally Disturbed, Physically Handicapped, Visually Handicapped, and School Psychology. Students in applying should direct their inquiries
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Scholarships and Student Financial Assistance

to the Head, Department of Special Education, Western Michigan University.

FOOD DISTRIBUTION

HARRY SCHIERHOLZ MEMORIAL SCHOLARSHIP OF THE NFBA FOUNDATION, INC.—This scholarship grant is offered to an undergraduate in the Food Distribution curriculum who is interested in making a career in food distribution. The amount of the scholarship is $1,000; it is offered for one year only. Apply to the Distributive Education Department.

INDUSTRIAL EDUCATION

ATLAS PRESS SCHOLARSHIP—The Atlas Press Company offers two scholarships to stimulate interest in Industrial Education. The scholarships are open to all high school graduates in Michigan who have had at least one course in Industrial Education and who plan to enter the Industrial Education curriculum. One award is for $740, the other for $185 per year. Apply directly to the Industrial Education Department.

CLARAGE FAN SCHOLARSHIP—The Clarage Fan Scholarship offers one scholarship per year of $200 to Industrial Education students who have at least a 2.5 scholastic average, and a metals or drawing major or minor. It includes a provision that the Clarage Fan Company will provide summer employment for the recipient of the award. (Optional on the part of the student, but it is highly recommended that he make use of this.) Apply directly to the Industrial Education Department.

ENGINEERING TECHNOLOGY

AMERICAN FOUNDRYMEN'S SOCIETY SCHOLARSHIP—The Central Michigan, Saginaw Valley, and Detroit (William D. Innes Memorial) Chapters of the American Foundrymen's Society offer six $250 scholarships per year to any Engineering or Technology student having a direct interest in the foundry industry. Apply directly to the Engineering and Technology Department.

A.S.T.M.E. SCHOLARSHIPS (Phillip J. Beatty Memorial)—The American Society of Tool and Manufacturing Engineers offers five scholarships per year or $150 each to Engineering or Technology students, sophomore standing or above. Apply directly to Engineering and Technology Department.

CLARAGE FAN SCHOLARSHIP—The Clarage Fan Corporations offers two $150 scholarships per year to Industrial Engineering and Industrial Supervision students. Apply directly to the Engineering and Technology Department.

DURAMETALLIC SCHOLARSHIP—The Durametallic Corporation offers $250 per semester to juniors and seniors enrolled in the Industrial
Supervision and Industrial Engineering Curriculums. Apply directly to the Engineering and Technology Department.

FOUNDRY EDUCATIONAL FOUNDATION SCHOLARSHIP—The Foundry Educational Foundation offers eight $250 scholarships per year to any Engineering or Technology student having a direct interest in the foundry industry. Apply directly to the Engineering and Technology Department.

INDUSTRIAL MANAGEMENT SOCIETY SCHOLARSHIP—The Industrial Management Society offers one $250 scholarship each semester to a sophomore, junior or first semester senior enrolled in an Engineering Technology curriculum and who is a student member of IMS in good standing. Apply directly to the Engineering and Technology Department.

THE SOCIETY OF DIE CASTING ENGINEERS SCHOLARSHIPS—The St. Joseph, Grand Rapids, and the Saginaw Chapters offer seven $250 scholarships per year to Mechanical Engineering Technology student who have a direct interest in Die Casting or Die Making. Apply directly to the Engineering and Technology Department.

MEDICAL TECHNOLOGY

The American Cancer Society, Kalamazoo County Unit, offers each year one or more $200 scholarships to sophomore students in Medical Technology. The same students receive similar awards in their junior year, if their academic average continues adequate (2.5 or better). They continue in the senior year as $100 awards. These awards are based on need and academic merit. Application is by invitation.

OCCUPATIONAL THERAPY

EDNA BURIAN SKELTON SCHOLARSHIP FUND—Supported by the Kenny-Michigan Rehabilitation Foundation, this fund provides scholarships up to the amount of $300 annually. Grants will be based on merit and financial need and may be awarded at any time during the academic year. Preference will be given to residents of Michigan at the sophomore, junior and senior levels. Grants will be made to freshmen when circumstances warrant and funds are available. Students should earn a minimum 2.5 scholastic average. Apply to the Occupational Therapy Department.

MICHIGAN OCCUPATIONAL THERAPY ASSOCIATION — An Award has been established by the Michigan Occupational Therapy Association for the purpose of aiding worthy students in occupational therapy. Applicants must exhibit scholarship, show a definite need, be Michigan residents and be juniors or seniors majoring in occupational therapy. Amount of each award is $200 annually. Apply to the Department of Occupational Therapy.

SOCIAL AND REHABILITATION ADMINISTRATION GRANT—Annual traineeships, awarded on the basis of scholarship and financial need,
Scholarships and Student Financial Assistance

are offered to juniors, seniors and graduate students in occupational therapy. Apply to the Department of Occupational Therapy.

Information concerning scholarships other than those administered by the Department of Occupational Therapy may be obtained from the departmental secretary.

PAPER TECHNOLOGY

Up to 70 scholarships ranging in size from $150 to $600 per semester are available to students majoring in the Paper Technology Curriculum. The average grant is about $400 per semester, renewable for eight semesters. The scholarship program is supported through the Paper Technology Foundation, Inc., the Louis Calder Foundation, individuals, and groups, as listed below.

Beginning students interested in the physical science and/or engineering may write the Department directly to request additional scholarship and curriculum information and to obtain scholarship application blanks. College students already in the Department or majoring in science or engineering and transferring to the Department are also eligible to apply. Recipients are selected each semester by the Paper Technology Scholarship Committee made up of University and industry representatives.

These scholarships are awarded on a semester-to-semester basis, primarily on the basis of superior academic achievement or promise. Need is a secondary consideration, but does have significance in deciding the level of the grant where academic factors are not decisive.

Conditions for renewal of the scholarships include the maintenance of a 2.5 cumulative point-hour-ratio, having no more than one semester below a 2.5 point-hour-ratio, and passing at least 14 semester hours of credit in the Paper Technology Curriculum.

The scholarship program is supported by major contributions from the following:

Albany Felt Company
Alton Boxboard Company
American Can Company
American Cyanamid Company
American Potash & Chemical Corporation
Appleton Coated Paper Company
Appleton Wire Works Corp.
Bauer Bros. Company
Beloit Corporation
Bergstrom Foundation
The Black-Clawson Company
Blandin Paper Company
L. H. Breyfogle (in memoriam)
Brown Company
Buckman Laboratories, Inc.
Burgess Cellulose Foundation
Louis Calder Foundation
Olin W. Callighan Scholarship
Cameron Machine Company
Central Soya Company
Chemurgy Division
Champion Paper Foundation
Consolidated Civic Foundation
Container Corporation of America
Clark & Vicario Company
Corn Products Company
Continental Can Company
Crown Zellerbach Foundation
Domtar Pulp & Paper, Inc.
Scholarships

Dow Chemical Company
Drafter Brothers Company
Theodore W. Dunn (in memoriam)
Engelhard Minerals & Chemicals Corporation
Freeport Kaolin Company
French Paper Company
Georgia Kaolin Company
Georgia-Pacific Company
P. H. Glatfelter Company
D. S. & R. H. Gottesman Foundation
Grain Processing Company
Albert S. Harman Scholarship (in memoriam)
Hercules, Inc.
Hoerner-Waldorf Corporation
Hooker Chemical Corporation
J. M. Huber Corporation
Industrial Nucleonics Corporation
Huyck Corporation
Improved Machinery, Inc.
International Paper Company Foundation
Johnson Corporation
Kimberly-Clark Foundation
The Lindsay Wire Weaving Company
Lockwood Trade Journal Company
Chas. T. Main, Inc.
The Mead Corporation Foundation
Menasha Corporation
Michigan Carton Corporation
Montmorency Paper Company
Moore & Munger
Mosinee Paper Mills Foundation
National Gypsum Company
Nalco Foundation
National Starch & Chemical Corporation
Nekoosa-Edwards Paper Company
New Jersey Zinc Company
Orr Felt Company
Owens-Illinois (Forest Products Division)
Oxford Paper Company
Packaging Corporation of America
Penick & Ford, Ltd.
Charles Pfizer & Company
PIMA-Michigan Division
PIMA-Northwest Division
Potlatch Forests, Inc.
Rayonier Foundation
Rice Barton Corporation
Rohm & Haas Company
Russell H. Savage Scholarship
St. Regis Paper Company
Scott Paper Company
Slavin Foundation (Hawthorne Paper Company)
Stein, Hall & Company, Inc.
Frederick W. Sutherland Scholarship
S. W. Industries Corporation
TAPPI-Kalamazoo Valley Section
Thiele Kaolin Company
Thilco Foundation
Titanium Pigment Corporation
Union-Camp Corporation
Union Carbide Corporation
Vicksburg Foundation, Simpson Lee Paper Company
S. D. Warren Company
Watervliet Division, Hammermill Paper Company
Weyerhaeuser Paper Company
James A. Wise Wyandotte Chemicals Corporation

PETROLEUM DISTRIBUTION

CENTRAL MICHIGAN OILMEN'S CLUB—A grant for student fees and books up to a maximum of $400 per year. Available on a one year basis. Open to high school graduates and community college students interested in petroleum from Clinton, Eaton, Ingham and Jackson counties.

DETROIT OILMEN'S CLUB—A grant for student fees up to a maximum of $300 per year. Available on a one year basis. Open to high
Scholarships and Student Financial Assistance

school graduates and community college students from Wayne, Oakland and Macomb counties with preference given to sons of oil families and oil company employees.

WEST MICHIGAN OILMEN'S CLUB—A grant for student fees for one year up to a maximum of $300 per year. Available on a one year basis. Open to Michigan high school graduates and community college students who are interested in careers in petroleum.

For information regarding these grants contact the Head, Department of Distributive Education.

PRINTING MANAGEMENT

PRINTING HOUSE CRAFTSMEN—The Kalamazoo Valley Club of Printing House Craftsmen has established a four-year scholarship in Printing Management at Western Michigan University, for residents of the State of Michigan. The scholarship pays the total tuition of the holder and is renewable throughout the four years required to complete the curriculum. A new scholarship is offered each year so that up to four such grants may be in effect at any one time. Apply to the Industrial Education Department.

SCIENCE

PAUL ROOD FELLOWSHIP—The generous gift of Dr. and Mrs. Paul Rood has made it possible to grant in the freshman year to outstanding men and women planning to major in physics amounts up to $500. These stipends may be continued for students maintaining a high scholastic record. Application forms may be obtained from the Department of Physics, Western Michigan University.

KALAMAZOO CIVITAN CLUB SCHOLARSHIP—Recipients must be residents of Kalamazoo County and must have earned a 2.5 average to secure and maintain the award. Major field of study is to be the physical sciences with special emphasis on teacher education. Financial need shall be the determining factor in awarding the scholarship and for continuation of the scholarship. It is renewable three times, funds permitting. The award is to be issued to the student in the amount of $150 for the first semester and $150 for the second semester each year.

UPJOHN COMPANY MERIT SCHOLARSHIP—The company sponsors a minimum of ten national merit scholarships, including one or more scholarships at Western Michigan University for science students from Southwestern Michigan. Eight of these scholarships are for students who plan to major in pharmacy, engineering, pre-medicine, or in one of the chemical or biological sciences. Two are for students who plan to pursue a course of study in any field. Administration of these scholarships is by the National Merit Foundation and all correspondence regarding them should be directed to the National Merit Scholarship Corporation, 990 Grove, Evanston, Illinois.
TRANSPORTATION TECHNOLOGY

AIRWAY UNDERWRITERS SCHOLARSHIP—This award of $185 is available each semester to second semester freshmen, sophomores, juniors and seniors enrolled in Aviation Engineering Technology or Aircraft Technology programs. Transfer students are eligible after one semester's residence. Apply directly to the Transportation Technology Department.

AMERICAN AIRLINES SCHOLARSHIP—An American Airlines grant provides scholarships for worthy juniors and seniors in Aviation Engineering Technology. Two $250 awards are made each semester. Transfer students are eligible after one semester's residence. Apply directly to the Transportation Technology Department.

GRANTS

ATHLETIC—Western Michigan University makes certain grants-in-aid available to students excelling in athletics, and participating in or preparing to participate in varsity sports. A student must be recommended by the Athletic Department and approved by the University Scholarship Committee. Application forms may be obtained from the Athletic Department.

DEBATE—Debate Scholarships are offered to men and women participating in debate. These scholarships will range in value from $180 to $300 per year. The recipients of these scholarships must be recommended by the Speech Department and are renewable only by further recommendation of this department. Contact the Speech Department.

MARTIN LUTHER KING FUND PROGRAM—Established to commemorate Dr. King and to perpetuate his principles which exemplify "the conscience of America."

MUSIC—Each year Western offers a number of grants-in-aid to deserving music students through the Department of Music. These grants, ranging in value from $180 to $300 per year, are offered in the following areas: Ensemble, Applied Music, Special Ability, Drum Major, and Majorette. For detailed information concerning dates of application and auditions, write to the Head of the Music Department, Western Michigan University.

PURE OIL GRANTS-IN-AID PROGRAM—Two grants for two years each to sons of Pure Oil dealers, jobbers or employees who are high school graduates and interested in careers in petroleum. The grants cover student fees and books. For information, contact the Head, Department of Distributive Education.

STUDENT FINANCIAL ASSISTANCE

The Office of Student Financial Aid administers the long term loan, the College Work-Study, the Educational Opportunity Grant, the short term loan and the off-campus part-time employment programs.
Scholarships and Student Financial Assistance

Several sources of loans are available at Western, including long term loans under the National Defense Student Loan program, the Michigan Higher Education Assistance Authority, Federal Student Loan Program, and United Student Aid Funds, Inc.

Employment opportunities, both on-campus and off-campus, are available to students at Western. The on-campus opportunities include regular University employment and Work-Study job opportunities. The Work-Study program and off-campus job placement are administered by the Office of Financial Aid. For regular on-campus University employment see page 76 under "Student Employment."

Financial Aid Procedures

In seeking financial assistance through the Office of Student Financial Aid a student interested in a National Defense Student Loan, the College Work-Study Program or the Educational Opportunity Grant in addition to making application for admission must take the following steps:

1) Submit a Parents' Confidential Statement (PCS) to the appropriate address given on the statement. The PCS may be obtained from the high school principal or counselor or the Office of Student Financial Aid.

2) Complete a Western Michigan University Application for Financial Assistance. It may be obtained from the high school principal or counselor or the Office of Student Financial Aid.

3) Arrange for a personal interview with a staff member of the Office of Student Financial Aid. Incoming freshmen should take care of the interview while they are at the university for the summer orientation program.

STUDENT LOANS

Long Term Loans

NATIONAL DEFENSE STUDENT LOAN FUND

Loans under the National Defense Education Act are available to Western Michigan University students who have demonstrated financial need. Full time undergraduates may borrow up to $1,000 per academic year, and graduates $2,500. The student must complete a Western Michigan University Application for Financial Assistance obtainable from his high school principal or counselor or from WMU's Office of Student Financial Aid. This application must be completed by April 20 preceding the start of the Fall semester.
MICHIGAN HIGHER EDUCATION ASSISTANCE AUTHORITY

Michigan students who are unable to qualify for the National Defense Student Loan may apply for a loan under the Michigan Higher Education Assistance Authority. Under this program a student may borrow from a Michigan lending institution (bank, credit union) up to $1,000 per academic year as an undergraduate, and $1,500 as a graduate. The student should apply directly to his local institution which participates in this program. The names of participating institutions can be obtained from the high school principal or counselor or from WMU's Office of Student Financial Aid.

UNITED STUDENT AID FUND PROGRAM

Students unable to qualify for a National Defense Student Loan and unable to obtain a Michigan Higher Education Assistance Authority loan (or a nonresident of Michigan unable to obtain a federally guaranteed student loan in his own state) may apply to his local lending institution which participates in this program. The names of participating institutions can be obtained from United Student Aid Funds, Inc., 5259 North Tacoma Avenue, Indianapolis, Indiana 46220. The loan is not to exceed $1,000 per academic year for an undergraduate nor $1,500 for a graduate student.

FEDERAL STUDENT LOAN PROGRAM

This program provides loan opportunities for students from any state. It is similar to the program for Michigan residents under the Michigan Higher Education Assistance Authority Program. The student should check with his high school principal or counselor for details pertinent to his own state. This program was designed to provide "loans of convenience" to students from middle-income families who find it difficult to meet rising college costs. Generally, these students would not qualify as "needy" for federally supported National Defense Student Loans. Undergraduates may obtain loans up to $1,000 per academic year and graduates up to $1,500 from banks or other commercial lending sources, with the Federal Government subsidizing the interest rate for student borrowers from families with an adjusted income of less than $15,000 per year.

Short Term Loans

A.A.U.W. GRADUATE SOCIAL WORK FUND—Established in 1969 by the Kalamazoo Branch of the American Association of University Women to assist graduate students who are enrolled in the Social Work Curriculum and who are in need of financial aid.

A.A.U.W. NURSERY EDUCATION LOAN FUND—Established in 1969 by the Kalamazoo Branch of the American Association of University
Scholarships and Student Financial Assistance

Women to assist needy juniors and seniors enrolled in the Early Elementary Education Curriculum, with preference being given to those students who are training to become Nursery School Teachers.

AMERICAN BUSINESS CLUB LOAN FUND—Established in 1965 by the American Business Club of Kalamazoo to assist junior and senior Occupational Therapy students in need of financial aid. Loans up to $300 are available and are due within six months after anticipated graduation.

ASSOCIATED WOMEN STUDENTS LOAN FUND—Established in 1962 to aid junior and senior women students. Loans are in the amount of $150 and may be renewed once.

FANNIE BALLOU MEMORIAL FUND—Founded in 1921 in honor of Fannie Ballou, who was for seven years supervisor of the second grade of the Campus School. Loans are awarded to persons of superior ability in the field of elementary education. Preference is given to students in early elementary education who have completed at least one year of resident work in this university.

AMELIA BISCOMB MEMORIAL LOAN FUND—Established in 1939 through the will of Mrs. Biscomb, for over 30 years a teacher of English at Western Michigan University, who provided the sum of $500 for this purpose.

EMMA WALES BROWN STUDENT LOAN FUND—Established in 1969 by Dr. William R. Brown, professor emeritus of the English department of Western Michigan University, to memorialize his wife’s unfailing interest in the welfare of Western students. Loans from this fund are available to any worthy student.

CHAPMAN LOAN FUND—Established in 1960 by Clifford and Ella Chapman, long time friends of the University. Loans from the fund are available to any worthy student.

STATE D.A.R. SCHOLARSHIP LOAN FUND—Founded in 1934, has grown to a fund over $500 through gifts made by the State Committee of the Daughters of the American Revolution.

STONE D.A.R. STUDENT LOAN FUND—Established in 1932 through gifts from the Lucinda Hinsdale Stone Chapter of the Daughters of the American Revolution.

DEBATE LOAN FUND—This loan fund is for the use of Varsity Debaters only.

DISTRIBUTIVE EDUCATION LOAN FUND—Established in 1967 for students in distributive education. Loans will be made only upon recommendation by the head of the Distributive Education Department.

MICHAEL FINLEY MEMORIAL LOAN FUND—Established in 1964 to honor the memory of Michael Finley, a student of this University. Loans from this fund are available to any worthy student.
FOREIGN STUDENT LOAN FUND—Established in 1946 for the use of foreign students who are in need of short-term loans.

JAMES GARDNER MEMORIAL LOAN FUND—Established in 1966 by neighbors and friends to honor the memory of James Gardner, a graduate of this University who was killed in action in Vietnam. Loans from this fund are available to any worthy student who is in need of financial assistance.

LEROY H. HARVEY MEMORIAL LOAN FUND—Established in 1925 by the Student Science Club to honor the memory of Dr. LeRoy H. Harvey, who until his death was head of the Department of Biology. Loans are made to students whose major interest is in the field of science.

DELDEE M. HERMAN LOAN FUND—Established in 1968 by students and friends of Mrs. Deldee M. Herman in honor of her lengthy and devoted service as a professor in the Department of Speech and as Director of Women's Debate. Loans from this fund are available to students enrolled in the Speech Department, with priority being given to students in forensics.

JOHN C. HOEKJE LOAN FUND—Established in 1958 to honor the memory of John C. Hoekje who retired from the university in 1955 after 39 years of service as dean of administration-registrar. The money is loaned to deserving university students on the recommendation of a faculty committee.

INTER-FRATERNITY COUNCIL LOAN FUND—This fund was established in 1969 by the fraternities at Western Michigan University through the Inter-Fraternity Council. Any active fraternity member in good standing is eligible. Application must be made to the Inter-Fraternity Council.

FREBURN W. JAMES LOAN FUND—Established in 1966 by Mr. and Mrs. Freburn W. James and Mr. and Mrs. John S. Lore to assist worthy students in need of financial aid.

KALAMAZOO AREA CHAPTER OF THE MAEDC LOAN FUND—Established in 1968 by the Kalamazoo Area Chapter of the Michigan Association for Emotionally Disturbed Children to assist students enrolled in the Special Education Curriculum for the Emotionally Disturbed, with preference being given to seniors. Loans up to $200 are available with repayment starting not later than six months after the recipient leaves the University.

KALAMAZOO LADIES' LIBRARY ASSOCIATION LOAN FUND—Established in 1967 by the Kalamazoo Ladies' Library Association to assist worthy students who are in need of short-term financial aid.

KALAMAZOO MOTOR FREIGHT LOAN FUND—Established in 1961 by the Kalamazoo Motor Carriers' Association for the use of juniors and seniors who are enrolled in the business administration or transpor-
Scholarships and Student Financial Assistance

tation curricula and are recommended by the Schools of Business or Applied Arts. The loans are awarded on the basis of need and merit, specifically in the business and transportation areas. A scholastic average of 2.0 is required. The amounts vary from $300 to $500 per year.

KIWANIS EDUCATIONAL AID FUND—A sum of money made available to the University which in turn makes loans available to worthy students of the University.

LANGUAGE DEPARTMENT LOAN FUND—Established in 1959 for the use of sophomores, juniors, and seniors who are majoring or minoring in a foreign language or languages at this University. The French Student Loan Fund, started in 1944 by Miss Marion Tamin, has been incorporated in this fund. The loans are non-interest bearing. Recommendations are made by the language faculty to the head of the Department of Language.

ALICE LOUISE LEFEVRE MEMORIAL FUND—The Alice Louise LeFevre Memorial Fund was established in 1963 by the Alumni Association of the Department of Librarianship to honor Alice Louise LeFevre, founder and director of the Department. The money is loaned to graduate students in the Department. The maximum grant is $500 with an interest charge of 3½ percent with payment over a three year period. Application may be made through the Department of Librarianship.

ELIZABETH E. LICHTY LOAN FUND—Established in 1966 to honor the memory of Dr. Elizabeth E. Lichty, Dean of Women, who retired from the University in 1965. Loans up to $150 are available to women students, either on a short- or a long-term basis. A fee of 50¢ will be charged on loans up to six months while five percent simple interest, beginning the first day of the fourth month after leaving school, will be charged on long-term loans.

MARVEL F. LIDDY STUDENT LOAN FUND—Established in 1968 through the will of Mrs. Alma Liddy in memory of her daughter, Marvel F. Liddy. Loans from this fund are available to any worthy student in need of financial assistance.

RAYTH W. LOWER MEMORIAL LOAN FUND—Established in 1968 by his wife and daughters in memory of Rayth L. Lower, an alumnus of this University. Loans from this fund are available to worthy students in need of short-term financial assistance.

MILDRED MALONEY MEMORIAL LOAN FUND—Established in 1960 to honor the memory of Mildred Lindberg Maloney, a student and an employee of this University. Loans from this fund are available to any worthy student.

WILLIAM McCracken Loan Fund in Chemistry—Established in 1945 through a gift of $1,000 made by Mrs. William McCracken to honor the memory of her husband who organized the Department of Chemistry and served as its head (1907-1939). Loans are granted to
worthy and needy students majoring in chemistry. Preference will be given students who have proven their ability through courses taken in chemistry at Western Michigan University. Applications for loans should be presented to the Head of the Department of Chemistry.

MICHIGAN BROADCASTING LOAN FUND—Established in 1963 for the use of students pursuing a course of study in radio and television. Loans from this fund are short-term and non-interest bearing.

FREDERICK W. MIHOLICH MEMORIAL LOAN FUND—Established in 1967 by Mr. and Mrs. Frederick E. Miholich to honor the memory of their son, Frederick W., a former student at this University. Loans from this fund are available to any worthy student.

FREDERICK W. MIHOLICH MEMORIAL FUND FOR SPECIAL EDUCATION—Established in 1968 by Mr. and Mrs. Frederick E. Miholich, also in memory of their son, Frederick W. Loans from this fund are available to students preparing to work with the handicapped, especially the mentally retarded, with preference being given to graduate students. Loans up to $500 are available, upon recommendation of the Department of Special Education, with repayment beginning within six months after the recipient leaves the University. Students attending spring and/or summer sessions only are also eligible but with repayment starting within three months of termination of study.

OCCUPATIONAL THERAPY FUND—Funds have been provided by the Kellogg and Kalamazoo Foundations for the use of Occupational Therapy students. Loans up to $300 are available to these students after the completion of one year at Western Michigan University. The purpose of the fund is to defray the cost of the clinical affiliation when necessary. The loans are payable within six months after the anticipated graduation date. Applications are to be made to the Department of Occupational Therapy.

OMNIBUS LOAN FUND—Established in 1968 as a common fund combining smaller contributions until such time as the accumulated deposits of any one contributor are sufficiently large to be listed as a separate loan fund. Funds donated by the Faculty Dames are included at present time. Loans from this fund are available to worthy students in need of financial aid.

PANHELLENIC (DETROIT AND GRAND RAPIDS) LOAN FUNDS—The Panhellenic Societies of Detroit and of Grand Rapids have established loan funds for deserving women students in need of short-term loans. These funds are intended especially for sorority members, but, if not used, they may be made available to other women students.

PANHELLENIC WMU COUNCIL LOAN FUND—Established in 1969 by the WMU Panhellenic Council, this fund provides loans for any Greek woman, active or pledge, who displays need. The loan maximum is $100. Application must be made to the Panhellenic Council's loan chairman.
Scholarships and Student Financial Assistance

TRUMAN A. PASCOE MEMORIAL FUND—Established in 1969 by family and friends to honor the memory of Truman A. Pascoe, a member of the Department of Paper Technology. Loans from this fund are available to students of paper technology in need of short-term financial assistance. Recommendations are made by the head of the department.

RAY C. PELLETT MEMORIAL LOAN FUND—Established in 1967 to honor the memory of Dr. Ray C. Pellett, Western's first Dean of Men, who served in that capacity for 28 of his 30 years at this institution. Loans from this fund are available to any worthy student in need of short-term financial assistance.

MICHIGAN DIVISION, PIMA, ROTATING LOAN FUND—For students of paper technology. Loans are available to students upon recommendation of the Head of the Department of Paper Technology. There is no charge for interest while the student is enrolled at Western Michigan University.

SOPHIA REED - MARY MOORE HOME ECONOMICS LOAN FUND—The Home Economics Club of Western Michigan University set up the loan fund in 1953 in honor of Miss Sophia Reed and Miss Mary Moore who served on the home economics faculty for many years. The maximum amount per applicant will be $100. This is a non-interest loan to be paid back within a year of the recipient's graduation date. Recommendations are made by the staff of the Home Economics Department.

ROTARY STUDENT LOAN—A short-term loan fund available to graduate students upon recommendation of a faculty committee.

KATHERINE SHUVER LOAN FUND—Established in 1968 through the will of Katherine I. Shuver to assist music students in need of financial aid.

SIGMA TAU GAMMA MEMORIAL LOAN FUND—Chi Chapter of Sigma Tau Gamma fraternity established this memorial loan fund to perpetuate the memory of Ode Custer, Elmer Stillwell, Harry Karnemont, Robert Fletcher and Robert Harvey who made the supreme sacrifice in World War II. Loans from this fund may be obtained by any male upperclassman with a point-hour ratio of at least 2.5. The loans are non-interest bearing.

J. TOWNER SMITH LOAN FUND—Established in 1966 by the Gamma Phi Chapter of Alpha Phi Omega to honor J. Towner Smith, former adviser of this service fraternity and Dean of Men, who retired in 1966. Loans from this fund are available to any worthy student.

SOUTHERN CALIFORNIA ALUMNI LOAN FUND—Established in 1963 by the graduates of this University living in Southern California. Loans from this fund, originated by the WMU Alumni Club of Los Angeles, are available to students in need of short-term financial assistance.
SOUTHWESTERN STATE EMPLOYEES CREDIT UNION LOAN FUND—Established in 1968 by the Southwestern State Employees Credit Union to assist students of sophomore standing or higher in need of short-term financial aid.

HELEN STATLER FUND—Established in 1944 by Mrs. Frederick C. Fischer and Frederick C. Statler in honor of their mother and is available to any worthy student.

RON STRAWSER MEMORIAL LOAN FUND—Established in 1965 to honor the memory of Ron Strawser, who was a teacher of the mentally handicapped and who was vitally interested in the field of Special Education. Loans are made to students whose major field is in Special Education.

STUDENT LOAN FUND—In September, 1912, a nucleus of a student loan fund was established by a gift of $200 from Miss Blanche Hull. This fund has been increased to a total of several thousand dollars. Money is loaned to deserving students on the recommendation of a faculty committee. An interest rate of five percent is charged.

KALAMAZOO VALLEY SECTION, TAPPI, ROTATING LOAN FUND—For students of paper technology. This fund amounts to $1,500. Loans are available to students upon recommendation of the head of the department of paper technology. There is no charge for interest while the student is enrolled at Western Michigan University.

DWIGHT B. WALDO MEMORIAL FUND—Initiated by a group of faculty members at the time of Dr. Waldo's death in 1939. Loans from the fund are available to any worthy student.

WALTER Wegerly Scholarship Loan Fund—Established in 1968 by Mrs. Lillian Wegerly in memory of her husband, Walter Wesley Wegerly, a graduate of this University, and of her son, Walter Kerry Wegerly, a former student of this University. Loans from this fund are available to worthy students in need of financial assistance.

JAMES A. WELCH FOUNDATION LOAN FUND—Established in 1968 by the James A. Welch Foundation to assist Western Michigan University students from Genesee County in need of financial aid.

W. DEAN WORDEN LOAN FUND—Established in 1969 by his family to honor the memory of W. Dean Worden, a graduate of this University and for many years a teacher of Industrial Arts in the Lansing Public Schools. Loans from this fund are available to full-time students in need of financial aid, with preference being given to those majoring in Industrial Arts.

EDUCATIONAL OPPORTUNITY GRANT PROGRAM

Under this program federal funds are made available to Western Michigan University to award grants to students of exceptional finan-
Scholarships and Student Financial Assistance

Ordinarily only students whose family gross income is $6,000 or less may qualify. These grants range in amount from $200 to $1,000. The combined total of the parents' contribution, as determined by the College Scholarship Service, and the amount of the grant may not exceed $1,000. The Office of Student Financial Aid will contact those students who according to the analysis of their Parents' Confidential Statement initially qualify for this grant.

THE COLLEGE WORK-STUDY PROGRAM

The College Work-Study Program is a cooperative program between the University and the Federal government. Its purpose is to promote the part-time employment in institutions of higher education of those students who are in need of these earnings to attend or remain in college. Priority must be given to students who fall within the low income categories established by the Office of Education. These categories are stated in WMU's brochure, The College Work-Study Program obtainable from the high school counselor or the Office of Student Financial Aid, Western Michigan University. Earnings under this program will not meet all of a student's educational expenses. It is anticipated that a student will need other financial aid such as a loan, a scholarship (or a grant-in-aid), and summer earnings to get through a year of college.

To be considered for this program a student must submit a Parents' Confidential Statement to the appropriate address. He must also complete and send to the Office of Student Financial Aid a WMU Application for Financial Assistance. Both of these are obtainable from the high school principal or counselor or WMU's Office of Student Financial Aid.

LAW ENFORCEMENT EDUCATION PROGRAM

This federal program was established in 1969 to encourage persons interested or engaged in law enforcement to pursue studies in higher education beneficial to them in this profession. Law enforcement involves "all activities pertaining to crime prevention or reduction and enforcement of the criminal law."

Grants up to $300 per semester are available for full-time or part-time students who are full-time employees of publicly funded law enforcement agencies.

Loans up to $1800 per academic year are attainable by full-time students who intend to pursue, or resume, full-time employment in a publicly funded law enforcement agency. Applicants must demonstrate need.

Applications for the grant and/or loan are obtainable from WMU's Office of Student Financial Aid.
MONTHLY EDUCATION PAYMENT PLANS

Western Michigan University has approved of two monthly payment programs which provide parents with the opportunity to borrow from $500 up to a maximum of the entire educational expense of their son or daughter. Inquiries concerning these programs should be directed to the following addresses:

College Aid Plan, Inc.
1008 Elm Street
Manchester,
New Hampshire 03101

Education Funds, Inc.
10 Dorrance Street
Providence, Rhode Island 02901

STUDENT EMPLOYMENT

A large percentage of students earn a portion of their expenses by working summers or by combining summer employment with employment while attending school. Students who find it necessary to work full-time and simultaneously carry more than ten semester hours of classes may anticipate academic difficulties. A full-time employee, no doubt, will require more than four years to secure his degree. Excessive employment usually leads to an unsatisfactory academic record.

Students who work while attending classes should adjust their work and academic loads so that they can achieve at the academic level of which they are capable. Students should not force themselves to give up all extracurricular activities in favor of long working hours or a shorter college career.

Students in good health and with reasonable ambition can carry an average academic load (12-16 credit hours) and work from ten to twenty hours per week. Men students may find work in the city of Kalamazoo in such places as restaurants, hotels and motels, service stations, police departments, factories and hospitals, in drug, clothing, department and appliance stores, and as custodians, chauffeurs, truck drivers, etc. Women students may find work in cafeterias, office and retail stores, and as waitresses and babysitters. Students may apply to the Student Aid Adviser, Office of Student Financial Aid, for assistance in securing off-campus employment.

On the campus, students are employed in cafeterias, offices, at switchboards, as staff assistants, custodians, waitresses, stenographers and machine operators. Students seeking work in Residence Halls and Food Service areas, Libraries, Maintenance, or various departmental student positions are encouraged to make direct application to the Dormitory Director, appropriate Departmental Supervisor, or Food Service Manager concerned. Students seeking office work are encouraged to leave an application for employment with the Personnel Office, Room 143, Administration Building.
AWARDS

DEPARTMENTAL

ACCOUNTING—The Ernst and Ernst Award is awarded annually on the basis of scholastic achievement to a graduating senior who has majored in Accounting. The student’s grades in accounting and his overall grades are the factors considered in making the selection.

ATHLETICS—The Athletic Board of Control Award is a plaque given to an outstanding athlete who ranks high in scholarship and participation.

BIOLOGY—The Harold Cook Memorial Prize of $20 is given to a student judged most proficient by the Committee on Scholarship, in cooperation with the president of the Faculty Science Club.

BUSINESS—Gamma Tau chapter, Alpha Kappa Psi, professional fraternity in commerce, awards annually a Scholarship Key to the male senior student pursuing a degree in the School of Business, who has attained the highest scholastic average for three years of work at this University.

CHEMISTRY—The William McCracken Award was named in honor of the first head of the Chemistry Department. It is given to a senior who, in the opinion of the chemistry staff, has shown the greatest aptitude in the field of basic chemistry.

ECONOMICS—Harald Smith Patton prizes given in memory of Lieutenant Colonel Patton, accidentally killed in service 1945, while on military leave as Head of the Department of Economics, Michigan State University. The prizes will be given to outstanding Economics majors, one of $60 to a senior, and one of $30 to a junior.

ENGLISH—The George Sprau Award in English is given to the outstanding English major in the graduating class.

FRENCH—The French Embassy gives an annual prize to the outstanding student of French in the graduating class.

HISTORY—The James O. Knauss History Award was established in honor of a distinguished scholar and teacher who was on the faculty for thirty years and was head of the History Department for eleven. It is awarded annually to the senior history major who has made the most outstanding record in history during his university career.

The Smith Burnham Award was established to honor a widely known speaker and head of the department for twenty years. It is made annually to the junior history major who has the most outstanding record in history.

HOME ECONOMICS—An award to a freshman girl based on scholarship and leadership.
Awards

INDUSTRIAL EDUCATION—A plaque is given to the outstanding senior student in that department.

MATHEMATICS—This prize is awarded to the senior student judged by the Department of Mathematics to have exhibited the highest proficiency and promise in that field.

OCCUPATIONAL THERAPY—The Marion R. Spear Award was established in honor of the founder of the Kalamazoo School of Occupational Therapy (1922-1944) and director of the Occupational Therapy curriculum at Western between 1944 and 1958. It is awarded annually to an outstanding senior who gives promise of being a superior occupational therapist.

PAPER TECHNOLOGY—Awards ranging from $100 to $500 are given to students above freshman level who have demonstrated superior performance in the curriculum. These awards may be for one year only, and vary in amount and number. These awards are made possible by American Cyanamid Co., Junior Award—$500; Boxboard Research and Development Association, Senior Student Award—$250; Kalamazoo Valley Section Tappi, Senior Thesis Awards—$100, $60 and $40; Northwest Division of the Paper Industry Management Association Award—$300; Paper Industry Management Association, Scholarship Award—$200.

PHILOSOPHY—The Robert Friedmann Essay Award was established by the Department of Philosophy and Religion in honor of Professor Robert Friedmann on his retirement. Any topic which is primarily philosophical may be chosen and competition is open to all undergraduate students. The prize is $50.

PHYSICS—An annual prize is given to the senior judged most proficient throughout his college course in the field of physics. An annual prize of a Handbook of Chemistry and Physics is awarded to the best students completing the first course in calculus-physics (210, 211, 212).

POLITICAL SCIENCE—The D. C. Shilling Awards were established in honor of a distinguished scholar and teacher who was on the faculty of Western Michigan University for thirty years, and Head of the Political Science Department for seven years. An annual award of about $30 is given to the graduating senior Political Science major or minor who has made the most outstanding record in Political Science during his university career. The D. C. Shilling Junior Scholarship Award of about $50 is given to the Political Science major or minor who, at the completion of his junior year, exhibits proficiency and promise in Political Science.

ORGANIZATIONAL

ASSOCIATED WOMEN STUDENTS—A prize to the outstanding woman student.
Scholarships and Student Financial Assistance

KAPPA DELTA PI—A prize to the outstanding student in academic areas.

MEN'S UNION—A prize to the outstanding male student.

PI KAPPA RHO—A scholarship cup awarded annually by the Committee on Scholarship to the outstanding women's organization.

TAU KAPPA EPSILON—A scholarship cup awarded annually by the Committee on Scholarship to the outstanding men's organization.
The Honors College
Samuel I. Clark, Director of Honors

The Honors College coordinates all honors work at Western Michigan University. The College organizes special programs of study, selects students for membership in these programs, assists its members in many ways and graduates them from the College when they graduate from the University.

Students may be admitted to the Honors College as provisional members upon admission to Western Michigan University. After one or two semesters at the University students may be admitted as full members. To be eligible for full membership a student must have a better than “B” academic average.

Provisional and full members of the Honors College are expected to pursue programs of study which will widen their intellectual interests and competence; they are expected to undertake a field of specialty. Also they are expected to equip themselves with certain basic intellectual skills like communication, clear thinking and writing. They are urged to learn a language and to become acquainted with art and literature.

Honors College members are to maintain a “B” average while in the College. In their senior year they are expected to write an Honors College paper (or produce a creative work of art) and be orally examined by their faculty. An Honors College graduate is so designated upon graduation.

Unusual opportunities and services are provided members of the Honors College. Students may pursue specially arranged programs of study tailored to individual talent and interest. These programs may utilize reading, research, and independent study courses. Students on occasion may be excused from certain course requirements and prerequisite obligations. Priority is given honors students in course enrollment and in the use of research equipment and in other facilities.

The Honors College has from time to time organized foreign study seminars for its students, special seminar courses, field trips, public speakers and performances. The Honors College manages an undergraduate assistantship program providing research opportunities for students. The Honors College encourages and supports its students in a cooperative science program with Argonne Laboratories which enables science students to elect to spend a semester of the senior year at Argonne Laboratories.

The Honors College assists its students in finding financial aid, applying for scholarships and fellowships, admission to graduate schools and in securing summer work and study opportunities.

A student may be a member of the Honors College without participating in any further honors program of the University; however, the
Honors College cooperates with or coordinates three other honors operations at the University: Departmental Honors Programs, the General Education Honors Program and the Honors College Curriculum.

**Departmental Honors Programs** exist in the academic departments listed below. Students enter these departmental honors programs by direct application to the departments. A student need not be in the Honors College to be a member of a departmental honors program. In general, department programs are reserved for students of high promise and performance, who wish to pursue a special field of study with particular diligence. These programs usually require a minimum "B" average both to enter and to remain in them, and they generally serve junior and senior students.

Programs are flexible, involve independent study, small seminar classes, and the ablest faculty. Students interested in a particular departmental honors program should communicate directly with the department.

Departments having honors programs are: Accounting, Biology, Chemistry, Economics, Engineering and Technology, English, Geography, Geology, History, Languages, Management, Mathematics, Music, Occupational Therapy, Physics, Political Science, Psychology and Sociology.

**The General Education Honors Program** is managed by the Honors College and may be entered at the time a high school senior enters the University. It is an alternative course program for the General Studies Requirements. Students in the General Education Honors Program are provisional members of the Honors College.

The program seeks high school seniors who are interested in applying themselves toward getting the best college education. The program associates its able entering students with one another and in small classes with provocative instructors. There is considerable intellectual freedom.

The General Education Honors Program consists of approximately 40 semester hours of study, pursued mainly during the freshman and sophomore years. The following courses are generally required:

**Suggested first year (fall and winter semesters)**
- Humanities I and II 8 credit hours
- Life Sciences I and II 8 credit hours
- Civilization of the West I and II 8 credit hours

**Suggested second year (fall and winter semesters)**
- Physical Properties of Nature I and II 8 credit hours
- Social Science I and II 8 credit hours
- Independent Study (if desired)

Under certain circumstances exceptions or substitutions are possible for the above courses. Students are encouraged to take a foreign language.
The Honors College Curriculum is also managed by the Honors College. It is designed for students who wish to avail themselves of the maximum advantages of the Honors College. The curriculum can be entered at the time a student is first admitted to the University or at a later date. The curriculum encompasses the entire college career of a student, provides maximum intellectual freedom and flexibility, leads to the B.A. Degree and is an excellent preparation for graduate school. Students must be or become members or provisional members of the Honors College to be enrolled in the curriculum; however, not all members of the Honors College are enrolled in the Honors College Curriculum.

The Curriculum expects students to study a variety of subjects in order to enlarge their knowledge, to pursue one area of study with some concentration, and to do good work.

The curriculum strongly encourages students to acquire a foreign language and a knowledge of mathematics (if neither has been acquired in high school).

The Honors College requirement of a senior paper and an oral examination are also required of students in the curriculum.

The formal expectations of the curriculum are as follows:

1. Adequate quality of performance (routinely established through a minimum "B" grade point average).
2. Minimal competency in the Humanities (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Humanities).
3. Minimal competency in the Social Sciences (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Social Science).
4. Minimal competency in the Natural Sciences involving:
   A. Competency in the Biological Sciences (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Life Sciences).
   B. Competency in the Physical Sciences (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Life Sciences).
5. Minimal competency in History (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Civilization of the West).
6. Minimal competency in a foreign language (routinely satisfied through proficiency tests or completion of an intermediate language course. The study of esoteric languages is favored, in which cases special determinations of competency are necessary).
7. Minimal competency in Mathematics (routinely satisfied by four years of high school mathematics or first year courses in college mathematics).
8. Minimal competency in Physical Education (routinely satisfied by four semester hours of physical education).
The Honors College

9. A departmental or interdepartmental major concentration.
10. A departmental or interdepartmental minor concentration.
11. An Honors College senior paper (or equivalent) properly approved and accepted.
12. An Honors College oral examination properly passed.
13. Adequate overall course work in the University (routinely satisfied by 124 hours of course work approved by the Honors College).

DESCRIPTION OF COURSES

General Education Honors Courses

Honors College 100 (200) Civilization of the West I 4 hours credit
An integrating survey of the human experience from the ancient civilizations through the modern era, with emphasis on the unique achievements of each of the major cultures.

Honors College 101 (201) Civilization of the West II 4 hours credit
Continuation of Civilization of the West I. Prerequisite: Civilization of the West I.

Honors College 106 Life Sciences I 4 hours credit
An introduction to and a critical examination of the principles of such subdivisions of biology as ecology, genetics, growth and development, taxonomy, anatomy and physiology, how these principles evolved and their impact on man.

Honors College 107 Life Sciences II 4 hours credit
An examination of the evidence serving as bases for the principles of biology, of the methodology and techniques employed in the accumulation of evidence and of the frontiers remaining to challenge biologists. Prerequisite: Life Sciences I.

Honors College 120 Humanities I 4 hours credit
A study of man's creative and imaginative life as this is revealed in philosophical, religious and esthetic works.

Honors College 121 Humanities II 4 hours credit
Continuation of Honors College 120, Humanities I. Prerequisite: Humanities I.

Honors College 202 Social Science I 4 hours credit
An historical account of the development of social science dealing with major questions about the nature of society and culture. Basic insights and concepts derived from anthropology, psychology, sociology, economics, geography and political science are presented.
Honors College Courses

Honors College 203 Social Science II 4 hours credit
Continuation of Social Science I. Prerequisite: Social Science I.

Honors College 208 Physical Properties of Nature I 4 hours credit
By treating the fundamental ideas and concepts of the physical sciences as they appeared in history, this course attempts to provide the student with an understanding of the methods and the goals of present day investigations in the physical sciences. Being a course in physical science, it will apply care and rigor to the presentation of ideas where applicable.

Honors College 209 Physical Properties of Nature II 4 hours credit
Continuation of Physical Properties of Nature I. Prerequisite: Physical Properties of Nature I.

Honors College 299 Independent Study Variable Credit
An opportunity to explore individually, under the guidance of a member of the faculty, a topic or problem in almost any area.

Upper Level Honors College Courses

Honors College 490 Honors Seminar Variable Credit
An undergraduate seminar for honors students. The content of the seminar varies and will be announced in advance. Admission by permission.

Honors College 492 Visiting Scholars Seminar Variable Credit
A seminar involving visiting scholars from other institutions and countries. The content of the seminar varies and will be announced in advance. Admission by permission.

Honors College 499 Individual Studies Variable Credit
Students in the Honors College may enroll in this course for variable credit for one or several semesters upon approval of the Director of Honors. The course is an administrative facility for individual study outside the usual course structure.

Further information about the Honors College may be had from the Director of Honors, West Hillside Apartment Building, Western Michigan University.
School of
Applied Arts and Sciences

GEORGE E. KOHRMAN,
Dean

Departments:
Agriculture
Distributive Education
Engineering and Technology
Home Economics
Industrial Education
Military Science
Occupational Therapy
Paper Technology
Transportation Technology
The School of Applied Arts and Sciences includes the Departments of Agriculture, Distributive Education, Engineering and Technology, Home Economics, Industrial Education, Military Science, Occupational Therapy, Paper Technology and Transportation Technology.

The School seeks to assist young men and women in becoming useful and successful citizens in a democratic and technological society. At least three educational needs serve as guides in planning the various courses of study within the school.

First, the critical shortage of skilled and scientific manpower in business and industry is recognized. High speed production, automation, the increasing use of electrical and atomic energy, the demand for more and better materials, the scientific developments in agriculture, and the revolutionary changes in home and family living are all indicative of the type of educational program needed by a large segment of our population.

Second, the School recognizes the personal values that should accrue to an individual from a well-planned educational program. It accepts the responsibility of contributing to the student's understanding and appreciation of himself and his surroundings, and to his emotional, physical and intellectual growth.

Third, the School attempts to assist the student in the development of desirable attitudes, habits, and character traits essential for successful living in his home, community, or occupational environment.
I. DEGREE CURRICULA

THE GENERAL CURRICULUM

B.S. Degree

Students in Agriculture, Distributive Education, Home Economics, or Industrial Education may graduate with a Bachelor of Science degree if 124 hours are completed by fulfilling the following requirements:

A. General Studies
   (See page 21 of this Catalog) ......................... 40 hrs.
B. Physical Education or Military Science .......... 4–8 hrs.
C. Major in one of the departments ................. 24 hrs.
D. Minor .................................................. 15 hrs.
E. Electives ............................................ 41–37 hrs.

Approval of Dean of School of Applied Arts and Sciences necessary for admission to above curriculum.

Agriculture

AGRICULTURE DISTRIBUTION

B.S. Degree

The Agriculture Department offers a four year degree program for students who are interested in the distribution of agricultural products and the technical services rendered to farmers by the many agriculturally related industries.

The program in Agriculture Distribution requires 30 semester hours of Agriculture, including Coordinated Industry, or 18 semester hours for a minor.

Students majoring in agriculture may complete work for a B.S. degree at Western Michigan University or if a higher degree of specialization is desired, transfer to Michigan State University's College of Agriculture at the end of the sophomore year without loss of credit.

Courses will be selected with the approval of the adviser. Students who complete either a major or a minor and who qualify for the secondary certificate may teach general or basic agriculture in Michigan high schools.

AGRICULTURE DISTRIBUTION

B.S. Degree

A. Minimum hours required for this curriculum .......... 125 hrs.
School of Applied Arts and Sciences

B. Course Requirements

1. General Studies requirements as described on page 21 of this catalog must be met.

2. Language and Literature, Speech and Philosophy and Religion
   a. Business and Prof. Speech 104 ........................................ 3 hrs.

3. Science, Mathematics, and Psychology
   a. Mathematics 100 or 122 ........................................... 4 hrs.
   b. Agriculture Geography 554 ........................................ 3 hrs.

4. Social Sciences
   b. Principles of Sociology 200 ......................................... 4 hrs.

5. Agriculture
   a. Animal Industry 110 ............................................... 3 hrs.
   b. Animal Industry 111 ............................................... 3 hrs.
   c. Agronomy 220 ...................................................... 5 hrs.
   d. Introduction to Soils 320 ........................................ 4 hrs.
   e. Agriculture Electives ............................................. 12 hrs.

6. Vocational Division
   a. Coordinated Industry 300 ...................................... 3 hrs.

7. Business
   b. Marketing 240 .................................................... 3 hrs.

8. Physical Education
   a. Military Science .................................................. 4 or 8 hrs.


C. Degree requirements must be met including minor course of study*

*The major is Agriculture Distribution with a minor in chemistry, business, marketing, biology, etc.
Western Michigan University is approved for the preparation of teacher-coordinators of cooperative and project method programs and teachers of preparatory and vocational-technical subjects.

The following is an outline of the sequence of courses that should be followed. The student should elect only one of the major options (A, B, or C). In addition to the B.S. degree, one is qualified to receive the Vocational Secondary Provisional Certificate and Secondary Provisional Teaching Certificate.

### A. Minimum hours required for this curriculum
124–131 Hours

### B. Course Requirements

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. General Studies requirements as described in the catalog must be met</strong></td>
<td></td>
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<tr>
<td><strong>2. Social Sciences</strong></td>
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<tr>
<td>Principles of Economics 201 and 202 (Options A and B)</td>
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<tr>
<td><strong>3. Education</strong></td>
<td>21</td>
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<tr>
<td>Human Development and Learning 250</td>
<td>4</td>
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<tr>
<td>Teaching and Learning 300</td>
<td>3</td>
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<tr>
<td>Seminar in Education 410</td>
<td>2</td>
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<tr>
<td>Directed Teaching 470</td>
<td>9</td>
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<tr>
<td>Principles of Practical Arts and Vocational Education 520</td>
<td>3</td>
</tr>
<tr>
<td><strong>4. Basic Core</strong></td>
<td>4–10</td>
</tr>
<tr>
<td>Teaching Techniques in Coop. Education 572</td>
<td>2</td>
</tr>
<tr>
<td>Coordination Techniques in Coop. Ed. 573</td>
<td>2</td>
</tr>
<tr>
<td><em>Supervised Work Experience</em></td>
<td>0–6</td>
</tr>
<tr>
<td><strong>5. Options A, B, or C</strong></td>
<td></td>
</tr>
<tr>
<td>Option A—Distributive Education</td>
<td>26</td>
</tr>
<tr>
<td>Organization and Operation of D. E. 570</td>
<td></td>
</tr>
</tbody>
</table>

*Dependent upon amounts of previous acceptable work experience.
### School of Applied Arts and Sciences

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Food Distribution Industry 130</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to the Petroleum Industry 120</td>
<td>3</td>
</tr>
<tr>
<td>Seminar in Distributive Education 500</td>
<td>3</td>
</tr>
<tr>
<td>Retailing Principles 375</td>
<td>3</td>
</tr>
<tr>
<td>Salesmanship 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

**Option B—Office Education**

See the Head of the Business Education Department for courses acceptable under this option.

**Option C—Multiple Occupations Cooperative**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metals</td>
<td>6</td>
</tr>
<tr>
<td>Electricity—Electronics</td>
<td>5</td>
</tr>
<tr>
<td>Drafting</td>
<td>5</td>
</tr>
<tr>
<td>Wood Technology</td>
<td>3</td>
</tr>
<tr>
<td>Power Technology</td>
<td>3</td>
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</tbody>
</table>

**6. Physical Education**

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>4</td>
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</table>

**7. Electives—(Options A & B)**

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>0–3</td>
</tr>
</tbody>
</table>

**C. Degree (See adviser)**

The major consists of one of three options:

- A. Distributive Education
- B. Office Education
- C. Multiple Occupations Cooperative

A teachable minor of 20 hours is required in Options A & B, while in Option C two minors are required; one in distributive education, and one in office education.
Engineering and Technology

ELECTRICAL ENGINEERING TECHNOLOGY

B.S. Degree

The Electrical Engineering Technology curriculum is an applied engineering program for the broad fields of electrical applications, instrumentation, communication electronics, and industrial electronics. Emphasis is placed on the fundamentals underlying the work of such areas as supervision, research and development, manufacturing, and industrial sales.

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Physics 110, 111 or 210, 211</td>
<td>8</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Introduction to Computers 106</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics I, II (122, 123)</td>
<td>8</td>
<td>Western Civilization 100 or 101</td>
<td>4</td>
</tr>
<tr>
<td>Industrial Calculations 150</td>
<td>1</td>
<td>Statics 256</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Drafting 230</td>
<td>3</td>
<td>Metallurgy 252</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Processes 152</td>
<td>3</td>
<td>Electromagnetic Devices 242</td>
<td>3</td>
</tr>
<tr>
<td>General Chemistry 102 or 103</td>
<td>4</td>
<td>*Social Science 202, 203 or 204</td>
<td>4</td>
</tr>
<tr>
<td>Electrical Circuits 240</td>
<td>3</td>
<td>Physical Education or R.O.T.C. 2-4</td>
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<tr>
<td>Electronic Circuits 241</td>
<td>3</td>
<td>Electives</td>
<td>5</td>
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<tr>
<td>Physical Education or R.O.T.C. 2-4</td>
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<td></td>
<td>33-35</td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>S.H.</th>
<th>Fourth Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Western World 304</td>
<td>4</td>
<td>Communication Electronics 441</td>
<td>4</td>
</tr>
<tr>
<td>Electronic Devices 340</td>
<td>4</td>
<td>Measurements and Instrumentation 440</td>
<td>4</td>
</tr>
<tr>
<td>Dynamics 355</td>
<td>3</td>
<td>Servomechanisms 442</td>
<td>4</td>
</tr>
<tr>
<td>Thermodynamics 352</td>
<td>3</td>
<td>General Studies II Elective</td>
<td>4</td>
</tr>
<tr>
<td>Fluid Mechanics 356</td>
<td>3</td>
<td>Electives</td>
<td>18</td>
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<tr>
<td>Arts and Ideas 222 or 224</td>
<td>4</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Industrial Electronics 341</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Systems 360 or Engineering Analysis 556</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strength of Materials 353</td>
<td>3</td>
<td>Electives</td>
<td>5</td>
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<tr>
<td>Electives</td>
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<td></td>
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<td>36</td>
</tr>
</tbody>
</table>

*Substitution—Economics 201 and 202
RECOMMENDED ELECTIVES

Mathematics III, IV (222, 223)  Conference Leadership 406
Independent Research  Industrial Supervision 502
and Development 490  Industrial Safety 504
Electrical Fields 541  Accounting 215
Advanced Circuits 542  Business Communication 242
Electrical Power Systems 545  Marketing 240
Business and Professional  Salesmanship 370
Speech 104  Advertising 374
Statistical Methods for  Machining Metals 151
Industry 360  Production Tooling 250
Chemistry 109  Testing Materials 354
Physics 212  Heat Transfer 451
Programming Computers 506  Mechanical Engrg. Lab. 452
Production Control 306  Product Engineering 550
Quality Control 308

INDUSTRIAL ENGINEERING

B.S. Degree in Industrial Engineering

The Industrial Engineering curriculum provides the essential foundation, experience and understanding in science, mathematics, humanities and engineering so graduates may find gainful employment in industries or utilities. The Industrial Engineer is particularly responsible for the improvement and development of management and production techniques. Special emphasis is placed on studies dealing with production planning and control, plant organization, manufacturing processes, inspection, plant safety, and employee and employer relations.

<table>
<thead>
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<td>3</td>
</tr>
<tr>
<td>Descriptive Geometry 231</td>
<td>3</td>
<td>Electrical Circuits 240</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Calculations 150</td>
<td>1</td>
<td>Electronic Circuits 241</td>
<td>3</td>
</tr>
<tr>
<td>Machining Metals 151 or</td>
<td>3</td>
<td>Physical Education or R.O.T.C.</td>
<td>2-4</td>
</tr>
<tr>
<td>Metal Casting I 254</td>
<td></td>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Computers 106</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education or R.O.T.C.</td>
<td>2-4</td>
<td></td>
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</tbody>
</table>

35-37
Degree Curricula

Third Year  S.H.  
Accounting 215  3  Thermodynamics 352  3  
*Social Science 202, 203, or 204 4  Quality Control 308 3  
Statistical Methods for Industry 360 4  Production Control 306 3  
Strength of Materials 353  3  Non-Western World 304 4  
Arts and Ideas 222 or 224  4  Material Handling and Layout 404 5  
Motion and Time Study 304  5  Product Engineering 550 3  
Dynamics 355  3  Industrial Supervision 502 3  
Fluid Mechanics 356  3  Labor Management Relations 500 4  
Electives 7  General Studies Elective 4  
Electives (Upper Class) 36  
--- 36

Fourth Year  S.H.  
Mechanism Analysis 332  Advanced Quality Control 508  
Differential Equations 500  Technical Illustrations 552  
Testing of Materials 354  Mechanical Vibrations 558  
Control Systems 360  Product Design and Development 554  
Industrial Safety 504  Engineering Analysis 556  
Work Simplification 506

RECOMMENDED ELECTIVES
Mechanism Analysis 332  
Differential Equations 500  
Testing of Materials 354  
Control Systems 360  
Industrial Safety 504  
Work Simplification 506  

INDUSTRIAL SUPERVISION
B.S. Degree

The Industrial Supervision curriculum is intended for young men and women who are planning to qualify for industrial or distribution positions in such areas as supervision, production control, time and motion study, quality control, plant management, personnel work, purchasing, and other managerial areas.

First Year  S.H.  Second Year  S.H.  
College Writing 116  4  Physics 110, 111  8  
Freshman Reading 140  2  Chemistry 103  4  
Industrial Processes 152  3  Electrical Circuits 240 or Statics 256  3  
Machining Metals 151 or Metal Casting I 254  3  Engineering Drafting 230  2  
Mathematics 100, 200  8  Psychology I, 150  3  
Industrial Calculations 150  1  Business Statistics 244  3  
Western Civilization 100 or 101  4  Introduction to Computers 106  1  
Business and Professional Speech 104  3  Physical Education or R.O.T.C. 2-4  6  
Physical Education or R.O.T.C. 2-4  2  
Electives  2  
Electives (Upper Class) 36  36

--- 32-34

*Substitution—Economics 201 and 202
### School of Applied Arts and Sciences

#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>Non-Western World 304</td>
<td>4</td>
<td>Work Simplification 506 or Advanced Quality Control 508</td>
<td>3</td>
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<tr>
<td>*Social Science 202, 203 or 204</td>
<td>4</td>
<td>Materials Handling and</td>
<td>5</td>
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<tr>
<td>Accounting 215</td>
<td>3</td>
<td>Layout 404</td>
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<tr>
<td>Production Control 306</td>
<td>3</td>
<td>Conference Leadership 406</td>
<td>3</td>
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<tr>
<td>Quality Control 308</td>
<td>3</td>
<td>Industrial Supervision 502</td>
<td>3</td>
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<tr>
<td>Motion and Time Study 304</td>
<td>5</td>
<td>Industrial Safety 504</td>
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<tr>
<td>Business Law 340</td>
<td>3</td>
<td>Labor Management</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
<td>Relations 500</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arts and Ideas 222 or 224</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Studies II Elective</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electives</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>34</td>
<td><strong>Total</strong></td>
<td>27</td>
</tr>
</tbody>
</table>

#### Spring or Summer

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern Industrial Practices 400</td>
<td>6</td>
</tr>
</tbody>
</table>

#### RECOMMENDED ELECTIVES

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Computers II</td>
<td>107</td>
</tr>
<tr>
<td>Psychological Testing 381</td>
<td></td>
</tr>
<tr>
<td>Industrial Psychology 540</td>
<td></td>
</tr>
<tr>
<td>Labor Problems 510</td>
<td></td>
</tr>
<tr>
<td>Collective Bargaining 512</td>
<td></td>
</tr>
<tr>
<td>Labor and Government 514</td>
<td></td>
</tr>
<tr>
<td>Electronic Data Proc. 555</td>
<td></td>
</tr>
<tr>
<td>Marketing 240</td>
<td></td>
</tr>
<tr>
<td>Purchasing 358</td>
<td></td>
</tr>
<tr>
<td>Salesmanship 370</td>
<td></td>
</tr>
<tr>
<td>Fundamentals of Management 254</td>
<td></td>
</tr>
</tbody>
</table>

### MECHANICAL ENGINEERING TECHNOLOGY

#### B.S. Degree

The Mechanical Engineering Technology curriculum is intended for those who are interested in a program of applied engineering in such industrial areas as product development, production, supervision, and technical sales.

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics I, II (122, 123)</td>
<td>8</td>
</tr>
<tr>
<td>Industrial Calculations 150</td>
<td>1</td>
</tr>
<tr>
<td>Machining Metals 151</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Drafting 230</td>
<td>3</td>
</tr>
<tr>
<td>Descriptive Geometry 231</td>
<td>3</td>
</tr>
<tr>
<td>Metal Casting I 254</td>
<td>3</td>
</tr>
<tr>
<td>General Chemistry 103</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Computers 106</td>
<td>1</td>
</tr>
<tr>
<td>Physical Education or R.O.T.C.</td>
<td>2-4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>34-36</td>
</tr>
</tbody>
</table>

*Substitution—Economics 201 and 202
### Degree Curricula

#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallurgy 351</td>
<td>3</td>
</tr>
<tr>
<td>Thermodynamics 352</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Ideas 222 or 224</td>
<td>4</td>
</tr>
<tr>
<td>Machine Drafting 330</td>
<td>3</td>
</tr>
<tr>
<td>Mechanical Analysis 332</td>
<td>3</td>
</tr>
<tr>
<td>Strength of Materials 353</td>
<td>3</td>
</tr>
<tr>
<td>Pressworking of Metals 350</td>
<td>3</td>
</tr>
<tr>
<td>Testing of Materials 354</td>
<td>3</td>
</tr>
<tr>
<td>Fluid Mechanics 356</td>
<td>3</td>
</tr>
<tr>
<td>Control Systems 360</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Western World 304</td>
<td>4</td>
</tr>
<tr>
<td>Dynamics 355</td>
<td>3</td>
</tr>
<tr>
<td>Mechanical Engrg. Lab. 452</td>
<td>3</td>
</tr>
<tr>
<td>Product Engineering 550</td>
<td>3</td>
</tr>
<tr>
<td>Air Conditioning 450</td>
<td>3</td>
</tr>
<tr>
<td>General Studies II Elective</td>
<td>4</td>
</tr>
<tr>
<td>Heat Transfer 451</td>
<td>3</td>
</tr>
<tr>
<td>Electives (Upper Class)</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
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</tbody>
</table>

#### RECOMMENDED ELECTIVES

- Mathematics III, IV (222, 223)
- General Chemistry 109
- Programming for Computers 506
- Production Drafting 331
- Industrial Design 430
- Product Engineering 550
- Electronic Circuits 241
- Labor Management Relations 500
- Casting Design 574
- Industrial Supervision 502
- Industrial Safety 504
- Die Casting 575

�*Substitution—Economics 201 and 202...
METALLURGICAL ENGINEERING TECHNOLOGY
B.S. Degree

The Metallurgical Engineering Technology curriculum is intended for those who are interested in a program of applied metallurgy, particularly in the areas of foundry and materials engineering involving product development, production, and supervision.

<table>
<thead>
<tr>
<th>First Year S.H.</th>
<th>Second Year S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics I, II (122, 123) 8</td>
<td>Physics 110, 111 or 210, 211 8</td>
</tr>
<tr>
<td>General Chemistry 103 4</td>
<td>Western Civilization 100 or 101 4</td>
</tr>
<tr>
<td>General Chemistry 109 4</td>
<td>Metal Casting I 254 3</td>
</tr>
<tr>
<td>College Writing 116 4</td>
<td>Statics 256 3</td>
</tr>
<tr>
<td>Freshman Reading 140 2</td>
<td>Industrial Welding 251 2</td>
</tr>
<tr>
<td>Engineering Drafting 230 3</td>
<td>Metallurgy 222 3</td>
</tr>
<tr>
<td>Electrical Circuits 240 3</td>
<td>Introduction to Computers 106 1</td>
</tr>
<tr>
<td>Industrial Calculations 150 1</td>
<td>*Social Science 202, 203, or 204 4</td>
</tr>
<tr>
<td>Machining Metals 151 3</td>
<td>Arts and Ideas 222 or 224 4</td>
</tr>
<tr>
<td>Physical Education or R.O.T.C. 2-4</td>
<td>Physical Education or R.O.T.C. 2-4</td>
</tr>
</tbody>
</table>

34-36 34-36

<table>
<thead>
<tr>
<th>Third Year S.H.</th>
<th>Fourth Year S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Western World 304 4</td>
<td>Metal Fabrication 570 3</td>
</tr>
<tr>
<td>Strength of Materials 353 3</td>
<td>General Studies II Elective 4</td>
</tr>
<tr>
<td>Testing of Materials 354 3</td>
<td>Industrial Supervision 502 3</td>
</tr>
<tr>
<td>Physical Metallurgy I 372 4</td>
<td>Industrial Safety 504 2</td>
</tr>
<tr>
<td>Physical Metallurgy II 373 4</td>
<td>Electives—Metallurgy 12</td>
</tr>
<tr>
<td>Thermodynamics 352 3</td>
<td>Electives 10</td>
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<tr>
<td>Control Systems 360 3</td>
<td>— 1</td>
</tr>
<tr>
<td>Electives 10</td>
<td>34</td>
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</tbody>
</table>

34

RECOMMENDED ELECTIVES

Metal Casting II 370
Casting Design 574
Die Casting 575
Welding Design Analysis 551
Production Tooling 250
Fluid Mechanics 356
Electronic Circuits 241
Production Control 306
Business Statistics 244
Quality Control 308
Labor Management Relations 500

Business and Professional Speech 104
X-Ray Diffraction 572
Physical Metallurgy III 573
Mathematics 222, 223, 360, 380
Physics 212, 342
Chemistry 222
Dynamics 355
Independent Research and Development 490

*Substitution—Economics 201 and 202
Home Economics

The Home Economics Department offers four-year programs leading to a B.S. degree for teachers, dietitians, and home economics for business personnel. A student who has a major in home economics and meets the requirements of the Department of Public Instruction for a certificate may teach home economics.

Dietetics

B.S. Degree

A student completing a Bachelor of Science in Dietetics is eligible for a year’s internship in a hospital, food clinic or industrial food service as approved by the American Dietetics Association.

The dietitian after the year of internship is eligible for positions in Hospitals as food administrator, therapeutic dietitian or teaching dietitian. She is also qualified for positions in commercial food establishments as restaurants, hotels, airlines, industrial feeding. Other areas open to her are school lunch, community nutrition positions and food service in the Armed Forces.

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Preparation and Meal Planning 114</td>
<td>5</td>
<td>Nutrition 210</td>
<td>3</td>
</tr>
<tr>
<td>Individual and Family Relationships 150</td>
<td>4</td>
<td>Organic Chemistry 265</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 100 or 102, and 120 8-10</td>
<td>8-10</td>
<td>Textiles and Clothing 200, 201</td>
<td>6</td>
</tr>
<tr>
<td>Western Civilization 100 or 101</td>
<td>4</td>
<td>Economics 201 and 202</td>
<td>6</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Sociology 200</td>
<td>3</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Psychology I 150</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
<td>General Biology 101</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arts and Ideas 222</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>2</td>
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</tr>
<tr>
<td></td>
<td>29-31</td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>
A student completing a Bachelor of Science degree in the Home Economics in Business Curriculum is eligible for positions in many types of business. Some of these are: retailing and buying of clothing and home furnishings, interior decorating, writing for a newspaper or magazine, designing and producing clothing, radio and television production, home service representative for a public utility, appliance and laundry product companies, for the testing of recipes and foods, and many others.

Recommended minors: Business, Retailing Art or Sociology (of 20 hours). In addition, the student may also complete the Education courses and receive a teaching certificate.
### Degree Curricula

#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
<th>Fourth Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing and Home</td>
<td>4</td>
<td>Equipment and Demonstration</td>
</tr>
<tr>
<td>Furnishings 350</td>
<td>4</td>
<td>Techniques 520</td>
</tr>
<tr>
<td>Home Economics Education 340</td>
<td>4</td>
<td>Home Management and</td>
</tr>
<tr>
<td>Electives (Minor)</td>
<td>14</td>
<td>Consumer Buying 352</td>
</tr>
<tr>
<td>Non-Western World 304</td>
<td>4</td>
<td>Economics 201</td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
<td>Electives (Minor)</td>
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<tr>
<td></td>
<td></td>
<td>General Studies</td>
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<td>30</td>
<td>Electives</td>
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</table>

#### Fourth Year

<table>
<thead>
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<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Equipment and Demonstration</td>
<td>4</td>
</tr>
<tr>
<td>Techniques 520</td>
<td>4</td>
</tr>
<tr>
<td>Home Management and</td>
<td>4</td>
</tr>
<tr>
<td>Consumer Buying 352</td>
<td>4</td>
</tr>
<tr>
<td>Economics 201</td>
<td>3</td>
</tr>
<tr>
<td>Electives (Minor)</td>
<td>6</td>
</tr>
<tr>
<td>General Studies</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>9-12</td>
</tr>
</tbody>
</table>

#### Western Michigan University prepares students to qualify as teachers of vocational Home Economics in Michigan under the provisions of the State plan for vocational education. Courses are planned in the Department for a major in home economics and minor outside the curriculum. Provision is also made for meeting the requirements for a vocational certificate in Michigan. Only persons holding this certificate can teach in the reimbursed homemaking departments in Michigan public schools.

#### HOME ECONOMICS EDUCATION

**B.S. Degree**

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual and Family</td>
<td>4</td>
<td>Selection and Design of</td>
</tr>
<tr>
<td>Relationships 150</td>
<td>4</td>
<td>Clothing 304</td>
</tr>
<tr>
<td>Food Preparation and Meal</td>
<td>5</td>
<td>Nutrition 210</td>
</tr>
<tr>
<td>Planning 114</td>
<td>4</td>
<td>Science (2 areas)</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>2</td>
<td>Human Growth 254</td>
</tr>
<tr>
<td>Western Civilization 100 or 101</td>
<td>6</td>
<td>Man and Society 202</td>
</tr>
<tr>
<td>Design 114</td>
<td>2</td>
<td>Arts and Ideas 222</td>
</tr>
<tr>
<td>Textiles and Clothing 200, 201</td>
<td>6</td>
<td>Physical Education</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td></td>
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<tr>
<td>Physical Education</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

|                                | 31   |                                |
### HOME ECONOMICS — GENERAL CURRICULUM

**B.S. Degree**

A student completing a Bachelor of Science degree in the Home Economics General Curriculum will take additional work in one of the major home economics areas. This curriculum is broad in scope and will prepare for many positions in business or be used as a base upon which advanced course work in a specialized area may be pursued.

**Recommended minors:** Art, Sociology, Science.

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual and Family Relationships 150</td>
<td>4</td>
<td>Selection and Design of Clothing 304</td>
<td>3</td>
</tr>
<tr>
<td>Food Preparation and Meal Planning 114</td>
<td>5</td>
<td>Nutrition 210</td>
<td>3</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Science (2 areas)</td>
<td>8-9</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Man and Society 202</td>
<td>4</td>
</tr>
<tr>
<td>Elementary Design 114</td>
<td>2</td>
<td>Human Growth 254</td>
<td>4</td>
</tr>
<tr>
<td>Textiles and Clothing 200, 201</td>
<td>6</td>
<td>Arts and Ideas 222</td>
<td>4</td>
</tr>
<tr>
<td>Western Civilization 100 or 101</td>
<td>4</td>
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<td>Electives</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>
### Third Year S.H.  
**Home Management and Consumer Buying** 352 4  
**Pattern Design and Tailoring** 306 4  
**Housing and Home Furnishings** 350 4  
**Non-Western World** 304 4  
**Elective (Home Economics)** 4  
**Electives (Minor)** 10  
--- 30

### Fourth Year S.H.  
**Equipment and Demonstration Techniques** 520 4  
**Home Economics Education** 340 4  
**Electives (Minor)** 12  
**General Studies** 10  
**Principles of Economics** 3  
--- 33
Industrial Education

These curricula meet the needs of students specializing in the fields of Industrial Arts, Printing Management, Vocational-Industrial Education, and Technical Education, providing a background to enter business, industry, or teaching.

Students enrolled in technical programs in community colleges can apply the technical courses to a major and minor in Industrial Education on approval of the departmental counselor.

INDUSTRIAL ARTS

B.S. Degree

The Industrial Arts student is prepared to teach in a comprehensive general shop or in a general unit shop at the junior or senior high school level. Teaching in a comprehensive general shop will require basic competence in, and an understanding of, the various areas encompassed by the broad field of industrial arts, plus a minor concentration in one technical area.

Teaching in a general unit shop requires superior competence in two areas of industrial arts through a major concentration in one technical area, and a minor concentration in one other technical area.

Minimum hours required for this curriculum 128 Hours
General Studies 40 Hours
Technical major in one of the following areas:* 30 Hours
  General Industrial Arts
  Drawing
  Electricity-Electronics
  Graphic Arts
  Metalworking
  Power-Automotives
  Woodworking

Technical minor in any one of the above areas other than the major* 20 Hours
I. A. Electives 3 Hours
Mathematics (100) 4 Hours
Education 21 Hours
Professional I. E. Courses 9 Hours
  †140 American Industry 2 hrs.
  342 Course Construction 2 hrs.

*Design 276, and Mech. and Cond. of Equip. 573 are required of all General Ind. Arts, Metalworking, and Woodworking majors.
†Must be taken during first year on campus.
Western Michigan University has been approved by the State Board of Control of Vocational Education to prepare vocational industrial and technical teachers for the secondary and post-secondary schools. In order to be eligible for a vocational certificate, the prospective teacher must have completed a B.S. degree, including required courses in education and in addition, (a) have completed three years of industrial experience in the shop area to be taught, or (b) if less than three years, pass a trade competency examination in the shop area to be taught. Each student, in consultation with his major adviser, will work out a fifty hour combined major and minor sequence of vocational-technical courses which will prepare him for teaching in the trade or industrial field of his choice. Twelve semester hours of credit may be earned through Coordinated Industry, Course No. 300. Option I is designed to prepare graduates as teachers in secondary vocational programs. Option II is designed to prepare graduates as coordinators of vocational-industrial cooperative education programs in secondary schools and community colleges. Option III will prepare a person for employment as an instructor in a technical institute or community college or for employment in the training divisions of industry.

A: Minimum hours required for this curriculum: 130 Hours

B. Course Requirements

1. General Studies Requirements (see page 21)  8 Hours
2. Mathematics  30 Hours
3. Technical Major  20 Hours
4. Technical Minor  28 Hours
5. Option I (Vocational Industrial Education) leading to Secondary Teaching Certificate  30 Hours
   a. Education requirements (page 201 of catalog)  21 hrs.
   b. Course Construction 342  2 hrs.
   c. Teaching of Ind Education 344  3 hrs.
   d. Plan and Organ of School Shop 345  2 hrs.
6. Option II (Industrial Cooperative Education) leading to Secondary Teaching Certificate  30 Hours
   a. Education requirements (page 201 of catalog)  21 hrs.
   b. Teaching Tech in Coop Education 572  2 hrs.
   c. Coord Techs in Coop Education 573  2 hrs.
d. Teaching of Ind Education 344  3 hrs.
e. Course Construction 342  2 hrs.

7. Option III (Technical Education) without teaching certificate  30 Hours
   a. Course Construction 342  2 hrs.
   b. Psychology  3 hrs.
   c. Coord Techs in Coop Education 573  2 hrs.
   d. Conference Leadership 406  3 hrs.
   e. Industrial Supervision 502  3 hrs.
   g. Electives  14 hrs.

8. Physical Education or R. O. T. C.  4 Hours

C. Degree—Major consists of one or two options:
   Vocational Industrial Education (Certificate)
   Technical Education (Non-Certificate)

PRINTING MANAGEMENT CURRICULUM

B.S. Degree

A. Minimum hours required for this curriculum  124 Hours

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met  40 Hours

2. Printing Courses  32 Hours
   - Graphic Arts 150  3 hrs.
   - Letterpress Presswork 152  3 hrs.
   - Typographic Design 250  5 hrs.
   - Machine Composition 254  4 hrs.
   - Photolithographic Techniques 350  3 hrs.
   - Lithographic Presswork 351  3 hrs.
   - Advanced Presswork 450  3 hrs.
   - Estimating 552  3 hrs.
   - Printing Production Control 553  2 hrs.
   - Paper Industry Processes 550  3 hrs.

3. Industrial Supervision  18 Hours
   - Industrial Calculations 150  1 hr.
   - Motion and Time Study 304  5 hrs.
   - Production Control 306  3 hrs.
   - Labor Management Relations 500  4 hrs.
   - Industrial Supervision 502  3 hrs.
   - Industrial Safety 504  2 hrs.

4. Business  15 Hours
   - Business Statistics 244 plus an additional 12 credit hours of course work must be selected from the following list of courses:
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of accounting 210</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Risk and Insurance 224</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Marketing 240</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Business Statistics 244</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Fundamentals of Management 254</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Business Finance 320</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Business Law 340</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Integrated Data Processing 355</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Personnel and Industrial Relations 360</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Advertising Copy and Layout 572</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Algebra and Trigonometry 100</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Physical Education</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Electives</td>
<td>11 hrs</td>
</tr>
<tr>
<td>To be selected from among the following areas: Art, Business</td>
<td></td>
</tr>
<tr>
<td>Administration, Economics, Industrial Education, Industrial</td>
<td></td>
</tr>
<tr>
<td>Engineering, Industrial Supervision, Language Studies, Mathematics,</td>
<td></td>
</tr>
<tr>
<td>Writing</td>
<td></td>
</tr>
</tbody>
</table>

D. Degree requirements must be met.

*Recommended minor.
Occupational Therapy

B.S. Degree

The curriculum is designed to prepare students to treat patients in various disability areas and to complete requirements established by the American Medical Association in cooperation with the American Occupational Therapy Association. It includes a minimum of nine months of clinical affiliation in selected hospitals providing experience with patients with a wide range of physical and psychosocial dysfunction.

The student who wishes to prepare for the profession of Occupational Therapy must take the following steps:

1. He will declare his intention to follow the Occupational Therapy curriculum at the time of application to the University; or, if he decides to transfer at a later date, the change in curriculum must be made over the signature of the departmental counselor.

2. The student will apply for admission to clinical affiliation early in the semester in which he will have earned credits equal to 60 semester hours. Applications are made in the departmental office. To enroll for clinical affiliation the student must hold a point hour ratio of 2.00 or above with no grade less than a "C" in courses in the major or minor sequence or their prerequisites. In addition, the students shall receive satisfactory recommendations from departmental faculty as to physical and emotional health, academic and general competency.

Transfer students with 60 or more credit hours or students holding Baccalaureate degrees will apply for clinical affiliations before the end of the first month in the curriculum.

The department may refuse to permit a student to continue in the curriculum if at any time it is deemed that physical or emotional disability will jeopardize his success professionally. Academically, no grade less than "C" will be accepted in courses in the major or minor sequences or their prerequisites.

OCCUPATIONAL THERAPY CURRICULUM

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
</tr>
<tr>
<td>College Writing 116</td>
</tr>
<tr>
<td>Physical Science 108</td>
</tr>
<tr>
<td>O.T. Orientation 130</td>
</tr>
<tr>
<td>Psychology I 150</td>
</tr>
<tr>
<td>General Crafts 110</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
## Degree Curricula

### SECOND YEAR

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>S.H.</th>
<th>Fourth Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Basis for Human Behavior 203</td>
<td>4</td>
<td>Arts and Ideas 222</td>
<td>4</td>
</tr>
<tr>
<td>Mammalian Anatomy 210</td>
<td>4</td>
<td>Human Physiology 219</td>
<td>4</td>
</tr>
<tr>
<td>Behavior Modification I 250</td>
<td>3</td>
<td>Growth, Development, &amp; Aging 225</td>
<td>3</td>
</tr>
<tr>
<td>Ceramics 103</td>
<td>3</td>
<td>O.T. Woodworking 198</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Spring and Summer Clinical Affiliation 340, 3 crs.

### THIRD YEAR

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>S.H.</th>
<th>Sixth Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Human Anatomy 221</td>
<td>5</td>
<td>Intro. to Non Western</td>
<td>4</td>
</tr>
<tr>
<td>Psychiatric Conditions 322</td>
<td>3</td>
<td>World 304</td>
<td>4</td>
</tr>
<tr>
<td>Applications in Psychiatry 342</td>
<td>5</td>
<td>Kinesiology 520</td>
<td>3</td>
</tr>
<tr>
<td>Weaving 100</td>
<td>3</td>
<td>Medical &amp; Orthopedic Cond. 524</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Therapeutic Media 210</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FOURTH YEAR

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>S.H.</th>
<th>Eighth Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Communication 400</td>
<td>4</td>
<td>Application in Physical Disabilities 432</td>
<td>5</td>
</tr>
<tr>
<td>Elective in Activities</td>
<td>2-3</td>
<td>Therapeutic Techniques 410</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>3-4</td>
<td>Organization for Patient Services 430</td>
<td>4</td>
</tr>
<tr>
<td>Clinical Neurology 323</td>
<td>3</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Spring, Summer, Clinical Affiliation 430, 431, 6 crs.

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*Curricular biology courses substitute for one-half of General Studies Science requirement.*
The department of Paper Technology offers B.S. and M.S. programs which provide extensive foundational scientific and technical training to prepare graduates for responsible employment in the research and development, technical-manufacturing, and technical-sales areas of the paper, pulp, and related industries. The breadth and depth of the program is such that a significant number of graduates have progressed into management positions and about twenty percent have taken study toward graduate degrees.

The Paper Technology B.S. Curriculum consists of academic majors in paper technology and chemistry, in addition to significant offerings in mathematics, physics, and engineering. A total of 144 semester hours is required for graduation.

Industrial experience is provided through employment by paper or related companies for at least two out of the three summers, as well as through operation of the outstanding pilot plant papermaking and coating machines of the department.

Close cooperation with the paper industry is maintained through committees of the Paper Technology Foundation, Inc. An extensive scholarship program is made possible through the membership of the Foundation. Information about scholarships may be found in the scholarship section of this catalog.

A B.S. and major in Paper Technology may be earned only by meeting all the requirements of the curriculum.

A minor in Paper Technology may be earned by completing the following 18 semester hours in the department: 100, 142, 320, 333, 341.

**PAPER TECHNOLOGY CURRICULUM**

**B.S. Degree**

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>S.H.</th>
<th>Second Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro. Pulp &amp; Paper Mfg. 100</td>
<td>3</td>
<td>Coating, Printing &amp; Converting 142</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 1 122</td>
<td>4</td>
<td>Mathematics II 123</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Chemistry 102</td>
<td>4</td>
<td>Qualitative Analysis 120</td>
<td>4</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>2</td>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Technical Drafting 132*</td>
<td>17</td>
<td>Western Civilization 100 or 101</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phys. Ed. or R.O.T.C.</td>
<td>1-2</td>
</tr>
</tbody>
</table>

Summer Mill Practice**

*May be waived if high school drafting was taken. Substitute technical elective in Junior or Senior year.

**Two summers of mill practice without credit will be required. Technical elective credit may be earned for one of the summers by writing a satisfactory report.
**SECOND YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>S.H.</th>
<th>Second Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Characteristics of Pulp, Paper &amp; Fibers 320</td>
<td>4</td>
<td>Chemistry of Wood &amp; Pulp</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics III 222</td>
<td>4</td>
<td>Mathematics IV 223</td>
<td>4</td>
</tr>
<tr>
<td>Organic Chemistry 360</td>
<td>4</td>
<td>Organic Chemistry 361</td>
<td>1-2</td>
</tr>
<tr>
<td>Prin. of Economics 200</td>
<td>5</td>
<td>Arts &amp; Ideas 222</td>
<td>4</td>
</tr>
<tr>
<td>Phys. Ed. or R.O.T.C.</td>
<td>1-2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>17-18</td>
</tr>
</tbody>
</table>

Summer Mill Practice

**THIRD YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>S.H.</th>
<th>Second Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp Manufacture 340</td>
<td>4</td>
<td>Paper Manufacture 341</td>
<td>4</td>
</tr>
<tr>
<td>Quantitative Analysis 222</td>
<td>4</td>
<td>Effluent Control &amp;</td>
<td></td>
</tr>
<tr>
<td>Mechanics &amp; Heat 210</td>
<td>4</td>
<td>Prin. Chem. Engineering 331</td>
<td>3</td>
</tr>
<tr>
<td>Current Topics in Paper &amp; Pulp</td>
<td>0</td>
<td>Elect. Sound &amp; Light 211</td>
<td>4</td>
</tr>
<tr>
<td>Phys. Ed. or R.O.T.C.</td>
<td>1-2</td>
<td>Current Topics in Paper &amp; Pulp</td>
<td>0</td>
</tr>
<tr>
<td>**Elective, Technical</td>
<td>2-3</td>
<td>Statistical Methods for Ind. 360</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>18-20</td>
</tr>
</tbody>
</table>

Summer Mill Practice 310, 2 S.H. (elective)

**FOURTH YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>S.H.</th>
<th>Second Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Chemistry 530</td>
<td>4</td>
<td>Physical Chemistry 531</td>
<td>4</td>
</tr>
<tr>
<td>Senior Thesis 470</td>
<td>2</td>
<td>Senior Thesis 471</td>
<td>2</td>
</tr>
<tr>
<td>Polymer Chemistry 530</td>
<td>2</td>
<td>Non-Western World 304</td>
<td>4</td>
</tr>
<tr>
<td>**Electives, Technical</td>
<td>6-8</td>
<td>**Electives, General Studies</td>
<td>7</td>
</tr>
<tr>
<td>Current Topics in Paper &amp; Pulp</td>
<td>1</td>
<td>Current Topics in Paper &amp; Pulp</td>
<td>1</td>
</tr>
<tr>
<td>Printing Processes 451</td>
<td>2</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17-19</td>
</tr>
</tbody>
</table>

*Two summers of mill practice without credit will be required. Technical elective credit may be earned for one of the summers by writing a satisfactory report.

**Suggested electives are Programming for Computers, 506; Advanced Analyt. Chem. 520; Engineering Problems 580; Intro. Computers, 106, 107; Statics 256; Thermodynamics 352; Strength of Materials 353; Fluid Mechanics 356; Control Systems 360; Heat Transfer 451. Other technical electives must be approved by the Department Head.

***Must be Junior-Senior level courses as given in the General Studies section of the Catalog.
Transportation Technology

AUTOMOTIVE ENGINEERING TECHNOLOGY
B.S. Degree

The Automotive Engineering Technology Curriculum is designed to provide a combination of applied and theoretical sciences and practical skills to enable students to move rapidly into technical positions in the automotive field. To help students achieve their employment objectives, two options are offered. Option I leads toward careers in automotive sales, service, supervision, and management. Option II is structured for positions in such areas as Manufacturing, Engineering, Production, Testing, and Service Engineering.

Minimum hours required for this curriculum ................................... 136 hours

Course Requirements ........................................................................

1. General Studies
   Western Civilization 100 or 101 .............................................. 4
   College Writing 116 ................................................................. 4
   Freshman Reading 140 ............................................................ 2
   Arts and Ideas 222 or 224 ......................................................... 4
   Non-Western World 304 .......................................................... 4
   General Studies Jr.-Sr. Elective ................................................. 4
   S.H. ...................................................................................... 136 hours

2. Automotive Courses ................................................................. 24 hours
   Automotive Chassis 125 ......................................................... 4
   Automotive Carburetion and Electricity 126 ......................... 4
   Fuels and Lubricants 222 ......................................................... 2
   Automotive Engines 226 ......................................................... 4
   Automotive Service Management 322 .................................... 2
   Automotive Testing 325 ........................................................... 4
   Automotive Design Analysis 422 ............................................. 4

3. Additional courses common to both options ............................. 18-19 hours
   General Chemistry 103 ........................................................... 4
   Introduction to Computers 106 ................................................ 1
   Technical Drafting 132 or Engineering Drafting 230 .................. 2-3
   Industrial Calculators 150 ....................................................... 1
   Principles of Economics 201, 202 ............................................ 6
   Physical Education or R.O.T.C. ............................................... 4
   S.H. ...................................................................................... 72 hours

4. Major Option ............................................................................ 72 hours
### AVIATION ENGINEERING TECHNOLOGY

**B.S. Degree**

The Aviation Engineering Technology Curriculum provides three options—Management and Transportation, Production and Testing, and Professional Pilot. The Management and Transportation Option is intended for those who are interested in the business aspects of aviation. The Production and Testing Option is primarily for those who wish to be associated with the manufacturing or engineering phases of aeronautics. The Professional Pilot Option is oriented toward career-pilot positions in general aviation. All Options permit students to qualify for the F.A.A. Airframes and Powerplant certificate.

Minimum hours required for this curriculum ............... 136 hours

#### Course Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Studies</td>
<td></td>
</tr>
<tr>
<td>Western Civilization 100 or 101</td>
<td>4</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Arts and Ideas 222 or 224</td>
<td>4</td>
</tr>
<tr>
<td>Non-Western World 304</td>
<td>4</td>
</tr>
<tr>
<td>General Studies Jr.-Sr. Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

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The text includes tables listing courses and credit hours for different options, such as Management and Service, Production and Testing, and Aviation Engineering Technology. It also mentions the curriculum's flexibility in allowing students to qualify for the F.A.A. Airframes and Powerplant certificate.
2. Aviation Courses
   Introduction to Aviation 110 3
   Powerplant Maintenance and Components 112 4
   Airframe Structures 113 4
   Powerplant Evaluation and Systems 212 4
   Propellers and Jet Propulsion 215 4
   Airframe Hydraulics and Electricity 216 4

3. Additional Courses Common to Both Options 24-25 hours
   General Chemistry 103 4
   Introduction to Computers 106 1
   Industrial Calculators 150 1
   Technical Drafting 132 or
   Engineering Drafting 230 2-3
   Principles of Economics 201, 202 6
   Electrical Circuits 240 3
   Metallurgy 252 3
   Physical Education or R.O.T.C. 4

4. Major Option 67 hours
   MANAGEMENT AND TRANSPORTATION
   Mathematics 100, 200 8
   General Physics 110 4
   Accounting Concepts and Applications 201 3
   Industrial Processes 152 3
   Machining Metals 151 3
   Marketing 370 3
   Business Statistics 244 3
   Fundamentals of Management 300 3
   Quality Control 308 3
   Production Control 306 3
   Industrial Supervision 502 3
   Electives 28

   PRODUCTION AND TESTING
   Mathematics I, II (122, 123) 8
   Physics 210, 211 or 110, 111 8
   Machining Metals 151 3
   Electronic Circuits 241 3
   Electromagnetic Devices 242 3
   Statics 256 3
   Dynamics 355 3
   Strength of Materials 353 3
   Testing of Materials 354 3
   Thermodynamics 352 3
   Fluid Mechanics 356 3
   Machine Design 330 3
   Mechanical Engineering Lab 452 3
   Electives 18

   PROFESSIONAL PILOT
   Mathematics 100, 200 8
   General Physics 110 4
   Accounting Concepts and Applications 201 3
   Aircraft Servicing 218 5
   Fuels and Lubricants 222 2
   Physical Geography 105 4
   Elementary Ground School 309 2
Students desiring to qualify for the FAA Airframes and Powerplant licenses must complete:

- Aircraft Servicing 218  4  FAA Regulations 219  2
- Aircraft Welding 214  2  Fuels and Lubricants 222  2

Adviser: Mr. VanDeventer
II. TWO YEAR CURRICULA

Distributive Education

FOOD DISTRIBUTION

This curriculum is designed to prepare students for management positions in the food industry. Emphasis is placed on merchandising, operations and supervision. Graduates will be prepared to assume management positions in the food distribution industry.

The curriculum is a cooperative work-study program which combines school and work on an alternating basis. The students are assigned in pairs to cover one job or work area. When one student is attending classes, the other is at work on the job.

CERTIFICATE

A. Minimum hours required for this curriculum ................................................................................. 65 Hours

B. Course Requirements

1. General Studies .......................................................................................................................... 14 Hours
   College Writing 116 ................................................................................................................. 4
   Freshman Reading 140 .............................................................................................................. 2
   Early Western Civilization 100 or alternatives ....................................................................... 4
   Man and Society 202 or alternatives ....................................................................................... 4

2. Language and Literature, Speech and Philosophy and Religion .............................................. 3 Hours
   Business and Professional Speech 104 ..................................................................................... 3

3. Science, Mathematics and Psychology .................................................................................... 3 Hours
   Psychology I 150 .................................................................................................................... 3

4. Social Science .......................................................................................................................... 6 Hours
   Principles of Economics 201 and 202 ..................................................................................... 6

5. Applied Arts and Sciences—Food Distribution ........................................................................25 Hours
   Food Distribution Industry 130 .............................................................................................. 3
   Food Distribution Merchandising 132 ..................................................................................... 4
   Food Distribution Supervision 231 .......................................................................................... 4
   Food Distribution Operations 232 .......................................................................................... 4
   Industry Survey 109 ................................................................................................................. 2
   *Super Market Foods 116 ........................................................................................................ 2
   Coordinated Distribution Practices 202 .................................................................................... 6
   Food Forum ............................................................................................................................... 0

6. Business .................................................................................................................................... 6 Hours
   Accounting 210 ....................................................................................................................... 3
   Marketing 240 .......................................................................................................................... 3

*Home Economics Dept.
7. Physical Education ........................................... 2 Hours
8. Electives .................................................. 6 Hours

**PETROLEUM DISTRIBUTION**

This curriculum is designed to prepare students in distribution methods and techniques used by the petroleum industry. Graduates will be prepared to sell, transport and otherwise work in the marketing and distribution of petroleum products to and through bulk plants and terminals to dealers and jobbers and other distributors, as well as to industrial and agricultural users.

The petroleum curriculum is a cooperative work-study program which combines school and work internship.

**CERTIFICATE**

A. Minimum hours required for this curriculum .................. 65 Hours
B. Course Requirements

<table>
<thead>
<tr>
<th>1. General Studies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Early Western Civilization 100 or alternative</td>
<td>4</td>
</tr>
<tr>
<td>Physical Science 108</td>
<td>4</td>
</tr>
<tr>
<td>Man and Society 202 or alternatives</td>
<td>4</td>
</tr>
<tr>
<td>Arts and Ideas 222 or alternatives</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Language and Literature, Speech and Philosophy and Religion</td>
<td></td>
</tr>
<tr>
<td>Business and Professional Speech 104</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Science, Mathematics and Psychology</td>
<td></td>
</tr>
<tr>
<td>Applied (Petroleum) Chemistry 107</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Social Science</td>
<td></td>
</tr>
<tr>
<td>Principles of Economics 201 and 202</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Applied Arts and Sciences—Petroleum</td>
<td></td>
</tr>
<tr>
<td>Introduction to Petroleum Industry 120</td>
<td>3</td>
</tr>
<tr>
<td>Properties and Application of Petroleum Products 220</td>
<td>3</td>
</tr>
<tr>
<td>Service Station Supervision 230</td>
<td>4</td>
</tr>
<tr>
<td>Industry Survey 109</td>
<td>2</td>
</tr>
<tr>
<td>Coordinated Distribution Practices 202</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Business</td>
<td></td>
</tr>
<tr>
<td>Accounting 210</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 211</td>
<td>3</td>
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<td></td>
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<tr>
<td>9. Physical Education</td>
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<td>2 Hours</td>
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<tr>
<td>10. Electives</td>
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<td></td>
<td>5 Hours</td>
</tr>
</tbody>
</table>
Engineering and Technology

DRAFTING AND DESIGN TECHNOLOGY

The Drafting and Design Technology curriculum is designed specifically to prepare men and women for positions in the field of Industrial Drafting and Design. All practical work experience in layout, detailing and design is in accordance with standard practices recommended by the U.S. Department of Defense, American Society of Mechanical Engineers, the Society of Automotive Engineers and other recognized standardizing agencies.

**First Year**
- College Writing 116
- Mathematics 100
- General Chemistry 103
- General Physics 110
- Industrial Processes 152
- Machining Metals 151 or Metal Casting I 254
- Engineering Drafting 230
- Descriptive Geometry 231
- Industrial Calculations 150
- Physical Education

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 100</td>
<td>4</td>
</tr>
<tr>
<td>General Chemistry 103</td>
<td>4</td>
</tr>
<tr>
<td>General Physics 110</td>
<td>4</td>
</tr>
<tr>
<td>Industrial Processes 152</td>
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<tr>
<td>Machining Metals 151 or Metal Casting I 254</td>
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<tr>
<td>Engineering Drafting 230</td>
<td>3</td>
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<tr>
<td>Descriptive Geometry 231</td>
<td>3</td>
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<tr>
<td>Industrial Calculations 150</td>
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<tr>
<td>Physical Education</td>
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**Second Year**
- Freshman Reading 140
- Production Drafting 331
- Metallurgy 252
- Electrical Circuits 240
- Electromagnetic Devices 242
- Production Tooling 250
- Survey of Office Machines 246
- Technical Electives

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<th>Course</th>
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<td>Freshman Reading 140</td>
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<td>Production Drafting 331</td>
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<td>Metallurgy 252</td>
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<td>Electrical Circuits 240</td>
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<td>Electromagnetic Devices 242</td>
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<td>Production Tooling 250</td>
<td>3</td>
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<tr>
<td>Survey of Office Machines 246</td>
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<tr>
<td>Technical Electives</td>
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31

ELECTRONICS TECHNOLOGY

The Electronics Technology curriculum is offered to students who want to prepare themselves for gainful employment as electronics technicians. Education and training is given in the skills necessary to install, maintain, and operate electrical and electronic equipment. Information necessary for classification, distribution testing and production of components is presented. Students taking Electronics Technology are prepared for electrical and electronics positions in Industry, Business and Government. Provisions can be made for qualifying for Federal Communication Commission licenses.

**First Year**
- College Writing 116
- Freshman Reading 140
- Mathematics 122, 123
- Industrial Calculations 150
- Technical Drafting 132 or Engineering Drafting 230
- Industrial Processes 152
- Machining Metals 151
- Electrical Circuits 240
- Electromagnetic Devices 242
- Physical Education

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<td>College Writing 116</td>
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<td>Mathematics 122, 123</td>
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<tr>
<td>Industrial Calculations 150</td>
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<tr>
<td>Technical Drafting 132 or Engineering Drafting 230</td>
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<tr>
<td>Industrial Processes 152</td>
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<td>Electromagnetic Devices 242</td>
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<td>Physical Education</td>
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**Second Year**
- Physics 110 or 210
- General Chemistry 103
- Machine Drawing 330
- Introduction to Computers 106
- Electronic Circuits 241
- Electronic Devices 340
- Industrial Electronics 341
- Electives

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<th>Course</th>
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<tr>
<td>Physics 110 or 210</td>
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<td>General Chemistry 103</td>
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<tr>
<td>Machine Drawing 330</td>
<td>3</td>
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<tr>
<td>Introduction to Computers 106</td>
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<td>Electronic Circuits 241</td>
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<td>Electronic Devices 340</td>
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<tr>
<td>Industrial Electronics 341</td>
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<tr>
<td>Electives</td>
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31
Transportation Technology

AIRCRAFT TECHNOLOGY

FAA Approved Technical School No. 3304
FAA Approved Airman Agency No. CE-08-1

The Aircraft Technology curriculum is intended for students who wish to qualify for the Federal Aviation Administration Airframe and Powerplant License. Students completing this curriculum will be prepared to enter maintenance and supervisory positions in the aviation industry.

Minimum hours required for this curriculum .............................................. 70 hours

Course Requirements

1. General Studies .................................................................................. 20 hours
   Mathematics 100 ................................................................. 4
   General Chemistry 103 ......................................................... 4
   General Physics 110 ............................................................ 4
   College Writing 116 ............................................................. 4
   Freshman Reading 140 ......................................................... 2
   Physical Education ............................................................... 2

2. Technical Courses ........................................................................... 50 hours
   Introduction to Aviation 110 ................................................... 3
   Powerplant Maintenance and Components 112 ................. 4
   Airframe Structures 113 ....................................................... 4
   Powerplant Evaluation and Systems 212 ................................. 4
   Propellers and Jet Propulsion 215 ........................................... 4
   Airframe Hydraulics and Electricity 216 ................................. 4
   Technical Drafting 132 .......................................................... 2
   Machining Metals 151 ............................................................ 3
   Industrial Processes 152 ......................................................... 3
   Aircraft Welding 214 .............................................................. 2
   Aircraft Servicing 218 ............................................................ 5
   FAA Maintenance Regulations 219 ........................................... 2
   Fuels and Lubricants 222 ....................................................... 2
   Electrical Circuits 240 ............................................................ 3
   Metallurgy 252 ........................................................................ 3
   Technical Elective* ................................................................... 2

*Recommended Elective - Pilot Training 310

Adviser: Mr. VanDeventer
III. DESCRIPTION OF COURSES

George Kohrman, Dean  Gordon O. Johnson  Lewis M. Yost

300 Coordinated Industry  3 hrs.  Fall, Spring, Summer

A cooperative education program involves a full-time planned and supervised work experience in industry during the semester or the equivalent on a part-time basis. A written report of the student's activities will be required. May be elected four semesters for a maximum of twelve semester hours credit. Prerequisite: Consent of instructor.

520 Principles of Practical Arts and Vocational Education  3 hrs.  Summer, Fall

The place and function of the practical arts and vocational education in the modern school; fundamental principles upon which this work is based. For teachers of agriculture, business, home economics, industrial subjects and administrators. For upperclassmen and graduate students.

Agriculture

Lee O. Baker, Head  Norbert L. Noecker

The Department of Agriculture recognizes the following responsibilities:

To provide opportunities to learn more about the important role of agriculture in the economy of the nation; basic training for workers in services sponsored by government or farmer group organizations; basic training for students planning to enter employment in the many agriculturally related industries servicing agriculture; technical information in the production of agricultural commodities needed by farm families dependent on sales of farm products; and to prepare teachers of agriculture for public secondary schools and to provide basic courses in agriculture for all teachers.

100 Agriculture Science  3 hrs.

A broad perspective of the field of Agriculture and an overview of the entire Agricultural society is presented so that students may obtain some idea of Agriculture's place today in our economy.

It is a survey type of course with many different fields being explored. We will examine the historical development of agriculture, and consider the various problems pertaining to agricultural production and farm management. We will explore opportunities in the many agriculturally related fields.
110 Animal Industry 3 hrs.
The fundamental problems and essential general concepts of livestock production and marketing in the United States are studied. It is an introduction to types, breeds, selection, feeding and management of dairy cattle, beef cattle, and sheep.

111 Animal Industry 3 hrs.
A continuation of 110 with swine, horses, and poultry being considered.

220 Agronomy 5 hrs.
A study of the field of plant science with consideration given to the many applications of plant morphology, physiology, nutrition, pathology, genetics, and ecology as they relate to farm practice.

222 Principles of Horticulture 4 hrs.
A basic course which will provide students with the opportunity to learn the skills and practices of modern horticulture. The scope of study includes: fruits, vegetables, turf, flowers, ornamental trees, plant propagation and nursery culture.

310 Feeding and Animal Nutrition 4 hrs.
A study of the recent advances and the most important facts concerning the nutrition, feeding, care and management of the various classes of farm animals.

320 Introduction to Soils 4 hrs.
A course designed to give the student an opportunity of becoming familiar with soils as natural units or entities and with their inherent characteristics; to develop in the student an understanding of the significance of fundamental soil properties; to set forth basic relationships between soils and plants; and last, to develop an understanding of the principles involved in the practical use and conservation of the soil.

322 Landscape Gardening 3 hrs.
A course where students become involved in the initial stage of planning through the final planting of property for use and attractiveness. It includes such topics as the care and planting of trees and shrubs, lawn establishment and care, identification and selection of planting materials, and design.

323 Landscape Design 3 hrs.
Emphasis in this course will be placed on the environmental approach to landscaping. This concept considers the relationship between a house and its lot and consequently their relationship to the neighborhood, the community, and ultimately the whole region.

324 Land Use and Soil Conservation 3 hrs.
A study of the utilization of land by man and ways and means of promoting better use of various land types, including recommended practices for conservation of the productivity of our lands.
School of Applied Arts and Sciences

330 Farm Organizations and Management 5 hrs.
   The role of the many farm organizations and their influence on today's agriculture. Basic principles of production, economics, and general problems in over all farm management are also studied.

332 Agriculture Marketing and Finance 4 hrs.
   This course will deal with more specific organized marketing facilities for farm products, using the existing facilities in Southwest Michigan, covering grains, fruits, livestock, and vegetable markets. How farming enterprises are financed and their relations to local sources of credit is included.

400 Independent Study 2 hrs.
   Qualified students may pursue a specific area of study on an individual basis depending upon background and need. (May be taken twice for credit.)

520 Soil Science 2 hrs.
   Treats soil as an organic resource. Soil formation, composition and classification are related to various physical, chemical and biological factors in the environment. Consideration is given to soil fertility, water retention and runoff, plant growth and land use as they are affected by these factors.

Distributive Education

Adrian Trimpe, Head      Lawrence A. Williams      William O. Haynes
Raymond A. Dannenberg   Wendall B. Fidler            Richard Neschich

The Department provides a variety of educational programs and services for individuals who are interested in the field of distribution in schools and business.

WORK-STUDY PROGRAMS

The Department has two cooperative programs, one in Petroleum Distribution and the other in Food Distribution. These programs are jointly sponsored with the industries. The students in petroleum and food programs can earn a certificate in two years or complete a four-year program with a Bachelor of Science degree.

COOPERATIVE OCCUPATIONAL EDUCATION

The Department has a degree program for individuals interested in preparing as teacher-coordinators of cooperative education programs and project method programs and teachers of preparatory and vocational-technical subjects.
SERVICES

The Department provides secondary schools having cooperative educational programs with consultative services and has available related instructional materials for classroom use.

The Department also assists schools and businesses in planning and conducting Adult Education Programs, Workshops, Conferences and Institutes.

Four Year Curricula—B.S. Degree
Cooperative Occupational Education

Two Year Curricula—Certificate
1. Food Distribution
2. Petroleum Distribution

A major can be earned only by being enrolled in one of the curricula offered by the department.

A minor may be secured upon the approval of the departmental adviser.

After completing a certificate program, a student may transfer into a degree program upon the recommendation of the counselor.

DEPARTMENTAL COURSES

109 Industry Survey 2 hrs.

Inspection trips are made to representative businesses and industrial establishments to observe such functions as production, transportation, storage, research and marketing. Company representatives will lecture to the class on the phases listed. Written reports are to be made of the visits, and a fee of $20.00 for transportation is required from each student.

202 Coordinated Distribution Practices 3 hrs.

The student will be employed as a trainee in a work situation for an entire term under the supervision of the University and the participating company. Written reports will be required and a performance appraisal of the trainee will be made by the employer. Students may elect two units for a total of six semester hours.

302 Coordinated Distribution Practices 3 hrs.

This is an advanced course in supervised work experience under the supervision of the University and the participating company. Written reports will be required and a performance appraisal of the trainee will be made by the employer. Students may elect two units for a total of six semester hours.

500 Seminar in Distributive Education 2-4 hrs.

An intensive study of problems related to distribution and education for distribution. This seminar is especially recommended for seniors and graduates in the distributive education department.
School of Applied Arts and Sciences

598 Readings in Distributive Education 1-3 hrs.
Directed, individual study of topics and areas of interest which are not otherwise treated in departmental courses. Consent of Department Head.

FOOD

130 Food Distribution Industry 3 hrs.
An introductory course for those entering the field of food distribution. A study of food distribution, its history, evolution, and structure with emphasis on the growing importance of the store unit will be analyzed. Basic principles and practices of the industry will be considered.

132 Food Distribution Merchandising 4 hrs.
A course designed to acquaint the student with the various merchandising techniques peculiar to food distribution. Receiving emphasis will be buying, display, promotion, turnover, pricing for profit, and increasing departmental sales. Resource people from the industry will be utilized to enrich classroom activities.

231 Food Distribution Supervision 4 hrs.
A course designed for providing techniques in supervising and developing people in food distribution. Attention will be directed toward organizational principles, labor relations, understanding people, communication, coaching, and building a store team. Leadership concepts so necessary in the industry will be stressed. Periodic lectures from industry resource people will enrich classroom instruction.

232 Food Distribution Operations 4 hrs.
A course designed to acquaint the student with the principles and methods used in the operation of food distribution units with regard to organization, planning and control. The over-all objective will be to provide knowledge and develop understanding in the students for efficient unit operation. Resource people from food distribution will appear in the classroom to enrich the instructional program.

331 Food Distribution Managerial Processes 3 hrs.
A study of advanced techniques in the development of food distribution personnel. Emphasis will be placed on job understanding, career dynamics, performance review, performance interview, behavior principles, and career discussions including appraising promotability. Time will be allowed for classroom practice of these techniques using role-playing procedures. Prerequisite: Super Market Supervision 231.

PETROLEUM

120 Introduction to Petroleum Industry 3 hrs.
A basic course in the study of the petroleum industry dealing with its history, exploration, drilling, production refining, distribution, service
station records and sales, and general economics and structure of the industry. The course includes the orientation necessary for the student to understand the cooperative work program and the student’s responsibility to such a program.

220 Properties and Application of Petroleum Products 3 hrs.

A comprehensive study of the properties of petroleum products such as fuels, lubricants, greases, naphthas, waxes, pesticides and petroleum chemicals. The application and uses of these products in manufacturing, transportation, agriculture and the individual consumer are covered.

230 Service Station Supervision 4 hrs.

The responsibilities and activities of the petroleum company salesman and supervision as they relate to retail establishment are dealt with. Such items as merchandising policies, advertising, inventory, product knowledge, plant layout, location, equipment and selling to the consumer are covered.

327 Petroleum Distribution Finance 3 hrs.

A course dealing with service station dealer finance counseling. An understanding of general finance of petroleum businesses, including retail outlets, jobber operations and major oil companies. Such topics as service station financing by major petroleum companies and jobbers, securing capital, interest, insurance and analysis of profit and loss statements are discussed. It also deals with principles of credit, and collections as it relates to the petroleum industry.

380 Distribution and Handling of Petroleum Products 3 hrs.

A course covering the wholesale and retail distribution channels used by major and independent companies. The transportation and handling of petroleum products from the oil field to the retail outlet. The analysis of a sales territory and the selection of a service station site.

COOPERATIVE OCCUPATIONAL EDUCATION

570 Organization and Operation of Distributive Education 2 hrs.

Deals with the organization and operation of distributive education in relation to the total educational program. It is concerned with preparatory, cooperative, and adult programs. Consideration is given to advisory committees and local, state and federal relationships.

571 Job Supervisory Training 2 hrs.

This course provides for mastery of the techniques and skills used in supervision of employees. It deals with conference leading, how to train, how to develop the skills of leadership and the corrective interview. This training is useful for vocational teachers and those preparing for supervisory positions.
School of Applied Arts and Sciences

572 Teaching Techniques in Cooperative Education 2 hrs.
This course deals with the methods and techniques used in teaching the related subjects to students on cooperative work-study programs. Special emphasis will be given to group and individual methods of instruction.

573 Coordination Techniques in Cooperative Education 2 hrs.
This is a study of duties and responsibilities of the coordinator. The organization and establishment of training programs, supervision of trainees on the job, development of individual training programs, establishing working relationships between the school, business, and home; and participation in extra-curricular activities in the community. Especially adapted to prospective coordinators.

Engineering and Technology

W. Chester Fitch, Chairman

Roger Bennett  Cassius Hesselberth  William Schrieber
Henry J. Beukema  G. Stewart Johnson  Frank Scott
Donald Black  Joseph A. Kelemen  Ronald L. Steger
Robert Boughner  Dale King  Roger Ulrich
Elmer J. Brune  Roy Klein  Booth Watmough
Charles Davis  Don W. Nantz  William Weeks
Robert B. Day  Jon Patton  William Wichers
Roscoe Douglas  Arden Pridgeon  Glade Wilcox
Joseph Gill  Leo S. Rayl  Charles F. Woodward
Roy Groulx  L. D. Ryan  Charles Yunghans
Jerry H. Hamelink

The various degree curricula offered by the Department of Engineering and Technology are designed primarily to prepare product and manufacturing oriented engineering personnel for industry. The programs provide extensive laboratory experience requiring the application of engineering principles to such industrial functions as product design and improvement, production planning and control, production, manufacturing engineering, and plant engineering. The following curricula are currently offered:

Four Year Curricula—B.S. Degree
1. Electrical Engineering Technology
2. Industrial Engineering
3. Industrial Supervision
4. Mechanical Engineering Technology
5. Metallurgical Engineering Technology

Two Year Curricula—Certificate
1. Drafting and Design Technology
2. Electronics Technology
A major can be earned only by completing one of the curricula offered by the department.

A minor may be secured upon the approval of the departmental counselor and by completing 15 to 20 semester hours of work. No minor will be given in Industrial Supervision.

After completing a two-year program, a student may transfer into a B.S. degree program upon the recommendation of the counselor.

**FOUNDRY PROGRAM**

A student enrolled in any engineering or technology degree curriculum and interested in the foundry industry may elect a series of courses specifically related to foundry operations to better prepare himself for work in this industry. The series will be selected in consultation with his counselor to conform with a student's interest. Enrollment in the cooperative education program is desirable, but not required, for students following this program. Many scholarships are available to help support such students.

**Cooperative Education Program**

Students enrolled in any Engineering and Technology degree curriculum may elect a cooperative plan of education.

Students are usually selected in pairs and alternate by semester between campus and industry. While on the job, the student must be enrolled in the course "Coordinated Industry 300". He is paid an appropriate salary by the company.

Cooperative students work in such areas as manufacturing, assembly, research, design, quality control, and safety. They may perform tests, prepare engineering drawings, collect and record data, design tools and fixtures, and assist in supervision. The student's cooperative program is closely supervised by a university coordinator.

**GENERAL ENGINEERING AND TECHNOLOGY**

150 Industrial Calculations 1 hr. Fall, Winter

Methods of calculation used in industry. Approximations, slide rule, calculators, and computers in relation to industrial calculations. Slide rule instruction. Prerequisite: Math 100.

300 Coordinated Industry 3 hrs. Fall, Winter, Spring

A cooperative education program involving a full semester of supervised work experience in industry. A written report of the student's activities is required. May be elected for a maximum of 12 semester hours credit. Prerequisite: Consent of coordinator.

490 Independent Research and Development 1-4 hrs. Fall, Winter Spring, Summer

Individual research or special project in engineering technology.
School of Applied Arts and Sciences

Open only to Juniors and Seniors having the approval of the department head and the faculty member under whom the student will work.

DRAFTING AND DESIGN TECHNOLOGY

132 Technical Drafting
2 hrs. Fall, Winter
Basic principles and techniques of engineering drafting as related to industrial manufacturing processes. Open only to students having had no drafting in high school.

230 Engineering Drafting
3 hrs. Fall, Winter
Essentials of drafting—lettering, instrument usage, applied geometry, freehand sketching, orthographic projections, auxiliaries and sections, dimensioning practice, detail and assembly drawing, conventions and standard drafting practices. Pictorial drawing, charts and graphs. Prerequisite: ET 132 or equivalent.

231 Descriptive Geometry
3 hrs. Fall, Winter
Space concepts using points, lines, planes and solids. Measurements of distances and angles, intersections, true sizes and shapes of plane areas and development of curved surfaces. Analytical procedures and systematic notation in graphical solutions. Prerequisite: ET 230.

330 Machine Drafting
3 hrs. Fall, Winter
Conceptual elements of machine design. Specific problems are undertaken in the design of gears, cams, linkages and springs, as well as the fabrication of other machine components. Use of standard and purchased parts in manufacturer's and supplier's catalogs. Standard engineering department practices. Use and maintenance of modern print-making equipment. Prerequisite: ET 230.

331 Production Drafting
4 hrs. Fall
Drafting for industrial production, design and development of necessary tooling for mass-produced products and illustrative techniques involving drawings for catalogs, sales and service manuals. Prerequisite: ET 330.

430 Industrial Design
3 hrs. Winter
Design and development of manufacturing products through a study of basic elements of industrial design. Models, mock-ups and prototypes will be constructed of students' designs. Prerequisite: ET 230.

552 Technical Illustrations
3 hrs. Winter
Techniques of illustrating for technical publications such as engineering reports, technical and service manuals and parts catalogs. Prerequisite: ET 230.
Engineering and Technology

553 Industrial Drafting Practice 2 hrs.
Organization, administration, procedures and methods involving personnel, planning, equipping, and systematizing an industrial drafting department. Prerequisite: ET 331.

554 Product Design and Development 3 hrs. Summer
Conceptual design and development of a product. Production of a working model in the laboratories. Product proposal, engineering documentation and engineering analysis of product. Prerequisite: ET 430.

ELECTRICAL ENGINEERING TECHNOLOGY

240 Electrical Circuits 3 hrs. Fall, Winter
Analysis of direct and alternating current circuits using Ohm's Law, Kirchhoff's Laws, mesh and nodal analysis, superposition, Thevenin's Theorem, Norton's Theorem and other network theorems and equations. Phasors, expressed as complex numbers in both polar and rectangular form, as well as periodic functions are used in analyzing steady-state alternating current circuits. Magnetic circuits are also covered. Prerequisites: Three years college preparatory math including trig. or Math 100 and H.S. Physics.

241 Electronic Circuits 3 hrs. Fall, Winter
An introduction to analysis and design of electronic devices, circuits, and system. Rectification, large and small signal amplification, oscillators, switching and shaping circuits using tubes, semi-conductors and integrated circuits. Introduction to equivalent circuits using z, y, and h parameters. Prerequisite: ET 240.

242 Electromagnetic Devices 3 hrs. Fall, Winter
Analysis, design and construction of electro-magnetic circuits and devices such as transformers, motors, generators and controls. Alternating and direct current circuit analysis techniques. Prerequisite: ET 240.

340 Electronic Devices 4 hrs. Fall, Winter
Analysis, design, and construction of modern electronics circuits using solid-state devices and integrated circuits. Prerequisites: ET 241, 242, Math 123.

341 Industrial Electronics 4 hrs. Fall, Winter

440 Measurements and Instrumentation 4 hrs. Fall, Winter
Theory, calibration, and application of electronic instruments used in the measurement of electrical, magnetic, and nonelectrical
quantities. Students design, construct, and standardize electronic instruments used in both measurement and control. Prerequisite: ET 340.

441 Communication Electronics 4 hrs. Fall, Winter
Analysis and design of communication circuits and systems. FCC standards and practices, receivers, transmitters, transmission lines, and antenna systems. Prerequisite: ET 340.

442 Servomechanisms 4 hrs. Fall, Winter
Analysis and synthesis of linear feedback systems by the use of Laplace transforms, Bode diagrams, Nyquist plots, Nicholas charts, and Root-Locus plots. Introduction to the analysis of nonlinear servo systems. Use of analog computer. Prerequisites: ET 242, 340, 360 or 556 or 542.

541 Electric Fields 3 hrs. Fall
Electrostatics covering such topics as Coulomb's Law, Gauss's Law, Maxwell's Equations, Laplace's and Poisson's Equations, Faraday's Law, Stoke's Theorem, Ampere's Law. Use is made of vector calculus in rectangular, cylindrical and spherical coordinates. Prerequisite: Math 223 or consent of instructor.

542 Advanced Circuits 3 hrs. Winter
Advanced circuit analysis, steady-state and transient responses, writing and solving integro-differential equations by classical methods and by Laplace transforms, network theorems, Fourier series analysis, complex frequency, poles and zeroes. Prerequisites: Math 123, ET 240 or consent of instructor.

545 Electrical Power Systems 3 hrs. Spring
Economic and engineering considerations concerning power plants, generating equipment, transmission and distribution systems, switch gear and industrial power distribution. Prerequisite: consent of instructor.

MECHANICAL ENGINEERING TECHNOLOGY

151 Machining Metals 3 hrs. Fall, Winter, Spring

152 Industrial Processes 3 hrs. Fall, Winter
Laboratory experience with tools, machines, and processes used to join and test the mechanical properties of metals and plastics. Not open to students with credit in 251.

250 Production Tooling 3 hrs. Fall, Winter
Practical problems in the design and fabrication of jigs, fixtures, gauges and special cutting tools for production lathes, mills, drills, and numerical control equipment. Prerequisite: ET 132, 151.
251 Industrial Welding  2 hrs.  Fall, Winter

Techniques and processes used to fabricate metal products by welding. Laboratory includes oxyacetylene, metallic-arc, gas shielded-arc (Mig, Tig). Not open to students with credit in 152.

256 Statics  3 hrs.  Fall, Winter, Spring

Mathematical and graphical techniques for ascertaining the magnitude of forces acting on structural bodies under static loads. Concepts of vectors, moments and couples, resultants and equilibrium of general force systems, free body analysis, centroids, moments of inertia. Beams, friction, and elementary structures. Prerequisite: Math 122 or 200.

332 Mechanism Analysis  3 hrs.  Fall, Winter

Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Prerequisite: ET 231, 256, and Math 123.

350 Pressworking of Metals  3 hrs.  Fall, Winter

Standard pressworking methods are analyzed in the construction and use of dies for blanking, shaving, bending, forming and stamping metals in standard power presses and brakes. Prerequisite: ET 250.

352 Thermodynamics  3 hrs.  Fall, Winter, Spring

Fundamental laws of thermodynamics, including gas and vapor processes, both non-flow and steady-flow, and thermo-dynamic cycles. Prerequisite: Math 123.

353 Strength of Materials  3 hrs.  Fall, Winter, Summer

Compression, tension, shear, torsion, and bending forces in structural members, including distribution of stress, deflections, buckling, and fatigue on engineering materials. Prerequisite: ET 256, Math 123.

354 Testing of Materials  3 hrs.  Fall, Winter, Spring

Principles and methods of destructive and non-destructive testing for determining the mechanical properties of materials. Planning of test procedures, interpretation of test results. Prerequisite: ET 353.

355 Dynamics  3 hrs.  Fall, Winter

Kinematics of rectilinear and curvilinear motion. Rigid bodies in plane motion and about a fixed axis and relative motion. Prerequisite: ET 256 and Math 123.

356 Fluid Mechanics  3 hrs.  Fall, Winter, Summer

Static fluids and hydrostatic pressure on plane and curved surfaces. Analysis of the flow of fluids based on Bernoulli's theorem. Flow through orifices, pipe systems, and open channels. Prerequisites: ET 256, Math 123.

360 Control Systems  3 hrs.  Fall, Winter, Spring

Theory and analysis of linear closed-loop control systems containing electronic, electro-magnetic, and mechanical components. Prerequisites: ET 240, 256, Math 123.
School of Applied Arts and Sciences

450 Air Conditioning 3 hrs. Fall, Winter
Theory of the conditioning of air. Applications related to air purification, humidity control, temperature control, distribution of air, and ventilation. Prerequisite: ET 352.

451 Heat Transfer 3 hrs. Fall, Winter
Steady state and transient conduction, emissivity, radiation functions, radiation networks, natural and forced convection, and design of heat exchangers. Prerequisite: ET 352.

452 Mechanical Engineering Laboratory 3 hrs. Fall, Winter, Spring
Principles of measurement, testing and evaluation of mechanical engineering systems. Prerequisites: ET 352, 355, 356, and 451. Two of these courses may be taken concurrently with the laboratory.

550 Product Engineering 3 hrs. Fall, Winter, Spring
The application of engineering concepts to technical design. Scope of design, analysis and synthesis of design parameters, evaluation of performance, and other factors related to product development. Prerequisites: ET 230, ET 353.

551 Welding Design Analysis 3 hrs. Winter
Production methods and design using modern techniques of electron beam welding, inertia welding, application of the laser for welding. Use of various protective enclosures, plasma arc welding, automated electronic welding and weld testing are investigated. Prerequisite: ET 251.

556 Engineering Analysis 3 hrs. Fall
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: Math 223 or equivalent.

558 Mechanical Vibrations 3 hrs. Winter
A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Prerequisites: ET 355, 360, Math 223, or equivalent.

562 Numerical Control of Production 3 hrs. Winter
Elements of design of numerically controlled production processes including the machine programming and control of input-output using appropriate gauging and AQL techniques. Prerequisites: ET 151, Math 106 and permission of instructor.

METALLURGICAL ENGINEERING TECHNOLOGY (FOUNDRY)

252 Metallurgy 3 hrs. Fall, Winter, Spring
Fundamental characteristics and properties of metals and alloys. Elementary theories of bonding, crystal structure, deformation phenomena and phase relationships in binary alloys. Annealing and heat treatment of alloys with major emphasis on iron-carbon alloys. Prerequisite: Chem. 100 or 102 or 103.
254  Metal Casting I  
3 hrs.  Fall, Winter, Spring

Laboratory experience related to processes, methods, tools, machines, and materials used in casting metals, coremaking, and sand testing.

351  Metallurgy  
3 hrs.  Fall, Winter, Spring

Oxidation, corrosion, physical properties, principles of alloying, and the fabrication of metals and alloys. Not open to metallurgy majors. Prerequisite: ET 252.

370  Metal Casting II  
3 hrs.  Winter

The theory and application of the metallurgy of casting alloys, gray iron, ductile and malleable iron, steel, brass, bronze and aluminum alloys will be studied. Melting, casting and heat treating processes will be analyzed for each alloy and the basic theory of the solidification of metals will be covered. Prerequisite: ET 252, 254.

372  Physical Metallurgy I  
4 hrs.  Fall

Introduction to the thermodynamics and kinetics of metallurgical alloys. Thermodynamic properties of the solid state, binary equilibrium diagrams, solidification of alloys, solid state diffusion, oxidation and solid state phase changes occurring in the heat treatment of alloys. Prerequisites: Chemistry 102, Math 123.

373  Physical Metallurgy II  
4 hrs.  Winter

Introduction to the free electron theory, the defect structure of metals and alloys, and simple theories of deformation and fracture. Structure-insensitive properties such as electrical conductivity, specific heats and magnetism; and the structure-sensitive properties of strength, hardness, toughness and ductility are considered. Strength, deformation and fracture properties of engineering alloys. Prerequisites: Chemistry 102, Math 123, Physics 110.

570  Metal Fabrication  
3 hrs.  Winter

Mechanical forming methods and special processes of fabricating metals. Rolling, forging, extrusion, drawing, bending, shearing, powder metallurgy, and explosive forming emphasizing mechanical variables in fabricating. Prerequisites: ET 373 or 351 and 354.

572  X-Ray Diffraction  
3 hrs.  Fall

X-ray methods of crystal structure determination, non-destructive testing, cold working, age hardening and phase changes in metal alloys. Prerequisites: Math 123, Physics 210, Chemistry 103 or ET 252.

573  Physical Metallurgy III  
3 hrs.  Winter

Material selection for resistance to both load and environment. Design parameters for material selection and various metal systems. Corrosion, service failures and mechanical behavior of engineering alloys at high and low temperatures. Prerequisite: ET 351 or ET 373.
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574 Casting Design 3 hrs. Fall
Relationship of casting design to foundry processes and economical production. The foundry is considered from various aspects such as, organizational and equipment requirements, and responsibilities to customers, employees and the community. Prerequisites: ET 252, 254.

575 Die Casting 3 hrs. Winter
Production of die casting, including design, melting, casting and finishing processes emphasizing production of quality casting economically. Prerequisite: ET 254.

579 Studies in Cast Metals Technology 1-3 hrs. Winter, Spring
Metallurgy of ferrous castings and melting. Solidification, risering, gating, ferrous castings, sand control and sand cases.

INDUSTRIAL ENGINEERING

304 Motion and Time Study 5 hrs. Fall, Winter, Spring
Techniques involving work analysis and simplification, measurement, and motivation, with emphasis on the supervisory problems involved in controlling methods, rates of production, and incentive earnings. Prerequisite: ET 150.

306 Production Control 3 hrs. Fall, Winter, Summer
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. Prerequisites: ET 150, Bus 244 or Math 360.

308 Quality Control 3 hrs. Fall, Winter, Summer
Methods for controlling the quality of materials in a production system. Principles and techniques of administration and the application of statistical methods. Use of standard practices in quality control measures: frequency distribution, control charts, sampling procedures, and continuing analysis. Prerequisites: ET 150, Bus 244 or Math 360.

404 Material Handling and Layout 5 hrs. Fall, Winter, Spring
Planning and integrating an effective and economical interrelationship between men, equipment, and materials in the manufacture and distribution of any given product. Prerequisites: ET 304, 306.

506 Work Simplification 3 hrs. Fall, Winter
Methods improvement applied to two actual cases in local industry. Administrative problems encountered in initiating methods improvement in industry. Prerequisite: 304.

508 Advanced Quality Control 3 hrs. Winter
Analysis and application of new concepts in the fields of quality control. Tests of significance, probability studies and other uses of statistics as applied to quality control. Prerequisite: ET 308.
INDUSTRIAL SUPERVISION

400 Modern Industrial Practices 6 hrs. Spring, Summer

Students will observe and analyze actual supervisory and managerial functions in industrial and commercial establishments. Conference procedures will be used in exploring all facets of supervisory and managerial practices and procedures. Prerequisite: Senior standing.

406 Conference Leadership 3 hrs. Fall, Winter

Basic methods of planning and presenting an industrial conference. Techniques of leadership with opportunity for practical application of these techniques. Prerequisite: Speech 104, upperclass.

500 Labor Management Relations 4 hrs. Fall, Winter, Spring

Existing relationships between government agencies, labor organizations, and management. Emphasis on collective bargaining procedures. Prerequisite: Senior standing.

502 Industrial Supervision 3 hrs. Fall, Winter, Spring

Supervisory duties and responsibilities of foremen, engineers, and technicians in industry. Prerequisite: Senior standing.

504 Industrial Safety 2 hrs. Fall, Winter, Summer

Importance of safety in industry. Cost of accidents, fundamentals of accident prevention, the elements of an effective safety program, accident investigation, and first aid. Prerequisite: Upperclass.
Western Michigan University prepares students to qualify as teachers of Vocational Home Economics in Michigan under the provisions of the State plan for vocational education. Courses are planned in the department for a major and a minor in Home Economics. Provision is also made for meeting the requirements for a vocational certificate in Michigan. Only persons holding this certificate can teach in the reimbursed homemaking departments in Michigan public schools.

Home Economics at the undergraduate level has for its primary objectives helping the individual student to achieve a rich and satisfying home, family and community life. It is concerned with the personal and group values that are desirable outcomes of successful living. It deals with the social, economic, aesthetic, managerial, health, and ethical aspects of family relations, child development, foods, clothing, and housing. Home Economics is an education for personal development, for family and community living, and for several areas of professional specialization.

Home Economics majors are required to complete courses in the General Studies program of 40 semester hours.

Students who plan to teach Home Economics in Michigan schools must complete Home Economics Education 254, 340 and Education Courses 300, 410, 450 and 470 in order to be eligible for a provisional certificate.

The Home Economics Department offers four-year programs leading to a B.S. degree.

Major areas in Home Economics include:

- Dietetics
- Home Economics in Business
- Home Economics Education
- Home Economics—General Degree

**BASIC HOME ECONOMICS COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Required of All Majors</th>
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</thead>
<tbody>
<tr>
<td>114</td>
<td>Food Preparation and Meal Planning</td>
<td>5</td>
</tr>
<tr>
<td>150</td>
<td>Individual and Family Relationships</td>
<td>4</td>
</tr>
<tr>
<td>200</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>201</td>
<td>Clothing Construction</td>
<td>3</td>
</tr>
<tr>
<td>210</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>340</td>
<td>Home Ec. Education</td>
<td>4</td>
</tr>
<tr>
<td>520</td>
<td>Equip. and Demonstration</td>
<td>4</td>
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</tbody>
</table>
The following courses are open to students from other curricula who wish a minor of 20-24 semester hours in Home Economics providing they meet the prerequisites for the courses: 150, 152, 200, 201, 212, 304, 306, 340, 350, 352, 520.

**TEXTILES AND CLOTHING**

200 Textiles 3 hrs. Fall, Winter
(majors and electives)
A study of basic textiles from the consumer's point of view to provide a knowledgeable use of fibers.

201 Clothing Construction 3 hrs. Fall, Winter
Basic principles of clothing construction, including pattern alteration and fitting related to the construction of three garments.

304 Selection and Design of Clothing 3 hrs. Fall, Winter
Includes selection of appropriate clothing for individual family members. Emphasis is given to the planning and purchasing of clothing in terms of family resources and the family life cycle. Prerequisites: Art 114, HE 200 or 201.

306 Pattern Design and Tailoring 4 hrs. Winter
A study of the basic principles of pattern designing and fitting applied to tailored garments such as coats and suits. Prerequisites: Art, HE 200 and 201.

500 Advanced Textiles 2 hrs.
A study of the composition, construction, finishing, and care of textiles. Prerequisite: HE 200 or 201.

502 Textile Clinic 2 hrs.
A workshop type program. Specialists and visual aids will present the newest information on textiles. To be followed by a study of methods implementing the new learnings.

504 The Socio-Psychological Aspects of Clothing 2 hrs.
A study of the social and psychological implication of clothing for the individual and the family. Clothing has many sociological and psychological implications, for the person as an individual and as a member of society. This course would bring together some of the pertinent findings of these two fields as they relate to the total area of clothing, ranging from the individual's selection of clothing as an expression of personality and social status to the impact of the clothing and fashion industries on the national economy.

506 History of Costume 3 hrs. Winter
History and development of Western costume. Dress is studied as an
School of Applied Arts and Sciences

expression of many interacting forces. Areas of influence include social structure, political thought, religious beliefs, cross-cultural interaction, technological developments, and outstanding persons of the period.

FAMILY RELATIONSHIPS, CHILD DEVELOPMENT, AND HOME MANAGEMENT

150 Individual and Family Relationships 4 hrs. Fall, Winter
The contributions and concerns of personal and family adjustments in planning for careers and marriage. Elective. Freshmen. Nursery laboratory 9 hrs.

152 Personality Development 2 hrs. Fall, Winter
Social usage and personality development are considered. Elective, Non-majors, Freshmen.

254 Human Growth and Development 4 hrs. Fall, Winter
This course involves study of the physical, social, emotional, and intellectual growth and development of children and adolescents. Elective. Substitute for ED 250. Nursery laboratory 9 hrs. included.

350 Housing and Home Furnishings 4 hrs. Fall, Winter
A study of principles of equipment and demonstration as applied to the areas of art, textiles, and consumer buying are applied to the home. Prerequisite: Art.

352 Home Management and Consumer Buying 4 hrs. Fall, Winter
A study of buying problems and consumer credit in relation to time, energy, and financial management for the family. Principles are applied to individual problems with respect to purchasing a specific type of consumer goods.

354 Home Management Residence 3 hrs. Fall, Winter
Students live in family size groups. There is opportunity for the application of principles from all areas of Home Economics. Prerequisite: HE 352.

520 Equipment and Demonstration Techniques 4 hrs. Fall, Winter
A study of principles of equipment and demonstration as applied to the areas of Home Economics. Prerequisites: HE 200, 210.

552 The Homemaking Center and the Equipment 2 hrs.
Consideration of fundamentals in planning laboratory and living area in terms of needs with special emphasis on built-ins, furnishings and equipment. Selected problems to be chosen by the individual.

HOME ECONOMICS EDUCATION

H EC. 220 Sex Education—An Introduction to Human Sexuality 3 hrs. Fall, Winter
This course is designed to cover various concepts of human sexuality,
sexual behavior and morality, trends in moral values and behavior patterns, anatomy and physiology of human reproduction, maternal health and current issues in sex education.

340 Home Economics Education 4 hrs. Fall, Winter

Course designed to acquaint students with the teaching field in home economics. Includes basic philosophy of home economics education, observations, unit planning, effective teaching materials as a basis for special methods and student teaching. Planning local programs of homemaking education in high school equipment and the organization of homemaking department, developing the home experience programs, and methods of teaching for junior and senior high schools and adult homemaking classes. Majors and minors in Home Economics.

H EC. 450 Teaching Sex Education in the Schools 2 hrs. Fall, Winter

In this course, consideration is given to the problems of establishing a sex education program in the school program with focus upon methods, materials, and curriculum development at various grade levels. Emphasis will be placed upon the secondary grades during the Fall semester and elementary grades during the Winter semester. Prerequisite: 220, or approval of instructor.

FOODS AND NUTRITION

114 Food Preparation and Meal Planning 5 hrs. Fall, Winter

Basic principles of food preparation. Planning, preparing, and serving of meals with emphasis on management. Majors.

116 Family Foods (Supermarket) 2 hrs. Fall

A study of foods with reference to processing, marketing and use in the home, and the basic principles of nutrition.

210 Nutrition 3 hrs. Fall

A study of the essential nutrients and their function in the human body. Prerequisite: Science 8 or 9 hours.

212 Foods and Nutrition 4 hrs. Fall, Winter

Food preparation, purchasing, and menu planning for family groups. Emphasis on nutritional needs for growing children and adults. Elective.

312 Quantity Foods 3 hrs. Winter

Quantity food preparation in a college residence hall kitchen and the school lunchroom. Prerequisite: HE 114, 210.

410 Diet and Disease 2 hrs. Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term</th>
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</thead>
<tbody>
<tr>
<td>510</td>
<td>Advanced Nutrition</td>
<td>3 hrs.</td>
<td>Fall</td>
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<tr>
<td></td>
<td>Study of recent developments in nutrition through readings and experiences. Prerequisite: HE 210.</td>
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<tr>
<td>512</td>
<td>Institutional Management</td>
<td>3 hrs.</td>
<td>Winter</td>
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<tr>
<td></td>
<td>Study of institutional administration, job analysis, labor policies, personnel problems and cost control in different types of food-service institutions. Prerequisite: HE 210.</td>
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<tr>
<td>514</td>
<td>Food Technology</td>
<td>2 hrs.</td>
<td>Winter</td>
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<tr>
<td></td>
<td>Food preparation with special emphasis on individual problems related to school food teaching units. Study of commercial food preparation.</td>
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<td></td>
</tr>
<tr>
<td>518</td>
<td>Advanced and Experimental Foods</td>
<td>4 hrs.</td>
<td>Fall</td>
</tr>
</tbody>
</table>
INDUSTRIAL EDUCATION COURSES

The Industrial Education Department offers shop and professional courses for five purposes: (a) to educate teachers and supervisors of Industrial Arts who will teach general Industrial Arts in all levels of the public schools; (b) to educate teachers who will be qualified to teach vocational-technical subjects in the secondary schools, or community college; (c) to educate students who wish a broad background in industrial subjects; (d) to educate students in Printing Management; and (e) to educate teachers who will be qualified to teach in Industrial Arts therapy programs.

Industrial Arts Teaching — A student must take one major sequence and one minor sequence as shown on page 104. If a student wishes to prepare as a general industrial arts teacher, and also be qualified as a unit area teacher, he must take a major in general industrial arts and a minor in a technical sequence. Students who plan to qualify for unit shop teaching must take one major sequence and one minor sequence in a different technical area or general industrial arts. A student may not elect a major and a minor sequence in the same technical area. For example, the student may major in metalworking and minor in drawing so that he would be qualified to teach only in these two areas. For students not majoring in Industrial Education a minor can be taken in any of the minor sequence areas plus the professional courses, Course Construction, and Teaching of Industrial Education.

Vocation-Technical Education — A forty-five hour combined major and minor sequence leading to

Option I —Vocational Education—Teaching Certificate
Option II —Cooperative Training—Teaching Certificate
Option III—Technical Education—Without Teaching Certificate

Industrial Education General Curriculum — Students wishing to secure a broad general industrial background can major in Industrial
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Education. The exact combination of courses will be determined by the needs of the student.

Printing Management — Students must pursue a major sequence of courses in Printing and Graphic Arts and a minor sequence in Business.

Industrial Arts Therapy — Students must pursue a major sequence of courses in Industrial Education, selected courses in Special Education, and spend one semester in participation at an approved veteran's hospital.

**DRAWING (Industrial Graphics)**

120 Survey of Drafting 3 hrs.
A survey course in general drawing predicated on man's ability to symbolize graphically in life and industry. Emphasis is placed on the underlying concepts involved in freehand perspective, flat drawing, elementary shading, technical sketching, multiview drawing, sectional views, size description, pictorial drawing and basic graphic analysis.

226 Industrial Graphics 3 hrs.
An extension of 120 emphasizing standardized and industrial graphic practices. Course content encompasses view analysis by direct and orthogonal methods, sections, primary, and secondary auxiliaries, precision measurements, fasteners, pictorials, surface development and basic principles of descriptive geometry. New developments and studies in graphics and drafting are presented as they relate to industry. Drawings and intermediates will be reproduced on white print equipment. Prerequisite: 120 or consent of instructor.

227 Technical Sketching 3 hrs.
A study of freehand and mechanical methods of illustrating. Primary consideration is given to angular, parallel and oblique perspective as a basis for freehand illustration. Emphasis is then placed on various types of paraline drawings, techniques of shades and shadows, shading films, and pencil and ink renderings for reproduction. Selected problems in surface treatment and textures, still life and chalkboard practice. Prerequisite: 120.

326 Advanced Industrial Graphics 3 hrs.
Advanced technical work for the specialist desiring to teach drafting. Included are applications of descriptive geometry, gears, cams, linkages, research problems, and checking. Current developments in the field of graphics and their impact will be discussed. Prerequisite: 226.

520 Architectural Graphics 4 hrs.
A graphical study of architectural details and methods of construction relative to frame and masonry veneer residential dwellings. Emphasis is placed on residential planning and design principles, calculating safe
loads, FHA minimum property standards, and local codes. Each student is required to design a single family dwelling, including preliminary studies, floor plans, elevations, all necessary details, plot plan, and specifications. Methods of estimating, heat loss and gain calculation, and financing are included. Drawings will be reproduced on white print equipment. Prerequisite: 226.

522 Laboratory Practices in Drafting 2 hrs.
A course in the methods and problems of teaching drafting and graphics on the secondary and post secondary level. In addition, emphasis is placed on a review of secondary and collegiate texts, resource materials, problem design and checking of drawings. Prerequisite: 18 hrs. in Drafting.

524 Commercial Architectural Design 2 hrs.
A course designed to give basic experience in designing light commercial structures. Emphasis will be placed on planning, traffic flow, exterior design, materials, and structural details. Prerequisite: 520 or equivalent.

525 Architectural Perspective and Rendering 2 hrs.
An intensive study of angular and parallel perspective. Emphasis will be placed on entourage and rendering techniques in preparing architectural presentation drawing. Prerequisite: 520 or equivalent.

ELECTRICITY-ELECTRONICS

160 Basic Electricity 3 hrs.
This course provides both theoretical and practical applications of basic electrical principles. The cause, effects, and control of electrical currents in circuits will be discussed and demonstrated. Practical experiences will include wiring, experimentation, repair, and maintenance of electrical equipment.

360 Electronic Servicing Techniques 3 hrs.
A course designed to round out technical competencies of students planning to teach electricity-electronics. Laboratory problems will point toward fundamental applications of electronic test instruments in diagnosing malfunctions and servicing radio, TV, and other electronic services. Also included are fundamentals of ham radio. Prerequisite: 6 hrs. of electricity-electronics.

460 Laboratory Practices in Electricity-Electronics 3 hrs.
Designed for laboratory teachers of electricity-electronics. Emphasis will be placed on textbook selections, course materials, methods, and instructional devices. Laboratory practice will be provided in applying techniques and developments to teaching.
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560 Electricity-Electronics for Teachers 2 hrs.

Designed for junior and senior high school shop and laboratory teachers of electricity and electronics. Emphasis will be placed on new methods and materials. Laboratory practice will be provided in applying new techniques and development of teaching projects in electricity and electronics. Industrial Arts and science teachers should find this workshop quite valuable in the light of our increasing technological development.

GENERAL INDUSTRIAL ARTS

170 Industrial Crafts Techniques 3 hrs.

An introductory course for industrial arts teachers in the crafts area, including ceramics, jewelry, art metal, leather, and plastic. Industrial applications and procedures will be stressed.

276 Industrial Arts Design 2 hrs.

A laboratory course dealing with functional, material, and visual requirements for products. Emphasis is upon design practices as they relate to projects and products in a variety of material areas.

370 Organizing and Administering the General Shop 3 hrs.

A course concerned with promoting, developing, and improving instruction both general unit shops and comprehensive general industrial arts laboratories. Emphasis is on curricular organization, personnel administration and management, trends in equipment, supplies, safety and teaching methodology applied to multiple activity instruction. Prerequisite: Junior and 15 hrs. in I. E. Tech. Labs.

570 Arts and Crafts Techniques 2 hrs.

Advanced laboratory experiences in the fields of internal plastic carving, leather work, model work, archery, photography, and related crafts in conjunction with a study of current technical literature in these areas. Written reports will be required. Course content will be adapted to individual needs.

573 Mechanics and Conditioning of Equipment 2 hrs.

A study of the principles of machining wood, metal, and synthetic materials. Practice in installation, adjustment, preventive maintenance and conditioning of power equipment will be included. Particular emphasis will be given the relationship between proper installation and condition to efficient machine operation.

575 General Industrial Arts Laboratory Organization 2 hrs.

Practical experiences in drawing and planning, woodworking, metalworking, electricity, and craftwork will be required. Course will include selection, development and preparation of materials and instructional

Note:
Additional courses in Electricity-Electronics can be obtained from the Engineering and Technology Department or by transfer from community colleges.
media for instruction at the junior and senior high school levels. Pre-
requisite: 15 hours in Industrial Education Technology.

578  Plastics Technology  2 hrs.
A comprehensive study of plastic materials and processes encompassing
applications of thermoplastic, thermosetting, and other selected synthetic
materials. Product development with emphasis on vacuum forming,
compression, extrusion, injection, and blow molding, lamination, casting,
reinforcing, foaming, coating, and general fabrication.

GRAPHIC ARTS AND PRINTING MANAGEMENT

150  Graphic Arts  3 hrs.
An introductory course in which the student will have an opportunity
to become familiar with the large area of graphic arts. Work is under-
taken in hand composition, presswork, bindery, screen, and offset printing,
etc. A thorough study of all graphic arts processes used in industry
is undertaken. Advantages and best uses as well as disadvantages and
limitations are considered for each process.

152  Letterpress Presswork  3 hrs.
This course includes hand-fed and automatic platen presswork. Em-
phasis is placed on forms requiring special preparation such as num-
bering, perforating, and envelope cut-outs. The various types of make-
ready techniques and impositions receive special consideration. Related
information on letterpress inks and paper is included. Prerequisite: 150.

250  Typographic Design  5 hrs.
A lecture-laboratory course in which the principles of design and
typography are studied and applied to the completion of a printed job.
Practical experience in the elements of design, tools, and methods used
by the artist are included. Prerequisite: 150.

253  Science for the Graphic Arts  4 hrs.
A study of the principles of science involved in such things as print-
ability tests, inks, photographic chemicals, paper, etc.

254  Machine Composition  4 hrs.
This course considers the problems of machine composition. It involves
a study of the various hot metal machines such as Linotype and Ludlow
and also considers the cold type and photographic machines such as
Varitype, Fotosetter, and Linofilm. Advantages, uses, limitations, etc.
of each machine are considered. Prerequisite: 150.

350  Photolithographic Techniques  3 hrs.
This course is designed to provide the student with basic offset photo-
graphic skills. Darkroom procedures, stripping techniques, and plate-
making will be stressed. Information will also be presented concerning
line and halftone work, lithographic films, copy preparation, cold type
uses, and lithographic plates. Prerequisite: 150.
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351 Lithographic Presswork 3 hrs.
Experience will be given on basic offset equipment regarding lithographic principles, press operations, mechanical adjustments, simple chemical reactions, as well as the advantages and disadvantages of lithography. Other areas to be studied are multi-color processes, inks, and papers. Prerequisites: 150 and 350.

356 Printing Machine Maintenance 4 hrs.
This course is designed to acquaint the student with the problems of care and maintenance of printing machinery including the Linotype. Simple adjustments are made on the various machines.

450 Advanced Presswork 3 hrs.
Practical presswork and makeready of various kinds of type forms for both cylinder and jobbers is undertaken. The imposition and lockup of type form for various kinds of presses is also studied. Prerequisites: 152 and 351.

451 Printing Processes 2 hrs.
A course designed to provide Paper Technology students with a working knowledge of the various printing processes and their relation to the manufacture of paper. Open only to students enrolled in Paper Technology.

455 Bindery Operations 2 hrs.
Bindery and finishing operations are studied. Work in bookbinding, folding machines, stitching, plastic binding, punching, perforating, etc., is taken up.

552 Estimating 3 hrs.
A study of the methods used in estimating the price of printed matter before manufacture and in the final pricing of that matter after production.

553 Printing Production Control 2 hrs.
A study of various systems used in the printing industry for planning and controlling the flow of work through the plant in order to maintain equalized work loads and meet delivery schedules.

METAL WORK

130 General Metals 3 hrs.
A comprehensive course in the technology of modern metalworking principles and practices; encompassing the areas of hot and cold cutting, joining, forming, fabricating, and finishing techniques utilizing both hand and machine processes.

234 Machine Shop 3 hrs.
A basic course in modern metal machining techniques involving theory and practice in the application of Machine Tool Metalworking principles. Prerequisite: 130.
235 Machine Tool Metalworking 3 hrs.

Advanced theory and practice in the application of machine tool metalworking processes and procedures. Special problems involving advanced set-ups and tooling. Included will be material testing, gaging and inspection, tooling for production using special jigs and fixtures, the use of tables and handbooks for the solution of selected problem situations. Prerequisite: 234.

332 Tooling and Production Metalworking 3 hrs.

An advanced course in the design and construction of metalworking tooling and equipment necessary for repetitive operations in the production of multiple units. Introduction to numerical control machining and programming. A study of the “state of the art” in the metalworking industry and its economic, social, and educational implications. Prerequisite: 235.

334 Metal Forming and Finishing 3 hrs.

Basic principles and practices in the technology of forming and fabricating metal products. Included are standard sheet metal practices, press brake and punch press operation and set-ups; drawing, blanking, punching, and spinning; metal finishing using organic coatings with electrostatic spray and standard spray equipment; inorganic coatings using chemical and electro-chemical processes. Prerequisite: 130.

335 Patternmaking and Foundry 3 hrs.

Basic principles, techniques and materials used in pattern construction. Theory and practice in metal casting principles and procedures using green sand, CO₂, investment, centrifugal, and shell processes.

336 Hot Metalworking 3 hrs.

A basic course in the technology of modern processes and procedures for the joining of metals by fusion welding and brazing, employing recent developments in low temperature surface alloying materials. Included are principles and practices in the use of materials, tools, and equipment for electric arc, T.I.G. and M.I.G. welding of common and specialty metals; gas welding and brazing, off hand and automatic flame cutting of ferrous metals. Heat treating, and foundry processes and procedures. Prerequisite: 130.

338 Advanced Metalworking 3 hrs.

An advanced comprehensive course in the technology of modern metalworking techniques, utilizing both hand and machine processes in the area of cutting, joining, forming, fabricating, and finishing.

538 Problems in Metalworking 2 hrs.

Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Course will emphasize
methods of selecting and developing course materials for junior and senior high school students. Course content will be adapted to meet the needs of individual students. Prerequisite: 234.

POWER MECHANICS-AUTOMOTIVE

180 Power Mechanics 3 hrs.
An introductory course designed to develop a knowledge of energy sources, power producing machines, and power transmission methods. Emphasis is on small internal combustion engines: principles of operation, carburetion, lubrication, ignition, governor controls, and transmission systems. Electric power transmission and rotating equipment are also studied.

280 Applied Energy and Power 3 hrs.
A study of the historic development and economic implications of applied energy and power. Emphasis is on power units typical to land, marine, and air transportation and power transmission and applications in production and service industries. Laboratory experiments with fluid power, horsepower rating, data recording, and data analysis. Prerequisite: I. E. 180.

582 Applied Fluid Power 2 hrs.
Advanced study of typical hydro-electric and pneumo-electric transmission and control systems. Emphasis is on industrial applications of fluid power systems. Laboratory experience includes the design and application of a fluid power or control system to a manually powered or controlled machine.

584 Automotive Technology for Teachers, I 3 hrs.
A course designed to extend the depth of knowledge in technical areas for automotive teachers, to acquaint them with recent developments in the field, and to explore instructional problems unique to the automotive area. Summer Session Institute 1969.

585 Automotive Technology for Teachers, II 3 hrs.
(Continuation of 584)

588 Power Laboratory Techniques 2 hrs.
An advanced course for laboratory teachers dealing with recent developments in energy and power applications. Planning and organizing laboratory facilities, tools, equipment, safety requirements, instructional materials, textbook selection and instructional devices for providing power mechanics and/or automotive instruction are included. Prerequisite: 180 or consent of instructor.

Note:
Courses in Auto Mechanics can be obtained from the Transportation Department or by transfer from community colleges.
WOODWORKING

100 General Woodworking

Laboratory experiences and the development of skills and knowledge in planning and layout; lumber and lumbering; purchasing and measuring lumber and plywood; methods of fastening and adhering wood; preparation of wood for a finish; elementary finishing methods; and sizing stock and wood joinery with hand tools; electric portable tools; and machines.

200 Machine Woodwork

Laboratory experiences and the development of skills and knowledge in designing and construction; an introduction to cabinet making; advanced wood joinery on industrial woodworking machines; wood moisture relationships; air seasoning; and kiln drying of wood; and an introduction to furniture finishing methods. Prerequisite: General Woodworking 100.

201 Wood Finishing

Principles of wood finishing; finishing materials and their characteristics; equipment and methods of application; finishing schedules; and finishing characteristics of different species of wood. Prerequisite: General Woodworking 100 and Machine Woodwork 200.

300 Upholstering

Mass production of chair frames and custom upholstering, which will include springing, padding, and the application of the final cover. Prerequisites: General Woodworking 100 and Machine Woodwork 200.

306 Residential Building Construction

A course designed to cover rough framing of a house or building which will include on the site building as well as prefabrication methods of wall panels and truss roof systems. It will also include layout, excavation, and the installation and use of concrete, masonry, insulation, lath and plaster, doors, window, sheetmetal roofing, and siding. Prerequisite: General Woodworking 100.

500 Furniture Production

Design and production of furniture, including the development of all phases of tooling and jig and fixture design necessary for the mass production of a piece of furniture. Prerequisites: General Woodworking 100 and Machine Woodwork 200.

501 Cabinetmaking

This course is designed to include finishing carpentry such as kitchen and built-in cabinets, millwork (including trim and finish flooring), floor covering, relationship of electrical work, plumbing and heating to the building trades. Prerequisites: General Woodworking 100 and Machine Woodwork 200.
502 Wood Technology
Experience in and study of the technical aspects of cellulose materials and their use in construction and manufacture. Included will be a study of the characteristics of lumber and man-made wood products, applied research done by the Forest Products Laboratory, and testing of materials. Prerequisites: General Woodworking 100 and Machine Woodwork 200.

PROFESSIONAL COURSES IN INDUSTRIAL EDUCATION

140 American Industry
A study of the elements of industry as they apply to common industrial materials. Man and technology, from crafts to automation, including major industries and occupations, will be reviewed. Laboratory experiences, as a company developing a prototype and mass producing a product, will be used. The class will examine industrial-vocational programs in the schools and their relationship to a modern technological society.

340 Technical Education Methods
A course dealing with an analysis and methods of organizing instruction in technical education. Methods of determining objectives, making analysis of instructional units, and developing them into a teaching plan will be emphasized. Consideration will be given to organizing educational programs within industry.

342 Course Planning and Construction
Principles and techniques of selecting and analyzing suitable teaching activities and arranging such material into a functional instructional order. Instructional unity prepared will be based on an analysis of a trade, occupation, or activity. Opportunity will be provided to prepare a detailed course of study.

344 Teaching of Industrial Education
This course deals with problems in teaching industrial subjects, the techniques employed in the analysis of instructional units, construction of tests and rating scales, and problems dealing with administration and work. The principal methods of instruction used in industrial subjects will be emphasized. Prerequisite: 342.

345 Plan and Organization of a School Shop
This is a course to help teachers plan and organize the school shop. Topics concerned include physical needs, selection of activities, shop layout, purchasing equipment, establishing a supply routine planning personnel organization, and shop management. Prerequisites: Junior and 344.

444 Independent Study in Industrial Education
Open to advanced students in the Industrial Education area with good scholastic records. An independent study program arranged in
consultation with a study supervisor. Approval of study program required prior to registration. Prerequisite: 9 hrs. of major area and instructor's permission.

545 Safety Education for Industrial Teachers 2 hrs.
A basic course covering the fundamentals of accident prevention in Industrial Education laboratories, treating legal responsibility of teachers, safety requirements in relation to equipment, safe guarding, and safe operation.

548 History and Philosophy of Industrial Education 2 hrs.
Industrial Education in America, with special attention to European influences, experiments, industrial developments and theories. Emphasizes developments leading to modern practices in industrial arts and vocational industrial education.

590 Industrial Arts for the Elementary School 2 hrs.
Deals with the problems of organizing and teaching Industrial Arts for the elementary grade. Course materials, techniques, and materials in the industrial and craft areas will be stressed.

598 Special Problems in Industrial Education 1-3 hrs.
Designed for qualified individual graduate students wishing to pursue special problems of individual need or interest under the direction of member of the graduate faculty. May be elected once in the industrial education department, and once in an associated department, with the approval of the Industrial Education Department Head and the faculty member under whom the student desires to work. Applications must be submitted and approved prior to the election of the course.

SERVICE COURSES

190 Industrial Arts for Elementary Teachers 3 hrs.
This course is planned for prospective elementary school teachers and will include a study of Industrial Arts for grades one through six, basic constructional techniques in the areas of sketching, woods, metals, leather, graphic arts, electricity, textiles, ceramics, and plastics will be included. An understanding of how industrial arts activities may be correlated with the elementary program will be emphasized. Special Education students may take this course for four semester hours of credit.

191 O.T. General Shop 3 hrs.
A course designed exclusively for individuals preparing for occupational therapy. This course will cover the fundamentals of sketching, drawing, plastics, art metals, and elementary electricity.

192 Related Arts and Crafts 3 hrs. (Extension only)
A general course in arts and crafts including work in leather, plastic, wood, and other related craft activities.
School of Applied Arts and Sciences

193  Related Arts and Crafts  3 hrs.  (Extension only)
A course in arts and crafts including work in graphic arts, art metal, basketry, and other crafts not previously included.

196  O.T. Printing  3 hrs.
This course is intended to acquaint the student with the various tools and equipment of a graphic arts shop. Studies are undertaken in such areas as typography, presswork, silk screen, block cutting, bookbinding and etching. Limited to students enrolled in the Occupational Therapy curriculum.

198  O.T. Woodworking  3 hrs.
A basic course in shop fundamentals, including the use of hand tools and machines, construction design, fastening devices, and finishing. Limited to students enrolled in the Occupational Therapy curriculum.

590  Industrial Arts for the Elementary School  2 hrs.
This course is concerned with the problems of organizing, correlating and teaching constructional activities in the elementary grades. Course materials, techniques, and materials in the industrial and craft areas will be stressed, through the construction of a teaching unit.

592  Aerospace for Classroom Teachers  2 hrs.
A course dealing with the educational, social, economic, and political implications of aerospace in the modern world. A study will be made of basic aerospace materials and activities that are appropriate for different grade levels. Consideration will be given to aerospace literature and visual aids suitable for youngsters. Opportunities will be provided for participation in a variety of aerospace experiences. This course is open to elementary and secondary education students.

593  Arts and Crafts for Teachers  2 hrs.
This course will cover advanced craft techniques in the areas of art metal, jewelry, leather, plastics, wood crafts, and other related experiences. Teaching procedures, methods, and materials will be emphasized.

594  Home Mechanics for the Blind  2 hrs.
A course to fulfill the needs for general knowledge and basic skills in home mechanics in the areas of woodworking, electricity, plumbing, and general maintenance.
Military Science

Colonel James G. Hays, Head

Major Terry J. Firestone
Major Theodore C. Frederick
Major James M. McFarland
Major Joseph P. Painting
Captain Craig L. Jensen

SGM Gerald R. Seifer
MSG Claude L. Yocum
SFC Wayne E. Burke
SSG Gerald A. Maltby
SSG Paul A. Taylor

Each male student shall enroll in the military science program unless he enrolls in general physical education. A male student must complete four semesters of military science or four semesters of general physical education.

This Department is a General Military Science Reserve Officers Training Corps Unit, which provides training in the Senior Division R.O.T.C. United States Army. Graduates may be commissioned Second Lieutenants in a branch of the Regular Army or United States Army Reserve. Enrollment in the R.O.T.C. program at Western Michigan University is on a voluntary basis and may be substituted for the Physical Education requirement. However, students who enroll in the Basic Course will be expected to complete the two-year Basic Course. Transfer students of less than Junior standing who started Army or Air Force R.O.T.C. training in another institution will be expected to enroll in the appropriate class of the Basic Course and complete the Basic Course.

The Head of the Department is an officer of the United States Army. He is assisted in his duties by other officers and enlisted men of the Army on active duty. The personnel assigned provide the instruction to the student cadets and the administration of the R.O.T.C. program at the university.

The Military Science Department offers both a basic and an advanced course. Upon completion of both the Basic and Advanced Courses, the prescribed summer camp training, and requirements for a college degree, students will apply for commissions as Second Lieutenants in the United States Army Reserve. Flight training is available in the Advanced R.O.T.C. Program on a competitive basis. (See page 155.) Upon completion of the prescribed courses, Distinguished Military Students are eligible to apply for appointment as Second Lieutenants in the Regular Army.

Uniforms are provided by the Government to all students who take R.O.T.C. work. Additional emoluments for advanced course students are described under the heading of Advanced Course.
School of Applied Arts and Sciences

An R.O.T.C. Activity fee of $2.00 per year is charged for support of R.O.T.C. activities such as rifle team, band, drill meets, military social events, and for providing suitable achievement awards.

BASIC COURSE

The first two years of Military Science comprise the Basic Course. It is designed to furnish a background of basic military subjects necessary to pursue the Advanced Course and to provide a general knowledge of military affairs to those students that do not enter the advanced program. The requirements for enrollment in the Basic Course are that: the student must be a citizen of the United States, over 14 and under 23 years of age, physically qualified and of good moral character. Students who have had three years of Junior R.O.T.C. (High School R.O.T.C.) or six months or more of active military service may substitute this training or service for the first year of the basic college R.O.T.C. course upon the approval of the Professor of Military Science. Students who are thus excused from taking the first year of the basic R.O.T.C. course will normally be allowed to enter the second year of the basic R.O.T.C. program at the beginning of their sophomore year. The records of students transferring from other institutions with less than two years basic R.O.T.C. credit will be reviewed by the Professor of Military Science to place such students in the appropriate R.O.T.C. class. Basic Course classes meet for two hours of classroom work and one hour of drill weekly. Although enrollment in R.O.T.C. is voluntary and may be substituted for the Physical Education Requirement, students who enroll in the Basic R.O.T.C. Course are expected to complete the course.

MS 100 Military Science 2 hrs.

MS 101 Military Science 2 hrs.
Includes American Military History, School of the Soldier, and Exercise of Command.

MS 200 Military Science 2 hrs.
Includes instruction in Map and Aerial Photograph reading, Combat Examples of the Application of the Principles of War, School of the Soldier, and Exercise of Command.

MS 201 Military Science 2 hrs.
Includes Basic Unit Tactics, Counterinsurgency, School of the Soldier, and Exercise of Command.

BASIC SUMMER CAMP

Attendance at a six week Basic Summer Camp may be substituted for the Basic R.O.T.C. course in order to qualify a transfer student or
other student for the Advanced R.O.T.C. course. Students will receive travel pay and will be fed, clothed, and quartered at the expense of the Government and will be paid at the rate of approximately $102.30 per month while in camp. See the Professor of Military Science for details of this program.

ADVANCED COURSE

The selection of students for enrollment in the Advanced Course is on a competitive basis. Special attention is given to maintenance of high standards of conduct and academic achievement both before and after enrollment in the Advanced Course. The major emphasis of the Advanced Course is on the development of individual leadership and a sense of responsibility. For admittance to the Advanced Course, a student must have completed either the Basic Course or Basic Summer Camp, be selected by the Professor of Military Science and the President of the university, be 25 years of age or under at time of enrollment, be enrolled in the R.O.T.C. Reserve Control Group, execute a contract with the Government to finish the course, attend a six-week summer camp, and accept a reserve commission if tendered. Students who have had one or more years active service with one of the Armed Forces and students who are transferring from another institution with credit for the Basic Course may be authorized to register for the Advanced Course in phase with their collegiate academic standing. Advanced Course classes meet for two or three hours of classroom work and one hour of drill weekly. (See below.) Students accepted for the Advanced Course receive payment of $50 per month. Students attending summer camp are fed and quartered at the expense of the Government, paid at the rate of approximately $170.00 monthly while in camp, and are given a travel allowance of six cents per mile from the university to the summer camp and return.

A program of flight instruction in connection with R.O.T.C. is of special interest to the advanced course student. Under this plan the Army will pay for flight training of selected seniors who enroll in Pilot Training course No. 310. (See page 164.) Completion of this training qualifies the student for the award of an FAA pilot's license. It further qualifies the advanced course student upon receiving his commission for advanced Army flight training.

MS 300 Military Science

Instruction in Leadership; Organization, Function, and Mission of the Arms and Services; Military Teaching Methods; School of the Soldier and Exercise of Command.

MS 301 Military Science

Instruction in Small Unit Tactics and Communication, Counterinsurgency, School of the Soldier, and Exercise of Command.
School of Applied Arts and Sciences

MS Summer Camp

Between MS 301 and MS 400 a summer training camp must be attended for a period of six weeks. Transportation to and from camp will be provided and students will be fed, clothed, housed and paid while at camp. Instruction at camp consists of participation in various military activities to include field training.

MS 400 Military Science 2 hrs.
Instruction in Operations, Command and Staff, Estimate of the Situation, and Combat Orders, Military Intelligence, Training Management, Logistics and Troop Movements, School of the Soldier and Exercise of Command.

MS 401 Military Science 3 hrs.
Instruction in Military Administration and Personnel Management, Military Justice, Service Orientation to include the Role of the United States in World Affairs, Leadership, Officer Indoctrination, Counter-insurgency and School of the Soldier and Exercise of Command.

R.O.T.C. SCHOLARSHIPS

A limited number of scholarships are available to qualified students who are enrolled in the R.O.T.C. program. These scholarships will pay for tuition, fees, books and related expenses and provide $50 per month retainer pay. See the Professor of Military Science for details.

Occupational Therapy

Rosalia Kiss, Head
Joy Anderson
Lois Hamlin
Alice Lewis
Geraldine Richardson
Doris Slack
Jane Thomas
Dean Tyndall
Mabel ValDez

The Department offers courses leading to the B.S. degree. The curriculum is approved by the American Medical Association, and graduates are qualified to take the American Occupational Therapy Association examination for registration. In order to earn a B.S. degree in occupational therapy, a student must complete a major in occupational therapy and a minor in skills used in occupational therapy.

100 (300) Weaving 3 hrs. Fall, Winter
Designed to give a working knowledge of hand and floor looms, functional adaptations for special treatments, all preparations for weaving, and types of weaving. Departmental consent.
103 (203) Ceramics  
3 hrs. Fall, Winter
Designed to give a working knowledge of ceramics from pinch pots, slab techniques, tall pots, mold making methods, decoration and glazes through stacking and firing of kilns. Departmental consent.

110 General Crafts  
3 hrs. Fall, Winter
A course planned to develop skill in various media and the care and use of special tools and equipment. Opportunity will be given for teaching experience through class demonstration of miscellaneous craft projects. Departmental consent.

130 Occupational Therapy Orientation  
1 hr. Fall, Winter
A lecture course designed to acquaint the beginning student with the profession.

210 Therapeutic Media  
2 hrs. Fall, Winter
Designed to develop skill in selection and use of various media for therapeutic application, and in relation to developmental level. Prerequisite: Occupational Therapy Major.

221 (321) Gross Human Anatomy  
5 hrs. Fall, Winter, Spring
A study of the structure and function of the various systems of the body. Lecture and laboratory. Prerequisites: Biology 210, Occupational Therapy Major.

225 (325) Growth, Development, and Aging  
3 hrs. Fall, Winter
A study of physical, mental, emotional, and social patterns of growth, development, and aging. Aspects to be given special emphasis for the occupational therapy student will be perceptual and motor development, physiology of aging, growth deterrents, and functional pathology in any of the above aspects. Prerequisites: Biology 210, Psychology 150, 160.

226 Field Experience  
2 hrs. Fall, Winter, Spring, Summer
Participation in a health service or agency to provide experience with hospital procedure and an orientation to patient groups. A daily log is required. Student must submit a proposal for the course for departmental approval prior to registration. Departmental majors only.

322 Psychiatric Conditions  
3 hrs. Fall
Lecture and discussion on evaluation and treatment of psycho-social disabilities. Prerequisites: Biology 219, Psychology 250.

323 Clinical Neurology  
3 hrs. Fall, Winter
Functional neuroanatomy, neuropathology will be presented. Case presentations and demonstrations of neurological examination will be included. Prerequisites: Biology 210, 219, OT 221.

340 Clinical Affiliation  
3 hrs. Fall, Winter, Spring, Summer
A three month affiliation in hospitals or agencies providing the student experience in the areas of psychiatry or General Medicine and
School of Applied Arts and Sciences

Surgery. Departmental consent only. Prerequisites: Occupational Therapy 322, 342.

342 Application in Psychiatry 5 hrs. Fall, Winter
A study of the philosophy and application of occupational therapy in the psychiatric field. Specific emphasis is upon the conscious use of one's own personality as a therapeutic tool and on acquainting the student with group processes used in occupational therapy situations. Includes observation of occupational therapy during required preclinical experience. Prerequisites: Psychology 250; Occupational Therapy 322 or concurrently.

410 (310) Therapeutic Techniques 4 hrs. Fall, Winter
A lecture and laboratory course with direct participation in evaluation procedures, prosthetic training, orthotic devises and special equipment, principles of use and construction of splints. Prerequisites: OT 221, 520.

430 Organization for Patient Service 4 hrs. Fall, Winter
A study of the philosophy, development, and current practices of medical and vocational rehabilitation. Special emphasis will be placed upon effective organization and administration of occupational therapy services. Prerequisites: OT 342, and 432.

432 (332) Application in Physical Disabilities 5 hrs. Fall, Winter
A study of treatment methods used by occupational therapists in general medical, neurological, and orthopedic conditions. Included are preclinical experiences and clinical observations in local hospitals. Prerequisites: OT 323, 520, 524.

436 Independent Study in Occupational Therapy 2-4 hrs. Falls, Winter, Spring
Designed to allow outstanding students to work independently under faculty supervision. Consent of departmental head. Credit variable.

440 Clinical Affiliation 3 hrs. Fall, Winter, Spring, Summer
Departmental consent only. Prerequisite: Completion of all academic work.

441 Clinical Affiliation 3 hrs. Fall, Winter, Spring, Summer
Departmental consent only. Prerequisite: Completion of all academic work.

510 Arts and Crafts for Home Teachers of the Blind 2 hrs. Winter
Includes methods and techniques of teaching needlework, ceramics, and leatherwork to visually handicapped adults. Prerequisite: Occupational Therapy majors must have consent of Department Head.

520 Kinesiology 3 hrs. Fall, Winter
Investigation and analysis of human motion. Includes a study of body mechanics, principles of muscle contraction, surface anatomy, range
of motion, muscle testing, and activity analysis. This study is accompanied by a review of basic functions of the musculo-skeletal and nervous system. Prerequisites: Occupational Therapy 221, Biology 219.

524 Medical and Orthopedic Conditions 4 hrs. Winter
A series of lectures concerned with medical and orthopedic conditions which are treated by the occupational therapist. Prerequisite: Occupational Therapy 221.

Paper Technology

Raymond L. Janes, Head
Andre L. Caron
Robert A. Diehm
James E. Kline
Stephen I. Kukolich

100 Introduction to Pulp and Paper Manufacture 3 hrs.
Includes consideration of the basic processes, equipment, techniques, and variables involved in the preparation of pulps and in the utilization of these pulps to produce papers. Prerequisites: High school chemistry, General Chemistry 102 concurrent.

142 Coating, Printing, and Converting 3 hrs.
A lecture-laboratory course dealing with the fundamentals of pigmented and functional coating of paper, printing-ink-paper interrelationships, folded and corrugated carton manufacture and packaging. Laboratory study involves preparation, application, and evaluation of various coatings; and printing and its evaluation. Prerequisite: Paper Tech. 100.

310 Summer Mill Practice 2 hrs. Spring and/or Summer
Full time employment in a pulp and/or paper mill or related industry in order to provide first-hand industrial experience. Typed report required. Open only to departmental majors. Prerequisite: One summer of summer employment.

320 Physical Characteristics of Pulp, Paper and Fibers 4 hrs.
Lecture and laboratory study of techniques, theories and instruments used for the characterization and evaluation of the physical and optical properties of papers and pulps. Also the microscopy of fibers is studied in the laboratory for the determination of fiber species and pulp type. Prerequisite: Paper Tech. 100.

330 Principles of Chemical Engineering 3 hrs.
A foundational course in chemical engineering concepts and calculations, stressing problem solving based on material and energy balances.
Some problems are taken from paper industry operations. Prerequisites: Chem. 102, Physics 112 concurrent, Math. 222.

331 Principles of Chemical Engineering 3 hrs.
A continuation of 330 emphasizing calculations and concepts of the unit operations of fluid dynamics and heat transfer. Also considered quantitatively are evaporation, humidification and drying. Prerequisite: Paper Tech. 330.

333 Chemistry of Wood and Pulp 4 hrs.
A combined lecture-laboratory consideration of the chemistry of wood, pulp, and pulping by-products. Included topics are cellulose, lignin, accessory carbohydrates, extractives, and spent liquor utilization. Prerequisites: Chemistry 360; 361 (concurrent).

340 Pulp Manufacture 4 hrs.
An advanced treatment of the topics introduced in Course 100. Processes, techniques, and equipment involved in pulping, chemical recovery, by-products, and bleaching of pulp are considered in depth from an engineering and chemical standpoint. Practical experience is gained through comparative laboratory pulping and bleaching studies using the various chemical, semi-chemical, and mechanical procedures. Prerequisites: Organic Chemistry 360, 361; Paper Tech. 100, 300; 333 concurrent.

341 Paper Manufacture 4 hrs.
An advanced treatment of the topics introduced in Course 100. Lecture and laboratory time is devoted to theory, engineering practice, and control of equipment in the mechanical preparation of fibers and the formation, pressing, and drying of paper. Papermaking operation will be studied on the pilot scale papermachine. Prerequisites: Paper Tech. 100 and 330.

440 Current Topics in Paper and Pulp 1 hr.
This course will be handled on a seminar basis utilizing guest speakers, University staff, and students. Its purpose is to add depth and breadth to the background of students. Required for third year students without credit. Fourth year students are required to elect this course twice for a total of two semester hours.

451 Effluent Control and Microbiology 2 hrs.
The causes and control of paper and pulp mill effluents in air and stream are discussed. The relationship between microbiology, stream pollution, papermill operations, and finished product are explored.

470 Senior Thesis 2 hrs.
This course is designed to increase the student’s ability to develop a research or technical problem; to critically analyze the available information on this problem; to use this analysis to plan an experimental investigation; to carry out the experiments, and, finally, to present the
completed program effectively both in writing and orally. About one-half of the semester is spent on developing the problem and completing the literature search. The second half is devoted to planning and initiating the experimental work. Prerequisite: Consent of Department Head.

471 Senior Thesis 2 hrs.
A continuation of 470, including completion of the laboratory work and preparation of the final typed paper in duplicate. Oral presentation will be arranged.

530 Polymer Chemistry 2 hrs.
A study of the molecular structure and polymerization reactions of high molecular weight compounds in relation to mechanical and rheological behavior and chemical properties. Methods for characterization of bulk and solution properties of polymers are considered in detail. Prerequisite: Chemistry 361.

550 Paper Industry Processes 3 hrs.
Offered primarily for students in graphic arts and printing management programs in order to provide a basic understanding of the major aspects of the science and technology of pulping, papermaking, coating, and evaluation of materials, especially as they relate to printing.

560 Advanced Topics in Pulp and Paper Engineering 3 hrs.
This course will stress the concepts of momentum transfer applied to fluid flow, heat transfer, and mass transfer. Mathematical consideration of filtration, extraction, mixing, and kinetics will be included.

590 Instrumentation and Process Control 3 hrs.
A detailed consideration of the theory and practice of electronic and pneumatic sensing instruments and process control. Simulation of process dynamics and computer application will be emphasized.

591 Instrumentation and Process Control 3 hrs.
Continuation of Course 590.

Transportation Technology

Harley D. Behm, Chairman

John W. Cummings
Charles E. Dee
Herbert E. Ellinger
Forrest O. Hutchins
LaVerne M. Krieger

Ronald L. Sackett
Pat D. Schiffer
Curtis N. Swanson
James VanDePolder
Clarence N. VanDeventer

The Transportation Technology Department offers four-year curricula in Automotive and Aviation Engineering Technology, a two-year curriculum in Aircraft Technology, and Pilot Training.
School of Applied Arts and Sciences

A major can only be obtained by completing one of the curricula. A minor may be secured upon the approval of the departmental advisor and by completing 15 to 20 semester hours of work, depending upon the area of specialization.

After completing the two-year program, a student may transfer into a degree technical program upon recommendation of the adviser.

Cooperative Education in Transportation Technology

Students enrolled in any Transportation Technology degree curriculum may pursue a cooperative plan of education whereby one semester is spent in industry followed by one semester of study on the campus. Only students of junior standing having a minimum scholastic average of 2.5 are eligible.

Students are usually selected in pairs and alternate by semester between campus and industry. While on the job, the student is enrolled in the course "Coordinated Industry 300" and is paid an appropriate salary by the company.

Cooperative students work in such areas as manufacturing, assembly, research, design, quality control, and safety. They may perform tests, prepare engineering drawings, collect and record data, design tools and fixtures, and assist in supervision. The student's cooperative program is closely supervised by a University Coordinator.

AUTOMOTIVE

125 Automotive Chassis 4 hrs.
A study of the design, operation and service techniques of the transmission, rear axle, brakes, power assist units, suspension and steering geometry. Theory is supplemented with laboratory work involving disassembly, visual inspection of parts, calculating loads, making adjustments and performing service operations.

126 Automotive Carburetion and Electricity 4 hrs.
Theory and practice in diagnosing, adjusting and tuning modern automotive engines and electrical accessories. Laboratory practice is provided using oscilloscopes, distributor testers, generator test benches, and other engine and electrical testing equipment.

222 Fuels and Lubricants 2 hrs.
A study of petroleum products and their application to the fuel and lubricant requirements of automobiles and aircraft. Laboratory tests are conducted to ascertain octane requirements, octane numbers, viscosity, volatility, flash and fire point, grease penetration, API degree, and dropping point of grease.

226 Automotive Engines 4 hrs.
A study of the design, dynamic characteristics, elementary thermo-
Transportation Technology

dynamics, and basic service techniques of automotive engines. Theory is supplemented with laboratory work involving disassembly, visual and mechanical inspection of parts, plotting charts and graphs of engine characteristics, performing service operations, assembly, and engine operation. Prerequisite: Math. 100 or equivalent.

322 Automotive Service Management 2 hrs.
A study of principles involved in management of automotive repair shops including establishing objectives, organizational problems, controls, personnel management, merchandising, pricing, and customer relations.

325 Automotive Testing 4 hrs.
Theory and application of the basic principles of engineering measurements, as applied to automotive testing. Laboratory assignments involve calibration of instruments, obtaining data, dynamometer operation, engine testing, and evaluation of engine performance. Written reports of laboratory assignments are required. Prerequisites: TT 125, 126, 222 and 226.

422 Automotive Design Analysis 4 hrs.
Individual and group design projects will be selected on subjects relating to automotive test, development, or modification. The student will design, build, test, develop and evaluate his project. Written reports including project request, progress reports, and final reports are required. Prerequisite: TT 325.

AVIATION

110 Introduction to Aviation 3 hrs.
A first course in aviation including a review of aviation history, theory of flight and elementary thermodynamics, weight and balance, power plants, structures, and helicopter theory.

112 Powerplant Maintenance and Components 4 hrs.
A study of aircraft powerplants and carburetion systems. Classroom and laboratory experiences dealing with familiarization, nomenclature, inspection, and overhaul procedures. Prerequisite: TT 110.

113 Airframe Structures 4 hrs.
Theory and laboratory experience relating to fabric and metal covered structures, honey-comb construction, and plastics. Prerequisite: TT 110.

212 Powerplant Evaluation and Systems 4 hrs.
Theory and laboratory work covering ignition systems, supercharger systems, lubrication systems, testing, diagnosis and operation of aircraft powerplants. Prerequisite: TT 112.

214 Aircraft Welding 2 hrs.
Theory and practices governing FAA approved aircraft welding techniques. Prerequisite: ET 152 or ET 251.
Propellers and Jet Propulsion 4 hrs.
A study of aircraft propellers, jet propulsion powerplants, jet aircraft systems, and their operation. Prerequisite: TT 110.

Airframe Hydraulics and Electricity 4 hrs.
Theory and laboratory practice covering aircraft hydraulic components and systems and electrical components and systems. Prerequisites: TT 110, ET 240.

Aircraft Servicing 5 hrs.
The primary objective of this course is to provide the student with an opportunity to conduct periodic inspection, routine and preventive maintenance, minor repairs on certificated flying aircraft, and a review of FAA publications. The student will also have the opportunity to learn servicing of aircraft and the management of a small airport. Required for all students who plan to quality for the FAA Airframe and Powerplant Mechanics Certificate.

FAA Maintenance Regulations 2 hrs.
A course designed to prepare the student for the A & P written and practical examinations administered by the FAA. Prerequisite: TT 218.

Elementary Ground School 2 hrs.
A study of the principles of flight, navigation, meteorology and the Federal Air Regulations as they apply to the private pilot. At the completion of the course, the student may take the written portion of the Federal Aviation Administration private pilot examination.

Elementary Pilot Training 2 hrs.
A course for any full-time University student. The course consists of private pilot training. Upon successful completion of the course, the student is eligible to take the Federal Aviation Administration private pilot examination. Prerequisite: Student must obtain a third-class F.A.A. medical certificate prior to enrolling in the course, TT 309.

Intermediate Ground School 2 hrs.
A continuation of TT 309 in which advanced systems and methods for commercial and instrument flying are explored. This course includes the Federal Aviation Administration Commercial Pilot written examination. Prerequisite: TT 309, or TT 310, or Private Pilot License.

Intermediate Pilot Training (A, B, C) 2-6 hrs.
A sequential group of three courses including Cross Country, Performance Proficiency, and Commercial Refresher pilot training. Each course requires 40 hours of flight time and one semester to complete. May be elected, with staff approval, for three semester for a maximum of six hours. Successful completion of this group provides student eligibility for certification as Commercial Pilot. Prerequisite: TT 310 or Private Pilot License, and staff approval.
409 Advanced Ground School 2 hrs.
A study of concepts, systems, and techniques related to instrument flying and instrument flight planning. Also, students desiring to specialize in flight instruction and aviation education may enroll in this course with consent of instructor. Prerequisite: TT 311 or Instructor consent.

410 Advanced Pilot Training (A, B) 2-4 hrs.
Each of two parts of this course requires one semester to complete. May be selected, with staff approval, two semesters for a total of four hours. One part deals with Instrument Flight, the other with Flight Instruction techniques. After completing each part, the student may qualify for the appropriate Federal Aviation Administration Pilot Certification. Prerequisite: TT 312C or Commercial Pilot License.

498 Studies in Transportation Technology 1-4 hrs.
An individual study program arranged in consultation with a study supervisor. Approval of study program required prior to registration. May be repeated up to a maximum of 4 hours.
School of Business

ARNOLD E. SCHNEIDER,
Dean

FRED V HARTENSTEIN,
Associate Dean

LEO NIEMI,
Administrative Assistant

Departments:
Accountancy
Business Education
General Business
Management
Marketing

Institute:
Business Research and Service
Objectives of the School of Business

The function of the School of Business is to prepare capable men and women for responsible positions in business, industry, and public service. Three major areas of education are involved in the development process. They are:

1. A foundation of liberal arts and sciences in full recognition that as a future leader in the business and industrial world, the student will need a sound understanding of his relationships to social, economic, political and cultural trends.

2. The presentation of a core curriculum which contemplates a thorough grounding in the fundamentals through which our free enterprise economic system operates. These fundamentals are met through core subjects such as accounting, business statistics, business law, finance, marketing, management and business communication.

3. An opportunity for specialization in various aspects of business activity.

Continuing opportunities are made available to resident students to participate in campus meetings with business, industrial, and public service leaders, as well as outstanding professional men from various disciplines. In addition, business firm visitations, as well as business internships, give ample opportunity for the student to relate himself to his future role. Western's Placement Office is visited by the major firms that are engaged in recruiting activities.

The four main programs in the School of Business are:

1. Business Administration—Bachelor of Business Administration Degree; 18 major areas.


3. Master of Business Administration for graduate students with a Liberal Arts, Engineering, Business or other undergraduate preparation.

4. Accountancy—Master of Science in Accountancy for students desiring intensive preparation for a professional accounting career.
The courses and the proper sequence of courses required in this curriculum are listed below. Students are cautioned against deviating from this pattern as courses with lower numbers are usually prerequisites to those with higher numbers.

Students at two-year Community Colleges who plan to continue at WMU are urged to take courses equivalent to the ones listed below for the Freshman and Sophomore years. Community College students should not take the 300 or 400 level courses listed as these cannot be accepted as equivalents to satisfy the curriculum and major requirements.

No more than twelve semester hours of appropriate transfer courses may be included in a major, and not more than six in a minor.

A. Minimum hours required for this curriculum .................. 124 hrs.
B. Course requirements

### FRESHMAN YEAR

#### General Studies
- College Writing 116 ........................................... 4
- Freshman Reading 140 ......................................... 2
- Early Western Civ. 100 or Modern Western Civ. 101 ....... 4
- One from the following: Physical Geography 105, Biological Science 107, Physical Science 108, Aims and Achievements of Science 110, Geological Science 112 .... 4

#### Other Areas
- Business and Professional Speech 104, or General Speech 100 .................................................. 3
- Psychology I 150 ............................................... 3
- Mathematics 120, Analysis I, or equivalent .................. 4
- American National Government 200 ......................... 3
- Physical Education ............................................ 2
- Electives ....................................................... 2

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<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Early Western Civ. 100 or Modern Western Civ. 101</td>
<td>4</td>
</tr>
<tr>
<td>Physical Geography 105, Biological Science 107,</td>
<td>4</td>
</tr>
<tr>
<td>Physical Science 108, Aims and Achievements of</td>
<td></td>
</tr>
<tr>
<td>Science 110, Geological Science 112</td>
<td></td>
</tr>
<tr>
<td>Business and Professional Speech 104, or General</td>
<td>3</td>
</tr>
<tr>
<td>Speech 100</td>
<td></td>
</tr>
<tr>
<td>Psychology I 150</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 120, Analysis I, or equivalent</td>
<td>4</td>
</tr>
<tr>
<td>American National Government 200</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
</tr>
</tbody>
</table>

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| Total Semester Hours | 31   |

---

Business Administration Curriculum

Bachelor of Business Administration Degree
## SOPHOMORE YEAR

**General Studies**
- Arts and Ideas 222 or Non-Western Arts and Ideas 224 4 hrs.

**BBA Core**
- Principles of Accounting 210, 211 6 hrs.
- Business Communication 242 3 hrs.
- Statistics 200 3 hrs.
- Fundamentals of Management 300* 3 hrs.
- Marketing 370* 3 hrs.

**Other Areas**
- Principles of Economics 201, 202 6 hrs.
- Physical Education 2 hrs.
- Electives 1 hr.

Total: 31 hrs.

## JUNIOR YEAR

**General Studies**
- Introduction to the Non-Western World 304 or approved substitute 4 hrs.

**BBA Core**
- Business Finance 320 3 hrs.

**Other Areas**
- One advanced course in Economics 3 hrs.
- Major and Minor Requirements and Electives 15 hrs.

Total: 31 hrs.

## SENIOR YEAR

**General Studies**
- Elect one course from:

**BBA Core**
- Management Problems 499 3 hrs.
- Major and Minor Requirements and Electives 24 hrs.

Total: 31 hrs.

*May be taken in the second semester of the Sophomore year at Western. Note Econ. 201 prerequisite for each of these courses.*
Major Areas of Concentration
In Business Administration

DEPARTMENT OF ACCOUNTANCY

Major Requirements:

Principles of Accounting 210, 211 ........................................ 6 hrs.
Intermediate Accounting 310, 311 ....................................... 6
Cost Accounting 322 ....................................................... 3
Income Tax Accounting 324 .............................................. 3
Advanced Accounting 411 ............................................... 3
Auditing 416 ................................................................. 3
Elective in Accountancy .................................................... 3

TOTAL ................................................................. 27

Accountancy Electives Available for Major Requirements:

Accounting Information Systems 413 .................................. 3 hrs.
Institutional Accounting 414 ............................................ 3
Theory and Problems 518 ............................................... 3
Studies in International Accounting 521 ............................ 3
Cost Accounting—Theory and Practice 522 ....................... 3
Studies in Tax Accounting 524 ......................................... 3

Advisers: Report to the Department of Accountancy, 150 East Hall for assignment to an adviser. Your adviser will be pleased to assist you in recommending elective courses and planning your program.

Transfer Credits: Up to 6 hours of Accounting may be accepted from other than a four-year accredited school. All accounting majors must take a minimum of 12 hours of accounting courses at Western Michigan University.

BUSINESS EDUCATION DEPARTMENT

1. Teaching of Business Subjects

The B.B.A. degree with certification for teaching business subjects at the secondary school level requires the addition to the Business Administration curriculum of the 21 semester hours of professional education courses listed on page 182 and Methods of Teaching Business Subjects, 346.

For certification with the B.S. or B.A. degree see the curriculum in Business Teacher Education listed on Page 181.
School of Business

2. Secretarial Administration

The Secretarial Administration Curriculum is designed to enable students to progress through sequential preparatory phases as they move toward the acquisition of a bachelor's degree and final preparation to undertake administrative secretarial and office supervisory positions.

A. Secretarial Internship Phase

This work-study program concentrates on the development of skills through cooperative work experience combined with classroom experience. The latter is combined with part-time employment during the Sophomore year. Students have the opportunity to elect courses which fit their needs, schedules, and abilities.

First and Second Semesters

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td><strong>General Studies electives</strong></td>
<td>8</td>
</tr>
<tr>
<td>Production Typewriting 185</td>
<td>4</td>
</tr>
<tr>
<td>Office Machines 281</td>
<td>3</td>
</tr>
<tr>
<td>Psychology I 150</td>
<td>3</td>
</tr>
<tr>
<td>Industrial and Business World 140</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

Third and Fourth Semesters

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Communication 242</td>
<td>3</td>
</tr>
<tr>
<td>Records Management 288</td>
<td>2</td>
</tr>
<tr>
<td>Coordinated Business Exp. 282</td>
<td>3</td>
</tr>
<tr>
<td>Coordinated Business Exp. 283</td>
<td>1</td>
</tr>
<tr>
<td>Accounting 210</td>
<td>3</td>
</tr>
<tr>
<td>Office Organization 386</td>
<td>3</td>
</tr>
<tr>
<td>Secretarial Practice 287</td>
<td>3</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>13</td>
</tr>
</tbody>
</table>

B. Administrative-Supervision Phase

This phase of the curriculum requires the completion of:

1. The General Studies requirements listed on page 21 of this catalog.
2. The Business Administration Curriculum requirements listed on page 173.
3. Administrative Behavior 451 3 hrs.
   Management Report Writing 552 3
   Office Management 556 3

**Electives chosen after consulting with adviser.

GENERAL BUSINESS DEPARTMENT

The General Business Department offers majors and minors in Finance, Insurance, and General Business and a minor in Business Law.

1. Finance Majors

   Option 1: Corporate Financial Management—Adviser: Grossnickle


**JUNIOR YEAR**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Financial System 310 3 hrs.</td>
<td>Credit Management 324 3 hrs.</td>
</tr>
<tr>
<td>Business Finance 320 3 hrs.</td>
<td>Investments 326 3 hrs.</td>
</tr>
</tbody>
</table>

**SENIOR YEAR**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Management 427 3 hrs.</td>
<td>Senior Topics in Finance 499 3 hrs.</td>
</tr>
</tbody>
</table>

Recommended Elective: Accounting 311

Option 2: Securities and Investment Management—Adviser: Edwards

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Financial System 310 3 hrs.</td>
<td>Investments 326 3 hrs.</td>
</tr>
<tr>
<td>Business Finance 320 3 hrs.</td>
<td></td>
</tr>
<tr>
<td>Intermediate Accounting 310 3 hrs.</td>
<td></td>
</tr>
</tbody>
</table>

**SENIOR YEAR**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Mgmt. 427 3 hrs.</td>
<td>Senior Topics in Finance 499 3 hrs.</td>
</tr>
<tr>
<td>Mgmt. of Financial Inst. 428 3 hrs.</td>
<td>Security Analysis 520 3 hrs.</td>
</tr>
</tbody>
</table>

Option 3: Financial Markets and Institutions—Adviser: Grossnickle

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Finance 320 3 hrs.</td>
<td>Investments 326 3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Money &amp; Capital Mkts. 426 3 hrs.</td>
</tr>
</tbody>
</table>

**SENIOR YEAR**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Management 427 3 hrs.</td>
<td>Senior Topics in Finance 499 3 hrs.</td>
</tr>
<tr>
<td>Mgmt. of Financial Inst. 428 3 hrs.</td>
<td>Security Analysis 520 3 hrs.</td>
</tr>
</tbody>
</table>

Recommended Elective: Accounting 310

Option 4: Insurance—Adviser: Burdick

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Winter Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Financial System 310 3 hrs.</td>
<td>Investments 326 3 hrs.</td>
</tr>
<tr>
<td>Business Finance 320 3 hrs.</td>
<td></td>
</tr>
</tbody>
</table>
SENIOR YEAR

Life & Health Ins. 422  3 hrs.  Adv. Life & Health Ins. 526  3 hrs.
Problems Multiple-Line Ins. 528  3 hrs.

2. Finance Minors  Advisers: Burdick, Edwards, Grossnickle

Business Finance 320, Financial Management 427, plus nine additional
hours in Finance selected with the approval of the adviser.

3. General Business Majors  Advisers: Morrison, Casey and Bliss

In addition to the Business Administration Core, elect a logical se-
quence of five advanced business courses, but not more than three courses
from any one department.

4. General Business Minors

Option 1: General Business

*Any student who has completed five courses from the Business Ad-
ministration Core listed on page 173 shall be entitled to declare these
as his 15-semester-hour General Business Minor. One advanced busi-
ness course of three or more semester hours may be substituted
for one of the five core courses. However, not more than two courses
may be taken from any one of the following eight areas: Accounting,
Business Communications, Business Statistics, Business Finance, Busi-
ness Law, Insurance, Management and Marketing. The requirement of
a written minor slip and consent of the adviser is waived.

Option 2: Business Law

Any student who has completed five courses from General Business 340,
341, 442, 541, 542, 544, and Political Science 526, may declare these as
his Business Law Minor. The requirement of a written minor slip and
consent of the adviser is waived.

*For a 20-semester-hour Business Education Teaching Minor, see Business Education
adviser.

MANAGEMENT DEPARTMENT

Majors and Minors for Students Beginning in 1969-70 Academic Year:

Students beginning their work toward a management minor or major
during the 1969-70 academic year are required to complete a five-course
sequence (15 hrs.):

Minor in Management (15 hrs.):

Fundamentals of Management 300 .................................. 3 hrs.
Fundamentals of System Performance 301 .......................... 3 hrs.
Concepts of Analysis 302 ........................................ 3 hrs.
Information for Decision Making 303 ................................ 3 hrs.
Systems Analysis and Design 304 .................................. 3 hrs.
(Management 303 and 304 are taken concurrently).
Major in Management (24 hrs.)

A major in Management consists of those requirements for a minor in Management plus an additional nine hours of advanced work. Such advanced work may be drawn from Topics in Management 400, Independent Study 458, and other approved courses from Management Department offerings and cognate fields. The advanced work will permit students to specialize in areas of particular interest, for example, personnel administration, industrial management, or electronic data processing.

Majors or Minors for students following previous catalogs:

Those students who wish to complete a major or minor as listed in the catalogs under which they entered, may do so provided they have their majors or minors approved in writing before September 1, 1969.

MARKETING DEPARTMENT

The Marketing Department offers four major areas of concentration as shown below. The courses are to be taken in the sequence indicated, following the prerequisites as listed after the course descriptions. Marketing 370 may be taken in the second semester of the Sophomore year, with Economics 201 as a prerequisite.

1. Advertising

<table>
<thead>
<tr>
<th>Course</th>
<th>Adviser: Cannon</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Advertising 374</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Advertising Copy &amp; Layout 474</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Advertising Media/Campaigns &amp; Strategies 572</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Marketing Problems 576</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Elective From Marketing Department</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24 hrs.

2. Retailing

<table>
<thead>
<tr>
<th>Course</th>
<th>Adviser: Embertson</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Advertising 374</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Principles of Retailing 375</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Retail Merchandising &amp; Promotion 476</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Marketing Internship 479</td>
<td></td>
<td>1-6 hrs.</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td></td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Marketing Problems 576</td>
<td></td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

24 hrs.
3. Industrial Marketing
   Marketing 370 ......................................................... 3 hrs.
   Purchasing Management 372 ......................................... 3 hrs.
   Advertising 374 ......................................................... 3 hrs.
   Sales Administration 376 ............................................ 3 hrs.
   Industrial Marketing 470 ............................................. 3 hrs.
   Marketing Research 573 ............................................... 3 hrs.
   Marketing Logistics 574 ............................................. 3 hrs.
   Marketing Problems 576 ............................................... 3 hrs.

4. General Marketing
   Advisers: "A" thru "K"—Hardin
             "L" thru "Z"—Orr
   Marketing 370 ......................................................... 3 hrs.
   Advertising 374 ......................................................... 3 hrs.
   Sales Administration 376 ............................................ 3 hrs.
   Industrial Marketing 470 ............................................. 3 hrs.
   Marketing Research 573 ............................................... 3 hrs.
   International Marketing 575 ......................................... 3 hrs.
   Marketing Problems 576 ............................................... 3 hrs.
   Elective From Marketing Department ............................... 3 hrs.

   24 hrs.

Any deviations from course sequence or course substitutions must have written approval from the student's major adviser.

A minor in Marketing will consist of the following courses:
1. Marketing 370, 3 Credit Hours.
2. Advertising 374, 3 Credit Hours.
3. Sales Administration 376, 3 Credit Hours; plus six hours of electives from within the Department and approved by the Departmental adviser.

RELATED MAJORS

Students on the B.B.A. Curriculum who complete the core requirements listed on page 173 may major in the following two areas and receive the B.B.A. Degree

I. Economics
   Adviser: Bowers
   Elect 30 semester hours from the Department of Economics.

II. Public Administration
   Adviser: Morrison
   The Public Administration curriculum requires the completion of the Business Administration major and the Political Science minor listed on following page.*

*Another option is available where a student may major in Political Science and minor in Business. See Political Science adviser.
Major: In addition to the Business Administration Core, elect at least 15 semester hours from the following:

- Institutional Accounting, Accounting 414 ............... 3 hrs.
- Personnel and Industrial Relations, Management 360 .......... 3
- Integrated Data Processing, Management 355 ............... 3
- Administrative Behavior, Management 451 ............... 3
- Office Management, Management 556 ............... 3
- Marketing Logistics, Marketing 574 ............... 3
- International Marketing, Marketing 575 ............... 3
- Income Tax Accounting 324 ............... 3

Minor: (Political Science)

- American National Government 200 ............... 3 hrs.
- State and Local Government 302 ............... 4
- Public Administration 330 ............... 5
- Problems of Public Administration 530 ............... 3-4
- Administrative Law and Public Regulation ............... 4

Business Teacher Education Curriculum

Bachelor of Science Degree**

BUSINESS EDUCATION DEPARTMENT

Teaching of Business

A State Secondary Provisional Certificate for teaching of business subjects in grades 7 to 12 is granted to students who complete this curriculum with a 30-semester-hour major in business and a 20-semester-hour minor, which may also be in business.

Provision is also made for meeting the requirements for a vocational certificate in Michigan. Only persons holding this certificate as vocationally qualified office education teachers and/or office education coordinators can teach in the reimbursed office education departments in Michigan public schools.

**Completion of 70 semester hours in the School of Liberal Arts leads to a Bachelor of Arts degree.
School of Business

A. Minimum hours required for this curriculum
124 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

2. Social and Behavioral Sciences
   - American National Government 200 3 hrs.
   - Principles of Economics 201, 202 6 hrs.*
   - Psychology I 150 or equivalent 3 hrs.**

3. Professional Education courses
   - Human Development and Learning 250 4 hrs.
   - Teaching and Learning, Secondary 300 3 hrs.
   - Seminar in Education 410 2 hrs.
   - School and Society 450 or Principles of Practical Arts and Vocational Education 520 3 hrs.
   - Directed Teaching 470 9 hrs.

4. Business Education Core
   - Coordinated Business Experience 282 or equivalent 3 hrs.
   - Business Communication 242 3 hrs.
   - Industrial and Business World 140 3 hrs.
   - or elective from Marketing or Management
   - Teaching of Business Subjects 346 3 hrs.
   - Office Organization 386 3 hrs.

5. Major and minor requirements; electives
42 hrs.

6. Physical Education or Military Science
4 hrs.

C. Suggested Areas of Emphasis

1. Secretarial and related business subjects
   - Business Education Core (See B. 4 above)
     - Transcription 184 4 hrs.
     - Production Typewriting 185 3 hrs.
     - Office Machines 281 3 hrs.
     - Secretarial Practice 287 3 hrs.
     - Records Management 288 2 hrs.

2. Accounting and related business subjects
   - Business Education Core (See B. 4 above)
     - Accounting electives 9 hrs.
     - Integrated Data Processing, Mgt. 355 3 hrs.
     - Business electives 2 hrs.

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*May be used as an approved alternative in Social Science under General Studies I.
**May be used as an approved alternative in Science under General Studies I.
3. Salesmanship, retailing and related subjects

Business Education Core ..................................................... 15 hrs.

(See B. 4)

Intermediate Typewriting 183 ............................................ 3 hrs.
Accounting 210 ................................................................. 3 hrs.
Courses from Marketing Department .................................. 9 hrs.

4. General Business and related subjects

Business Education Core ..................................................... 15 hrs.

(See B. 4)

Accounting 210 ................................................................. 3 hrs.
Records Management 288 ............................................... 2 hrs.
Business Law 340, 341 ...................................................... 6 hrs.
Integrated Data Processing, Mgt. 355 .............................. 3 hrs.
or Business electives

5. Office Education Coordinator

Western Michigan University is approved by the State Board of Control for Vocational Education for the preparation of coordinators and related subjects teachers in office education. The following major will qualify the student for the Vocational Coordinator's Certificate and the Secondary Provisional Teaching Certificate.

Business Education Core ..................................................... 15 hrs.

(See B. 4)

Coordination Tech. in Office Educ. 583 or Coordination Tech. in Coop. Educ., D.E. 573 .......................... 2 hrs.
Intermediate Typewriting 183 ............................................ 3 hrs.
Office Machines 281 ......................................................... 3 hrs.
Business electives ............................................................ 2 hrs.

6. Other areas of emphasis are available: See adviser.

D. Business Education Minors

Adviser: Jones

1. For students majoring in Business Education

With the approval of the adviser, select 20 semester hours of courses from a subject matter area such as Accounting, General Business, Electronic Data Processing, Retailing, Salesmanship, or other areas appropriate for secondary education.

2. For education majors not majoring in Business Education

The Business Education minor of at least 20 semester hours is selected with the approval of the adviser. In addition to the Business Education core listed on page 182 of this catalog, 5 semester hours of courses from a subject-matter area such as

*May be substituted for Education 450, School and Society.
Accounting, General Business, Electronic Data Processing, Retailing, Salesmanship, or other area appropriate for secondary education, will complete the minor.

3. Non-Teaching Administrative Services
The Administrative Services minor is designed to provide preparation in the basic business tool courses that serve as complementary adjuncts for appropriate academic majors. With the approval of the adviser the student selects 18 hours with an emphasis on areas such as Clerical, Secretarial, Data Processing, Business Communications or a combination of these.
DESCRIPTION OF COURSES

Foreign Studies Seminars

Students may receive six hours credit in any combination of departments as described, provided the seminar is planned with that combination in mind. No student will receive credit under the course plan indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the School of Business.

Business 504, International Business Seminar 1–6 hrs.

A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organizations, supplemented by coordinated faculty lectures and assigned reading. Students completing such a seminar may receive credit in the Departments of Accounting, Business Education, General Business, Management or Marketing, if approved by the Head of the Department prior to registration for the seminar.

Accountancy

John T. Burke, Head

James E. Daniels  James L. Mitchell, Jr.  Frederick W. Schaeberle
Frederick Everett  William C. Morris  John D. Sheppard
Kenneth J. Kuipers  Robert D. Neubig  William R. Welke
James J. Leisenring  Gale E. Newell  Robert B. Wetnight

The Department of Accountancy prepares its majors for positions as accountants in industrial, governmental and public accounting enterprises. Accountancy majors must complete the Business Administration curriculum.

Students preparing for positions in industry wishing to minor in accountancy are required to take 15 hours. Of those 15 hours, Accounting 210, 211 and 310 are required. The remaining 6 hours will be selected with the student's professional objective in mind.

201 (215)  Accounting Concepts and Applications  3 hrs.  Winter, Spring

A study of the fundamental concepts and applications of accounting. Especially designed for the non-business student. This course does not
serve as a prerequisite for any other accounting course and cannot be used for a major or minor in business. Not open to students with credit in accounting.

210 Principles of Accounting 3 hrs. Fall, Winter, Spring, Summer
An introductory course in accounting which includes the recording and reporting of business transactions, and the measuring, planning and controlling of business income, assets and equities.

211 Principles of Accounting 3 hrs. Fall, Winter, Spring, Summer
A continuation of course 210 with emphasis on financial and cost accounting concepts. Prerequisite: 210.

310 Intermediate Accounting 3 hrs. Fall, Winter, Spring, Summer
A study of the valuation of current assets, investments, plant and equipment and current liabilities as well as their effect on business net income. Prerequisite: 211.

311 Intermediate Accounting 3 hrs. Fall, Winter, Spring or Summer
A continuation of accounting 211, includes the following topics: Corporate capital, statements from incomplete data; financial statement analysis, and statement of application of funds. Prerequisite: 310.

322 (512) Cost Accounting 3 hrs. Fall, Winter, Spring or Summer
The relation of cost accounting to management for control; general principles involved in constructing a cost system; distribution of cost-materials, labor, and burden; cost records; operating reports, standard cost and budgetary control. Prerequisite: 211.

324 (514) Income Tax Accounting 3 hrs. Fall, Winter, Spring, or Summer
A study of the federal income tax laws, as they apply to individuals, partnerships, and corporations. Prerequisite: 211.

410 Internship in Accounting 1-4 hrs. Fall, Winter, Spring, Summer
Under the direction of a faculty adviser, students attain employment experience with public accounting or other business organizations. Participation is limited to available internships and selection by the faculty adviser. Students are required to file reports during the internship period and also write a final term report. In addition, they are evaluated by the executives of the firm. Prerequisite: Written Consent of Instructor.

411 (511) Advanced Accounting 3 hrs. Fall, Winter, Spring or Summer
Accounting for problems in special sales, consolidations and equities. Prerequisite: 311 and senior standing.

413 (513) Accounting Information Systems 3 hrs. Fall, Winter
An examination of the accounting system as an element of the man-
agement information system in various types of businesses. Prerequisite: 211 or written consent of instructor.

414 (314) Institutional Accounting 3 hrs. Spring
A study of accounting principles and practices of school districts and federal, state, county, and city government agencies. Prerequisite: 211 or written consent of instructor.

416 (516) Auditing 3 hrs. Fall, Winter, Spring, Summer
The theory and practice of public and internal auditing of business enterprises. Prerequisite: 311 and senior accounting major.

418 Honors Seminar in Accounting 1 hr. Fall, Winter
Seniors who are eligible may enroll for departmental honors. Requirements and permission to elect must be obtained at Department of Accountancy office.

518 Accounting Theory and Problems 3 hrs. Winter
Theoretical consideration of accounting problems. The analysis of the type of problems that are found in the CPA examinations, or encountered by business management is included. Prerequisite: Senior standing, accounting majors.

521 Studies in International Accounting 3 hrs. Fall (odd-numbered years)
A study of the differences in the principles of accounting auditing standards, and auditing procedures in selected countries of the world. Emphasis is placed on those countries which are important in world commerce. Prerequisite: Written consent of instructor.

522 (517) Cost Accounting—Theory and Practice 3 hrs. Fall
The development and application of cost accounting principles to industrial situations. The course includes the application of costs to operations and to products. The preparation and analysis of detailed cost information, as well as methods and procedures for solving complex cost problems encountered in industry, are included as a major part of the course. Prerequisite: 322.

524 Studies in Tax Accounting 3 hrs. Winter, Spring
Special studies related to tax problems of individuals, partnerships and corporations. Emphasis on corporation taxes, trusts and estate tax problems. Gift and estate taxes, and introduction to tax planning are included. Prerequisite: 324 or written consent of instructor.

598 Readings in Accounting 1-4 Fall, Winter, Spring, Summer
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
The Department of Business Education includes the areas of preparation for business teaching, office education coordination, office supervision, administrative secretarial positions, and specialized stenographic and clerical work. Students enrolled in the secretarial internship phase of the Secretarial Administration Curriculum learn by combining the classroom theory and the practical experience gained from business, government, educational and industrial office situations.

In order to be vocationally certified as an office education teacher in the State of Michigan, it is necessary to have two years of unsupervised office work experience or one year of supervised internship experience. Therefore, a statement certifying the completion of the internship phase of the Business Teacher Education or the Secretarial Administration programs will be available upon request.

A major in the Department of Business Education consists of 30 semester hours. A teaching minor consists of 20 semester hours. The non-teaching Administrative Services minor consists of 18 semester hours.

140 Industrial and Business World 3 hrs. Fall, Winter

This is an introductory course which, through a very broad approach, attempts to acquaint the student with existing principles and problems of business and industry. Such topics as types of American businesses, current business problems, current business trends, long-term financing, short-term financing, insurance, physical location and lay-out, production problems are included. Not open to B.B.A. students.

180 Beginning Shorthand 4 hrs. Fall, Winter

A study of the theory and principles of Gregg shorthand. Typewriting 182 or its equivalent is a prerequisite or should be elected concurrently. Credit given to beginning students or students with not more than one semester of high school shorthand.

181 Intermediate Shorthand 4 hrs. Fall, Winter

A continuation of 180. Emphasis on developing speed in taking dictation in Gregg shorthand and transcription procedures. Prerequisites:
Business Education 180 and Business Education 182 or equivalents. Credit given to students with not more than one year of high school shorthand.

182 Beginning Typewriting 2 hrs. Fall, Winter
The mastery of the keyboard and the proper techniques of typewriting are developed in this course. Credit given to beginning students or to students with not more than one semester of high school typewriting.

183 Intermediate Typewriting 3 hrs. Fall, Winter
Special emphasis is placed upon perfecting the techniques necessary for accuracy and speed in office typewriting. Includes office production problems at rates acceptable for initial employment. Prerequisite: Business Education 182 or equivalent. Credit given to students with not more than one year of high school typewriting.

184 Transcription 4 hrs. Fall, Winter
Emphasizes superior skill in the typewritten transcription of business letters and other office communications. Prerequisites: Business Education 181, or 3 semesters of high school shorthand, or equivalent; Business Education 183, or equivalent.

185 Production Typewriting 3 hrs. Fall, Winter
The development of superior skill in the production of typewritten materials for business office use. Prerequisite: Business Education 183 or equivalent. This course follows 3 semesters or more of high school typewriting.

242 Business Communication 3 hrs. Fall, Winter, Spring
Provision is made in this course for an analysis of and practice in writing various types of business letters and reports. A study is made of the principles of effective written expression. Prerequisite: General Studies 116 or equivalent.

246 Survey of Office Machines 2 hrs. Fall, Winter
A study to develop a working knowledge of the basic mathematical operations applied to typical business problems on rotary calculators, printing calculators, key-driven calculators, ten-key adding listing machines, and full-key adding listing machines. Not open to Business Education or Secretarial Administration majors.

281 Office Machines 3 hrs. Fall, Winter
This course is designed primarily for students preparing for office occupations and/or business teaching. Includes problems of office duplicating, voice writing and fundamentals of punched-card machines. Required of all secretarial majors. Prerequisite: Business Education 183 or equivalent.

282 Coordinated Business Experience 3 hrs. Fall
A work-experience course meeting weekly for students in the Secretarial and Business Teacher curriculum. Prerequisites: current or pre-
vious enrollment in Business Education 184, and/or Business Education 185, and/or Business Education 287, or department permission.

283 Coordinated Business Experience 1 hr. Winter
A continuation of Business Education 282 for students currently enrolled in Business Education 287 or those who have completed the equivalent of Business Education 287.

287 Secretarial Practice 3 hrs. Fall, Winter
This course includes knowledges and abilities expected of executive secretaries. Emphasis is placed on intelligent choices and decision making at supervisory levels. Prerequisites: Business Education 184 and Business Education 185, or equivalents.

288 Records Management 2 hrs. Fall, Winter
The study of efficient methods and procedures of processing, controlling, and disposing of the records of business. Includes information retention and retrieval, classifying, and the administration of paperwork. Emphasis on the role of supervisory personnel in a records management program.

346 Teaching of Business Subjects 3-5 hrs. Fall, Winter
A course in the methods of teaching the business subjects including shorthand, typewriting, bookkeeping, and other business education knowledge and abilities. This course should immediately precede directed teaching in business education. This course is required for business education certification and follows this pattern:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Subject</th>
<th>Weeks</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction to Business Education</td>
<td>1-3</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Basic Business Subjects</td>
<td>4-6</td>
<td>1</td>
</tr>
<tr>
<td>III</td>
<td>Bookkeeping</td>
<td>7-9</td>
<td>1</td>
</tr>
<tr>
<td>IV</td>
<td>Typewriting</td>
<td>10-12</td>
<td>1</td>
</tr>
<tr>
<td>V</td>
<td>Shorthand, Secretarial Subjects</td>
<td>13-15</td>
<td>1</td>
</tr>
</tbody>
</table>

All students enroll in Unit I and at least 2 others.
All students will enroll for at least 3 semester hours of credit. The course will then provide for those students who expect to teach Bookkeeping and Basic Business courses. Students who expect to teach Typewriting add an additional 3 weeks of classwork for a total of 4 semester hours of credit. Students who expect to teach Shorthand and other secretarial courses may enroll for 5 semester hours of credit for the full 15-week semester.

Prerequisites: Open only to Business Education majors or minors; Teaching and Learning, 300.

380 Alphabetic Shorthand I 4 hrs. Fall
A system of alphabetic shorthand for personal use and for business use where 100 words a minute is adequate. Prerequisite: ability to typewrite.
381 Alphabetic Shorthand II 4 hrs. Winter
A continuation of Business Education 380 with emphasis on transcription. Prerequisite: Business Education 380 and Business Education 183 or equivalent.

386 Office Organization 3 hrs. Fall, Winter
Personnel policies and how they affect workers; handling and procurement of office equipment and supplies; charting of paperwork flow and methods of paperwork simplification. Professionalization of office work and role of supervisory worker. Designed for those entering professional office work, or preparing to teach office workers.

583 Coordination Techniques in Office Education 2 hrs.
A study of the role and responsibilities of the office education coordinator in his educational system. Surveys the organization of the office education program, the course content of the related class, supervision of on-the-job trainees, the establishment of working relationships among the school, business and home; examines latest pertinent research. Prerequisite: DE 573, Coordination Techniques in Cooperative Education.

584 Improvement of Instruction in Shorthand and Secretarial Subjects 2 hrs. Winter
A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future development in shorthand.

586 Improvement of Instruction in Typewriting 2 hrs. Fall
A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future development in typewriting.

588 Improvement of Instruction in Bookkeeping and Basic Business Subjects 2 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future developments in the business subject matter of this field.

589 Organization and Teaching of Office Practice 2 hrs.
A consideration of aims and content of office-practice course in the secondary school, with plans and techniques for organizing and teaching the subject matter of the course and its laboratory material.

598 Readings in Business Education 1-4 hrs. Fall, Winter
A series of directed readings in the area of Business Education. Prerequisite: Written consent of department head.
General Business

Arnold E. Schneider, Head
Leo Niemi, Administrative Assistant

Finance and Insurance Area
Richard T. Adams
William L. Burdick
Adrian C. Edwards
Edwin Grossnickle
Kermit C. Zieg, Jr.

Law Area
James R. Bliss
James A. Casey
John B. Healey
William F. Morrison

The General Business Department includes the areas of finance, insurance, and law.

Specialized majors may be obtained from the areas of finance and insurance and specialized minors in finance, insurance, and law. In addition, non-specialized General Business majors and minors may be obtained by selecting a logical sequence of courses from the several departments within the School of Business. All majors and minors (except General Business and Law minors) in this department must be approved by the assigned adviser.

FINANCE

310 The American Financial System 3 hrs. Fall, Winter, Spring
A survey of the financial system of the United States designed to provide essential foundation for advanced finance and business administration courses. The emphasis is on the impacts and implications of changes in monetary policies and financial conditions upon the business community, especially as these changes affect business managers. The course covers the development of the American financial system, the major financial institutions, the financial markets, the monetary theory underlying modern financial systems, and stabilization policies. Prerequisites: Economics 201 and 202.

320 Business Finance 3 hrs. Fall, Winter, Spring, Summer
Presents a basis for understanding the financial management function of the business enterprise. Considers financial principles and techniques essential for planning and controlling profitability and liquidity of assets, planning capital structure and cost of capital, and utilizing financial instruments and institutions for capital raising. Prerequisites: Accounting 210 and 211.

322 Real Estate Fundamentals 3 hrs. Fall and Winter
Supplies the basis for comprehension in real estate of the basic economic
characteristics and the organization and techniques used in the real estate business. Treats real estate resources, marketing, financing, valuation, and trends.

324 Credit Management 3 hrs. Winter

An analysis of the credit mechanism from the viewpoint of the financial executive of commercial- and consumer-oriented business enterprises. Considers the management aspects of accounts receivable acquisition. The aim is to relate the credit area to the other working capital responsibilities of the chief financial officer. Prerequisite: 320 Business Finance.

326 Investments 3 hrs. Fall, Winter, Spring

Concentrates on corporate securities as long-term investment media, largely from the standpoint of the individual investor. Examines security appraisal techniques and portfolio management strategies, with some discussion of strategies appropriate for selected financial institutions. Considers mechanics, markets, institutions and instruments important to the investment process. Prerequisite: 320 Business Finance. Recommended: 310 The American Financial System.

426 Money and Capital Markets 3 hrs. Fall

A systematic analysis of the functions and operations of the major American financial markets and institutions with special emphasis upon their function as suppliers of credit to the financial system. Examines the impact of cyclical and secular changes in business activity upon the money and capital markets through national income and flow-of-funds techniques. Prerequisite: 310 The American Financial System OR 320 (Economics) Money and Credit.

427 Financial Management 3 hrs. Fall, Spring

Stresses the financial officer's responsibilities—especially the marshalling and interpreting of figure data—in such activities as making and implementing capital expenditure policies, solving short-term and long-term financing problems, establishing dividend policies, effecting mergers and consolidations, and adapting to trends in financial markets. Case study method demonstrates financial management's role in the total management effort. Prerequisite: 320 Business Finance. Recommended: 310 The American Financial System.

428 The Management of Financial Institutions 3 hrs. Winter

This course is devoted to in-depth analysis of the operations of selected major financial institutions (commercial banks, savings and loans associations, insurance companies, trust companies, mutual funds, pension funds, etc.) with emphasis on management decision-making processes. Through case analysis and problems the student is introduced to cash, loan, deposit, investment, and management problems faced daily by managers of these financial institutions. Prerequisites: 310 The American Financial System AND 320 Business Finance.
499 Senior Topics in Finance 3 hrs. Fall, Winter and Spring

This course is designed as a capstone course for finance majors who can benefit from intensive study of selected current issues in finance. Course designed to increase research and analytical capacities of finance majors through intensive faculty-student work. Student permitted freedom to explore topics of interest in depth with assistance of professors. Prerequisite: Written consent of instructor.

520 Security Analysis 3 hrs. Fall, Winter and Spring

A sophisticated analysis of investment securities from the viewpoint of establishing meaningful valuation techniques. The course is designed for students anticipating careers in investment management in industrial firms and/or financial institutions. Prerequisite: 326 Investments.

INSURANCE

321 Risk and Insurance 3 hrs. Fall, Winter and Spring

A comprehensive course which considers the nature and orientation of non-speculative risks and the methods of treating them, with major emphasis on the insurance mechanism. The impact of these risks on public policy is also discussed, as are the primary functional aspects of insurance operations.

328 Internship in Insurance 1-4 hrs.

Open only to insurance students. Under the direction of the adviser, students obtain home office or branch office experience with insurance companies. They are required to file reports during the internship period, and will be evaluated by company officers.

422 Life and Health Insurance 3 hrs. Fall

This course combines a discussion of the economic aspects of life and health insurance with basic analysis of life insurance, health insurance and annuity contracts. It also includes investigation of the major functional aspects of life and health insurance companies. Prerequisite: 321 Risk and Insurance.

424 Property and Liability Insurance 3 hrs. Winter

This course includes analytical study of the major property and liability contracts, together with discussion of the principal functional aspects of property and liability company operations. Prerequisite: 321 Risk and Insurance.

526 Advanced Life and Health Insurance 3 hrs. Winter

By means of problems and cases this course analyzes in detail the following areas: group life and health insurance, business life and health insurance, insured pension plans and estate and tax planning. Prerequisite: 422 Life and Health Insurance.
528 Problems in Multiple-Line Insurance 3 hrs. Fall
The topics studied by means of cases and problems in this course include multiple-line insurance operations, special problems in functional areas of industry operations and personal and commercial risk surveys and analysis. Prerequisite: 424 Property and Liability Insurance.

LAW

340 Business Law 3 hrs. Fall, Winter, Spring
An introduction to the legal environment in society with emphasis on contracts.

341 Business Law 3 hrs. Fall, Winter, Spring, Summer
Continuation of Business Law 340 with emphasis on borrowing and banking transactions to include checks and other commercial paper, bankruptcy, agency and employment contracts, wills and estates. Prerequisite: 340 Business Law.

442 Damage and Tort Liability 3 hrs. Winter
The study of business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: 340 Business Law.

541 Law of Sales and Personal Property 3 hrs. Fall, Spring
The study of law as it applies to the sale of goods emphasizing the legal aspects of marketing a product. Prerequisite: 340 Business Law.

542 Law of Real Property 3 hrs. Winter
The study of land ownership, sales agreements including the legal duties of the real estate broker, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: 340 Business Law.

544 Law of Business Organizations 3 hrs. Fall, Spring
Study of business organizations including partnerships and corporations. Prerequisite: 340 Business Law.

ALL AREA COURSES

598 Readings in General Business 1-4 hrs. Fall, Winter
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
Management

J. Michael Keenan, Chairman

Gene S. Booker  Lawrence Klatt  Max C. Schnoor
Hugh Bradley  Alan H. Leader  Dana D. Squire
Peter D. Couch  Sandra Mriscin  Melvin J. Tessin
David L. Guinn  Leo Niemi  Roger L. Wallace
Fred V Hartenstein  Arnold E. Schneider  Harold K. Wilson

200 Statistics.  3 hrs.  Fall, Winter, Spring, Summer

An applications-oriented study of statistical concepts and techniques of collecting, organizing and interpreting data for purposes of business decision-making. Major topics of study are statistical description, central tendency, dispersion and error, distributional shapes, sampling, confidence levels, difference between means, differences between proportions, analysis of variance, simple, partial and multiple correlation and regression, canonical correlation, discriminant analysis, factor analysis, non-parametrics, index numbers, time series and experimental design. Prerequisite: Math. 120 or Equivalent.

250 Small Business Management  3 hrs.  Fall, Winter

A study of the fundamental principles involved in the operation of a small business enterprise. The structure, functions, and basic operating principles will be discussed and developed. (Prerequisite: Non-BBA students only.)

300 (254) Fundamentals of Management  3 hrs.  Fall, Winter, Spring, Summer

The basic elements of decision making are related to the management process as utilized for effective development, operation, and control of organization systems. Prerequisite: Economics 201.

301 Fundamentals of System Performance  3 hrs.  Fall, Winter, Spring

The major variables relating managerial performance to system effectiveness are presented. The student will examine applications of relevant predictive and descriptive theories from the behavioral sciences. Prerequisite: Mgmt. 300.

302 Concepts of Analysis  3 hrs.  Fall, Winter, Spring

The student will relate the concepts of optimization, expected value, and cost/effectiveness to the development of administrative systems. Applications of system theory and quantitative analysis to administrative organizations will be emphasized. Prerequisite: Mgmt. 300.
Management

303 Information for Decision Making 3 hrs. Fall, Winter, Spring
Basic methods for collating and collecting data are presented. The structure and design of research is examined within a framework of the evaluation of additional information. Prerequisite: Mgmt. 301, 302; Co-requisite: Mgmt. 304.

304 Systems Analysis and Design 3 hrs. Fall, Winter, Spring
From a framework of General Systems Theory, the student will develop and experiment with his own model of an organization. The course is designed to integrate relevant variables, analysis, and data into an operating system. Prerequisite: Mgmt. 301, 302; Co-requisite: Mgmt. 303.

352 Manpower Management 3 hrs. Fall, Winter, Spring
The manager-employee relationship, oriented toward the personnel responsibilities of all managers: the nature of the manager-employee relationship; selection, appraisal, and development of subordinates; communication, discipline, and leadership; relationship of the individual and the organization. Emphasis on case analysis and current research. This course is intended to be the introductory course in personnel management.

355 Integrated Data Processing 3 hrs. Fall, Winter, Spring
A survey of electro-mechanical and electronic data processing equipment, methods, and applications. Programming computers in detailed machine, SPS, and FORTRAN languages.

360 Personnel and Industrial Relations 3 hrs. Fall, Winter
The administration of the personnel program, with emphasis on formal personnel department functions. Special attention will be given to the management of compensation and employee services, and to the administration of labor relations programs including contract negotiation and maintenance.

400 Topics in Management 3 hrs. Fall, Winter, Spring, Summer
An examination of advanced topical problems in management. Prerequisite: Mgmt. 303 and 304, and consent of instructor. (Repeatable.)

420 Forecasting 3 hrs. Fall
A study of the typical business cycle behavior, significant business indicators and methods of analyzing and forecasting business trends. Includes a critical analysis of published research on business trends and a small research study by the student on the analyses of various bodies of data. Prerequisite: 200 Statistics.

451 Administrative Behavior 3 hrs. Fall, Winter
A course designed to integrate the contributions and implications of the behavioral sciences to modern business practice to promote and maintain effective human relations for the individual and the group. Extensive use of cases and conference methods is made.
School of Business

458 Independent Study 3 hrs. Fall, Winter, Spring, Summer
Independent research on specialized management topics. Prerequisite: Mgmt. 303 and 304, and consent of instructor. (Repeatable.)

490 Honors Seminar 1-3 hrs. Fall, Winter, Spring, Summer
A discussion of selected topics in contemporary management. Prerequisite: Consent of departmental honors committee and instructor. May be repeated for credit.

491 (499) Independent Honors Studies in Management 1-3 hrs. Fall, Winter, Spring, Summer
Opportunity for independent reading and/or research under the direction of a faculty member. Prerequisite: Consent of departmental honors committee and instructor. May be repeated for credit.

499 (550) Management Problems 3 hrs. Fall, Winter, Spring, Summer
An integrating course intended to give the student an opportunity to solve management problems by bringing together the knowledge gained in the study of areas such as finance, accounting, marketing, economics, management. Case study method is used. Prerequisites: Senior standing and all core courses.

540 Advanced Statistics 3 hrs. Winter
An intensive study of probability theory and statistical inference. Topics covered include theoretical probability distributions, hypergeometric binomial, normal approximation of binomial, poisson and the t-distribution. Also included are point and interval estimation, tests of hypothesis, type I and type II errors, the power of a test, sequential sampling, correlation and regression analysis, and some Bayesian Statistics. Prerequisite: 200 Statistics.

552 Management Report Writing 3 hrs. Fall, Winter
A study of the techniques in, and applications of, management reports and management report writing. Actual management reports in the various fields will be studied. The development and practice of technical report writing will be stressed.

553 Planning and Analysis for Production 3 hrs. Fall, Winter
An examination of modern methods of analyzing and solving recurrent problems in the area of production planning. Applications will be stressed. Prerequisite: Principles of Economics 201, 202; Statistics 200 and Math. 122 or 200.

554 Introduction to Management Science 3 hrs. Fall, Winter
Modern scientific techniques used in business and industry for controlling operations, maximizing profits or minimizing costs. Allocation of men, money and machines among alternative uses. Other strategies and control methods applicable to management, marketing and finance. Prerequisite: Statistics 200 and Math. 122 or 200.
555 Electronic Data Processing 3 hrs. Winter
Programming electronic computers in PL/I and COBOL languages. Computers, computer applications, systems and procedures, and feasibility studies. Prerequisite: An introductory computer course or consent of instructor.

556 Office Management 3 hrs. Fall, Winter
Areas of office services from the managerial viewpoint. A brief overview of the problems of organizing, constructing, installing, and maintaining office systems. New concepts of office automation are introduced.

557 Inventory Management 3 hrs.
The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisite: Statistics 200 and Math 122 or written consent of instructor.

562 Administrative Dynamics 3 hrs.
The development of a model to integrate management principles, administrative behavior, small groups research and individual psychological theory. Analysis of static and dynamic models. Prerequisite: Written consent of instructor.

564 Industrial Dynamics 3 hrs.
Development of a model for the integration of the functional areas of business to create more successful management policies and organizational structures.

598 Readings in Management 1-4 hrs. Fall, Winter
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of department head. Repeatable with consent of department head.

Marketing

Robert B. Trader, Head
Alvin J. Bytwork Frances S. Hardin Leonard D. Orr
Zane Cannon William H. Japinga Conner P. Otteson
Richard E. Embertson Emil J. Sokolowski

All numbers in parentheses are former course numbers.

270 (370) Salesmanship 3 hrs. Fall, Winter, Spring
An introduction to the principles of selling. Includes study of selling in our present economy, analysis of the steps in a sales demonstration,
School of Business

and a classroom demonstration. Not open for Marketing major or minor credit.

370 (240) Marketing 3 hrs. Fall, Winter, Spring, Summer
Functions, institutions, and problems of marketing examined from the viewpoint of their effect on distribution of goods. Prerequisite: Econ. 201.

372 (358-558) Purchasing Management 3 hrs. Fall, Winter, Spring
The organization and operation of the purchasing function, responsibilities and policies; problems confronting the purchasing department; relationships with other departments and suppliers. Prerequisite: Mktg. 370.

374 Advertising 3 hrs. Fall, Winter, Spring, Summer
A comprehensive survey of basic principles and practices of advertising in their relationship to the economy, society, and the system of mass communication. Prerequisite: Mktg. 370.

375 Principles of Retailing 3 hrs. Fall, Winter
Designed to give the student an over-all view of the field of retailing. Includes history of retailing, types of retail institutions, store location, layout, fixtures, and equipment; store organization; store records; customer services; personnel management; systems and store protection. Prerequisite: Mktg. 370.

376 (370-376) Sales Administration 3 hrs. Fall, Winter, Spring
Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting; training; sales communication; territories and quotas; motivation, measuring selling effectiveness. Prerequisite: Mktg. 370.

470 Industrial Marketing 3 hrs. Fall, Winter
A course designed to analyze the problems of marketing industrial goods. Attention is given to market information, market planning, methods of distribution, pricing, and the promotional problems of industrial marketing. Prerequisite: Mktg. 370.

474 (572) Advertising Copy & Layout 3 hrs. Fall, Winter
Study of the theory and practice in the writing, preparation and typographical composition of advertising including the writing of radio, television, magazine, and newspaper copy. Prerequisite: Advertising 374.

476 (474-573) Retail Merchandising and Promotion 3 hrs. Fall, Winter
Covers the two major functions of retailing: merchandising and promotion. Includes sales and customer analysis; merchandising budgeting; promotional planning; expense control systems; and pricing policies. Prerequisite: Retailing 375.
201

Marketing

479 (371) Marketing Internship 1-6 hrs. Arranged

Cooperative internship training for the BBA degree marketing majors having completed sophomore year. Variable credit at the rate of approximately one credit per 100 hours of internship training acceptable to advisor. May be repeated for a maximum of 6 hours. Term reports required; evaluations completed by executives of firms in which training takes place. Prerequisite: Marketing major; permission of the instructor.

572 (570-577) Advertising: Media/Campaigns and Strategies 3 hrs. Fall, Winter

Evaluation of media and advertising through communications research, analysis and preparation of advertising as a communication tool. Includes theory and practice of media research, media plans, schedules, and strategies. Case studies. Prerequisites: Adv. 374, 474.

573 (576) Marketing Research 3 hrs. Fall, Winter, Spring

Designed to include an introduction to market research, the procedures and applications of research, and the accomplishment of a research project. Term project includes selection of problems, preparation of questionnaires, data collection, analysis of data, and final report. Prerequisite: Mktg. 370, Stat. 244.

574 (578) Marketing Logistics 3 hrs. Fall, Winter

An analysis of problems relating to the movement, handling and storage of industrial products. Attention will also be given to changing market conditions and industrial structure as they affect the physical distribution of industrial goods. Prerequisite: Mktg. 370.

575 (579) International Marketing 3 hrs. Fall, Winter

An examination of the theories and principles of international marketing. Attention directed to related commercial policies, trade practices and procedures, and marketing research tools and techniques required to locate and evaluate foreign markets. Prerequisite: Mktg. 370.

576 (574) Marketing Problems 3 hrs. Fall, Winter, Spring, Summer

Analysis of current marketing problems utilizing the case method of study. Capstone course in marketing series.

598 Readings in Marketing 1-3 hrs. Arranged

Directed individual study of bodies of knowledge not otherwise treated in departmental offerings. Prerequisite: Written permission of instructor.
School of Education

JAMES H. GRIGGS,
Dean

Morvin A. Wirtz
Assistant Dean

Departments:
Teacher Education
Special Education
School Services
Physical Education for Men
Physical Education for Women

Agencies:
Educational Resources Center
Institute of Blind Rehabilitation
Psycho-Educational Clinic
School of Education

The School of Education consists of the following departments and agencies: Teacher Education, Special Education, School Services, Physical Education for Men, Physical Education for Women, the Educational Resources Center, the Institute of Blind Rehabilitation, and the Psycho-Educational Clinic.

In general, the School of Education performs six functions:

1. Supervises the selection, admission and retention of students in advanced teacher education curricula;
2. Offers professional education courses designed to develop competent, efficient performance in the classroom and within a school system;
3. Offers advanced specialized courses in selected major and minor fields in departments within the school;
4. Offers service courses to students in other schools within the University;
5. Provides clinical and curricular services to teachers and school personnel; and
6. Conducts experimentation and research at all levels of professional education.

ADMISSION TO THE TEACHER EDUCATION PROGRAM

The student who wishes to prepare for the profession of teaching will take the following steps:

Step 1—Declaration of Intent to Prepare for Teaching

The student will identify himself as a prospective teacher candidate by declaring at the time of application to the University his intention to follow a Teacher Education curriculum.

Step 2—Admission to the Teacher Education Program

The student will apply for formal admission to the professional education sequence early in the semester in which he will have earned credits equal to 45 semester hours. The application must be made not later than the semester in which the credits equal 60 semester hours. The student who applies later than this may be required to take additional hours of work at the University to fulfill requirements for teacher certification. Application for admission to the professional education sequence will be initiated by the student in Room 2441 Sangren Hall. To enroll for the professional education sequence the student must have a cumulative point hour ratio of 2.00 or above. Factors such as academic achievement, health, personality, and general competence to teach are considered for admission to the Professional Education Sequence.
Step 3—Admission to Directed Teaching

The student should apply at the Directed Teaching Office for admission to the directed teaching program early in the semester following completion of seventy-five hours of credit. In addition to the general requirements stated above the student shall: (1) present satisfactory evidence of continued academic competency; (2) receive satisfactory recommendations from both the Department of Teacher Education and the major department in which he has been working; and (3) receive approval of an all-University teacher education selection committee.

COOPERATIVE TEACHING INTERNSHIP PROGRAM TO PREPARE ELEMENTARY SCHOOL TEACHERS

The Cooperative Internship Program offers the competent student intending to be an elementary school teacher the opportunity of obtaining an earlier start on a professional career. Paid internship begins in the fourth year of his college preparation, when approximately 106 to 110 semester hours of credit have been earned. The work-study design of the internship allows the student to earn a salary while learning. During intern teaching, the student is in complete control of his own classroom, aided by the guidance and counsel of a master teacher. Students interested in enrolling in this program should apply to the Directed Teaching Office, 2504 Sangren Hall. This program leads to full certification and the bachelor's degree.

CURRICULA FOR TEACHERS

The program for prospective teachers consists of three parts: (1) general education, designed to develop those understandings and competencies which make for effective living and good citizenship, offered largely in the School of General Studies; (2) advanced specialized study, with major and minor interests in the fields of the student's choice, offered in different schools; and (3) professional education courses offered in the School of Education.

In general, prospective teachers choose to work for the State Elementary Provisional Certificate, valid for grades kindergarten through eight, or the State Secondary Provisional Certificate, valid for grades seven through twelve.

Students majoring in art, music, librarianship, speech correction, or physical education for women may choose either the State Elementary Provisional Certificate or the State Secondary Provisional Certificate. Either certificate will authorize the candidate to teach his special sub-
School of Education

ject in both the elementary and secondary grades when the candidate qualifies in both fields.
Those preferring to teach in smaller communities may elect the Rural Elementary curriculum which leads to the State Elementary Provisional Certificate.

Elementary Curriculum

A.B. or B.S. Degree

State Elementary Provisional Certificate
(For the preparation of Teachers of Kindergarten and Grades 1-8)

A. Minimum hours required for this curriculum ........................................... 124 hrs.

B. Course requirements
1. General Studies Requirements as described on page 21 of the catalog must be met.
2. Language, Literature, Speech, Philosophy and Religion
   Children's Literature 282 .................................................. 4 hrs.
3. Science and Mathematics
   Structure of Arithmetic 150 .............................................. 4 hrs.
   Teaching of Elem. Sch. Math. 552 (strongly recommended)
4. Teacher Education
   Human Development and Learning 250 .......... 4 hrs.
   Teaching and Learning in the Elem. School 300 ............... 3 hrs.
   Teaching of Reading 312 ............................................. 3 hrs.
   Elementary School Social Studies 507 .......... 2 hrs.
   Directed Teaching, Seminar in Education and School and Society 470, 410, and 450 ..... 14 hrs.
5. Fine Arts (Art and Music)
   Music for the Classroom Teacher 140 .......... 4 hrs.
   Art Education Workshop 150 .................. 3 hrs.
6. Practical Arts
   One course in Business, Home Economics, Industrial Education, or Occupational Therapy*
   (Ind. Ed. 190 recommended)
7. Physical Education .......... 4 hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. Two minors or group minors of 20 or 24 hours each; or one major or group major of 30 or 36 hours are required. All of these must be in subjects or subject fields taught in the elementary school. (Check catalog descriptions for major and minor requirements.)

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*Students with a minor in librarianship may substitute 3 s.h. of library science courses for the practical arts requirement.
Curricula for Teachers

The following areas are acceptable fields for majors and/or minors in Elementary Education:

African Studies*; American Studies**; Anthropology; Art; Asian Studies*; Biology; Chemistry; Earth Science; Economics; English; French; Geography; Geology; German; Health Education*; Health, Physical Education and Recreation; History; Integrated Creative Arts*; Latin-American Studies*; Library Science*; Linguistics*; Mathematics; Music; Physical Education; Physics; Political Science; Rural Life and Education; Russian; Science; Slavic Studies*; Social Science; Sociology; Spanish; Speech; Special Education** (Blind and Visually Impaired, Crippled and Homebound, Emotionally Disturbed, Mentally Handicapped, Speech Pathology and Audiology) *Minors only **Majors only.

D. The candidate must satisfy the requirements of the A.B. or B.S. degree.

E. Nursery School Certification.*

Rural Elementary Curriculum

A.B. or B.S. Degree

State Elementary Provisional Certificate

Major attention is given to preparation for teaching in schools located in rural or small community areas—population 2,500 or less.

Students desiring to teach in schools serving these areas select the Rural Life major or two academic minors under the guidance of the Director of Rural Life and Education. Thought is given to the many demands made upon the teacher in the small school. Those preparing to serve the smaller communities in other professional groups, such as ministers, librarians, recreation leaders, etc., either at home or overseas, will find considerable basic work in the curricula of Rural Life and Education.

RURAL ELEMENTARY CURRICULUM

A. Minimum hours required for this curriculum .......... 124 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met. (Students should include Physical Geography and Biological Science.)

2. Language, Literature, Speech, Philosophy and Religion

   Children’s Literature 282 .......... 4 hrs.

3. Science, Mathematics and Psychology

   Structure of Arithmetic 150 .......... 4 hrs.

*Students wishing to meet State Certification Requirements for Nursery Teaching inquire at Teacher Education Office (2112 Sangren).
School of Education

4. Social Sciences ........................................... 8 hrs.
   Rural Sociology 220 .................................. 3 hrs.
   Rural Economics 230 .................................. 3 hrs.
   Rural Life (Seminar) ................................. 2 hrs.

5. Teacher Education ...................................... 25–31 hrs.
   Human Development and Learning 250 ............ 4 hrs.
   Teaching and Learning in Elem. School 300 .... 3 hrs.
   Teaching of Reading 312 ............................. 3 hrs.
   Directed Teaching .................................... 9 or 5* hrs.
   Seminar in Education 410** ......................... 2 hrs.
   School and Society 450 ............................... 3 hrs.

Rural Education
   Curr. Organization in Small Schools 201 ...... 3 hrs.
   Problems of Comm. Schools in Rural Areas .... 3 hrs.
   Supervision in Rural Area School ............... 2 hrs.
   (Sem.) 408 .............................................. 1-2 hrs.

   Music for the Classroom Teacher 140 .......... 4 hrs.
   Art Education Workshop 150 ...................... 3 hrs.

7. Practical Arts ........................................... 3 hrs.
   One course in Business, Home Economics, Industrial
   Education, or Occupational Therapy

8. Physical Education ...................................... 4 hrs.
   (Must include Physical Education for the Elementary
   Teacher 340)

C. Either a group major in Rural Life, including Rural Sociology,
   Rural Economics, Rural Life Seminar, Introduction to the Non-
   Western World, and 22 additional hours selected from courses offered
   in liberal arts; or two academic minors in subject fields taught in the
   elementary school, chosen with the guidance of the Director of
   Rural Life and Education.

D. The candidate must satisfy the requirements for the A.B. or B.S.
   degree.

RURAL LIFE AND EDUCATION CURRICULUM—
SPECIAL PROGRAM FOR EDUCATION OF CAREER TEACHERS
IN RURAL AND SMALL COMMUNITIES

Individuals electing this curriculum will fulfill requirements for the
Bachelor's degree and the Rural Elementary Curriculum as outlined
above. Students who qualify will complete a Rural Life Major.

An important feature of this program is the teacher intern "earn and
learn" provision. The student, upon recommendation of the Director of

*Only for students enrolled in the Special Program as described below.
**Not required of students enrolled in the Special Program.
Curricula for Teachers

Rural Life and Education, may teach full time with pay after successfully completing 90 hours of carefully selected courses from the curriculum, including directed teaching.

The teacher intern remains under close University and local supervision while teaching. He continues his academic and professional studies on a restricted but uninterrupted basis. The internship terminates at the end of two years, by which time all requirements for the degree and certificate must be met.

Junior High School Curriculum

A.B. or B.S. Degree

State Secondary Provisional Certificate

(With special emphasis for preparation of teachers in Grades 7, 8 and 9)

A. Minimum hours required for this curriculum .......................... 124 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

2. Language, Literature, Speech, Philosophy and Religion ................................................................. 3 hrs.
   - Speech for Teachers 102 ........................................ 3 hrs.

   - Psychology II 160 ........................................ 3 hrs.

4. Social Sciences ........................................................ 7 hrs.
   - Principles of Sociology 200 ..................................... 4 hrs.
   - Juvenile Delinquency and the Comm. 514 ................. 3 hrs.

5. Teacher Education ...................................................... 21 hrs.
   - Human Development and Learning 250 ................. 4 hrs.
   - Teaching and Learning in Jr. H. S. 300 .............. 3 hrs.
   - Directed Teaching, Seminar in Education and School and Society 470, 410 and 450 ............. 14 hrs.
   - Teaching of Reading (Secondary 322, strongly recommended)

6. Physical Education or Military Science .......................... 4 or 8 hrs.

C. One group major of 36 hours and one minor of 20 hours or one major of 30 hours and one group minor of 24 hours, or one major of 30 hours and one second major of 30 hours (State Secondary Provisional Certificate only) must be completed in subjects or subject fields taught in the junior high school. Certain courses in some departments may not be counted toward majors or minors. (See course descriptions.)

Acceptable academic majors for this curriculum are designed in the following fields: English, Speech, Social Science, Mathematics, Science, Foreign Languages, and Linguistics* (second major only). Minor areas must be chosen from fields related to the major. For
example, desirable combinations may relate the fields of English and
Linguistics, Social Science and Speech, or Science and Mathematics.
Majors in foreign language should choose minors in English, Speech,
Social Science, or a second foreign language. Other combinations of
major and minor areas may be elected with the consent of the aca-
demic adviser.

Students who plan to teach in areas such as Physical Education,
Art, Music, Home Economics and Industrial Arts should follow
major and minor requirements of the respective departments.

D. The candidate must satisfy the requirements of the A.B. or B.S.
degree.

E. The candidate for the State Secondary Provisional Certificate must
present a methods course in a major or minor field, preferably at
the junior high school level.

Secondary Curriculum

A.B. or B.S. Degree

State Secondary Provisional Certificate
(For the preparation of teachers in Grades 7-12)

A. Minimum hours required for this curriculum .......... 124 hrs.

B. Course Requirements

1. General Studies requirements as described on page
   21 of the catalog must be met.

2. Teacher Education ........................................... 21 hrs.
   Human Development and Learning 250 ........ 4 hrs.
   Teaching and Learning in Jr. or Sr. H. S. 300 3 hrs.
   Directed Teaching, Seminar in Education and
   School and Society 470, 410, and 450 ....... 14 hrs.

3. Physical Education or Military Science ............ 4 or 8 hrs.

C. One major or group major of 30 or 36 hours, and one minor or group
   minor of 20 or 24 hours or one second major of 30 hours, in subjects
   or subject fields taught in the Junior and Senior high school. Certain
   courses in some departments may not be counted toward majors or
   minors. (See course descriptions.)

The following areas are acceptable fields for majors and/or minors in
Secondary Education:

- African Studies*
- Agriculture
- American Studies**
- Anthropology
- Art (60 hr. program includes Drawing-Design minor)
- Asian Studies*
- Aviation*
- Biology
- Business Education
- Business Education—General Business*
- Chemistry
- Distributive Education
- Earth Science
- Economics
- English
- French
- Geology
- Geography
- German
- Health Education*
- Health, Physical Education, and Recreation
- History
- Home Economics
- Industrial Education
- Latin
- Latin-American Studies*
- Library Science*
- Linguistics***
- Mathematics
- Music*
- Public School
Curricula for Teachers

Music**; Musical Education; Physics; Political Science; Psychology; Russian; Science*; Slavic Studies*; Social Science; Sociology; Spanish; Speech; Special Education** (Blind and Visually Impaired, Crippled and Homebound; Emotionally Disturbed, Mentally Handicapped, Speech Pathology and Audiology); Vocational Technical Education.
*Minors only **Majors only ***Minors or second majors only

D. The candidate must satisfy the requirements for the A.B. or B.S. degree.

E. The candidate for the State Secondary Provisional Certificate must present a methods course in a major or minor field.

Librarianship Curriculum

A.B. or B.S. Degree
State Elementary or Secondary Provisional Certificate
(For Teacher-Librarians)

A. Minimum hours required for this curriculum ......... 124 hrs.
B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

2. Language, Literature, Speech, Philosophy and Religion ........................................ 19 hrs.
   Modern Language ................................... 8 hrs.
   Children's Literature 282 ...................... 4 hrs.
   English Elective .................................. 4 hrs.
   Speech Elective ................................... 3 hrs.

   Psychology I 150 .................................. 3 hrs.
   **Structure of Arithmetic 150 .................. 4 hrs.

4. Social Science ..................................... 5–6 hrs.
   Government Elective .............................. 3 hrs.
   *History Elective ................................. 3 hrs.
   **Elementary School Social Studies 507 ...... 2 hrs.

   Introduction to Librarianship 100 (Strongly recommended for elementary, required for secondary) ................................. 2 hrs.
   Building Library Collections 510 ................. 3 hrs.
   Reference Service 512 ............................ 3 hrs.
   Cataloging Principles 530 ........................ 3 hrs.
   Field Assignment and Seminar 520 ................ 2 hrs.
   *Reading Interests of Young Adults 542 .......... 3 hrs.
   **Storytelling 546 ................................. 3 hrs.
   **Elementary School Library Materials 516 ...... 3 hrs.

*Required only for teacher-librarian candidates in the secondary curriculum.
**Required only for teacher-librarian candidates in the elementary curriculum.
School of Education

6. Teacher Education ........................................ 21 hrs.
   Human Development and Learning 250 .......... 4 hrs.
   Teaching and Learning 300 (Elem., Jr.
   H.S., or Sr. H.S.) .............................. 3 hrs.
   Directed Teaching, Seminar in Education
   and School and Society 470, 410, and 450. 14 hrs.

7. Physical Education or Military Science .......... 4 or 8 hrs.

C. Candidates for the secondary provisional certificate must elect a
   major or group major of 30 or 36 hours in subjects or subject fields
   taught in the secondary school; candidates for the elementary pro-
   visional certificate must elect one minor or group minor of 20 or 24
   hours and meet the requirements of the Elementary Curriculum as
   listed on page 202.

D. A portion of the Directed Teaching period is spent in a selected
   school library.

E. The candidate must satisfy the requirements of the A.B. or B.S.
   degree.

Music Education Curriculum

B.M. Degree

State Secondary Provisional Certificate
(For preparation of Teachers of Vocal and Instrumental Music)

A. Minimum hours required for this curriculum .......... 128 hrs.
   (The usual number of hours in these curricula vary
   from 134 to 137. Certain proficiencies in the Secondary
   Performance media may be met by comprehensive
   examinations to reduce the usual number of hours.)

B. Course Requirements

1. General Studies requirements as described on page
   21 of the catalog must be met.

   Theory Elective ..................................... 2 hrs.

   Major Performance Medium ....................... 16 hrs.
   Secondary Performance Media, Conducting
   and Ensemble .................................... 20–26 hrs.
   (These requirements vary for Instrumental,
   Vocal and Combined curricula. See
   Music Supplement Catalog for details.)

4. Teacher Education ...................................... 30 hrs.
   Human Development and Learning 250 ........ 4 hrs.
   Teaching and Learning in Secondary School
   300 .................................................... 3 hrs.
Curricula for Teachers

Directed Teaching, Seminar in Education and School and Society 470, 410, and 450 .......... 14 hrs.
General Music Methods 240 ..................... 3 hrs.
Music Methods Electives ....................... 6 hrs.

5. Physical Education or Military Science ............ 4 or 8 hours

C. Candidates may be additionally certified to teach music in Grades Kindergarten—Six, inclusive, if they qualify through methods courses and directed teaching at the elementary level.

D. The candidate must meet the requirements of the B.M. degree. (See Music Supplement Catalog for details.)

Elementary Curriculum — Music Major

B.S. Degree

State Elementary Provisional Certificate
(For preparation of Elementary Music Teachers and/or Classroom Teachers, Grades K-8)

A. Minimum hours required for this curriculum ............ 124 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

   Basic Music 160-161 .................................. 6 hrs.
   Elem. Music Practicum 244-245 ....................... 6 hrs.
   Piano and Voice ..................................... 10 hrs.
   Music Appreciation 170 .............................. 4 hrs.
   General Methods 240 ................................. 3 hrs.
   Graderoom Music Literature 374 .................. 3 hrs.
   Ensemble ........................................... 5 hrs.
   Choral Conducting 330 .............................. 2 hrs.

3. Elementary Education Minor ......................... 21 hrs.
   Children's Literature 282 ......................... 4 hrs.
   Structure of Arithmetic 150 ...................... 4 hrs.
   Elementary School Social Studies 507 ........ 2 hrs.
   Approved Elective
      (Substitution for Music for the Classroom Teacher 140) ............ 4 hrs.
   Art Education Workshop 150 .................... 3 hrs.
   Physical Education for Classroom Teacher 340 .... 1 hr.
   Practical Arts ..................................... 3 hrs.

4. Teacher Education .................................. 24 hrs.
   Human Development and Learning 250 .......... 4 hrs.
   Teaching and Learning in Elementary School 300 .... 4 hrs.
Teaching of Reading 312 .................. 3 hrs.
Directed Teaching, Seminar in Education,
and School and Society 470, 410, and 450 . 14 hrs.

5. Physical Education ................................. 4 hrs.
(Includes Physical Education for the
Elementary Teacher 340)

6. Electives to make 124 hours

Special Education Curriculum—
Blind and Visually Impaired

B.S. Degree

State Elementary Provisional Certificate
(For the preparation of teachers of blind children)

A. Minimum hours required for this curriculum .......... 132 hours

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

2. Language, Literature, Speech, Philosophy and Re-
ligion .................................................. 7 hrs.
Children's Literature 282 ................. 4 hrs.
General Speech 100 .............................. 3 hrs.

Structure of Arithmetic 150 ............. 4 hrs.
Psychology I 150 ............................... 3 hrs.

4. Teacher Education ................................ 19 hrs.
Human Development and Learning 250 ... 4 hrs.
Teaching and Learning (Elem.) 300 ....... 3 hrs.
Teaching of Reading 312 ................. 3 hrs.
Seminar in Education 410 ................. 2 hrs.
School and Society 450 ...................... 3 hrs.
Directed Teaching 471 ...................... 4 hrs.

5. Fine Arts (Art and Music) ..................... 7 hrs.
Music for the Classroom Teacher 140 ... 4 hrs.
Art Education Workshop 150 .............. 3 hrs.

6. Practical Arts ................................ 2 hrs.
Arts and Crafts for Teachers 593 ........ 2 hrs.
Psychology I 150 ............................... 3 hrs.
(Must include Physical Education for the Ele-
mentary Teacher 340 and Adapted Physical Education
348 for men or Personal Physical Education 100 for
women)
8. Blind and Visually Impaired—Major

Introduction to Speech Correction 250 .............. 3 hrs.
Directed Teaching 474 (Spec. Educ.) ............... 8 hrs.
Interdisciplinary Education and Rehab. Techniques 528-29 .............. 4 hrs.
Education of Exceptional Children 530 .............. 3 hrs.
Physiology and Function of the Eye 590 .............. 2 hrs.
Braille and Other Communication Methods 591 .............. 2 hrs.
Education of the Blind and Partially Sighted 592 .............. 2 hrs.
Methods & Techniques of Teaching Braille and Other Areas of Communications 593 .............. 3 hrs.
Principles of Orientation and Mobility for the Blind 594 .............. 3 hrs.
Development of Services to the Blind 597 .............. 3 hrs.

C. The candidates must satisfy the requirements of the B.S. degree.

Special Education Curriculum — Blind and Visually Impaired

B.S. Degree

State Secondary Provisional Certificate
(For the preparation of teachers of blind children and youth)

A. Minimum hours required for this curriculum .............. 132 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

2. Language, Literature, Speech, Philosophy and Religion
   General Speech 100 .............. 3 hrs.

3. Science and Mathematics
   Mammalian Anatomy 210 .............. 4 hrs.
   Psychology I 150 .............. 3 hrs.

4. Teacher Education
   Human Development and Learning 250 .............. 4 hrs.
   Seminar in Education 410 .............. 2 hrs.
   School and Society 450 .............. 3 hrs.
   Directed Teaching 471 .............. 4 hrs.

5. Fine Arts (Arts and Music)
   Music for the Classroom Teacher 140 .............. 4 hrs.

6. Practical Arts
   Arts and Crafts for Teachers 593 .............. 2 hrs.
7. Physical Education ........................................ 4 or 8 hrs.
   (Must include Adapted Physical Education 348 or Personal Physical Education 100 or Military Science)

   Interdisciplinary Education and Rehabilitation Techniques 528-29 ............... 4 hrs.
   Education of Exceptional Children 530 ............ 3 hrs.
   Physiology and Function of the Eye 590 ............ 2 hrs.
   Braille and Other Communication Methods 591 ............. 2 hrs.
   Education of the Blind and Partially Sighted 592 .............. 2 hrs.
   Principles of Orientation and Mobility for the Blind 594 .................. 3 hrs.
   Orientation and Mobility 595 ..................... 2 hrs.
   Advanced Orientation and Mobility 596 ............ 4 hrs.
   Development of Services to the Blind 597 ........... 3 hrs.
   Pre-Practicum: Education of Blind and Visually Impaired 476 (2 semesters) ....... 12 hrs.

C. One academic minor in a subject or subject field taught in secondary school.

D. Pre-Practicum 476, will be a paid field assignment under the supervision of the University for two complete semesters. This will extend the undergraduate program to five years.

E. The candidate must satisfy the requirements of the B.S. degree.

Special Education Curriculum — Crippled and Homebound Children

B.S. Degree

State Elementary Provisional Certificate

(For the preparation of teachers of crippled and homebound children)

A. Minimum hours required for this curriculum .......... 132 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

   Children's Literature 282 ......................... 4 hrs.

   Structure of Arithmetic 150 .................... 4 hrs.
   Mammalian Anatomy 210 ......................... 4 hrs.
   (Eight hours must be taken in General Studies Science Courses)
Curricula for Teachers

4. Teacher Education
   - Human Development and Learning 250 4 hrs.
   - Teaching and Learning in the Elem. School 300 3 hrs.
   - Teaching of Reading 312 3 hrs.
   - Elementary School Social Studies 507 2 hrs.
   - Directed Teaching, Seminar in Education and School and Society 471, 410 and 450 9 hrs.

5. Fine Arts (Art and Music)
   - Music for the Classroom Teacher 140 4 hrs.
   - Art Education Workshop 150 3 hrs.

6. Practical Arts
   - Arts and Crafts for Teachers 593 2 hrs.

7. Crippled and Homebound—Major
   - Psychology I 150 3 hrs.
   - Introduction to Speech Correction 250 3 hrs.
   - Psychological Testing in Education 380 3 hrs.
   - Directed Teaching 474 (Special Education) 8 hrs.
   - Medical and Orthopedic Conditions (O.T.) 524 4 hrs.
   - Education of Exceptional Children 530 3 hrs.
   - Mental Deficiency 532 4 hrs.
   - Education and Therapeutic Care of Crippled Children 543 4 hrs.
   - Mental Hygiene of Childhood and Adol. 585 2 hrs.

8. Physical Education or Military Science 4 or 8 hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. One academic minor in a subject or subject field taught in elementary school.

D. The candidate must satisfy the requirements of the B.S. degree.

Special Education Curriculum — Emotionally Disturbed

B.S. Degree

State Elementary or Secondary Provisional Certificate
(For the preparation of teachers of emotionally disturbed children)

A. Minimum hours required for this curriculum 132 hrs.

B. Course Requirements
   1. General Studies requirements as described on page 21 of the catalog must be met.
School of Education

2. Language, Literature, Speech, Philosophy and Religion
   - Children's Literature 282 ........................................ 4 hrs.

3. Science and Mathematics
   - Structure of Arithmetic 150 ................................. 4 hrs.
   - Mammalian Anatomy 210 ......................................... 4 hrs.
   (Eight hours must be taken in General Studies Science courses)

4. Teacher Education
   - Human Development and Learning 250 ........................... 4 hrs.
   - Teaching of Reading 312 ........................................... 3 hrs.
   - Seminar in Education 410 .......................................... 2 hrs.
   - School and Society 450 ............................................. 3 hrs.
   - Directed Teaching 471 (Regular Class) ......................... 4 hrs.

5. Fine Arts (Art and Music)
   - Music for the Classroom Teacher 140 ............................ 4 hrs.
   - Art Education Workshop 150 ....................................... 3 hrs.

6. Practical Arts
   - Arts and Crafts for Teachers 593 .................................. 2 hrs.

7. Emotionally Disturbed—Major
   - Psychology I 150 ................................................... 3 hrs.
   - Introduction to Speech Correction 250 .......................... 3 hrs.
   - Psychological Testing 380 ......................................... 3 hrs.
   - Directed Teaching 474 (Special Education) ..................... 8 hrs.
   - Practicum in Special Education 521 .............................. 2 hrs.
   - Interdisciplinary Education and Rehabilitation techniques 528 and 529 ................................. 4 hrs.
   - Education of Exceptional Children 530 ........................... 3 hrs.
   - Mental Hygiene of Childhood and Adol. 585 .................... 2 hrs.
   - Education of Emotionally Disturbed Children 589 .......................... 4 hrs.
   - Psychopathology of Childhood 588 ................................ 2 hrs.

8. Physical Education or Military Science .......................... 4 or 8 hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. One academic minor in a subject or subject field taught in elementary or secondary school.

D. During the first three years the student must complete a minimum of 150 clock hours of observing and working with normal and maladjusted children.

E. The Candidate must satisfy the requirements of the B.S. degree. Upon graduation from this curriculum he receives temporary approval to teach emotionally disturbed children. Permanent approval for such teaching is granted upon application by the student at the completion of one year of successful teaching in this field.
Special Education Curriculum — Mentally Handicapped

B.S. Degree

State Elementary Provisional Certificate
(For the preparation of teachers of mentally handicapped children)

A. Minimum hours required for this curriculum 132 hrs.

B. Course Requirements

1. General Studies requirements as described on page 21 of the catalog must be met.

2. Language, Literature, Speech, Philosophy and Religion
   Children's Literature 282 4 hrs.
   General Speech 100 3 hrs.
   7 hrs.

3. Science and Mathematics
   Structure of Arithmetic 150 4 hrs.
   4 hrs.

4. Teacher Education
   Human Development and Learning 250 4 hrs.
   Teaching of Reading 312 3 hrs.
   Seminar in Education 410 2 hrs.
   School and Society 450 3 hrs.
   Directed Teaching 471 (Regular Class) 4 hrs.
   16 hrs.

5. Fine Arts (Art and Music)
   Music for the Classroom Teacher 140 4 hrs.
   Arts and Crafts for Teachers 593 2 hrs.
   7 hrs.

6. Practical Arts
   Arts and Crafts for Teachers 593 2 hrs.
   2 hrs.

7. Mentally Handicapped—Major
   Psychology I 150 3 hrs.
   Introduction to Speech Correction 250 3 hrs.
   Psychology II 160 3 hrs.
   Psychological Testing in Education 380 3 hrs.
   Directed Teaching 474 (Special Education) 8 hrs.
   Education of Exceptional Children 530 3 hrs.
   Mental Deficiency 532 4 hrs.
   Education of the Mentally Handicapped 534 4 hrs.
   Mental Hygiene of Childhood and Adolescence 585 or Psychopathology of Childhood 588 2 hrs.
   33 hrs.

8. Physical Education or Military Science 4 or 8 hrs.
   (Must include Physical Education for the Elementary Teacher 340)
   4 or 8 hrs.

C. One academic minor in a subject or subject field taught in elementary school.

D. The candidate must satisfy the requirements of the B.S. degree.
**School of Education**

**Special Education Curriculum — Speech Pathology and Audiology**

B.S. Degree

State Elementary Provisional Certificate
(Pre-professional Speech Pathology and Audiology)

A. Minimum hours required for this curriculum ........................................ 130 hrs.

B. Course Requirements

1. General Studies requirements as described on Page 21 of this catalog must be met. Physical Science 108 and Human Communication 400 are strongly recommended.

2. Language, Literature, Philosophy and Religion ........................................ 4 hrs.
   Children's Literature 282 .................................................. 4 hrs.

   Acoustics 100 ................................................................. 2 hrs.
   Psychology 150 ............................................................... 3 hrs.
   Psychology 160 ............................................................... 3 hrs.
   Psychology 250 ............................................................... 3 hrs.
   Structure of Arithmetic 150 .................................................. 4 hrs.

4. Teacher Education and Special Education .............................................. 29 hrs.
   Human Development and Learning 250 ............................................. 4 hrs.
   Teaching of Reading 312 ...................................................... 3 hrs.
   Teaching and Learning (Elem.) 300 ............................................ 3 hrs.
   Elem. School Social Studies 502 .............................................. 2 hrs.
   Practical Arts ................................................................. 3 hrs.
   Directed Teaching, Seminar in Education and School and Society 470, 410, 450 .............. 14 hrs.

5. Fine Arts ......................................................................................... 7 hrs.
   Music for Classroom Teacher 140 ................................................. 4 hrs.
   Art Education Workshop 150 .......................................................... 3 hrs.

6. Speech Pathology and Audiology ......................................................... 30 hrs.
   Intro. to Communication Disorders 200 ............................................ 3 hrs.
   Orientation to Clinical Practice 201 .............................................. 1 hr.
   Anatomy and Physiology of Speech and Hearing 202 ............................ 2 hrs.
   Speech and Language Development 203 ............................................ 2 hrs.
   Phonemics 204 ............................................................................. 2 hrs.
   Speech and Hearing Science 300 ..................................................... 2 hrs.
   Phonemic Disorders 351 .............................................................. 2 hrs.
   Phonatory Disorders 352 .............................................................. 2 hrs.
   Fluency Disorders 353 ................................................................. 2 hrs.
   Language Disorders in Children 354 ............................................... 2 hrs.
   Hearing Disorders 355 ..................................................................... 2 hrs.
Introduction to Audiometry 356 .......... 2 hrs.
Practicum I 400 ......................... 1 hr.
Practium II 401 ......................... 1 hr.
Electives ................................. 4 hrs.

7. Physical Education or Military Science including Physical Education for the Elementary Teacher 340 .......................... 4–8 hrs.

C. One minor appropriate to Elementary Education.
D. During the program the student must satisfactorily complete clinical requirements as specified by the Department of Speech Pathology and Audiology.
E. The candidate must satisfy the requirements for the B.S. degree.

CLINICS

Psycho-Educational Clinic

The primary purpose of the Psycho-Educational Clinic is to provide educational and clinical experiences for mature students enrolled at Western Michigan University who are preparing to do educational and psychological work with children and adults. A secondary function of the clinic is to provide educational and psychological services to parents, teachers and college students. Special activities carried on by the clinic are designed to provide corrective and developmental instruction in reading for children and adults, and to furnish consultative services for teachers and schools in Southwestern Michigan. Furthermore, the clinic provides students in education and psychology an opportunity to see the administration of educational and clinical tests and the procedures employed in interviewing children.

Reading Clinic

University students encountering difficulty in reading or those wishing to improve their reading skills may seek assistance in the Psycho-Educational Clinic located in Room 300 of the Health Service Building on the East Campus. Referrals are made by the Counseling Bureau and by members of the faculty. After causal factors have been identified, treatment is provided.

Reading Improvement for College Students and Adults

Classes are provided each semester in Adult Reading. The emphasis in these classes is upon instructional and developmental procedures for helping adults improve their reading skills as they do their
School of Education

regular academic or office work. Each class consists of lectures, demonstrations and laboratory periods in which the students do both guided and free reading. Reading as a thinking process is stressed. The student is taught how to improve his vocabularies, how to read a chapter effectively, how to read for the purpose of solving problems, how to concentrate upon reading activities, how to find and organize information and how to read critically. Measures of reading are administered at the beginning and the end of the course in order that the student may evaluate objectively his reading performance.

Institute of Blind Rehabilitation

Donald Blasch, Director

The Institute of Blind Rehabilitation offers clinical and educational services to students and other clients who have severe visual impairments, and works cooperatively with the Michigan Division of Services for the Blind. Operating in part on grants from the Vocational Rehabilitation Administration, and the Department of Health, Education, and Welfare, the Institute offers graduate programs in Orientation and Mobility, Home Teachers for the Adult Blind, and undergraduate programs for teachers of visually handicapped children. Part of its function is to conduct workshops for people working in the field, provide consulting services, and to initiate pertinent research in this area.

Faculty members of the Institute are members of the Department of Special Education and are responsible to that department for teaching courses, counseling students and curricular revision.
Teacher Education

Orval L. Ulry, Head
A. L. Sebaly, Director of Student Teaching
James O. Ansel, Director of Rural Life and Education

Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to take a minimum of 21 hours of professional courses in teacher education, plus a methods course offered in the major or minor field; students in elementary education are required to complete 26 hours in professional education courses. A “C” average or better must be earned in required professional courses.

Applicants for the secondary provisional certificate are not permitted to major in Teacher Education.

Elective courses are available in the following fields: elementary education, secondary education, rural life and education, special education, methods of teaching, foundations of education, and related areas. Certain special-methods courses are available in other departments of the university.
School of Education

Students take the block of Integrated Professional Education courses 410, 450, and 470 during either semester of their senior year. Students with irregularities in their professional work or with advanced credit in education should confer with the departmental adviser at the earliest possible date. Those majoring in certain fields requiring continuous study throughout the senior year may, upon application to the Directed Teaching office, be permitted to take 450 during the other semester of that year.

INTEGRATED CREATIVE ARTS MINOR

An inter-departmental minor in the creative arts is now offered for elementary teachers. This minor consists of 24 semester hours distributed as follows:

Teach Ed. 230*—The Nature of Creativity .......................... 4 hrs.
Women’s Phys. Ed. 341—Creative Dance for Children ........... 4 hrs.
Music 140—Music for the Classroom Teacher ...................... 4 hrs.
Art 200—The Creative Process Through Art ...................... 4 hrs.
Speech 564—Creative Dramatics for Children ...................... 4 hrs.
Teacher Ed. 430—Creativity in the Elem. School ................ 4 hrs.

Students enrolled in this minor must take T. Ed. 430 (Creativity in the Elementary School) after they have taken all other courses in the minor.

HEALTH EDUCATION GROUP MINOR

A Group Minor is offered in Health Education. It is open to all students and is especially appropriate for those specializing in Elementary Education, in Special Education, and in Secondary Education with majors in such areas as Biology, Home Economics, Physical Education, Psychology, Sociology, and Speech Pathology and Audiology. The health education group minor consists of 24 hours. Ten to eleven hours are required and the other thirteen to fourteen are elective. Since health is a multidisciplinary program, students should not elect more than two courses in any one department exclusive of required courses.

Adviser: Dr. Margaret S. Large

Required Courses .......................... 10-11 hrs.

P.E.W. 342—Elementary School Health and Safety Education OR

343—Secondary School Health and Safety Education .............. (elect one) 3 hrs.

Biol. 100—Principles of Biology OR

101—Animal Biology OR

107—Biological Science ........................................ (elect one) 3-4 hrs.

**205—Human Body in Health and Disease ......................... 4 hrs.

*May be substituted for Arts and Ideas in the General Studies Program.
**Mammalian Anatomy (210) or Human Physiology (219) may be substituted for Human Body in Health and Disease (205)
Teacher Education

Elective Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>Healthful Living</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>210</td>
<td>Mammalian Anatomy</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>219</td>
<td>Human Physiology</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>555</td>
<td>Alcohol Education</td>
<td>2 hrs.</td>
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<tr>
<td>585</td>
<td>Mental Hygiene of Childhood and Adolescence</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>212</td>
<td>Foods and Nutrition</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>160</td>
<td>Psych. II: Personality and Developmental Psych.</td>
<td>3 hrs.</td>
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<tr>
<td>250</td>
<td>Behavior Mod. I: Abnormal Psych.</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>200</td>
<td>Principles of Soc.</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>290</td>
<td>Modern Marriage</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>572</td>
<td>Community Agency Resources</td>
<td>2 hrs.</td>
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<tr>
<td>592</td>
<td>Family Life Education and Counseling</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>530</td>
<td>Education of Exceptional Children</td>
<td>3 hrs.</td>
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<tr>
<td>200</td>
<td>Introduction to Communication Disorders</td>
<td>3 hrs.</td>
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<tr>
<td>150</td>
<td>First Aid</td>
<td>2 hrs.</td>
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<tr>
<td>275</td>
<td>Community Health</td>
<td>3 hrs.</td>
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<tr>
<td>514</td>
<td>Health Education Materials and Methods</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>516</td>
<td>Issues in Health Education:</td>
<td>1-4 hrs.</td>
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<tr>
<td></td>
<td>a) Mental Health, b) Sex Education, c) Mood</td>
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<tr>
<td></td>
<td>Modifiers, d) Environmental Pollution, e) etc.</td>
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<tr>
<td></td>
<td>Students may register for 516 more than once</td>
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<td>but may not repeat the same issue</td>
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For course descriptions, see the listings in the various departments.

100 Introduction to Education 2 hrs.

This course is designed to provide an early introduction to the profession of teaching and to the educational services present in communities of the state and nation. Field trips, observations, audio-visual materials, resource persons, tests and personal inventories are used to acquaint students with the purposes and functions of education in American society, and to help students make intelligent choices of areas of specialization within the profession. Course meets three hours a week for two hours credit.

REQUIRED WORK IN EDUCATION

(For Provisional Certificate)

SOPHOMORE OR JUNIOR YEAR

250 Human Development and Learning 4 hrs.

Class meets five periods a week for four hours credit. Course deals with physical, social, emotional, and intellectual growth and development of children and adolescents.
School of Education

JUNIOR YEAR

300 Teaching and Learning (in Elem., Jr. H.S., Sr. H.S.) 3 hrs.

This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; non-instructional duties of the teacher in school and community. Sections are divided according to school levels: elementary, junior high school and senior high school.

SENIOR YEAR

410, 450, 470 Integrated Professional Education 14 hrs.

For all seniors whose programs will permit them to devote one semester entirely to professional education. A unified course for seniors which is based on needs and problems of students while doing their directed teaching. Prerequisite. 250 and 300, or equivalent; and twice as many honor points as hours attempted.

470 Directed Teaching 9 hrs.

Students devote a minimum of four and one-half days per week for one semester to Directed Teaching, at which time they have experience in both the curricular and extra-curricular program of the school in which they teach. All students expecting to do Directed Teaching should enroll at the Directed Teaching Office well in advance of the semester in which the Directed Teaching is to be done.

410 Seminar in Education 2 hrs.

(Taken in conjunction with Directed Teaching)

Students work individually and in groups on the kinds of problems faced in directed teaching situations in classroom, school and community. Other problems to be faced later as full-time teachers are considered. Suggestions and guidance are afforded by staff members and by resource persons. The seminar is divided into elementary and secondary sections.

450 School and Society 3 hrs.

Course content includes such matters as social, political, and economic influences on education; historical and philosophical backgrounds of present-day education; changes and trends in education; and current problems in education.

OPTIONAL COURSES IN DIRECTED TEACHING

471 Directed Teaching 1 to 8 hrs.

Only for seniors who have completed most of their professional course work prior to the senior year. Similar to description for 470. Students
should enroll at the Student Teaching Office for Directed Teaching 471, 472 or 474 well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: twice as many honor points as hours of credit acquired.

472 Directed Teaching 4-9 hrs.
Only for seniors who have previously fulfilled a part of their requirement in directed teaching. Similar to description for 471.

474 Directed Teaching (Special Education) 4-8 hrs.
Only for students specializing in special education. Candidates must be approved by the Head of the Special Education department.

475 Directed Teaching (Rural) 5 hrs.
Only for students in the Special Rural Life and Education curriculum.

GENERAL COURSES

102 Techniques of Learning and Adjustment 1 hr.
Designed to aid the student in making a more adequate academic and social adjustment. Attention is given to schedule-making, note-taking, study techniques and examination writing. Principles of effective learning are discussed and demonstrated.

104 Adult Reading 2 hrs.
Designed to show the student how to make more effective use of text and reference books in academic subjects. Attention is given to chapter reading, vocabulary building, problem solving concentration and critical reading. Group and individual conferences are provided.

502 Curriculum Workshop 2-4 hrs.
Opportunity is provided for teachers, supervisors and administrators in selected school systems to develop programs of curriculum improvement. A wide variety of resources is used for instructional purposes, including several specialists, library and laboratory facilities, field trips, audio-visual materials and the like.

506 Adult Education 2-4 hrs.
This course will include such topics as organizing and financing formal public school adult education programs, promoting informal adult education activities, leadership training, program planning, and adult education group techniques. Students will be permitted to select special areas of interests for research and study.

508 Parent Education 2 hrs.
Places major emphasis on home problems which have educational implications for the child. Parent-teacher relationships, council programs, and cooperative efforts for improvement of education in home and in school are studied.
ELEMENTARY AND SECONDARY EDUCATION

230 The Nature of Creativity 4 hrs.
An interdisciplinary course dealing with creativity as a human function central to man's behavior, institutions and environment. Team-taught by faculty members from the departments of Art, Music, Physical Education (Women), Speech and Teacher Education.

310 Stories for Childhood 2 hrs.
A study of stories and poems suitable to childhood. Classroom practice in story telling.

311 Reading Workshop 3 hrs.
The basic purpose of the workshop will be to study typical classroom reading problems. Tools useful in identifying problems, materials available, and techniques for the teaching of reading will be examined and experimented within the classroom. Special consideration will be given to a case study of one severe reading problem.

312 The Teaching of Reading (Elementary) 3 hrs.
A summary of the results of the scientific studies made in the field of reading. Methods of teaching reading are critically analyzed. Stress is placed on appropriate materials at various levels.

313 Problems in Elementary Education 3 hrs.
This course is designed to deal with problems of immediate concern to beginning teachers—discipline, group activity, teacher-pupil planning, and other problems dealing with teaching in the elementary school.

322 The Teaching of Reading (Secondary) 3 hrs.
This course deals with methods and materials for improving reading in the junior and senior high school. Both developmental and remedial procedures are stressed.

416 Later Elementary Education 3 hrs.
A study of the characteristics and needs of pupils in the later-elementary grades and of the materials and methods of instruction.

430 Creativity in the Elementary School 4 hrs.
A synthesis of the principles of creativity in application to teaching and learning situations in elementary education. Team-taught by faculty members from the departments of Art, Music, Physical Education (Women), Speech and Teacher Education.

442 Fundamentals of Driver Education 2 hrs.
Description: Fundamentals, principles, practices, objectives, and subject matter content of high school Driver Education and Traffic Safety. Methods of teaching in the classroom. First of three required courses to certify Driver Education teachers. Prerequisites: Junior level and valid driver's license.
This course is designed to help teachers understand the role of the social studies in the elementary school, gain insight into important considerations in the selection of content, and discover how to guide and assess the learning of children in this field. Planning social studies experiences and ways of working with children in classroom setting will be emphasized.

510 The Elementary Curriculum  
A consideration of content and procedures to adapt experiences of pupils in elementary schools to modern conditions and to child needs and interests. Individual or committee reports concerning the improvement of various aspects of the elementary school curriculum will be prepared.

514 Nursery-Kindergarten Education  
This course will acquaint the students with the history and present-day status of Nursery School and Kindergarten education. Consideration will be given to the organization, equipment, curriculum, and approved teaching procedures.

535 Introduction to Teaching the Disadvantaged  
Designed for teachers and administrators who are presently working with disadvantaged children and youth. Class meetings are centered around problems arising from practical situations, particularly with respect to affective factors of environment and their relation to teaching and learning. Extensive use is made of consultants from social, governmental and educational agencies working with the disadvantaged.

542 Administration and Methods of Driver Education  
Description: History, Philosophy, and Psychology of Driver Education. Emphasis on organization and administration of high school Driver Education programs. Laboratory work in dual control cars and driving range programs. Prerequisites: T.Ed. 442, 21 years of age, and valid driver's license.

544 Psychology of Driver Education  
Description: Psychological and perceptual aspects of the driver and traffic safety. The role of the teacher in influencing driver behavior. Research in traffic safety. Prerequisite: T.Ed. 442.

560 Practicum: Sociological and Psychological Foundations of Teaching the Disadvantaged  
The initial course required of all students in this program. Designed to develop awareness of family situations, community conditions, behavior, value systems, and characteristics of the disadvantaged, as well as to develop positive attitudes toward these children and their problems. Consists of readings, lecture-discussions, and field experiences with the
disadvantaged, including home visits, visits to social and governmental agencies, and school experiences including supervised teaching. Generous use is made of consultants from all agencies dealing with the problems of the disadvantaged.

586 Clinical Studies in Reading 2 hrs.
This course is intended to provide the basic information needed in the examination of persons with reading disorders. Interviewing techniques and examination procedures will be the basic content of the course. Emphasis will be placed on the physical, psychological and sociological factor affecting reading performance.

587 Educational Therapy in Reading 2 hrs.
A study is made of the psychological, sociological and physiological factors affecting children's reading ability, together with laboratory application of such knowledge in the prevention, diagnosis and treatment of reading problems. Open only to experienced teachers by permission of the instructor.

597 Reading and Related Language Experiences 2 hrs.
A study of the current research in the many aspects of language which are involved in the process of effective reading.

598 Selected Reading in Education 1-4 hrs.
Designed for highly qualified students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental adviser and instructor.

METHODS OF TEACHING

548 Fundamentals of Audiovisual Media 2 hrs.
A survey of audiovisual media as effective means for achieving educational objectives. Emphasizes selection and classroom use of both commercially available and simple, locally produced instructional materials. Students preview and evaluate films, filmstrips, recordings, etc. and are expected to show proficiency in the operation of projectors, tape recorders and other equipment during correlated laboratory sessions which require several hours outside of class during the semester. In addition to text materials, students must provide supplies averaging about $5.00 per student. Limited to 30 students.

549 Basic Production of Audiovisual Materials 3 hrs.
A laboratory course in the preparation and effective use of teacher-made visual materials. Covers basic processes of mounting, laminating and reproducing pictures; designing and creating posters and displays; construction of presentation boards; design and production of transparencies for overhead projection, and fundamentals of photography. In addition to text materials, students must provide supplies averaging about $15.00 per student and must have the use of a simple camera. Limited to 20 students. Prerequisite: TEED 548 taken previously or concurrently.
555 Alcohol Education 2 hrs.

Deals with problems of alcohol education in the school and community, with special emphasis on teaching methods and procedures, relationships with governmental and social agencies, and administration of the program.

RURAL LIFE AND EDUCATION

Dr. James O. Ansel, Director

201 Curriculum Organization in Small Schools 3 hrs.

A study of the objectives of education as related to rural children and rural needs and teaching practices leading toward these objectives. Students experience through observation and participation the development of materials suitable for use in small schools.

408 Supervision in Rural Area Schools 1-2 hrs.

Prerequisite 305. Planned for supervisors, principals, and administrators. Discussion and individual reports center on curriculum problems, orienting new teachers, teaching practices and in-service education. Other supervisory problems for all types of rural schools are included.

411 Problems of Community Schools in Rural Areas 1-2 hrs.

Prerequisite 201. An analysis of the community school-reorganization of school districts; functions of the local intermediate and state boards of education; school building planning, supplies, equipment, professional organizations, school law, public relations and other topics.

475 Direct Teaching (Teacher interns) see p. 205 5 hrs.

RURAL SOCIAL SCIENCE

220 Rural Sociology 3 hrs.

A study of life in the rural environment—local, regional and worldwide, including cultural factors; population trends; impact of industrialization; family, village, community; social institutions, agencies and organizations; educational, recreational, religious, health and government facilities. Magazines, pamphlets, and other sources supplement textbooks.

231 Rural Economics 3 hrs.

Basic economic principles are considered in terms of rural conditions—local, national, international. Economic interpretations are given topics found in local school's curricula—conservation, taxes, insurance, consumer education, cooperatives, agricultural, extension, services, etc.

525 Rural Life 2 hrs.

Prerequisite 220. Critical study of recent books in rural social life. Consideration is given individual problems related to social aspects of community life. Special problems are selected for study by each student. Field work is encouraged.
The Department of Special Education offers undergraduate and graduate programs for the preparation of teachers, administrators and clinical service personnel in the areas of blind rehabilitation, emotionally disturbed, crippled and homebound, and mentally handicapped. Students in these programs are awarded either the elementary or secondary provisional certificate with a major in one of the above fields, which also permits them to teach in their major throughout all grades of the school system.

The curricula in Special Education represent balanced programs of general, specialized and professional education, and are designed to meet state requirements for approval of teachers in the respective fields. Students interested in entering Special Education should consult with their departmental advisers early in their college careers.

SPECIAL EDUCATION

512 Workshop in Special Education 2-4 hrs.

Designed for teachers, counselors, psychologists, social workers and others interested in studying selected aspects of special education at appropriate locations, such as state hospitals and special schools. A variety of instructional experiences are provided, including conferences.

521 Practicum in Special Education 2 hrs. Fall

This course consists of supervised tutoring of exceptional children with learning problems, such as the mentally retarded, perceptually handicapped and emotionally disturbed. Educational evaluation, teaching materials and techniques, and management of emotional and social aspects of the learning process are included in the course content. Regular clinical case conferences directed by the instructor and members of the institutional staff are held.

528-29 Interdisciplinary Education & Rehabilitation Techniques 4 hrs.
(2 per semester) Fall, Winter

This course is intended to develop a thorough understanding of the roles of the various disciplines involved in the diagnosis, education, and rehabilitation of exceptional children and youth. Lectures, taped and
filmed interviews, and live demonstrations are utilized. Class meets during the fall and winter terms on Mondays, from 4:15 to 6:00 for four hours credit. The course is applicable to students of speech correction, reading therapy, occupational therapy, psychology and special education as well as to those in general education.

530 Education of Exceptional Children 3 hrs. Fall, Winter
Deals with the problems and methods involved in the adjustment and training of exceptional children in the schools—the mentally retarded, the gifted, the crippled, the deaf, the blind, the emotionally unstable, and the delinquent.

532 Mental Deficiency 4 hrs. Fall, Winter
A course especially intended for teachers of mentally handicapped children. Also recommended for school counselors, psychologists, social workers and other auxiliary personnel. Course objectives include an understanding of the causes, diagnoses, classification and interpretation of mental deficits. Prerequisite: Educ. 530 or equivalent.

534 Education of the Mentally Handicapped 4 hrs. Fall, Winter
The course includes a critical evaluation of methods and materials utilized in teaching the mentally handicapped. Special attention will be given to problems of organizing special classes, developing curriculums and understanding expectations of educational program for mentally handicapped children and youth. Prerequisite: Educ. 532 or equivalent.

543 Education and Therapeutic Care of Crippled Children 4 hrs. Fall
Study of educational, psychological, and therapeutic needs of crippled children and the role of allied disciplines in meeting these needs. Prerequisite: Education of Exceptional Children 530 or consent of instructor.

585 Mental Hygiene of Childhood and Adolescence 2 hrs. Fall, Winter
Deals with the problems of emotional adjustment and maladjustment in childhood and adolescence.

588 Psychopathology of Childhood 2 hrs. Fall, Winter
A comprehensive study of the causes, manifestations, treatment and prognoses of Psychiatric conditions in children suffering from neuroses, psychoses, schizophrenia, behavior disturbances, psychopathic personality disorders, organic malfunctioning, sexual deviations, etc. The learning difficulties and educational problems presented by emotionally disturbed children. Terminology and concepts needed for an understanding of mental illness and for effective communication with members of related psychiatric professions.

589 Education of Emotionally Disturbed Children 4 hrs. Fall, Winter
Taken concurrently with directed teaching in this field, this course provides group and individual guidance regarding problems encountered in teaching the emotionally disturbed. Methods of teaching, evaluation, cooperation with other agencies and professions, staff diagnostic confer-
ences, and inter-disciplinary teamwork are among the areas covered. Resource persons include psychiatrists, psychologists, social workers, etc.

**BLIND REHABILITATION**

**476 Pre-Practicum (Education of Blind and Visually Impaired) 6 hrs.**

Designed to give students in specialized areas an opportunity for paid field experience in this area. They will be under the direct supervision of the University and will be assigned to assist an experienced and qualified specialist in the field. Only students completing their third year of study in the professional education block will be eligible. Permission of the student’s adviser will be necessary.

**590 Physiology and Function of the Eye 2 hrs. Fall, Winter**

The anatomy, structure and function of the eye. Various eye diseases and malfunctions are stressed. The student is given an opportunity to observe all types of eye conditions, eye prosthesis and low visual aids.

**591 Braille and Other Communication Methods 2 hrs. Fall, Winter**

Acquaints the student with the basic rudiments of Braille reading and writing. Familiarization with other means of communication used by the blind.

**592 Education of the Blind and Partially Sighted 2 hrs. Fall**

An overview of the education of visually handicapped children and adults. An introduction to the literature, history, principles, practices and problems in the field, including curricular and methodological adaptations of various educational programs.

**593 Methods and Techniques of Teaching Braille and Other Areas of Communication 3 hrs. Winter**

Provides students with the ability to teach areas of communication essential to the blind, such as: social communication, use of Braille, typing, script writing, electronic devices and other media. Opportunity for supervised practical application of methods will be afforded to the student.

**594 Principles of Orientation and Mobility for the Blind 3 hrs. Fall, Winter**

An examination of the fundamental principles underlying spatial and geographical orientation and mobility for the blind. This will include an analysis of the sensorium in orientation and a study of bodily alignment and movement in mobility. There will also be a study of the specific characteristics of various mechanical typhlostaffs, plus an evaluation of electronic sensory aids for travel.

**595 Orientation and Mobility 2 hrs. Fall, Winter**

Techniques will be acquired under conditions simulating blindness. Emphasis will be placed on the use of the remaining senses, common
objects, the muscles and the skeleton in activities of daily living. Permission of instructor.

596 Advanced Orientation and Mobility 4 hrs. Fall, Winter
Orientation and mobility techniques and the proper methods of incorporating them into a person’s method of travel. Guided observation and practice with blinded individuals ranging in age from the pre-kindergarten through the aged in various environments, such as the: school, residence, community, and work situations. Permission of instructor.

597 Development of Services to the Blind 3 hrs. Fall
This introductory course is designed to acquaint the students with the development, scope, and present-day status of various types of services offered to blind people. It includes an investigation of administrative structure and function of state and private agencies serving the blind and surveys specialized needs and recent trends of interest to prospective teachers in the field.

School Services

Harold W. Boles, Head
Robert Betz
William A. Carlson
William D. Coats
James A. Davenport
Kenneth B. Engle
L. Dale Faunce
Neil Lamper
James Lowe
Dorothy McCuskey
Arthur J. Manske
Gilbert E. Mazer
Paul J. Misner
Maurice F. Seay
Roland S. Strolle
Donald Tosi
Thelma Urbick
William P. Viall
Donald C. Weaver

The Department of School Services offers work in the fields of administration and supervision, curriculum development, guidance and personnel services. Most of these courses are open to graduate students only, but the following courses in guidance are open to qualified undergraduates.

GUIDANCE AND PERSONNEL SERVICES

580 Principles and Philosophy of Guidance 2 hrs. Fall, Winter
An introductory course for elementary and secondary teachers. A thorough investigation of the democratic philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.
School of Education

581 Interpretation and Use of Tests in Guidance 2 hrs. Winter
Designed to familiarize students with various psychological tests and scales that may be used in school guidance programs. Tests are taken and scored by students, and the results are interpreted and evaluated.

Education 582 The Information Service in Guidance 2 hrs. Fall, Winter
Designed to introduce counselors, teachers and other personnel workers to: 1) basic resources available in the area of occupational, educational and personal social information, 2) theories of vocational development and their application to the process of guidance and counseling, and 3) the world of work, and especially an analysis of work's impact on American culture.

583 Guidance Workshop 2 hrs.
Designed for counselors who wish to study particular guidance problems and procedures in relation to their local guidance program.

584 Elementary School Guidance 2 hrs. Fall
Designed to give teachers, administrators and elementary counselors an understanding of the principles and techniques of guidance programs in elementary schools.

Physical Education for Men

Joseph T. Hoy, Head
Donald E. Boven
Bill M. Chambers
J. Patrick Clysdale
Charles C. Comer
George G. Dales
Fred A. Decker
F. William Doolittle
Manley G. Fossen
Edward A. Gabel
Edward C. Hager
George W. Hobbs
J. Arthur Jevert
Jack D. Jones
Kenneth W. Kopke
Fletcher R. Lewis
Clarence Means
John T. Miller
Fred C. Orlofsky
Richard Raklovits
Harold L. Ray
William Rowekamp
Merle J. Schlosser
Thomas C. Slaughter
Raymond F. Sorensen
Fred L. Stevens
Roy J. Wietz
Robert F. Wyman
Roger M. Zabik

THE GENERAL PHYSICAL EDUCATION REQUIREMENT
All men must participate in general physical education beginning with the first semester or session of residence, until a minimum of four hours is completed. Classes meet two hours weekly for one semester of credit.
Exceptions

1. Any student 30 years of age or older is not required to take physical education. (124 hours still required for graduation)

2. A student may elect to complete the basic ROTC course (4 semesters) as a substitute for the general physical education requirement.

3. Students in the marching band may count band participation towards 3 semesters of general physical education. At least one hour of general physical education must be completed.

4. A veteran (defined as one having served one year's continuous active duty with honorable discharge) must complete only two semesters of general physical education. A veteran must request the waiver of two hours by presenting his discharge papers at the Academic Records Office.

5. Majors and minors specializing in physical education must complete only two hours of general physical education in courses as specified by the Department of Physical Education and Athletics.

6. A transfer student must enroll in general physical education during the first semester or session of residence at Western Michigan and thereafter each semester or session until the 4 hour requirement is completed or until graduation, whichever occurs first.

7. A member of varsity athletic teams may receive up to 3 credits in general physical education by enrolling in the appropriate course in the PEM 220 series.

8. Students are classified for physical education activities on the basis of a medical examination required by the University Health Service. Students classified as 'limited' in terms of physical activity should enroll in the adapted physical education program. (4 semester hours are required)

Restrictions

1. Only four hours of general physical education will be accepted as credits towards graduation.

2. A freshman, sophomore, or junior student may not enroll in more than one hour of general physical education in any one semester. A senior may enroll in two hours in one semester (just cause must be shown) upon obtaining the written consent of the Coordinator of General Physical Education.

COURSES IN GENERAL PHYSICAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>89</td>
<td>Physical Fitness Program (No credit) (Winter)</td>
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<tr>
<td>100</td>
<td>General Physical Education 1 hour (Fall)</td>
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<tr>
<td>100</td>
<td>Adapted Physical Education 1 hour (Fall)</td>
<td></td>
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<tr>
<td>101</td>
<td>General Physical Education 1 hour (Fall)</td>
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<tr>
<td>101</td>
<td>Adapted Physical Education 1 hour (Fall)</td>
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<tr>
<td>102</td>
<td>General Physical Education 1 hour (Fall)</td>
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### Programs for Specializing Students

#### Pattern I — Group Minor in H.P.R.E. (24 Hours)

Required courses for the group major in health, physical, and recreation education are 150, 160, 240, 330, 352, 380, 390, 460.

Elect minimum of four hours from 331, 332, 333, 334, 335, 336. Elect minimum of four hours from 270, 370, 371, 470. Elect two courses from Biol. 111, PEW 275, 342 or 343, 514, 516, Teacher Education 555, 585. Elect minimum of two courses from PEM 244, 260, 348, 430, 490.

Animal Biology 101 (or Biol. 100), Mammalian Anatomy 210, Human Physiology 219 are required in biological science.

#### Pattern II-A — Group Minor in H.P.R.E. (24 Hours)

Required courses for the group minor in H.P.R.E. are 150, 160, 240, 330, 380, 390, 460.
Physical Education for Men

Elect minimum of one course from 331, 332, 333, 334, 335, 336. Elect minimum of one course from 270, 370, 371, 470. Elect minimum of one course from Biol. 111, PEW 275, 342 or 343, 514, 516, Teacher Education 555, 585. Elect minimum of one course from PEM 244, 260, 348, 352, 430, 490. Candidates in elementary education should consult departmental adviser for elective offerings.

Animal Biology 101 (or Biol. 100) and Mammalian Anatomy 210 are required in biological science.

PATTERN II-B — Recreation Minor (20 Hours) (Non-Teaching)

REQUIRED CORE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>P.E. 270</td>
<td>Outdoor Education</td>
<td>2</td>
</tr>
<tr>
<td>**370</td>
<td>Community Recreation</td>
<td>2</td>
</tr>
<tr>
<td>371</td>
<td>Procedures and Materials in Recreation</td>
<td>2</td>
</tr>
<tr>
<td>470</td>
<td>Directed Field Experiences</td>
<td>2</td>
</tr>
<tr>
<td></td>
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<td>8</td>
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</table>

ELECTIVES

Group I—Arts and Crafts—(3 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>I.E. 190</td>
<td>Ind. Arts for Elementary Teachers</td>
<td>3</td>
</tr>
<tr>
<td>192</td>
<td>Related Arts and Crafts</td>
<td>3</td>
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</table>

Group II—Aquatics—(1 hr.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>**330</td>
<td>Swimming</td>
<td>1</td>
</tr>
<tr>
<td>430</td>
<td>Advanced Swimming</td>
<td>1</td>
</tr>
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</table>

Group III—Activity Skills—(3 or 4 hrs.)

<table>
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<tbody>
<tr>
<td>**390</td>
<td>Teaching of Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>150</td>
<td>Foundations of Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>100-215</td>
<td>General Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>160</td>
<td>Introduction to Coaching</td>
<td>3</td>
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Group IV—Additional Electives—(5 or 11 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Biol. 234</td>
<td>Outdoor Science for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>232</td>
<td>or 233 (Seasonal)</td>
<td>3</td>
</tr>
<tr>
<td>P.E. 244</td>
<td>Sports Officiating</td>
<td>2</td>
</tr>
<tr>
<td>260</td>
<td>Intramural Sports</td>
<td>2</td>
</tr>
<tr>
<td>Music 290</td>
<td>Recreational Music</td>
<td>2</td>
</tr>
<tr>
<td>O.T. 334</td>
<td>Recreation for Handicapped</td>
<td>2</td>
</tr>
<tr>
<td>Geog. 350</td>
<td>Conservation Natural Resources</td>
<td>3</td>
</tr>
<tr>
<td>P.E. 380</td>
<td>1st Aid and Athletic Injuries</td>
<td>2</td>
</tr>
<tr>
<td>Soc. 368</td>
<td>Welfare Organization</td>
<td>2</td>
</tr>
<tr>
<td>Libr. 546</td>
<td>Story Telling</td>
<td>2</td>
</tr>
<tr>
<td>Ed. 310</td>
<td>Stories for Childhood</td>
<td>2</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>
Students from outside H.P.E.R. normally select a minimum of 5 hours from Group IV. Majors and minors in physical education must elect 11 hours from Group IV—due to duplication in this minor as shown by the courses marked **.

Pattern 11-C—Health Education Group Minor (24 Hours)

See page 224.

DESCRIPTION OF COURSES

150 Foundation of Physical Education 3 hrs. Fall, Winter

Taught by a teaching team, the course provides an orientation to the profession by integrating theory and practical application. Fundamentals of a variety of sports are presented. History of sports and scientific foundations stressed. Motor readiness of professional students determined by testing program.

160 Introduction to Coaching 3 hrs. Fall, Winter

To acquaint the prospective teacher with the ethics, responsibilities, and skills necessary for a coaching career. Emphasis is placed on fundamentals of basketball, baseball, track, and football.

240 Gymnastics Techniques 2 hrs. Fall, Winter

Taught by teaching team, stress is placed on fundamentals and routines of tumbling, side horse, parallel bars, rings, horizontal bar, and trampoline. Emphasis on teaching-spotting techniques, and progression of exercises. Prerequisite: P.E.M. 150

244 Sports Officiating 2 hrs. Fall, Winter

This course considers rules and officiating techniques with emphasis on football, basketball and track. The student will be required to officiate in organized athletic contests and must qualify for certification as an official under the M.H.S.A.A. regulations.

260 Organization and Administration of Intramural Sports 2 hrs. Fall, Winter

A study of the philosophy, objectives, rules, policies, regulations and other administrative details of intramural sports programs. Preparation of an intramural project for use on the secondary level. Opportunity is provided for practical experience in the administration of intramural sports activities.

270 Outdoor Education 2 hrs. Fall

Agency and school camping are stressed. The aims and values of camping, laws governing camp operation and camp counseling receive attention. Opportunity for applying skills in a real camp setting is given.

330 Swimming 1 hr. Fall, Winter

This course for physical education majors and minors is basic. In-
struction is given to beginners with emphasis on the various strokes. Competent swimmers may participate in qualification tests for Senior Life Saving.

331 Coaching of Basketball 2 hrs. Fall, Winter
Theory and practice of basketball coaching. Coaching techniques are stressed, with a study of offensive and defensive systems. A personal textbook involving all materials is created.

332 Coaching of Baseball 2 hrs. Fall, Winter
Special emphasis is placed on the organization and operation of the entire program from the standpoint of the beginning coach. Selection, purchasing, and care of equipment and organizing of personnel through the complete season discussed.

333 Coaching of Track 2 hrs. Fall, Winter
The accepted forms for starting, sprinting, hurdles, running, and for field events. Factors affecting speed, endurance and fatigue. Selection and preparation of contestants. Managing of meets.

334 Coaching of Wrestling 2 hrs. Winter

335 Coaching of Tennis 2 hrs. Winter
For physical education majors and minors interested in teaching and coaching tennis. Instruction in fundamental strokes and court strategy. To develop knowledge of tennis rules and terms. Emphasis on training and conditioning. Selection of equipment.

336 Coaching of Football 2 hrs. Fall, Winter
Fundamentals and philosophy of coaching football with special emphasis on the kicking game, building an offense, principles of defense, scouting, rules, and strategy.

348 Adapted Physical Education 2 hrs. Winter
A survey of the physical education needs of exceptional children—physically and mentally handicapped individuals. Opportunity is provided for observing and working with the handicapped.

352 Tests and Measurements in Physical Education 2 hrs. Winter
The theory of measurement in physical education, the selection and administration of appropriate tests, and the interpretation of their results by fundamental statistical procedures.

370 Community Recreation 2 hrs. Fall, Winter
Nature and function of play; age periods and adaptations of activities; social environment; needs and objectives; construction, management and supervision. Study of outstanding programs in operation.
371 Procedures and Materials in Recreation 2 hrs. Winter

The student has an opportunity to participate in and direct recreational activities and to become acquainted with and collect materials. Emphasis will be on activities used on playgrounds, in schools and in community centers.

380 First Aid and Athletic Training 2 hrs. Fall, Winter

Knowledge and skill in meeting emergencies. The use of massage, strappings, and training room techniques from the coach's point of view. Ten hours of laboratory experience in the training room (laboratory hours: 2-6 p.m.—arranged with instructor). Prerequisites: Animal Biol. 101 and Mammalian Anatomy 210.

390 Teaching of Physical Education 4 hrs. Fall, Winter

Materials and skills are presented from the prospective teacher's viewpoint. Program planning, analysis of motor learning, rhythmic activities, games and relays suited to both elementary and secondary levels. Leadership and practical experience emphasized. Prerequisites: P.E.M. 150, 240.

430 Advanced Swimming 1 hr. Winter

This course is designed for students who wish to qualify for the Red Cross Senior Life Saving and Instructor's Certificate. The certificate will qualify the student for waterfront administration. Prerequisite: Approval by instructor.

460 Administration of Physical Education 2 hrs. Fall, Winter

The planning of physical education programs for city, village and rural schools; the organization of games, tests, meets, tournaments, and seasonal play; principles of supervision; construction and equipment of buildings, grounds, swimming pools, athletic fields, stadia.

470 Directed Field Experiences in Recreation 2 hrs. Fall, Winter

Students work individually and in groups on problems arising from situations in recreational programs in the school and community. Opportunity for this experience is planned on campus and in cooperation with local recreational agencies.

490 Exercise Physiology 2 hrs. Fall

The mechanics of muscular contraction, nerve impulse conduction, oxygen exchange, and circulatory efficiency are discussed. Basic principles concerning the adaptation of the human body to stress in the form of strenuous exercise are applied to the training and conditioning of competitive athletics. Prerequisites: Mammalian Anatomy 210, and Human Physiology 219.

561 Problems in Interscholastic and Intercollegiate Athletics 2 hrs. Winter

Relationship of athletics to education is considered. Problems in the
organization of an athletic program including eligibility, finance, liability, transportation, safety, facilities and equipment will be discussed.

598 Readings in Health, Physical Ed., and Recreation

1–3 hrs. Fall, Winter

Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Pre-requisite: Approval of department head.
Each student must complete four semester hours of physical education. The maximum amount of general physical education credit to be earned in one semester is one semester hour. Each transfer student must enroll for and participate in general physical education during the first semester or session of residence at Western Michigan University and thereafter each semester or session until the requirement is completed or until graduation, whichever occurs first. No student is excused from fulfilling the requirements because of a physical disability. After consultation with the Department Head, a student with such a disability will be assigned to an adapted program based upon her individual needs.

Veterans of military service (minimum of one year continuous active duty) shall be granted, upon request, two hours of the general physical education credit. The remaining two hours must be completed with emphasis on the lifetime sports.

Persons 30 years of age or older are not bound by the general physical education requirements.

Physical education majors or minors may elect to take four semester hours of credit in the general program. These courses must be in addition to the required physical education professional activity and academic courses.

In order to be assigned an adviser in the Physical Education Department, any transfer student or person currently enrolled at Western Michigan University who desires to pursue a curriculum in the Department of Physical Education for Women should consult with the department head.
The Department of Physical Education for Women offers undergraduate major curricula preparation in the areas of physical education, physical education with an elementary emphasis, dance education, aquatics and recreation. Minors may be obtained in physical education in elementary education, physical education in secondary education, recreation, coaching, swimming, dance, physical education for the exceptional child, and health.

MAJORS

Physical Education Major

Physical Education Majors will be expected to attend the Spring Session of their freshman year. Transfer students are expected to attend the Spring Session at the end of their first year of residence. By the end of the first two years in residence, the student must have completed a minimum of 12-25 clock hours of observing and working with young people on the elementary level and on the secondary level. Proficiency tests will be offered in bowling, golf, archery, softball, basketball, social forms of dance and modern dance.

Hours Required for this Curriculum .................................................. 124 hrs.

1. General Studies as described on page 21 of this catalog ........ 41 hrs.
   A. Required courses .......................................................... 33 hrs.
      Biology 101 replaces Biology 107 ................................. 3 hrs.
   B. Liberal Arts
      Biology 210 ................................................................. 4 hrs.
      Biology 219 ................................................................. 4 hrs.

2. Required Professional Courses .................................................... 35 hrs.
   PEW 190 Philosophical Foundations of Physical Education ........ 3 hrs.
   PEW 294 Analysis of Movement .............................................. 3 hrs.
   PEW 392 Measurement and Evaluation ................................... 3 hrs.
   PEW 132 Basic Motor Skills .................................................. 1 hr.
   PEW 123 Beginning Contemporary Dance ................................. 1 hr.
   PEW 290 Teaching of Physical Education in the Elementary School ................................. 3 hrs.
   PEW 292 Teaching of Physical Education in the Secondary School ................................. 3 hrs.
   PEW 390 Scientific Bases of Human Activity ......................... 3 hrs.
   PEW 140 Badminton and Tennis ............................................. 1 hr.
   PEW 120 Stunts, Tumbling, and Gymnastics ........................... 1 hr.
   PEW 131 Field Sports ....................................................... 1 hr.
   PEW 142 Volleyball ............................................................ 1 hr.
   PEW 135 Rhythmic Movement for Children .............................. 1 hr.
   PEW Elect 1 officiating course ........................................... 1 hr.
   PEW Two swimming courses from general program ................... 2 hrs.
   PEW 144 Track and Field ..................................................... 1 hr.
### School of Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 121</td>
<td>International Dance</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 143</td>
<td>Introductory Games and Sports</td>
<td>1 hr.</td>
</tr>
</tbody>
</table>

#### Activities (4 hours)

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>PEW 215</td>
<td>Bowling</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 129</td>
<td>Golf</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 115</td>
<td>Archery</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 148</td>
<td>Softball</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 146</td>
<td>Basketball</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 124</td>
<td>Social Forms of Dance</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 102</td>
<td>Modern Jazz</td>
<td>1 hr.</td>
</tr>
</tbody>
</table>

**Physical Education Major with an Elementary Emphasis**

Majors are to have directed teaching experience on both the elementary and the secondary level. By the end of the first two years in residence, the major must have completed a minimum of 15-25 clock hours of observing and working with young people on both the elementary level and the secondary level. Proficiencies are available in archery, badminton, tennis, basketball, bowling, and golf.

**Hours Required for this Curriculum** ................. 124 hrs.

1. General Studies as described on page 21 of this catalog ........ 41 hrs.
   
   **A. Required Courses** ........................................ 33 hrs.
   
   (1) Biology 101 replaces Biology 107
   (2) Teacher Education 230 replaces 222

   **B. Liberal Arts** ............................................. 4 hrs.
   
   (1) Biology 210 .............................................. 4 hrs.
   (2) Biology 219 .............................................. 4 hrs.

2. Required Professional Courses .................................. 35 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEW 190</td>
<td>Philosophical Foundations of Physical Education</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 392</td>
<td>Measurement and Evaluation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 132</td>
<td>Basic Motor Skills</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 123</td>
<td>Beginning Contemporary Dance</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 290</td>
<td>Teaching of Physical Education in the Elementary School</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 292</td>
<td>Teaching of Physical Education in the Secondary School</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 170</td>
<td>Recreation and Society</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 390</td>
<td>Scientific Bases of Human Activity</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 296</td>
<td>Physical Education for Physical and Learning Disabilities</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>PEW 120</td>
<td>Stunts, Tumbling and Gymnastics</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 135</td>
<td>Rhythmic Movement for Children</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 121</td>
<td>International Dance</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 144</td>
<td>Track and Field</td>
<td>1 hr.</td>
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Physics Education for Women

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PEW</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 143</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEW 172</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

### Dance Education

Hours Required for this Curriculum: 124 hrs.

1. General Studies as described on page 21 of this catalog: 41 hrs.
   - **A. Required Courses**
     - (1) Teacher Education 230 replaces General Studies 222
     - (2) Biology 101 replaces General Studies 107
   - **B. Liberal Arts**
     - (1) Biology 210: 4 hrs.
     - (2) Biology 219: 4 hrs.

2. Required Professional Courses: 35 hrs.
   - PEW 190 Philosophical Foundations of Physical Education: 3 hrs.
   - PEW 294 Analysis of Movement: 3 hrs.
   - PEW 332 Measurement and Evaluation: 3 hrs.
   - PEW 132 Basic Motor Skills: 1 hr.
   - PEW 123 Beginning Contemporary Dance: 1 hr.
   - PEW 482 History and Philosophy of Dance: 3 hrs.
   - PEW 384 Dance Education for Secondary School: 3 hrs.
   - PEW 182 Beginning Choreography: 3 hrs.
   - PEW 382 Advanced Choreography: 3 hrs.
   - PEW 282 Dance Accompaniment: 2 hrs.
   - PEW 133 Intermediate Contemporary Dance: 1 hr.
   - PEW 121 International Dance: 1 hr.
   - PEW 124 Social Forms of Dance: 1 hr.
   - PEW 204 Dance Activities for Children: 2 hrs.
   - PEW 233 Advanced Dance Techniques: 2 hrs.
   - PEW 388 Staged Productions: 3 hrs.

### Acquatics Education

This major will qualify a student to conduct a total swimming program in a large high school.

Hours Required for this Curriculum: 124 hrs.

1. General Studies as described on page 21 of this catalog: 41 hrs.
   - **A. Required Courses**
     - (1) Biology 101 replaces Biology 107: 3 hrs.
   - **B. Liberal Arts**
     - (1) Biology 210: 4 hrs.
     - (2) Biology 219: 4 hrs.
2. Required Professional Courses .......................... 35 hrs.

PEW 190 Philosophical Foundations of Physical Education .................. 3 hrs.
PEW 294 Analysis of Movement .................................. 3 hrs.
PEW 392 Measurement and Evaluation .................................. 3 hrs.
PEW 132 Basic Motor Skills .................................. 1 hr.
PEW 123 Beginning Contemporary Dance .......................... 1 hr.
PEW 390 Scientific Bases of Human Activity .................. 3 hrs.
PEW 155 Teaching of Swimming .................................. 3 hrs.
PEW 250 Teaching of Speed Swimming and Diving .................. 2 hrs.
PEW 252 Teaching of Synchronized Swimming .................. 2 hrs.
PEW 350 Swimming for the Exceptional Child .................. 3 hrs.
PEW 400 Practicum .................................. 1 hr.
PEW 108 Speed Swimming .................................. 1 hr.
PEW 214 Synchronized Swimming .................................. 1 hr.
PEW 120 Stunts, Tumbling and Gymnastics .......................... 1 hr.
PEW 137 Small Craft .................................. 2 hrs.
PEW 118 Springboard Diving .................................. 1 hr.

In addition, choose one of the following areas of concentration:

1. Dance
   International Dance—1 hr.
   Social Forms of Dance—1 hr.
   Intermediate Dance Techniques—2 hrs.

2. Individual Sports—Choose 4
   Tennis and Badminton—1 hr.
   Bowling—1 hr.
   Golf—1 hr.
   Archery—1 hr.
   Track and Field—1 hr.

3. Team Sports
   Field Sports—1 hr.
   Volleyball—1 hr.
   Basketball—1 hr.
   Softball—1 hr.

Recreation Education

Designed to prepare students in the area of recreation with an emphasis in: (1) outdoor education and camping; (2) mentally, physically and socially handicapped, and (3) recreation.

Hours Required for this Curriculum .................................. 124 hrs.

1. General Studies .................................. 40 hrs.

   A. Required Courses .................................. 33 hrs.
      (1) Biology 101 replaces 107
      (2) Teacher Education 230 Nature of Creativity replaces Arts and Ideas 222

   B. Liberal Arts .................................. 3 hrs.
      (1) Public Speaking 231 .................................. 3 hrs.
      (2) Biology 210 .................................. 4 hrs.
2. Required Professional Courses

A. General Professional Courses .............................................. 24 hrs.
B. Specialized Area of Emphasis ............................................. 11 hrs.

3. General Professional Courses ............................................. 24 hrs.
PEW 170 Recreation and Society ........................................... 3 hrs.
PEW 370 Organization and Administration of Recreation ........................ 3 hrs.
PEM 370 Community Recreation ............................................ 2 hrs.
PEW 272 Music and Drama in Recreation .................................. 3 hrs.
PEW 143 Introductory Games and Sports ................................ 1 hr.
IE 190 Arts and Crafts for Teachers ..................................... 3 hrs.
PEW General Physical Education Activity Courses ......................... 3 hrs.
PEW 470 Recreational Facilities and Areas ................................ 3 hrs.
PEW 342 Health Education in the Elementary School .................... 3 hrs.

EMPHASIS I—OUTDOOR EDUCATION AND CAMPING EMPHASIS ................. 11 hrs.
PEW 172 Camp Leadership .................................................. 3 hrs.
PEW 137 Small Craft ....................................................... 2 hrs.
PEM 270 Outdoor Education ................................................ 2 hrs.
PEW 101 Recreational Games .............................................. 1 hr.
PEW 400 Practicum ......................................................... 3 hrs.

EMPHASIS II—MENTALLY, PHYSICALLY AND社ALLY HANDICAPPED ............. 11 hrs.
Sp Ed 530 Education for Exceptional Children .......................... 3 hrs.
Sp Ed 588 Psychopathology of the Exceptional Child ..................... 2 hrs.
PEW 296 Physical Education for Physical and Learning Disabilities .......... 3 hrs.
PEW 400 Practicum ......................................................... 3 hrs.

EMPHASIS III—RECREATION EMPHASIS ....................................... 11 hrs.
PEW 172 Camp Leadership .................................................. 3 hrs.
PEW 271 Recreation for the Exceptional Child ........................... 3 hrs.
LIB 546 Story Telling ...................................................... 2 hrs.
PEW 400 Practicum ......................................................... 3 hrs.

MINORS

Physical Education Minor in Elementary Education

Hours Required for this Minor ............................................ 20 hrs.

1. Required Courses
PEW 294 Analysis of Movement ............................................ 3 hrs.
PEW 290 Teaching of Physical Education in the Elementary School ............... 3 hrs.
PEW 170 Recreation and Society ........................................... 3 hrs.
PEW 296 Physical Education for Physical and Learning Disabilities .............. 3 hrs.
PEW 132 Basic Motor Skills .................................................... 1 hr.
PEW 120 Stunts, Tumbling and Gymnastics .................................... 1 hr.
PEW 121 International Dance .................................................. 1 hr.
PEW 144 Track and Field ....................................................... 1 hr.
PEW 143 Introductory Games and Sports ..................................... 1 hr.
PEW 204 Dance Activities for Children ...................................... 2 hrs.
PEW 123 Beginning Contemporary Dance .................................... 1 hr.

2. By the end of the first two years in residence, the student must have completed 15-25 clock hours of observing and working in activity situations with elementary children.

Physical Education Minor in Secondary Education

Hours Required for this Minor .............................................. 21 hrs.

1. Required Courses
PEW 294 Analysis of Movement .............................................. 3 hrs.
PEW 292 Teaching of Physical Education in the Secondary School ............ 3 hrs.
PEW 390 Scientific Bases of Human Activity ................................ 3 hrs.
PEW 392 Measurement and Evaluation ....................................... 3 hrs.
PEW 132 Basic Motor Skills .................................................... 1 hr.
PEW 120 Stunts, Tumbling and Gymnastics .................................... 1 hr.
PEW 121 International Dance .................................................. 1 hr.
PEW 123 Beginning Contemporary Dance .................................... 1 hr.
PEW Elect 1 officiating course ............................................. 1 hr.
PEW Two individual sports ................................................... 2 hrs.
PEW Two team sports ......................................................... 2 hrs.

2. By the end of the first two years in residence, the student must have completed 15-25 clock hours of observing and working in activity situations with junior or senior high school students.

Recreation Minor

Hours Required for this Minor .............................................. 20 hrs.

PEW 170 Recreation and Society .............................................. 3 hrs.
PEM 270 Outdoor Education ................................................... 2 hrs.
PEM 371 Procedures and Materials in Recreation .............................. 2 hrs.
PEW 400 Practicum .................................................................... 3 hrs.
PEW 272 Music and Drama in Recreation ..................................... 3 hrs.
IE 190 Arts and Crafts for Teachers .......................................... 3 hrs.
PEW 143 Introductory Games and Sports ..................................... 1 hr.
PEW 470 Recreational Facilities and Areas .................................. 3 hrs.
Physical Education Coaching Minor

Designed to qualify the physical education major to care for and to coach interscholastic and intercollegiate athletic teams. The coaching minor, available only to physical education majors, will provide instruction in the sports which are currently emphasized by the Michigan Inter-school Sports Programs: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics, and golf.

Hours Required for this Minor ........................................... 21 hrs.

PEW 160 Theory of Coaching ........................................ 2 hrs.
PEW 461 First Aid and Athletic Training .......................... 2 hrs.
PEW 368 Administration and Organization of Intramural Sports ... 2 hrs.
PEW 260 Coaching and Advanced Techniques of:
  Basketball ........................................ 2 hrs.
  Field Hockey ..................................... 2 hrs.
  Volleyball ....................................... 2 hrs.
  Gymnastics ...................................... 2 hrs.
  Tennis .......................................... 2 hrs.
  Track and Field .................................. 2 hrs.
PEW 360 Elect 1 officiating course ............................... 1 hr.
PEW 400 Practicum ........................................... 1 hr.
PEW 148 Softball ........................................ 1 hr.
PEW 146 Basketball ........................................ 1 hr.
PEW 215 Bowling .......................................... 1 hr.
PEW 129 Golf ........................................... 1 hr.

Swimming Minor

Hours Required for this Minor ........................................... 21 hrs.

PEW 155 Teaching of Swimming ..................................... 3 hrs.
PEW 252 Teaching of Synchronized Swimming and Diving ........ 2 hrs.
PEW 250 Teaching of Speed Swimming and Diving .............. 2 hrs.
PEW 294 Analysis of Movement ................................... 3 hrs.
PEW 190 Philosophical Foundations of Physical Education .... 3 hrs.
PEW 132 Basic Motor Skills .................................... 1 hr.
PEW 123 Beginning Contemporary Dance .......................... 1 hr.
PEW 120 Stunts, Tumbling and Gymnastics ....................... 1 hr.
PEW 118 Springboard Diving .................................... 1 hr.
PEW 214 Synchronized Swimming ................................. 1 hr.
PEW 108 Speed Swimming ....................................... 1 hr.
PEW 400 Practicum ........................................... 2 hrs.
Physical Education Minor for the Exceptional Child

Designed to prepare special education and physical education majors in the area of recreation, physical education, swimming, health and dance for the exceptional child. Students majoring in other curricula must take the background courses in each area.

Hours Required for this Minor .................................................. 21 hrs.

1. Background Courses ..................................................... 5-6 hrs.

A. Physical Education Majors—5 hrs.
   Sp Ed 530 Education for Exceptional Children .................. 3 hrs.
   Sp Ed 588 Psychopathology of the Exceptional Child ....... 2 hrs.

B. Special Education Majors—6 hrs.
   PEW 290 Teaching Physical Education in the Elementary School .... 3 hrs.
   PEW 292 Teaching Physical Education in the Secondary School .... 3 hrs.

2. Required Courses .......................................................... 15 hrs.
   PEW 296 Physical Education for Physical and Learning Disabilities .... 3 hrs.
   PEW 271 Recreation for the Exceptional Child ...................... 3 hrs.
   PEW 356 Seminar (Health for the Exceptional Child) .............. 3 hrs.
   PEW 400 Practicum .................................................. 3 hrs.
   PEW 493 Psycho-Education Field Experience ...................... 3 hrs.

3. General physical education activity courses for the Special Education major who minors in Physical Education for the Exceptional Child should be selected from the following list. No more than two hours in dance or swimming may be taken.
Physical Education for Women

PEW 132 Basic Motor Skills—required 1 hr.
PEW 204 Dance Activities for Children 2 hrs.
PEW 120 Stunts, Tumbling and Gymnastics 1 hr.
PEW 121 International Dance 1 hr.
PEW 143 Introductory Games and Sports 1 hr.
PEW 111 Beginning Swimming 1 hr.
PEW 112 Intermediate Swimming 1 hr.
PEW 211 Life Saving 1 hr.
PEW 213 Water Safety Instructors 1 hr.
PEW 101 Recreational Games 1 hr.
PEW 123 Contemporary Dance 1 hr.
PEW 215 Bowling 1 hr.

Health Education Minor (21 hours)

(See group minors)

See page 224

COURSE DESCRIPTIONS

GENERAL PHYSICAL EDUCATION COURSES

100 Personal Physical Education 1 hr. Fall, Winter
101 Recreational Games 1 hr. Fall, Winter, Spring
102 Modern Jazz 1 hr. Fall, Winter, Spring
103 Beginning Fencing 1 hr. Fall, Winter
104 Softball 1 hr. Fall, Winter
105 LaCrosse 1 hr. Fall
106 Skiing (additional fee) 1 hr. Winter
107 Skating (additional fee) 1 hr. Winter
108 Speed Swimming 1 hr. Fall
109 Horsemanship (additional fee) 1 hr. Fall, Winter, Spring, Summer
   (riding times adjusted to student schedules)
110 Beginning Stunts, Tumbling and Gymnastics 1 hr. Fall, Winter
111 Beginning Swimming 1 hr. Fall, Winter, Spring, Summer
   (unable to swim in deep water)
112 Intermediate Swimming and Diving 1 hr. Fall, Winter, Spring, Summer
   (able to swim in deep water)
113 Basketball 1 hr. Fall, Winter
114 Volleyball 1 hr. Fall, Winter
115 Archery (205) 1 hr. Fall, Summer
116 Skin Diving 1 hr. Fall, Spring, Summer
117 Scuba Diving 1 hr. Fall, Spring, Summer
### School of Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>118</td>
<td>Springboard Diving</td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>119</td>
<td>Field Hockey</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>121</td>
<td>International Dance</td>
<td>1 hr.</td>
<td>Fall, Winter, Spring</td>
</tr>
<tr>
<td>122</td>
<td>Relaxation</td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>123</td>
<td>Beginning Contemporary Dance</td>
<td>1 hr.</td>
<td>Fall, Winter, Spring</td>
</tr>
<tr>
<td>124</td>
<td>Social Forms of Dance</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>126</td>
<td>Ballet</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>128</td>
<td>General Physical Education</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>129</td>
<td>Beginning Golf</td>
<td>1 hr.</td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>130</td>
<td>Movement for Athletes</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>133</td>
<td>Intermediate Contemporary Dance</td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>135</td>
<td>Rhythmic Movement for Children</td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
<tr>
<td>138</td>
<td>Canoeing</td>
<td>1 hr.</td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>139</td>
<td>Sailing</td>
<td>1 hr.</td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>200</td>
<td>Beginning Tennis</td>
<td>1 hr.</td>
<td>Fall, Spring, Summer</td>
</tr>
<tr>
<td>201</td>
<td>Intermediate Tennis</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>(Prereq. 200 or written permission of instructor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>202</td>
<td>Badminton</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>203</td>
<td>Intermediate Golf</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>(Prereq. 129 or permission of instructor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>204</td>
<td>Dance Activities for Children</td>
<td>2 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>A study of all dance and rhythmic activities for the elementary school child. (Dance majors or permission of instructor)</td>
<td></td>
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</tr>
<tr>
<td>207</td>
<td>Intermediate Fencing</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>(Prereq. 103 or permission of instructor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>208</td>
<td>Intermediate Gymnastics</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>(Prereq. 110 or with permission of instructor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>211</td>
<td>Life Saving</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>212</td>
<td>Advanced Swimming and Diving</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>213</td>
<td>Water Safety Instructors</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Must have current life saving certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>214</td>
<td>Synchronized Swimming</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>215</td>
<td>Bowling (additional fee)</td>
<td>1 hr.</td>
<td>Fall, Winter, Spring</td>
</tr>
<tr>
<td>223</td>
<td>Intermediate Dance Techniques</td>
<td>2 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>(Dance majors or permission of instructor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>237</td>
<td>Track and Field</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>340</td>
<td>Physical Education for the Elementary Classroom Teacher</td>
<td>1 hr.</td>
<td>Fall, Winter, Spring</td>
</tr>
</tbody>
</table>

This course is required of all persons enrolled in Elementary Education curricula.
### SPECIAL ACADEMIC COURSES

**241 Physical Education and Recreation for Teachers**

2 hrs. Fall, Winter

This course is open only to teachers. Topics included in the course are: Program planning, making of games and equipment, accident prevention, basic motor skills. Practice in games, stunts, rhythms and recreational activities will be included. Offered by extension only.

**341 Creative Dance for Children**

4 hrs. Fall, Winter

This course explores and manipulates the principles, materials and techniques of creative dance for elementary school children. A concentrated study is made of how children discover movement and create dances with form and meaning, lectures, observation, and laboratory experiences.

### PHYSICAL EDUCATION PROFESSIONAL ACTIVITY COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>Stunts, Tumbling and Gymnastics</td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>131</td>
<td>Field Sports</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>132</td>
<td>Basic Motor Skills</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>137</td>
<td>Smallcraft</td>
<td>2 hrs.</td>
<td>Spring</td>
</tr>
<tr>
<td>140</td>
<td>Badminton and Tennis</td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
<tr>
<td>142</td>
<td>Volleyball</td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
<tr>
<td>143</td>
<td>Introductory Games &amp; Sports</td>
<td>1 hr.</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>144</td>
<td>Track and Field</td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>146</td>
<td>Basketball</td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
<tr>
<td>148</td>
<td>Softball</td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
</tbody>
</table>

### PHYSICAL EDUCATION ACADEMIC COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>First Aid</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
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</tbody>
</table>

The standard course in first aid techniques leading to Red Cross certification.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>155</td>
<td>Teaching of Swimming</td>
<td>3 hrs.</td>
<td>Winter</td>
</tr>
</tbody>
</table>

The techniques of water safety, swimming, diving, and pool and waterfront management. Includes participation with students.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>160</td>
<td>Theory of Coaching</td>
<td>2 hrs.</td>
<td>Winter</td>
</tr>
</tbody>
</table>

The philosophy, principles, administration, organization, guidelines, and motivating techniques of coaching.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>170 (276)</td>
<td>Recreation and Society</td>
<td>3 hrs.</td>
<td>Fall</td>
</tr>
</tbody>
</table>

The educational experiences of an outdoor environment which would provide opportunities to live, to work and to play in a group situation. Students will be encouraged to participate in the week camping experience at Clear Lake Camp and other summer counselor positions.
172 (270) Camp Leadership  
3 hrs. Winter
The investigation of the responsibilities and duties of the counselor in various types of camps. Aims and values of camping are emphasized. Practical experience in a camp setting.

182 Beginning Choreography  
3 hrs. Winter
The study of and experimentation in compositional principles of dance. Prereq. Beginning and Intermediate Contemporary Dance or permission of instructor.

190 (151) Philosophical Foundations of Physical Education  
3 hrs. Fall, Winter
The application of past history and philosophy to current movements and trends in physical education.

223 Intermediate Dance Technique  
2 hrs. Fall
The study of the development and analysis of building movement sequences and dance techniques above the beginning level. Prereq. 123 and 133.

233 Advance Dance Technique  
2 hrs. Winter
A study of advance dance technique with experience in original creation of movement patterns and dance sequences.

250 Teaching of Speed Swimming and Diving  
2 hrs. Fall
Teaching progressions and techniques for springboard diving and speed swimming, and procedures for conducting meets.

252 Teaching of Synchronized Swimming  
2 hrs. Winter
The progressions and teaching techniques for synchronized swimming skills; show production, organization of clubs and competitive events.

260 Coaching and Advanced Technique Series 2 hrs. each Fall, Winter
Coaching and advanced skills, selection of a team, preparation, judging and conducting competitive events.

271 Recreation for the Exceptional Child  
3 hrs. Fall
The provision for the experience of outdoor education skill activities which have particular values to the exceptional handicapped child. Field experiences with the handicapped child will be provided.

272 Music and Drama in Recreation  
3 hrs. Winter
The study of principles and techniques for developing community creativity in music and drama through educational and recreational programs. Emphasis on puppetry, marionette, talent-variety shows, music-dance-drama, drama productions and festivals.

282 Dance Accompaniment  
2 hrs. Fall
The study of the rhythmic composition of dance movement and the
use of techniques and instruments used in accompanying movement. Prereq. 123, 133 and 223.

290  Teaching Physical Education in the Elementary School  3 hrs. Fall

The study of concepts and practices that actuate the progressive and sequential development of an elementary physical education program. Methods of instruction, program planning and evaluation, and the application of the fundamentals of movement to the areas of self-testing, games, and rhythmic activities are examined. Prerequisites: 132, 120, 135 and 121.

292  Teaching Physical Education in the Secondary School  

The secondary school program including characteristics of students, school program, methods of instruction, observation and participation with students.

294  Analysis of Movement  3 hrs. Winter

The study of the movement of muscles and the application of kinesiology to physical activity.

296  Physical Education for Physical and Learning Disabilities  

Principles and problems in physical education for those with physical and learning disabilities. Includes selected field experience with handicapped children and adults.

300  Seminar Series  1-4 hrs. each Fall, Winter

Designed to provide an opportunity for qualified students to examine and discuss a subject area in a field of common interest. Enrollment by written permission of the chairman of department of physical education for women.

342  Elementary School Health and Safety Education  3 hrs. Fall, Winter

This course is directed toward prospective elementary school teachers. It is designed to provide knowledge and experiences related to the total school health program.

343  Secondary School Health and Safety Education  3 hrs. Fall, Winter

This course is directed toward prospective secondary school teachers. Through the media of knowledge and experiences the total school health program is brought into focus as an integral part of the secondary school program.

350  Swimming for the Exceptional Child  3 hrs. Fall

The study of various handicaps, values, of swimming and teaching techniques for the exceptional child. Includes practical experiences with handicapped children.
School of Education

360 Officiating Series 1 hr. each Fall
The discussion and application of rules and officiating techniques. The student will be required to officiate in out-of-class athletic programs.

368 Administration and Organization of Intramural Sports 2 hrs. Winter
The problems, policies, finances, eligibility, awards, officiating, publicity and procedures related to the intramural program.

370 Organization and Administration of Recreation 3 hrs. Fall
The study of methods of organization in recreational programs at local, state, and federal levels with emphasis on administrative procedures concerning personnel, facilities-areas, legalities, financing and programming.

382 Advanced Choreography 3 hrs. Fall
The study of varied uses of time, space and force in dance design leading to dance works in production. Prerequisite: Beginning Choreography.

384 Dance Education for Secondary School 3 hrs. Fall
The study of teaching procedures for all forms of dance in the secondary school.

388 Staged Productions 3 hrs. Winter
The study of the creation and production of dance and sports events. Aspects of lighting, scenery, costuming, accompaniment, publicity and programming will be considered.

390 Scientific Bases of Human Activity 3 hrs. Fall
The physiological principles and facts upon which conditioning for competition in athletic activities and physical performance should be based. Special attention is given to structural, mechanical, physiological, psychological, and therapeutic aspects of exercise and fitness. Direct application to training for competition in major sports and individual activity.

392 Measurement and Evaluation 3 hrs. Fall, Winter
The elements of test construction, item analysis, administration of a test and elementary statistics.

400 Practicum 1-4 hrs. each Fall, Winter
The practical field experience. The individual approach to practical field experiences in health, physical education and/or recreation for the normal and handicapped. Enrollment by written permission of the Chairman of the Department of Physical Education for Women.

461 First Aid and Athletic Training 2 hrs. Winter
The knowledge and skill in meeting emergencies. The use of massage,
strappings, and training room techniques. Prerequisite: Biology 100 and Biology 210.

470 Recreational Facilities and Areas 3 hrs. Fall
The study of the design, use and maintenance of recreational areas and the facilities appropriate to those areas in relation to community needs, program objectives and physical surroundings.

482 History and Philosophy of Dance 3 hrs. Fall
The study of the history of the development of dance as it is culturally determined and the philosophies which have influenced dance in education. Dance Majors or permission of instructor.

491 Introduction to Research 3 hrs. Winter
The techniques fundamental to an individual approach to research and problem solving.

493 Psycho-Educational Field Experience 3 hrs. Winter
The study of the family, psychological and educational problems of the handicapped child. Field experience will be assigned in cooperation with the Department of Psycho-Education.

514 Methods and Materials in Health Education 2 hrs. Fall
Lectures and demonstrations with emphasis on the effective health supervision of school children, the principles and practices of health teaching in the various grades, and the interrelation of this teaching with that of other subjects in the curriculum. (Prerequisites: 353, 354 or consent of instructor.)

516 Issues in Health Education 3 hrs. Fall, Winter
The focus will be placed on current health issues. May be designed to deal with one issue or several.

545 Philosophies of Physical Education 2 hrs. Fall, Winter
A study of the ideas and concepts of various philosophical schools as they apply to physical education.

562 Administration and Organization of Physical Education 2 hrs. Winter
The administrative procedures and problems connected with physical education programs, including scheduling, facilities, personnel problems and public relations.

586 Dance and the Related Arts 3 hrs. Winter
The study of the common principles and elements of dance, drama, music, art, and television. Dance Majors, and Minors, Aquatics Majors and Swim Minors.
School of General Studies

ROBERT M. LIMPUS,
Dean

Academic Areas:
Humanities
Science
Social Science

Service:
Broadcasting
The School of General Studies is responsible for establishing and maintaining the program of general education at Western Michigan University. This program affects all undergraduate students, regardless of the Schools or curricula in which they are enrolled.

The main purposes of general education and, consequently, of the General Studies program, are to open doors and present ideas, to stimulate healthy self-criticism, to introduce the student to the world in which the educated man and the responsible citizen must live, a world of pressures and changes and of endlessly varied problems, and to give him some of the most important means for coping with them. It attempts to attack rigid and prejudiced habits of thought and at the same time to provide a foundation for tenable values.

The program includes 40 hours of work: 26 hours at the Freshman-Sophomore level, 8 hours at the Junior-Senior level and 6 hours of additional “non-professional liberal arts courses.”
DESCRIPTION OF COURSES

Freshman-Sophomore Level:

Each student should take College Writing 116 and Freshman Reading 140 in his freshman year, but both should not be taken the same semester. It is expected that the student's program for the freshman year would also include Western Civilization 100 or 101 as well as the requirement in science. Arts and Ideas 222 and the courses in social science should be taken in the sophomore year.

Humanities Area
Harold O. Bahlke, Chairman

100 Early Western Civilization 4 hrs. Fall, Winter
This course is designed to give the student an understanding and an appreciation of contemporary institutions and culture through a study of their origins and development. It is essentially a history of culture which shows how the present is a product of the past and how peoples widely separated in space and time have contributed to the present.

101 Modern Western Civilization 4 hrs. Fall, Winter
A continuation, from the seventeenth century, of 100. This course surveys important developments in all parts of the world. It emphasizes the last half-century.

116 College Writing 4 hrs. Fall, Winter
Through classroom discussion and conferences with his instructor, the student will be encouraged to think for himself and to experience the satisfaction of working with his own ideas. Through constant practice in writing, he will be expected to achieve a reasonable competence in organizing a paper and writing it with clarity in the language used by literate Americans.

140 Freshman Reading 2 hrs. Fall, Winter
A course in selected reading of books representing some of the best and most stimulating writing in several areas of thought. In this course the student assumes responsibility for conducting his reading program efficiently, requesting conferences with faculty advisers when it is desirable.

222 Arts and Ideas 4 hrs. Fall, Winter
This course explores the relation between form and content in the arts of the Twentieth Century in the attempt to help students achieve a more
School of General Studies

conscious and appreciative awareness of what it means to be human in the modern Western world.

224 Non-Western Arts and Ideas 4 hrs. Fall, Winter
An introduction to the thought and art of major non-Western civilizations through a study of their central philosophic and religious texts and an examination of their chief works of art and literature. This course is an approved alternative for Arts and Ideas 222.

Science Area

Ollin J. Drennan, Chairman

105 Physical Geography 4 hrs. Fall, Winter
The study of several earth sciences which give an understanding of man’s environment: the form of the earth, earth-sun relationships, maps, weather and climate, soils, vegetation, the oceans, landforms and earth materials. Where possible, stress is given to the significance of environmental factors in the life of man. Students may present either this course or General Studies 112 toward their science requirements, but not both. Laboratory experiences are included.

107 Biological Science 4 hrs. Fall, Winter
A course designed to present basic biological principles and to give the student an understanding of the operation of the world of life. Laboratory experiences are included.

108 Physical Science 4 hrs. Fall, Winter
The major objective of the course is to prepare the student for intelligent living in the nuclear age. The course is designed for students who are not planning to specialize in any of the physical sciences. Physical Science 108 is designed to provide a scientific background for understanding our rapidly changing culture. Laboratory experiences are included.

110 Aims and Achievements of Science 4 hrs. Fall, Winter
A course designed to present to the student the goals and objectives of science, the methodology of science and some of the major achievements of science through a series of scientific case studies examined historically and philosophically as well as scientifically.

112 Geological Science 4 hrs. Fall, Winter
An introduction to physical and historical geology for students who do not plan to major or minor in geology or earth science. The importance to man of minerals and rocks, geologic processes, and the history of the earth including the evolution of past life are emphasized. Three lectures and a two-hour laboratory period. Students may present either this course or General Studies 105 toward their science requirements, but not both.
202 Man and Society

An introduction to social science, including scientific interpretation of human nature and culture and some issues of contemporary society. Not open to students who have taken the old Basic Studies 102 or 103.

203 The Social Bases of Human Behavior

An analysis of the behavioral sciences and their contributions to the understanding of man's origin and human personality, the interaction between persons in groups, the understanding of social institutions and the function of culture. Not open to students who have taken the old Basic Studies 102 or 103.

204 Comparative Social Institutions

A course showing the interaction and influence of social forces in determining the nature and function of institutions through which a society attempts to achieve its goals. Because all societies have many basic problems in common, a study is made to ascertain how different people, under differing circumstances solve these problems. Not open to students who have taken the former Basic Studies 102 or 103.

205 Race and Culture

A social scientific view of the warranted knowledge and of the reciprocal problems and issues of race and culture, focusing specifically on current social issues.

Junior-Senior Level

At the Junior-Senior level the student must take Introduction to the Non-Western World 304 or approved alternatives. He must also take at least one course from the list of General Studies upper-class electives listed below:

304 Introduction to the Non-Western World

A survey of the traditional cultures of certain major societies which have developed essentially apart from the stream of Western civilization. This is followed by an analysis of the Western impact on these societies and their reactions thereto, and by a study of contemporary social, economic, and political problems of non-Western countries.
UPPER-CLASS ELECTIVES:

400 Human Communication 4 hrs. Fall, Winter
A cooperative investigation of the processes by which man uses the dynamics of symbol systems, centrally concerned with both personal and cultural communication behavior.

401 Science and Intellectual History 4 hrs. Fall, Winter
A study of the impact of scientific growth on the history of ideas.

402 American Culture 4 hrs. Fall, Winter
An interdisciplinary study of some of the most significant issues of American life, past and present, as seen from the perspectives of literature, the arts, the social sciences, and philosophy.

405 Molders of Thought 4 hrs. Fall, Winter
A course in which the ideas and achievements and lives of two or three leading thinkers in various areas are studied comparatively. Different selections of topics and men will be made from time to time.

408 Social and Cultural Change 4 hrs. Fall, Winter
An interdisciplinary study of the universal human problem of social change. Single and multifactor theories will be used to assess the question of change as "drift" and change as socially directed. Additionally, an examination of various economic, technological, political, military, ideological, ethical and religious efforts to explain change will be examined.

497 Seminar in Contemporary Issues 4 hrs. Fall, Winter
A course in which large scale social movements and trends are examined in interdisciplinary terms for their general impact on societies. Differing selections of issues will be made from time to time.

503 Criticism of Mass Media 4 hrs. Fall, Winter
A study of the nature of the mass media and a development of standards for criticizing them.

504 Business and Society 4 hrs. Fall, Winter
A systematic analysis and evaluation of the concepts and institutions, both internal and extrinsic, which shape the role of business in our society. Illustrative topics: Authority and Power, Pluralism, Competition, Freedom of Association, Innovation, Social Responsibility.
School of
Liberal Arts and Sciences

CORNELIUS LOEW,
Dean

JAMES H. POWELL,
Associate Dean

PHILIP DENENFELD,
Associate Dean

Departments:
Anthropology
Art
Biology
Chemistry
Economics
English
Geography
Geology
History
Languages, Modern and Classical
Linguistics
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Religion
Sociology
Speech
Speech Pathology and Audiology
School of Social Work
School of Liberal Arts and Sciences

The School of Liberal Arts and Sciences offers a variety of subjects that combine to develop a student who will be at home in the world of ideas, and whose experience of living will be deepened by an understanding of his cultural heritage. It aims to offer him training in thinking objectively, critically, and creatively. Its offerings serve not only the special student of the sciences and humanities but also provide a background of liberal education for students in the other schools of the university and for those in the pre-professional courses.

Degree Curricula

I. LIBERAL ARTS CURRICULUM

B.A. Degree

A. Sixty hours work in the School of Liberal Arts and Sciences of which sixteen hours should be distributed as follows: four hours in each of the two divisions of Science and Mathematics, and of Social Sciences. Also, four hours from the area of literature, speech, philosophy and religion, and four hours from the area of fine arts.

B. The regular General Studies requirements.

C. Thirty hours of work in 300, 400 and 500 courses exclusive of General Studies.

D. Four hours of intermediate work in a foreign language, or successful completion of a placement examination.

E. Four hours of college mathematics (or two years of high school preparation from the following: algebra, geometry, and/or trigonometry).

F. Physical education, four hours, or Military Science, eight hours.

G. Completion of a major and minor in the School of Liberal Arts and Sciences and electives to make a total of 124 hours.
II. THE GENERAL CURRICULUM

B.A. or B.S. Degree

In this curriculum a student may satisfy the requirements for pre-professional curriculum. If 124 hours are completed in this program the student will be eligible for a degree of Bachelor of Arts or Bachelor of Science.

A. General Studies Requirements  
(See page 21 of this Catalog.) ........................................ 40 hours

B. Physical Education or Military Science ................................ 4–8 hours

C. A major in one of the Departments of the School of  
Liberal Arts and Sciences

D. University courses to complete a minor

E. University electives to make a total of 124 hours
Inter-Disciplinary Programs

1. Institute of International and Area Studies
2. The Medieval Institute
3. Foreign Studies Seminars
4. American Studies
5. Group Majors and Minors
6. Medical Technology
The Institute of International and Area Studies was established by the University to assist in developing programs on various regions of the world. It cooperates with the School of General Studies in offering a general education course on the non-Western world.

It has established minors programs for certain regions of the world. These programs involve interdepartmental committees and combinations of courses regularly offered by the departments of the University.

It recommends standards for area studies and coordinates the offerings in such areas. It cooperates with various governmental agencies in exchange programs, visiting leaders programs, etc.

It houses information on foreign study, faculty exchange, foundations and the like, providing assistance to faculty in grant applications and research projects. It maintains current files on foreign embassy releases, international conferences, information services, and other immediately current affairs. It conducts conferences, seminars, lecture series, grant programs and the like, concerning different regions of the world.

In general, it coordinates activities of an international character centering at Western Michigan University.

INSTITUTE OF INTERNATIONAL AND AREA STUDIES COURSES

General Studies 304 The Non-Western World 4 hrs.
A cultural survey of those societies which have developed essentially apart from European forces. This course is taught in the School of General Studies by a committee of the Institute of International and Area Studies.

Social Science 506 Studies in the Non-Western World 2–3 hrs.
A course designed to give students an awareness of social forces operating outside of Western Civilization. The workshop approach will be used to introduce students to such problems in Asia and Africa as industrialism, nationalism, self-government, social integration, population explosion, and the Western impact. The answers which two-thirds of the world are now giving to these problems cannot help but affect Western society. The ultimate objective is to provide students with
selected resource materials and initial awareness of dynamic forces shaping over half the world.

This course is offered in a cooperative arrangement with social science departments.

THE AREA COMMITTEES

Four area committees have been established under the Institute. All are authorized to offer area minors. These minors have been approved for teacher certification by the State Board of Education.

African Studies Program

Chairman: Ronald Davis
Department of History

Students with a minor in African Studies must elect a minimum of twenty hours of course work from the following list. At least five courses are to be taken from the list of Core Courses, the remainder to be selected from the lists of Core and Cognate Courses.

Special Summer programs may be offered providing students with an opportunity to study and travel in Africa. Credits received for participation in such programs can be counted towards the African Studies minor.

Each student enrolled as an African Studies minor is expected to meet once each semester with the Chairman of the African Studies Program until the requirements for the minor have been completed.

Core Courses

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Number</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>334</td>
<td>Cultures of North Africa and the Middle East</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>335</td>
<td>Cultures of Africa</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>545</td>
<td>Topics in Ethnology: Africa</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Economics</td>
<td>585</td>
<td>The Economics of Sub-Saharan Africa</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>English</td>
<td>519</td>
<td>Non-Western Literature in Translation: Africa</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Geography</td>
<td>386</td>
<td>Geography of Middle and South Africa</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>387</td>
<td>Geography of Middle East and North Africa</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>550</td>
<td>Studies in Historical Geography: Africa</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>History</td>
<td>386</td>
<td>Introduction to African History and Civilization</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>587</td>
<td>Early African History</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>588</td>
<td>Recent African History</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Political Science</td>
<td>341 (342)</td>
<td>African Political Systems</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>549 (540)</td>
<td>Problems of Foreign Political Systems: Africa</td>
<td>3-4 hrs.</td>
</tr>
</tbody>
</table>
## Inter-Disciplinary Programs

| Religion | 304 African Religions | 4 hrs. |
| Sociology | 557 Changing Social Systems—Sub-Saharan Africa | 3 hrs. |
|          | 571 Social Change: Designated Area | 3 hrs. |

### Cognate Courses

| Anthropology | 220 | Introduction to Anthropology: Cultural Anthropology | 3 hrs. |
|             | (231) | Peasant Societies in Cross-Cultural Perspective | 3 hrs. |
|             | 534 | Political Anthropology | 3 hrs. |
|             | 537 | Legal Anthropology | 3 hrs. |
|             | 539 | Economic Anthropology | 3 hrs. |
|             | 540 | Cultural Ecology | 3 hrs. |
| Economics | 588 | Economic Development | 4 hrs. |
| Geography | 244 | Economic Geography | 3 hrs. |
|           | 540 | Political Geography | 3 hrs. |
|           | 541 | Geographic Foundations of National Power | 3 hrs. |
|           | 543 | Cultural Geography | 3 hrs. |
| History | 343 | Great Britain and the British Commonwealth | 3 hrs. |

| Linguistics | 575 | Studies in Languages of the World | 4 hrs. |
| Political Science | 250 | International Relations | 4 hrs. |
| Religion | 300 | Prehistoric and Primitive Religions | 4 hrs. |

Sociology | 558 | Social Forces in Underdeveloped Areas | 3 hrs. |

## Asian Studies Program

Chairman: Andrew Nahm  
Department of History

Students may minor in this program provided they elect 20 credit hours drawn from the following list and provided that not more than 8 hours are taken from the approved list of cognate courses. Students are strongly urged to elect General Studies 304, Introduction to the Non-Western World.

### Core Courses

| Anthropology | 336 | Cultures of Asia | 3 hrs. |
|             | 545 | Topics in Ethnology: Asia | 3 hrs. |
| English | 519 | Non-Western Literature in Translation: Asia | 4 hrs. |
| General Studies | 224 | Non-Western Arts and Ideas* | 4 hrs. |

*If not counted toward General Studies requirements.
<table>
<thead>
<tr>
<th>Subject</th>
<th>Course No</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geography</strong></td>
<td>385</td>
<td>The Geography of the Pacific Realm</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>388</td>
<td>Geography of East Asia</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>389</td>
<td>Geography of Southeast Asia</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>390</td>
<td>Geography of South Asia</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>550</td>
<td>Studies in Historical Geography: Asia</td>
<td>3 hrs.</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>380</td>
<td>The Early Far East</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>381</td>
<td>The Modern Far East</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>580</td>
<td>Early China</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>581</td>
<td>Modern China</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>582</td>
<td>Japan to 1853</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>583</td>
<td>Japan Since 1853</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>584</td>
<td>Modern Korea</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>585</td>
<td>Southeast Asia in the Twentieth Century</td>
<td>3 hrs.</td>
</tr>
<tr>
<td><strong>Philosophy</strong></td>
<td>306</td>
<td>Asian Thought</td>
<td>4 hrs.</td>
</tr>
<tr>
<td><strong>Political Science</strong></td>
<td>342</td>
<td>Asian Political Systems</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>543</td>
<td>Politics and Institutions of South Asia</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>547</td>
<td>Political Modernization of Japan and Korea</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>548</td>
<td>Asian Communism</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>549 (540)</td>
<td>Problems of Foreign Political Systems: Asia</td>
<td>3-4 hrs.</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td>302</td>
<td>Religion in Indian Tradition</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>303</td>
<td>Religion in the Chinese and Japanese Traditions</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>Historical Studies in Religion</td>
<td>2-4 hrs.</td>
</tr>
<tr>
<td><strong>Sociology</strong></td>
<td>571</td>
<td>Social Change: Designated Area</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

**Cognate Courses**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course No</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anthropology</strong></td>
<td>220</td>
<td>Introduction to Anthropology: Cultural Anthropology</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>(231)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>534</td>
<td>Peasant Societies in Cross-Cultural Perspective</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>536</td>
<td>Cultural Evolution</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>537</td>
<td>Political Anthropology</td>
<td>3 hrs.</td>
</tr>
<tr>
<td><strong>Economics</strong></td>
<td>380</td>
<td>International Economics</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>584</td>
<td>Comparative Economic Systems</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>588</td>
<td>Economic Development</td>
<td>4 hrs.</td>
</tr>
<tr>
<td><strong>Geography</strong></td>
<td>244</td>
<td>Economic Geography</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>540</td>
<td>Political Geography</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>541</td>
<td>Geographic Foundations of National Power</td>
<td>3 hrs.</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>518</td>
<td>History, United States Foreign Relations</td>
<td>3 hrs.</td>
</tr>
<tr>
<td><strong>Linguistics</strong></td>
<td>575</td>
<td>Studies in Languages of the World</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>(548)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inter-Disciplinary Program

Political Science  
250 International Relations  4 hrs.  
350 American Foreign Policy  4 hrs.  
552 Studies in International Relations  3-4 hrs.

Religion  
311 Myth and Ritual  4 hrs.

Sociology  
314 Race Relations  3 hrs.  
554 Sociological Analysis of Population  3 hrs.  
558 Social Forces in Underdeveloped Areas  3 hrs.  
577 Comparative Institutional Studies  3 hrs.

Latin American Studies Program

Chairman: Robert Jack Smith  
Department of Anthropology

Students with a Minor in Latin American Studies must elect a minimum of twenty hours of work from the list below. Of these, at least twelve hours must be in core courses. A course program of broad interdisciplinary character is required. All minors are strongly urged to include language training in their programs. This is of particular significance to anyone intending to seek advanced training in a Latin American program and/or work or travel in the Latin American area.

Special summer programs may be offered, providing qualified students with an opportunity to study and to do research in selected parts of Latin America. Credit for participation—within certain limitations—can be counted towards the Latin American Studies Minor.

Core Courses

Anthropology  
337 Indian Cultures of Mexico, Central and South America  3 hrs.  
501 Rise of Civilization: Mesoamerica  3 hrs.  
(544)  
545 Topics in Ethnology: Latin America  3 hrs.

Geography  
381 Geography of South America  3 hrs.  
382 Geography of Middle America  3 hrs.  
550 Studies in Historical Geography: Latin America  3 hrs.

History  
370 Colonial Latin America  3 hrs.  
371 Latin American Republics  3 hrs.  
571 History of Mexico  3 hrs.  
572 History of the Plata Region  3 hrs.

Language  
323 Life and Culture of Latin America  3 hrs.  
329 Introduction to Spanish-American Literature  3 hrs.  
550 Independent Study in Spanish  1-3 hrs.  
560 Studies in Spanish Literatures:  
  Spanish-American Short Story  3 hrs.  
  Contemporary Spanish-American Novel  3 hrs.
<table>
<thead>
<tr>
<th>Department</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Science</td>
<td>343</td>
<td>Latin American Political Systems</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>(342)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>549 (540)</td>
<td>Problems of Foreign Political Systems: Latin America</td>
<td>3-4 hrs.</td>
</tr>
<tr>
<td>Sociology</td>
<td>571</td>
<td>Social Change: Designated Area</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Anthropology</td>
<td>534</td>
<td>Peasant Societies in Cross-Cultural Perspective</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Economics</td>
<td>588</td>
<td>Economic Development</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Language</td>
<td>200, 201</td>
<td>Intermediate Spanish</td>
<td>8 hrs.</td>
</tr>
<tr>
<td></td>
<td>316</td>
<td>Spanish Composition</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>317</td>
<td>Spanish Conversation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Sociology</td>
<td>558</td>
<td>Social Forces in Underdeveloped Areas</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

**Slavic Studies Program**

Chairman: George Klein
Department of Political Science

Students minoring in this program must elect 20 hours of work from the following list, a minimum of 12 hours from the core courses and eight hours from the cognate courses of language.

### Core Courses

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>583</td>
<td>Studies in Economic Planning</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>586</td>
<td>Economics of the Soviet Union and Eastern Europe</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Geography</td>
<td>384</td>
<td>Geography of USSR and Eastern Europe</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>550</td>
<td>Studies in Historical Geography: Eastern Europe</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>History</td>
<td>340</td>
<td>Russia to 1917</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>341</td>
<td>The Soviet Union</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>344</td>
<td>Eastern Europe</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>345</td>
<td>The Baltic Region</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>470</td>
<td>Independent Research in History</td>
<td>2-3 hrs.</td>
</tr>
<tr>
<td></td>
<td>540</td>
<td>Social and Cultural History of Tsarist Russia</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>541</td>
<td>The USSR in World Affairs</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>542</td>
<td>Social and Cultural History of the USSR</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>598</td>
<td>Independent Readings in History</td>
<td>2-3 hrs.</td>
</tr>
</tbody>
</table>


### Inter-Disciplinary Program

**Political Science** 549 Problems of Foreign Political Systems:  
(540) Eastern Europe 3-4 hrs.  
546 Governments of the Soviet Union and Eastern Europe 4 hrs.  

**Sociology** 571 Social Change: Designated Area 3 hrs.  

**Cognate Courses**

**Economics** 584 Comparative Economic Systems 4 hrs.  
588 Economic Development 4 hrs.  

**Geography** 540 Political Geography 3 hrs.  
541 Geographic Foundations of National Power 3 hrs.  

**Language** 100, 101 Basic Russian 8 hrs.  
200, 201 Intermediate Russian 8 hrs.  

**Linguistics** 575 Studies in Languages of the World 4 hrs.  
(548)  

**Political Science** 250 International Relations 4 hrs.  
340 European Political Systems 4 hrs.  
561 Contemporary Political Theory 4 hrs.  
560 Comparative Political Ideology 4 hrs.  
598 Studies in Political Science 1-4 hrs.
The Medieval Institute

John R. Sommerfelt, Director

Knowledge of medieval culture is being increasingly recognized as essential to an understanding of modern culture. The Medieval Institute was established by the University to develop and coordinate interdisciplinary programs in medieval studies. In addition to an undergraduate minor the Institute offers a graduate program leading to an M.A. in Medieval Studies.

Western Michigan University has sufficient library resources and medieval specialists to provide a good academic environment for the study of the Middle Ages. The Institute hosts a biennial Conference on Medieval Studies which has brought the University wide recognition throughout the United States and Canada. *Studies in Medieval Culture*, a publication which includes many of the best papers presented at these conferences, also has gained an enviable reputation among medievalists here and abroad. In addition, the Institute sponsors a lecture series each year on campus on medieval culture and civilization.

The headquarters of the Medieval Institute is located at 1013 Sutherland Avenue.

**MINOR PROGRAM**

Students with a minor in medieval studies must elect twenty hours to include the following:

1. History 352—Early Medieval History .......................... 3 hrs.
2. History 353—Later Medieval History .......................... 3 hrs.
3. (a) English 530—Medieval Literature  
       OR  
       (b) English 531—The Age of Chaucer .................... 4 hrs.
4. (a) Philosophy 300—History of Ancient Philosophy  
       OR  
       (b) Philosophy 500—Seminar in Medieval Philosophy  
       OR  
       (c) Religion 500—Early and Medieval Christianity  
       OR  
       (d) History 506—Intellectual History to 1500 ............. 3–4 hrs.
5. Other courses on the Middle Ages chosen with the consent of the adviser .................................. 6–7 hrs.

In addition the student must elect four semesters of college work in Latin, French, or German, or present the equivalent.
Inter-Disciplinary Programs

DESCRIPTION OF COURSES

Foreign Studies Seminars

Students may receive up to six hours credit in any combination of departments as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the School of Liberal Arts.

Liberal Arts 503 Foreign Studies Seminar 1-6 hrs.

Foreign studies seminars in the sciences organized and conducted by the School of Liberal Arts and Sciences for exceptionally talented undergraduate or graduate students: Students completing such a seminar may receive credit in the departments of Psychology, Geography, Geology, Biology, Physics or Chemistry if approved by the Head of the Department prior to registration for the seminar.

Liberal Arts 504 Foreign Studies Seminar 1-6 hrs.

Seminars in the Social Sciences: Students who complete such a seminar may receive credit in the departments of Anthropology, Economics, Geography, History, Political Science or Sociology if the credit is approved by the Head of the Department prior to registering for the seminar.

504 Social Studies Seminar: England 6 hrs. Summer 1969

A foreign study seminar especially designed for teachers and advanced college students in the social studies. It consists of regularly scheduled lectures and discussions on British life, institutions, social problems, and international relations. Following twelve days of travel in the British Isles, the seminar is in formal session at Oxford University for a period of about four weeks. After this, the party spends approximately a month touring several countries on the Continent. Graduate or undergraduate credit for this course, scheduled as Liberal Arts 504, may be earned. A maximum of 3 hours credit in each of two departments in the Social Science area, under such conditions and stipulations as the individual departments may determine, may be allowed, but arrangements for this must be made in advance with the heads of the departments in which the student wishes to earn credit.

504 Social Studies Seminar: Yugoslavia 6 hrs. Summer 1969

A lecture and study program in Yugoslavia, with lectures, followed by discussion forums by leading scholars in Yugoslavia and travel in the country. Designed for exceptionally talented undergraduate students and graduate students, the seminar introduces participants to the social and political system, philosophical and religious beliefs, art and literature,
American Studies Program

peoples, customs, and traditions of Yugoslavia. A maximum of three hours undergraduate or graduate credit may be earned in each of two departments of the Social Science area, under such conditions and stipulations as the individual departments may make. Arrangements must be made in advance with the heads of the departments in which the student wishes to earn credit.

504 Social Studies Seminar: East Africa 6 hrs. Summer 1971

A lecture and field-study program of approximately six weeks in Kenya and Uganda, especially designed for students and teachers in the social sciences with a special interest in Africa. A lecture series, focusing on the general theme “Education and Planning for Development” and combined with discussion forums is presented at the University College, Nairobi. University authorities and prominent leaders in African affairs deliver the lectures. Field study trips follow the lecture series. Three additional weeks are devoted to global travel. A maximum of three hours undergraduate or graduate credit may be earned in each of two Social Science Departments, under such conditions and stipulations as the individual Departments may determine but arrangements for this must be made in advance with the heads of the departments in which the student wishes to earn credit.

American Studies Program

This is an interdepartmental program bringing to bear insights of literature and the social sciences on the problems of American life. It provides an excellent background for students planning careers in journalism, politics, public relations, teaching, the foreign service, mass communications, or library work.

Students majoring in American Studies are expected to complete:

1. At least 36 hours in approved courses (list available at American Studies Office, 1422 Sangren Hall).
2. At least 18 hours in courses numbered 300 or above.
3. At least 12 hours in one participating Department.
4. At least 4 hours in each of the Departments in the Social Science Division, plus 4 hours or more in American Literature, and 3 hours in Philosophy and Religion.
5. An interdisciplinary course dealing with basic issues in American Culture.

500 Studies in American Culture 3 hrs.

An interdisciplinary study of perennial issues in American life. The materials for this course are drawn from literature, the arts, the social sciences, and philosophy.
GROUP MAJORS AND MINORS

Departmental major and minor requirements are listed under the individual Science Departments (Biology, Chemistry, Geography, Geology, Mathematics, Physics, and Psychology), and students must consult departmental advisers concerning them. Group majors and minors are intended for students in Elementary Education, including Special Education, or Dietetics curricula. They will not ordinarily be approved for students in other curricula, except in rare cases with special permission of the Group Science Adviser, Robert C. Nagler (117B McCracken Hall).

Group Science Majors and Minors

1. The Group Science minor for Elementary Education:
   - Biology 100, 101 or 107 ........................................ 3-4 hrs.
   - Biology 210 or 234 or 403 .................................. 4 hrs.
   - Geog. 105 or Geol. 230 ...................................... 4 hrs.
   - Geog. 225 or 226 or Geol. 230 or 231 .................. 4 hrs.
   - Physical Science 108 ........................................ 4 hrs.
   - Astronomy 104 ................................................ 4 hrs.
   - ................................................................. 24 hrs.

2. The Group Science major for Elementary Education supplements the minor with 12 hours of advanced work from other Science courses. Regional Geography and Psychology will not ordinarily be accepted unless they are strongly oriented toward the natural sciences.

3. The Junior High Science major for teachers in Junior High School will include 12-13 hours of Biological Science, 11-12 hours of Earth Science and 12 hours of Physical Science. It is also recommended that students with a Junior High Science major elect in their General Studies advanced course, Science in Intellectual History 401, 4 hours. A total of 36 hours is required. The following courses are recommended:

   12-13 hours Biological Science
   - Biology 100, 101, and 102 .................................. 9 hrs.
   - One of the following: ........................................ 3 or 4 hrs.
     - Biology 210—Mammalian Anatomy
     - Biology 221—The Plant Kingdom
     - Biology 234—Outdoor Science
     - Biology 301—Ecology
     - Biology 306—Genetics
     - Biology 541—Invertebrate Zoology
Group Science Majors and Minors

11-12 hours Earth Science

Geog. 105 ........................................... 4 hrs.
From the following .................................. 3 or 4 hrs.
   Astronomy 104 ................................... 4 hrs.
   Geol. 230—Physical Geology .................... 4 hrs.
   Geol. 231—Historical Geology .................. 4 hrs.
   Geol. 310—Life of the Geologic Past .......... 3 hrs.
   Geol. Minerals and Rocks ...................... 3 hrs.
   Geog. 225—Intro. to Meteorology & Climatology 4 hrs.
   Geog. 226—Advanced Physical Geography ........ 4 hrs.

12 hours Physical Science

Physics 106, 110 or Physical Science 108 ........ 4 hrs.
Chemistry 101, 102, or 103 ...................... 4 hrs.
One of the following: ............................. 4 hrs.
   Chemistry 109—General Chemistry .......... 4 hrs.
   Physics 111—General Physics ............... 4 hrs.
   Astronomy 104 .................................. 4 hrs.

4. Related Course Offerings

The following related freshman courses are offered: Biological Science; Physical Geography; Physical Science; or Geological Science. Descriptions of these courses are found under the School of General Studies. In addition to these, the following related courses are offered, of which only the latter three may be used in the Group Science major and minor:

203 Teaching of Elementary Science 3 hrs.

This course covers important subject matter of the physical and biological sciences with methods for its effective presentation in the classroom. Extension only.

308 Teaching of Physical Science 2 hrs.

Study of problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of apparatus ordering, maintenance and planning of laboratories are also considered. Prerequisite: One year of college chemistry and one year of college physics.

435 Medical Technology Affiliation (see p. 288) 15 hrs.

501 Higgins Lake Field Course 1 hr.

A one-week course offered in cooperation with Eastern Michigan University, Central Michigan University and the Michigan Department of Conservation. The student may concentrate in any one of four areas of study—Conservation, Game Bird Ornithology, Botany of Flowering Plants, and the Natural History of Michigan Mammals. The one-week
course in Conservation is acceptable towards major or minors in Geography, Biology, and Group Science. The course may be repeated provided there is no repetition in the area of specialization.

510 Studies in Space Science 3 hrs.

The properties, structure, and evolution of stars will be emphasized in this course. Topics covered will also include: tools and methods of investigation, galaxies, cosmogony, and cosmological theories. Prerequisites: Physics 106, or Physics 110 and Physics 111, or equivalent, Astronomy 104 or equivalent.

530 Conservation Education 2 hrs.

Survey of the whole field of conservation through lecture, laboratory, library, and field experience. Consideration will be given to ways of including conservation in the elementary and secondary curricula. Students will have contact with personnel of local, state, and federal conservation agencies. Designed primarily for teachers in service. Prerequisite: Consent of Instructor.

Social Science Major And Minor

In addition to majors and minors in the individual Social Science departments (Anthropology, Economics, History, Political Science, and Sociology), a major and a minor in Social Science are offered. Requirements for the departmental majors may be found under the departmental listings. Students desiring to major or minor in Social Science in preparation for a career in social work should consult with the Social Work Adviser, Mrs. Nellie Reid. Others planning to major or minor in Social Science should consult with William Fox (3411 Sangren Hall).

Major and minor programs should be arranged in conference with the Adviser indicated above by the fourth semester of the student's college career.

1. Requirements for the Major in Social Science
   a. At least 36 hours credit in the Social Science departments listed above. Courses listed under "General Studies" may not be counted toward the major in Social Science.
   b. The following basic courses must be completed. They may be applied towards either the Social Science major or a minor in one of the departments:
      Anthropology 200 or 220
      Economics 200 level
      History 210 and 211
      Political Science 200
      Sociology 200
   c. A total of 9 hours credit in 300 or 500 level courses.

*Elementary Education majors may satisfy this requirement by completing the specified courses in four of the five departments listed.
d. No more than 16 hours credit in any one Social Science Department may be used to apply to the required total of 36 hours.

e. Majors in Secondary and Elementary Education Curricula may include up to 2 courses in Geography in their major program, provide such courses are not specified for "science credit".

f. In addition to the above, majors in the Secondary Education Curriculum must elect Social Science 300 (Teaching of Social Studies in Secondary Schools).

2. Requirements for the Minor in Social Science

a. The Social Science minor in the Secondary Education Curriculum is open only to students who are majoring in English, Geography, or one of the Social Science departments listed above.

b. At least 24 hours credit in the Social Science departments listed above. This may not include any courses listed under "General Studies". It may include one course in Geography, provided such course is not specified for "science credit".

c. At least 6 hours credit in 300 or 500 level courses.

d. In the event that the major is in one of the listed Social Science departments, the minor in Social Science must include courses in all the other listed departments.

3. Related Course Offering

300 Teaching of Social Studies in Secondary Schools 3 hrs. Fall, Winter

Definition of objectives; selection, organization, and use of materials; procedures and problems of effective teaching in this area. Prerequisite: Junior standing.

Medical Technology

John J. Josten, Adviser

A Bachelor of Science degree is awarded in the field of Medical Technology on completion of the following series of courses and a one-year internship in Medical Technology at a hospital affiliated with Western Michigan University. The curriculum fulfills the minimum requirements of the American Society of Clinical Pathologists as well as their recommendations for a strong program. A major is allowed in Medical Technology with 30 hours credit for the year of internship. This credit is only allowed if the internship is preceded by the requirement work in Chemistry and Biology, and is taken at an affiliated hospital. Minors are taken in both Biology and Chemistry.
Inter-Disciplinary Programs

The hospitals with which Western Michigan University is affiliated are: Borgess Hospital and Bronson Hospital, Kalamazoo; Blodgett Memorial Hospital, Butterworth Hospital, and St. Mary's Hospital, Grand Rapids; McLaren Hospital, Flint; Wayne County General Hospital, Eloise; Hackley Memorial Hospital, Muskegon; and Burns Clinic-Little Traverse Hospital, Petoskey.

Tuition must be paid during the year of internship and grades for the work completed during that year are recorded on the student's record. At the completion of the course, the Registry examination must be passed to become a Registered Medical Technologist.

A. Minimum hours required for this curriculum .............. 124 hrs.

B. Course Requirements
   1. General Studies requirements, as described on page 21 of this catalog must be met.

   2. Science and Mathematics .................. 45 or 49 hrs.
      Mathematics 100 (if not elected in high school) .............. 4
      Biology 100 and 101 .................................... 6
      Mammalian Anatomy 210 .................................. 4
      Animal Physiology 554 ................................ 3
      Microbiology 412 ........................................ 4
      Advanced Microbiology 513 ................................ 3
      General Chemistry 101 or 102 ............................. 4
      Qual. Analysis 120 ..................................... 4
      Organic Chemistry 265 .................................. 4
      Quant. Analysis 222 .................................... 4
      Biochemistry 553 ....................................... 5
      Physics 106 ............................................. 4


   4. Physical Education or Military Science .......... 4–8 hrs.

C. Degree requirements must be met.

435 Medical Technology Affiliation 15 hours Fall, Winter

A course in clinical laboratory methods with instruction in one of the hospital medical technology schools under contract with Western Michigan University. This course is taken for two semesters.
PREPROFESSIONAL CURRICULA

Every professional school has prescribed the nature and amount of the academic work to be completed as a prerequisite to the professional training for a particular vocation. Four years of higher education are generally required by most professional schools for entrance. Western Michigan University is able to offer its students courses of study that meet the requirements for this preprofessional training. It should be noted, however, that the courses outlined are only suggested plans to illustrate in general the kinds of programs that preprofessional students should follow. IN EVERY CASE THE STUDENT SHOULD PLAN HIS COURSE ACCORDING TO THE REQUIREMENTS OF THE SCHOOL TO WHICH HE PLANS TO TRANSFER FOR HIS PROFESSIONAL TRAINING. It cannot be emphasized too strongly that the student should exercise care to make certain that the specific requirements of a particular school will have been met.

Christian Ministry

The following program includes every basic recommendation of the American Association of Theological Schools. Most seminaries urge that undergraduates major in a humanistic field such as Philosophy, History, or Literature. Many seminaries, especially those which have the highest reputation for excellence, recommend a major in Religion at the undergraduate level.

The program at Western as outlined below is not mandatory in every detail, but departures from it should be discussed with the Head of the Department of Religion.

A. Minimum hours required for this curriculum .......... 124 hrs.

B. Course Requirements

1. General Studies requirements, as described on page 21 of this catalog must be met.

2. Foreign Language ........................................... 16 hrs.
   4 semesters of German, French, Latin, or Greek

3. Religion ...................................................... 16 hrs.
   A minor in religion

4. Philosophy .................................................... 12 hrs.
   Philosophy 200, 300, 301

5. Political Science 200 ....................................... 3 hrs.

6. Physical Education or Military Science .......................... 4–8 hrs.

7. Remaining hours ........................................... 33 hrs.
   Electives

C. Degree Requirements must be met
Dentistry

Although the Dental Aptitude Test is required of all applicants to any dental school, the amount and kind of academic work needed for admission varies. Therefore, a student planning to do his pre dental work at Western Michigan University should have a catalog from the dental school of his choice and plan his work at Western to meet the requirements of that particular school.

The following program will in most instances satisfy dental school requirements:

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Physics 110, 111</td>
<td>8</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Organic Chem. 360, 361</td>
<td>10</td>
</tr>
<tr>
<td>Biology, 100, 101, 102</td>
<td>9</td>
<td>Phys. Ed. or Military Science</td>
<td>2-4</td>
</tr>
<tr>
<td>Chemistry 100 or 101 or 102, 120</td>
<td>8 or 10</td>
<td>Language or Arts and Ideas 222</td>
<td>6-8</td>
</tr>
<tr>
<td>Phys. Ed. or Military Science</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language or Arts and Ideas 222</td>
<td>6-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
<td></td>
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</table>

Recommended Third Year | S.H. |
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<tbody>
<tr>
<td>Comparative Chordate</td>
<td>4</td>
</tr>
<tr>
<td>Anatomy 342</td>
<td>4</td>
</tr>
<tr>
<td>Vertebrate Embryology 343</td>
<td>4</td>
</tr>
<tr>
<td>Genetics 306</td>
<td>3</td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>Electives (complete minors)</td>
<td>13</td>
</tr>
</tbody>
</table>

Engineering

Dr. Don W. Nantz, Adviser

Students who wish an engineering program, other than that offered in the School of Applied Arts and Science should consult the adviser in their field. He will help the students plan a program to permit transfer to either Michigan State University, Michigan Technological University, University of Michigan or Wayne State University.
Frequent and significant changes have occurred in the curricula of these and other engineering schools in recent years. Thus, each student should seek counseling during his first semester of enrollment. Representative course schedules have been prepared on the basis of suggestions received from these institutions.

**MICHIGAN STATE UNIVERSITY**

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Mathematics 222, 223</td>
<td>8</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Physics 210, 211</td>
<td>8</td>
</tr>
<tr>
<td>Math 106, 122, 123</td>
<td>9</td>
<td>General Studies 202, 203</td>
<td>8</td>
</tr>
<tr>
<td>General Chemistry* 103, 109</td>
<td>8</td>
<td>Electives</td>
<td>4</td>
</tr>
<tr>
<td>General Studies 101, 102</td>
<td>8</td>
<td>PE</td>
<td>1</td>
</tr>
<tr>
<td>PE</td>
<td>1</td>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>33</strong></td>
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</tbody>
</table>

**MICHIGAN TECHNOLOGICAL UNIVERSITY**

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Physics 210, 211</td>
<td>8</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Math 222, 223</td>
<td>8</td>
</tr>
<tr>
<td>Math 122, 123</td>
<td>8</td>
<td>Economics 201, 202</td>
<td>6</td>
</tr>
<tr>
<td>Gen. Chemistry* 103, 109</td>
<td>8</td>
<td>Statics 256</td>
<td>3</td>
</tr>
<tr>
<td>Drafting* 230, 231</td>
<td>6</td>
<td>Gen. Studies** 202, 203</td>
<td>8</td>
</tr>
<tr>
<td>Gen. Studies** 100, or 101</td>
<td>4</td>
<td>PE or ROTC</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>34</strong></td>
<td></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

*Chemical Engineers should omit Drafting 230, 231 and Chem 103, 109 and take Chem 102, 120, 362, 363.

**Geological Engineers may omit General Studies and take the following Geology courses—112, 231, 301, 335.

**UNIVERSITY OF MICHIGAN**

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Mathematics 222, 223</td>
<td>8</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Physics 210, 211</td>
<td>8</td>
</tr>
<tr>
<td>Math 106, 122, 123</td>
<td>9</td>
<td>Statics 256</td>
<td>3</td>
</tr>
<tr>
<td>Engrg. Drawing 230</td>
<td>3</td>
<td>Dynamics 355</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry* 103, 109</td>
<td>8</td>
<td>Economics 201, 202</td>
<td>6</td>
</tr>
<tr>
<td>General Studies 100</td>
<td>4</td>
<td>General Studies 101</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>30</strong></td>
<td></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

*Chemical, Metallurgical, and Materials Engineering and Meteorology, Oceanography, and Physics should take Chemistry 102, 120.
Forestry

Dr. Lee Baker, Adviser

The following is a two-year program approved by Michigan State University:

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Chemistry 100 or 101 or 102, 109</td>
<td>8 or 10</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Botany of Seed Plants 220</td>
<td>4</td>
</tr>
<tr>
<td>General Biology 100, 101, 102</td>
<td>9</td>
<td>Plant Kingdom 221</td>
<td>4</td>
</tr>
<tr>
<td>Math.</td>
<td>6, 8 or 10</td>
<td>Social Science (Elect.)</td>
<td>8</td>
</tr>
<tr>
<td>Agronomy 220, 221</td>
<td>6</td>
<td>Soils 320</td>
<td>3</td>
</tr>
<tr>
<td>Phys. Ed. or Military Science 2 or 4</td>
<td></td>
<td>Phys. Ed. or Military Science 2 or 4</td>
<td></td>
</tr>
</tbody>
</table>

Students planning to transfer to the University of Michigan for work in forestry at the end of the second year must plan on attending the University's summer camp before beginning work on the Ann Arbor campus.

Journalism

This program is a two-year preprofessional curriculum for students intending to transfer at the junior level to other institutions offering the bachelor's degree in journalism. The student pursuing this curriculum should plan his course of study to meet the requirements of the institution to which he plans to transfer.

A. Minimum hours required for this curriculum .......... 64 hrs.

B. Course Requirements:

1. Freshman-Sophomore General Studies requirements as described on page 263 of the catalog must be met.

2. Language and Literature, Speech, and Philosophy and Religion:
Preprofessional Curricula

a. English 264, Journalism ........................................... 4
b. Speech 342, Radio and TV Journalism .......................... 4
c. Additional hours may be taken from the following list:
   Speech 100, Introduction to Speech ............................ 3
   English 210, Literary Interpretation ........................... 4
   English 362, Advanced Writing .................................. 4
   Foreign Language—Any one ....................................... 8 hrs.

3. Social Sciences:
   a. Political Science 200, American National Government 3
   b. History 211, U.S. History Since 1877 ........................ 3
   c. Additional hours may be taken from the following list:
      History 210, U.S. History to 1877 ............................ 3
      Pol. Sci. 302, State and Local Govt. ........................ 4
      Economics 201, Principles of Economics ..................... 3
      Sociology 200, Principles of Sociology ...................... 4

      6-20 hrs.

4. Physical Education or Military Science ......................... 4–8 hrs.

Law

No special college program is required or recommended by most law schools. In general, law schools do urge a solid, four-year program leading to the Bachelor of Arts Degree, or its equivalent. Even those schools which consider applications for admission at the end of the third year of undergraduate study highly recommend that the four-year program be completed. Although it is relatively unimportant what the prospective law student uses for his major, it is most important that a high level of academic achievement be maintained. It is also important that the prospective lawyer’s education be as broad as possible.

Although a student might choose to be in any of the University’s curricula for his prelegal education, if he specifies prelaw his four-year program will be based upon either the general curriculum or the liberal arts curriculum as offered in the School of Liberal Arts and Sciences. If a student interested in law desires another curriculum, he should confer with his regularly assigned curriculum counselor.

Students interested in prelaw education should review the degree requirements as outlined under the general curriculum or liberal arts curriculum which may be found on the first few pages of the section in the University catalog devoted to the School of Liberal Arts and Sciences.
Librarianship

A preprofessional curriculum in librarianship is outlined in this bulletin under the Graduate School on page 467.

Medicine

Many medical schools accept students with three years of college work. Others require that the student finish four years before entering. The Medical College Admission Test is required of all applicants to medical schools.

A student planning to do his premedical work at Western Michigan University should obtain catalogs from three medical schools of his choice and should plan his college work to meet their requirements. A special counselor for those enrolled in premedical work will assist the student in planning his course of study. Students should get in touch with the chairman of Western Michigan University's Premedical Advisory Committee by the end of their freshman year.

The following program will in most instances satisfy medical school requirements:

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Quantitative Analysis 222</td>
<td>4</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Physics 110, 111</td>
<td>8</td>
</tr>
<tr>
<td>Biology 100, 101, 102</td>
<td>9</td>
<td>Man and Society 202,</td>
<td></td>
</tr>
<tr>
<td>Chemistry 100 or 102, 120</td>
<td>8 or 10</td>
<td>Introd. to Non-Western:</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>8</td>
<td>World 304 (4 hours)</td>
<td>8</td>
</tr>
<tr>
<td>Phys. Ed. or Military Science</td>
<td>2-4</td>
<td>Phys. Ed. or Military Science</td>
<td>2-4</td>
</tr>
<tr>
<td>Trig. and Alg. 100</td>
<td>4</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>S.H.</th>
<th>Fourth Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparative Anatomy 342</td>
<td>4</td>
<td>If four-year premed is taken then</td>
<td></td>
</tr>
<tr>
<td>Organic Chemistry 360, 361</td>
<td>8</td>
<td>complete major or minor require-</td>
<td></td>
</tr>
<tr>
<td>Electives in Social Science</td>
<td>4</td>
<td>ments. Take electives in art,</td>
<td></td>
</tr>
<tr>
<td>Embryology 343</td>
<td>4</td>
<td>music, literature, speech and</td>
<td></td>
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</tbody>
</table>

|                                  |      | social sciences. The following   |
|                                  |      | courses are recommended as elect- |
|                                  |      | ives in science:                 |
|                                  |      | Genetics 306                     |
|                                  |      | Histology 545                    |
|                                  |      | Parasites and Parasitism 551     |
|                                  |      | Animal Physiology 317            |
|                                  |      | Invertebrate Zoology 541         |
Mortuary Science

The first two years of a three-year program in Mortuary Science are called the preprofessional part of the program. To complete the requirements for this, a student must earn 60 hours of credit. It is strongly recommended that this course work include the following: English (6 hours), General Chemistry (8 hours), Organic Chemistry (4 hours), Social Sciences including geography, history, political science, economics, sociology and philosophy (8 hours), Zoology or Biology (4 hours), Psychology (2 or 3 hours), Mathematics or Accounting (4 hours).

The Michigan Board of Examiners of Mortuary Science requires completion of certain group requirements which the student should check thoroughly.

<table>
<thead>
<tr>
<th>Suggested First Year</th>
<th>S.H.</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Biology 100</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Small Bus. Mgmt.</td>
</tr>
<tr>
<td>Chem. 100 or 101 or 102, 109</td>
<td>8 or 10</td>
<td>Phys. Ed.</td>
</tr>
<tr>
<td>Man and Society 202 or Western Civil. 100, 101 or Non-West. World</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Nursing

Preprofessional preparation for transfer to a college of nursing may be taken at Western Michigan University for one academic year. Most universities offering a correlated program leading to a B.S. degree and R.N. accept transfer students from an accredited institution upon the completion of specified requirements.

Students should plan with care, in cooperation with the prenursing counselor, to meet the admission requirements of the school they wish to attend.

A typical one-year preprofessional required program:

<table>
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<tr>
<th>S.H.</th>
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<tbody>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Chemistry 100 or 101 or 102, 109</td>
<td>8 or 10</td>
</tr>
<tr>
<td>Biology 100, 101</td>
<td>6</td>
</tr>
</tbody>
</table>
Bronson Methodist Hospital School of Nursing students receive pre-clinical instruction at Western in special courses arranged for their particular needs. These courses are given University credit but their applicability to curricula or graduation requirements here is determined by departmental evaluation.

**Pharmacy**

A student transferring to a college of pharmacy is required to be in residence at that school for a minimum of six semesters regardless of how much previous college training he may have had. Therefore, the prepharmacy course of study at Western Michigan consists of one year's work.

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<tr>
<th>First Year</th>
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<tr>
<td>Freshman Reading 140</td>
<td>2</td>
<td>Trig. and Alg. 100</td>
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<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Electives (Speech 100 is recommended)</td>
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<tr>
<td>Chemistry 100 or 101 or 102, 120</td>
<td>8 or 10</td>
<td>Phys. Ed. or Military Science 2 or 4</td>
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<td>Biology 100, 101, 102</td>
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**Anthropology**

Robert F. Maher, Chairman

Elizabeth E. Baldwin
William Garland
Ernestene Green

Reinhold Loffler
William Pilcher
Robert Jack Smith

Courses are designed (1) to give students a better understanding of the nature of man; (2) to broaden familiarity with the diverse ways of human life, both past and present; (3) to meet the needs of students preparing to teach in the social science field; and (4) to prepare students to do graduate work in Anthropology.

A major in Anthropology consists of a minimum of 24 hours, 6 of which may be taken in Sociology. Courses 200 and 220 are required.

A combined major in Sociology and Anthropology consists of a minimum of 30 hours. Courses Anthropology 200 and 220 and Sociology 200, 504 and 582 are required with at least 12 hours in each of the two fields, Sociology and Anthropology.

A minor in Anthropology consists of a minimum of 18 hours, 6 of which may be in Sociology. Courses 200 and 220 are required.
Students in Education Curricula must take 30 hours for a major in Anthropology and 20 hours for a minor. All major or minor programs must be approved by the Department Adviser.

200 (230) Introduction to Anthropology: Physical Anthropology and Archeology 3 hrs. Fall, Winter

A consideration of the biological evolution of man and of the archeological remains which document his cultural past.

220 (231) Introduction to Anthropology: Cultural Anthropology 3 hrs. Fall, Winter

A study of the nature of culture through an investigation of the ways of life of both “primitive” and “civilized” peoples. The structure and functions of culture are considered along with its relationships to the environment, society, and the individual.

300 (341) The Archeology of North America 3 hrs. Fall

The prehistoric development of man and culture in the New World north of Mexico. Prerequisite: 200 or consent of instructor.

331 Art and Culture 3 hrs. Fall

A study of artistic activity in cultures of Africa, Oceania and the Americas, with attention to prehistoric as well as recent products. Relations between the visual arts and other aspects of culture. Prerequisite: 220 or consent of instructor.

334 Cultures of North Africa and the Middle East 3 hrs. Winter

A study of the peasant, urban, and nomad cultures from Morocco to Afghanistan, including consideration of Islamic civilization and recent ideological trends. Prerequisite: 220 or consent of instructor.

335 Cultures of Africa 3 hrs. Fall

A study of the development of cultures in the ecological setting of sub-Saharan Africa from ca. 5500 B.C., with the beginnings of agriculture on the continent, to the European partition of Africa. Prerequisite: 220 or consent of instructor.

336 Cultures of Asia 3 hrs. Winter

A study of the social and cultural characteristics of the various peoples of Asia with concern for both the great civilizations and the lesser known tribal cultures. Prerequisite: 220 or consent of instructor.

337 Indian Cultures of Mexico, Central and South America 3 hrs. Fall

A study of the Indian cultures of Mexico, Central and South America with attention to both their aboriginal traditions and their role in contemporary life in Latin America. Prerequisite: 220 or consent of instructor.
School of Liberal Arts and Sciences

339 Native Cultures of North America 3 hrs. Winter
Study of the aboriginal cultures of America from the Arctic to the Rio Grande, with emphasis on contrasting patterns of regional cultures. Prerequisite: 220 or consent of the instructor.

350 (347) Human Evolution 3 hrs. Fall
Study of both the indirect evidence and the fossil evidence concerning human evolution, including comparisons with other primates, living and extinct, and a consideration of the present-day races of man. Prerequisite: 200 or consent of instructor.

370 (332) Language in Culture 3 hrs. Winter
A consideration of the evolution of language as a symbolic system of communication. The relations of language to cognition, social structure, cultural variation and nationalism; proxemics and other similar epilinguistic phenomena. Some consideration will be given to the ethnography of communication and related subjects. Prerequisite: Anthro. 220 or Ling. 200, or consent of instructor.

498 Honors Study 2 hrs. Fall, Winter
A program of independent study (reading or research) to provide the honors student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the Department. May be repeated once. Permission to register must be obtained from the Department Honors Adviser.

500 (546) Topics in Archeology 3 hrs. Fall, Winter
A consideration of the prehistory of a particular geographic area (e.g. the southwestern United States, the Circumpolar) or of selected theoretical problems (e.g. artifact typology, prehistoric ecology). The topic to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 200, or consent of instructor.

501 (544) The Rise of Civilization 3 hrs. Fall, Winter
The archeological sequence in one or more of the nuclear centers of prehistoric civilization will be considered in some detail. The course may focus intensively upon one area (e.g. the Near East, or Meso-America), or it may give equal emphasis to two or more areas in a comparative framework. The specific area or areas to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 200 or consent of instructor.

510 (541) Field Methods in Archeology I 3 hrs. Summer
Instruction in the archeology of a particular area (e.g. Great Lakes, southwestern United States, Aleutians), with particular attention to prehistoric cultural developments and ecological relationships as these appear in the process of excavation. (May be repeated for credit.) Prerequisite: Consent of instructor.
511 (542) Field Methods in Archeology II 3 hrs. Summer
Practical application of the basic skills used in the excavation of archaeological sites, including surveying techniques, methods of excavation, compilation of field data sheets, and classification of artifacts. To be taken concurrently with 510. (May be repeated for credit.) Prerequisite: Consent of instructor.

520 History of Anthropological Theory 3 hrs. Winter
A systematic examination of the evolution of the significant theoretical problems and contributions in anthropology over the last two centuries. Developments are examined in relation to the prominent figures in the discipline and their times. Prerequisite: 200 and 220 or consent of the instructor.

531 Medical Anthropology 3 hrs. Fall
An examination of anthropological techniques and findings relating to medical beliefs and practices on a cross-cultural basis. Concern with the sociocultural aspects of health, illness, and folk and scientific systems of medical care. Prerequisite: 220 or consent.

532 Culture and Personality 3 hrs. Winter
An investigation of the interaction of culture and personality with particular attention to the role of culture as a force in the development of the individual. Prerequisite: 220 or consent of instructor.

534 Peasant Societies in Cross-Cultural Perspective 3 hrs. Winter
A cross-cultural study of the development of peasant groups as a cultural type. Theoretical and substantive emphasis is on the cultural antecedents of peasant societies, the conditions promoting change from folk to peasant status, and the relationships between peasant groups and urban, national societies. Prerequisite: 220 or consent of instructor.

535 The Anthropology of Religion 3 hrs. Fall
An examination of anthropological theories and findings relating to the origin, nature and function of religion as a universal category of culture. A scientific cross-cultural consideration of religious beliefs and practices and their relation to concepts of the nature of the universe. The role of religion in revitalistic reactions to culture contact. Prerequisite: 220 or consent of instructor.

536 Cultural Evolution 3 hrs. Winter
An inquiry into the dynamics of culture through a study of selected theories of culture change and their application to concrete situations such as the rise of complex civilizations and the reactions of non-Western societies to contact with the West. Prerequisite: 200 or 220 or consent of instructor.

537 Political Anthropology 3 hrs. Fall
Theoretical and descriptive analysis of the political aspect of social organization, ranging from primitive to complex societies; the relation-
ship of politics to technological development, habitat, symbolic systems and other aspects of social organization. Prerequisite: 220 or consent of instructor.

538 Legal Anthropology 3 hrs. Winter
A study of law through the theory and method of comparative legal dynamics. The relation of law to the whole of culture; the function of law as revealed in the comparative study of societies ranging from simple to complex. Prerequisite: 220 or consent of instructor.

539 Economic Anthropology 3 hrs. Fall
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisite: Anthro. 220, Econ. 200 and/or consent of instructor.

540 Cultural Ecology 3 hrs. Winter
A cross-cultural, comparative inquiry into the general and specific ways in which the interaction of society and environment determines the forms societies take, especially in respect to demography, territoriality, and the organization of kinship, politics, law, religion and economics. Prerequisite: 200 or 220 or consent of instructor.

545 Topics in Ethnology 3 hrs. Fall, Winter
An intensive study of the cultures of an area of the world (e.g. Japan, Philippines, Caribbean, East Africa) or of selected problems (e.g. kinship systems, millenarian movements). Topic will be announced each semester. (May be repeated for credit.) Prerequisite: 220 or consent of instructor.

549 Anthropology of Education 3 hrs. Fall
A study of education as the process which transmits the culture of one generation of a society to the next. Particular attention is given to education in primitive and peasant societies generally lacking formal institutions of education. Prerequisite: Soc. 200 or 600 or Anth. 220 or consent of instructor.

550 (547) The Primates 3 hrs. Winter
A study of the Order Primates with emphasis on the similarities and differences in the physical features of man, the apes, the monkeys and the Lower Primates. Field studies of the behavior and social organization of monkeys and apes will be reviewed to gain insight into the early behavior and social organization of man. Prerequisite: 200 or consent of instructor.

575 (548) Studies in Languages of the World 4 hrs.
Intensive study of a group of languages (varying from semester to semester) that are either genetically related (e.g. Slavic languages),
typologically similar (e.g. "tone" languages), or geographically proximate (e.g. African languages). May be repeated for credit.

580 Linguistic Field Techniques 4 hrs.
Interview techniques for the elicitation of oral language data, and methods of analysis of the data into significant linguistic units for their eventual arrangement in the form of a grammar and dictionary. Consent of instructor.

598 Readings in Anthropology 1–4 hrs. Fall, Winter
Independent study arranged in consultation with an instructor. Intended for advanced students with good academic records. 1 to 2 hours credit per semester, cumulative to 4 hours. Prerequisite: consent of instructor.

The Department of Art offers programs leading to the BA or BS degree in the following areas:

1. Fine Arts Major. 60 credit hours in Art.
This program is designed to meet the needs of the student intensely concerned with art, to develop creative artists and to prepare them for graduate work. The requirements of the Liberal Arts or General curricula (p. 270) have to be satisfied. 60 credit hours in art satisfy both the major and minor requirements of these curricula and are distributed as follows:

12 hours in the basic program (110, 111, 114, 115, 120, 121).
16 hours composed of: drawing (210, 310); art history (220, 221 plus one history elective); and art seminars (320, 525).
14 hours in one area of concentration selected from painting, sculpture, graphic design, printmaking, ceramics, weaving or jewelry (Example: 240, 340, 440, 540, 500 in painting).
18 hours in required and elective art courses related to the area of concentration and determined in consultation with the departmental adviser.

An exhibition of each student’s work will be required in the senior year.

Special programs for those interested in art history or other special situations can be arranged in consultation with the departmental adviser.

Candidates for this program should see the departmental adviser as soon as they have decided to major in art and must declare an area of concentration by their junior year.

2. Secondary Art Education Major. 60 credit hours.

This program is intended to develop artist-teachers certified to teach art at the elementary and secondary levels and prepared to continue their studies at a graduate school.

The requirements of the Secondary Curriculum of The School of Education (p. 206) must be satisfied. 60 credit hours in art satisfy the major and minor requirements of this curriculum and are distributed as follows:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121).
- 14 hours composed of: drawing (210, 310); and art history (220, 221 plus one art history elective).
- 8 hours in art education (352, 353, 550, 551).
- 14 hours in one area of concentration as defined in the Fine Arts program.
- 12 hours in elective art courses.
- One semester of directed teaching in art, preferably in both elementary and secondary situations.

An exhibition of each student’s work will be required in the senior year.

Candidates for this program should see the departmental adviser as soon as they have decided to major in art education.

3. Elementary Art Education Major. 40 credit hours.

This program is designed to develop artist-teachers certified to teach art and prepared to become classroom teachers at the elementary level.

The requirements of the Elementary Curriculum of The School of Education (p. 202) have to be satisfied. 40 credit hours in art satisfy the major requirement of this curriculum and are distributed as follows:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121).
- 8 hours composed of: drawing (210) and art history (220, 221).
- 4 hours in art education (352, 550).
- 16 hours in art determined in consultation with the departmental adviser.

Candidates for this program should see the departmental adviser as soon as they have decided to major in elementary art education.
4. Art Minor.

This program is designed to expose the student to the field of art and satisfies the minor requirements of the Liberal Arts, General, or Education curricula. 24 credit hours are distributed as follows:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121).
- 12 hours in art electives.

5. Art Courses for Non-Art Majors or Minors.

Elementary Education majors are required to take Art 150 except for those students in the Integrated Creative Arts minor who are required to take 200.

Any course with no prerequisites may be taken by non-art students, but those seeking a broadly inclusive studio experience in art are advised to take Art 130 and/or 140. The Art Survey and Art History courses are open with no prerequisites to non-art majors and can satisfy the humanities requirements alternative of the Liberal Arts and General curricula.

**Basic Program.** Courses required of all majors and minors in art as prerequisites to other advanced courses.

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<tbody>
<tr>
<td>110 Drawing</td>
<td>2</td>
<td>114 Design</td>
<td>2</td>
<td>120 Art Survey</td>
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</tr>
<tr>
<td>111 Drawing</td>
<td>2</td>
<td>115 Design</td>
<td>2</td>
<td>121 Art Survey</td>
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**ART DEPARTMENT COURSE OFFERINGS**

**110 Drawing**

2 hrs. Fall, Winter

Visual perception: reading form in space, composition, organization of visual matter. Technique: effective means of defining form. To include drawing and perspective by inspection. Prerequisite: None.

**111 Drawing**

2 hrs. Fall, Winter

Continuation of Drawing 110 with emphasis on composition in dark and light. The exploitation of the expressive possibilities of the various drawing media oriented towards future needs of art students. Prerequisite: Art 110.

**114 Design**

2 hrs. Fall, Winter

The study of the elements of visual design and the principles of their organization. The mechanics of visual perception and communication. Emphasis on black and white in two dimensions. Prerequisite: None.

**115 Design**

2 hrs. Fall, Winter

Continuation of Design 114 with emphasis on color theory and the mechanics of color organizations. Prerequisite: Art 114.
School of Liberal Arts and Sciences

120 Art Survey 2 hrs. Fall, Winter
An introduction to language of art, art theory, aspects of art, and form analysis from a topical point of view. Prerequisite: None.

121 Art Survey 2 hrs. Fall, Winter
An introduction to the philosophy of art with understanding of the aesthetic values that are reflected from key movements of art in painting, sculpture, and architecture, in comparison to contemporary art. Prerequisite: Art 120.

130 Studio Experience — (3-D) 2 hrs. Fall, Winter
A course designed for the non-art student as an enriching experience in three dimensional media; to include clay, wood, metal, and other sculptural materials. This course may not be elected by majors or minors in art or art education and does not fulfill the certification requirement for education students. It is designed primarily for the General Degree student who wishes to have some art experience. Prerequisite: None.

140 Studio Experience — (2-D) 2 hrs. Fall, Winter
A course designed for the non-art student as an enriching experience in two dimensional media; to include painting and drawing and other graphic media. This course may not be elected by majors or minors in art or art education and does not fulfill certification requirements for teaching. Prerequisite: None.

150 Art Education Workshop 3 hrs. Fall, Winter
A studio course structured to provide the classroom teacher with the opportunity to explore, experiment, and develop concepts related to art, creativity, and perception. Such concepts are explored and developed through the use of a variety of art materials and techniques. Prerequisite: For the Elementary Education Minor only. May not be taken by Integrated Creative Arts minors, nor Art Majors or Minors.

200 The Creative Process through Art 4 hrs. Fall, Winter
Individual involvement in the creative process related to human growth and development by means of exploration with many art media. Prerequisite: 230, The Nature of Creativity (Ed. 230). For the Integrated Creative Arts Minor only. This course waives the Art 150 requirement for the Elementary Education majors.

210 Life Drawing 2 hrs. Fall, Winter
The study of the essential aspects of life drawing (such as gesture, contour, proportions, anatomy, structure, and articulation) and their synthesis into a coherent drawing attitude. Prerequisite: Basic Program.

220 History of Art 3 hrs. Fall, Winter
An historical survey of art from pre-historic ages to the Renaissance. Prerequisite: None.
221 History of Art
An historical survey of art from the Renaissance through the contemporary period. Prerequisite: None.

224 Comparative Arts
A correlation of music and the visual arts. Topics include form, color, realism, etc., as applied to both fields. Also a study of stage design, cinema, lumia as art forms. Taught by two instructors, one each from the departments of art and music. Prerequisite: None.

230 Ceramics
A course devoted to a survey of pottery processes including hand-building, technical information and a limited experience with the potters wheel. Prerequisite: Basic Program.

231 Sculpture
Introduction to sculptural concepts and techniques in clay, plaster and wood. Prerequisite: Basic Program, 210 or 210 concurrently.

232 Craft Design
A course stressing creativity in the design of products through the use of varied materials. Prerequisite: Basic Program.

234 Textile Design
An introduction survey in textiles to include weaving, stitchery, block printing, stencilling, tie and dye, and batik. Prerequisite: Basic Program.

237 Studio Equipment
An introduction to the proper use and care of shop equipment to include hand and power tools. Students generally use hardware, canvas, and sheet metal in a succession of class problems but wood is the major material. Prerequisite: Basic Program.

238 Jewelry
A survey of jewelry processes to include cutting, soldering, casting, stonecutting, and the use of appropriate equipment. Prerequisite: Basic Program.

240 Painting I
An introduction to the techniques and expressive possibilities of painting. Prerequisite: Basic Program, 210 or 210 concurrently.

241 Printmaking
An introduction to the basic printing techniques as fine arts media. Includes etching and lithography. Prerequisites: Basic Program, and Art 210 or 210 concurrently.

242 Watercolor Painting
A survey of the application, techniques, and limitations of the water color painting medium. Prerequisite: Basic Program.
245 Graphic Design  2 hrs.  Fall, Winter

An introduction to problem solving for visual communication through typographic and geometric images. The fundamentals of calligraphy, typography, and typographic design are investigated in experimental and practical projects. Incorporates research in the communicative potential of color and structure. Prerequisite: Basic Program.

310 Life Drawing  3 hrs.  Fall, Winter

Advanced work in the exploitation of life drawing as a form of art capable of expressing humanistic values. Prerequisite: Art 210.

315 Three Dimensional Design  3 hrs.  Fall, Winter

A course stressing the definition of time and three dimensional space by use of line, plane, texture and color. Esthetic exploration, manipulation and application of materials. Prerequisite: Basic Program.

320 Seminar in Art  1 hr.  Fall, Winter

A seminar to explain content and nature of all courses offered, the sequences, the requirements, texts, etc. An opportunity for discussion and interaction of students and faculty on contemporary and historical topics in the arts to be supplemented with resources and resource people. A student may enroll in this course a second time and receive credit. Prerequisites: None (Art majors only).

330 Ceramics  3 hrs.  Fall, Winter

Continuation of 230 with opportunity for concentration in the medium. Some experiment in glazing. Prerequisite: Art 230.

331 Sculpture  3 hrs.  Fall, Winter

Figure modeling, development of sculptural form through clay, casting techniques. Prerequisite: Art 231, 210.

332 Craft Design  3 hrs.  Fall, Winter

A continuation of Craft Design 232. Prerequisite: Art 232.

334 Textiles  3 hrs.  Fall, Winter

Advanced work in textile design allowing for specialization with a material or technique surveyed in 234. Prerequisite: Art 234.

338 Jewelry and Metalwork  3 hrs.  Fall, Winter

Advanced work in the jewelry processes. Prerequisite: Art 238.

340 Painting II  3 hrs.  Fall, Winter

Continuation of Art 240. Prerequisites: Art 210, 240.

341 Printmaking  3 hrs.  Fall, Winter

A continuation of printmaking 241, exploring the possibilities of one of the printing media in a more thorough manner. Includes one of the following: etching, lithography, screen printing. Prerequisites: Art 241, 310.
342 Watercolor 3 hrs. Fall, Winter
Advanced problems in watercolor techniques to include composition. Prerequisite: Art 242.

345 Graphic Design 3 hrs. Fall, Winter
The study and practice of graphic design for two dimensional media. Emphasis is placed on the conceptual development of geometric, figurative, and decorative imagery for posters, covers, promotionals, magazine and newspaper advertising. Includes thematic development, graphic planning, comprehensive and finished art production. Prerequisite: Graphic Design 245.

352 Art Education (Majors) 2 hrs. Fall, Winter
A studio course specifically designed to familiarize the elementary art teacher with teaching philosophies and creative teaching procedures using varied media and materials. Emphasis is placed on qualitative art programming in the elementary school. Prerequisites: Basic Program and open only to art majors.

353 Art Education (Majors) 2 hrs. Fall, Winter
A studio course specifically designed to familiarize the secondary art teacher with teaching philosophies and creative teaching procedures using varied media and materials. Emphasis is placed on qualitative art programming in the secondary school. Prerequisites: Basic Program and open only to art majors.

410 Drawing 3 hrs. Fall, Winter
Drawing as the study of form and as a conclusive esthetic statement. Model available during approximately ½ of the class meetings. Prerequisite: Art 310.

420 History of 19th Century Art 3 hrs. Fall, Winter
Major developments, such as Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism are discussed. Key figures whose works lie at the roots of modern art are considered in relationship to their times. Prerequisites: Art 220 and 221 for art majors and minors, none for non-art majors and minors.

421 History of 20th Century Art 3 hrs. Fall, Winter
Major developments including Fauvism, Cubism, Non-Objective art, Expressionism, Surrealism, Abstract Expressionism, and Op and Pop art are discussed. Emphasis is placed upon the roots of contemporary trends and the contributions of individuals to new modes of presentation. Prerequisites: Art 220 and 221 for art majors and minors, none for non-art majors and minors.

425 Problems in Art History 2-3 hrs. Fall, Winter
Selected problems in the history of art from ancient times to the present. Individual undergraduate students may work on a special in-
vestigation in consultation with the instructor, or a topic may be selected for an advanced student group. Prerequisite: Permission of instructor. Repeatable for credit.

430 Ceramics
Continuation of 330 with some experience in stacking and firing procedures. Prerequisite: Art 330.

431 Sculpture
Continuation of 331. Emphasis on welding and sheet metal techniques. Prerequisite: Art 331.

434 Textiles
Continuation of 334. Prerequisite: Art 334.

438 Jewelry
Advanced work in the jewelry processes. Prerequisite: Art 338.

440 Painting III
An intermediate course introducing a variety of contemporary techniques and media. This course emphasizes the matching of technique and medium to the characteristics of the desired image. Prerequisites: Art 210, 340.

441 Printmaking
Continuation of printmaking 341. Prerequisites: Art 310, 341.

442 Watercolor
Watercolor problems with the introduction of mixed media. Prerequisite: Art 342.

445 Graphic Design
A basic photography studio course designed to familiarize the graphic design student with the aesthetic, technical, and communicative potential of photography. Emphasis is placed upon the development of imagery for visual communication. Prerequisite: Graphic Design 345.

500 Independent Studies
An opportunity for qualified undergraduates to elect an area of special interest and pursue it in depth. Prerequisite: Permission of department. Repeatable for credit.

510 Drawing
Continuation of Art 410. Prerequisite: Art 410.

525 Seminar in Art
A seminar primarily in Art Philosophy and History with opportunity for research and debate. (Art majors only)
530 Advanced Ceramics
3 hrs. Fall, Winter
Advanced work in Ceramics including glaze calculations and experimentation. Prerequisite: Art 430.

531 Sculpture
3 hrs. Fall, Winter
Continuation of Sculpture 331. Emphasis on bronze and aluminum casting and related techniques. Prerequisite: Art 331.

534 Textiles
3 hrs. Fall, Winter
Continuation of 434 with advanced work in textile design. Prerequisite: Art 434.

538 Jewelry
3 hrs. Fall, Winter
Continuation of 438; advanced work in jewelry processes. Prerequisite: Art 438.

540 Painting IV
3 hrs. Fall, Winter
Continuation of Painting III. Prerequisite: Art 440.

541 Printmaking
3 hrs. Fall, Winter
A continuation of printmaking, 441. Prerequisites: Art 510, 441.

542 Watercolor
3 hrs. Fall, Winter
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: Art 442.

545 Graphic Design
3 hrs. Fall, Winter
The fundamentals and procedures of graphic design for sequential, three-dimensional, and serial forms. Problems in design continuity, and coordination are explored through editorial, corporate identity, campaign, product, and packaging design. Incorporates investigation of graphic processes and papers. Prerequisite: Graphic Design 445.

550 Preparation For Art Teaching (Elementary) 2 hrs. Fall, Winter
Designed to prepare elementary art education majors to realistically meet such responsibilities as working with elementary classroom teachers, selecting, organizing, and teaching art activities at each stage of development. Must precede student teaching.

551 Preparation For Art Teaching (Secondary) 2 hrs. Fall, Winter
Designed to prepare art education majors to understand the problems of the secondary art program and the responsibilities of an art consultant or supervisor. Organizing activities, teaching, budgeting, and other problems of secondary art education programs. Must precede student teaching.

581 History of Ancient Art
3 hrs. Fall, Winter
Selected topics from the art and architecture of ancient Egypt, the ancient Near East, the Aegean proto-Greek, Classical and Hellenistic Greece, Etruria, and Rome to the Early Christian period. Prerequisite: Art 220 for Art majors and minors, none for other students.
585 History of Renaissance Art 3 hrs. Fall, Winter
The development of art through the early Renaissance to the Late Renaissance and Mannerism. Some of the major artists discussed are: Giotto, Donatello, Leonardo, Michelangelo, Titian, Van Eyck, Breughel and Dürer. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

586 History of Baroque Art 3 hrs. Fall, Winter
Art of the late 16th, 17th, and early 18th centuries. Major artists and architects discussed are: Caravaggio, the Carracci, Rembrandt, Rubens, Poussin, Velasquez, Bernini, Borromini, and Neumann. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

590 History of Prints 3 hrs. Fall, Winter
Major developments in printmaking, including origins of woodcut and engraving. Renaissance and Baroque master etchers and engravers. (Dürer, Rembrandt, etc.) Lithography in the 19th century. (Delacroix, Daumier, Toulouse-Lautrec) 20th century printmaking. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

593 History of American Art 3 hrs. Fall, Winter
Art and architecture in the United States from the Colonial Period to the present. Topics discussed are: Colonial portraiture and Copley; the evolution of 19th and 20th century painting, sculpture and architecture with emphasis on the work of Stuart, Cole, Bingham, Homer, Eakins, Ryder, Sullivan, Wright, Marin, Pollock, and Smith. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

Biology
Clarence J. Goodnight, Head

Arthur R. Barbiers  Gyula Ficsor  Phoebe Rutherford
Harriette V. Bartoo  Dona J. Fowler  Beth Schultz
Richard D. Brewer  Stephen B. Friedman  Donna N. Schumann
Darwin A. Buthala  Frank J. Hinds  Marjorie A. Spradling
Raymond C. Deur  Imy V. Holt  Edwin B. Steen
William E. Dulin  Edgar Inselberg  Gian C. Sud
Gordon W. Duncan  John J. Josten  Leo C. VanderBeek
Robert C. Eisenberg  Jean M. Lawrence  William C.
Joseph G. Engemann  Richard W. Pippen  VanDeventer
Ronald J. Ericsson  Myrtle M. Powers  Jack S. Wood

A major in biology consists of a minimum of 30 credit hours in courses in biology including the basic core curriculum; a minor in biology consists of a minimum of 15 credit hours (in Secondary Education, 20 hours). All major and minor programs are taken under the direction of and with
the approval of a departmental adviser. The following courses are not counted towards a major or minor: Biol. 111, 205.

Students majoring in biology are required to take a minimum of three semesters of college chemistry, including a course in organic, two semesters of college mathematics, and two semesters of physics. Students in secondary and elementary education who are majoring in biology may substitute one semester of geology for the second semester of physics. For those planning to undertake graduate work in biology, two semesters of organic chemistry, quantitative chemistry, calculus, and statistics are strongly recommended.

All students minoring in biology are required to take two semesters of college chemistry and one semester of college mathematics.

Students majoring in Biology in a Secondary Education Curriculum may take a group science minor as follows: (1) Chemistry (including organic), and (2) either Geology 8 hours and Physics 4 hours; or Physics 8 hours and Geology 4 hours. A total of 24 hours are required for a group minor.

The basic core curriculum for biology majors consists of Biology 100, 101, 102, 301, 306, and 317. Modifications in curriculum are made to meet various pre-professional requirements. Only courses in which a grade of "C" or better is obtained may be counted towards a major or minor.

An Honors Program in Biology is available for students who demonstrate superior abilities during their first two years of college work.

Associated with the Biology Department is the Charles C. Adams Center for Ecological Studies established in 1956 following the gift to Western Michigan University of the personal library, letters, notes, and manuscripts of the pioneer American ecologist for whom the Center is named. The Kleinstuck Preserve, a 50 acre tract, provides instructional space near the campus.

The department maintains The Clarence R. Hanes Herbarium which houses the Hanes' collection of vascular plants from Kalamazoo County. The herbarium also contains an additional teaching collection of several thousand specimens and facilities for research. Collections of Dr. Leroy H. Harvey and Dr. Leslie A. Kenoyer are housed in the department.

The department has a radiation laboratory equipped for teaching and research in the areas of instrumentation, isotopes, ultraviolet and X-ray techniques.

**DESCRIPTION OF COURSES**

**100 Principles of Biology**

3 hrs. Fall, Winter

An introduction to the fundamental principles common to plants, animals and microorganisms. The structure of the living cell is related to its function. The chemical compounds that make up living systems are presented and followed through the more important processes that take place in cells and organisms, such as respiration and photosynthesis. The student is introduced to genetics, as well as to the relationships of organisms to their environment and to one another. A college course in general chemistry taken previously or concurrently is recommended.
101 Animal Biology 3 hrs. Fall, Winter

An animal survey emphasizing structure, function and behavior of different groups. The current frontiers of research with the animal groups will be used as the unifying theme. This course may be taken along with Biology 100 or 102.

102 Plant Biology 3 hrs. Fall, Winter

A survey of plants stressing the interactions of structure and function with the environmental stimuli. The current frontiers of research with the plant groups will be used as the unifying theme. This course may be taken along with Biology 100 or 101.

107 Biological Science 4 hrs. Fall, Winter

Designed to present basic biological principles, and to give the student an understanding of the operation of the world of life. This course fulfills the general education requirement for biological science.

111 Healthful Living 2 hrs. Fall, Winter

A study of the principles involving sound health practices. Factors in the causation, prevention, and control of all departures from normalcy in health are considered.

205 The Human Body in Health and Disease 4 hrs. Fall

A study of the organs and organ systems and their functioning in health and disease. The nature of disease and disease processes, theories of disease causation and methods employed in healing are considered. Principles and practices of effective living are emphasized. Prerequisite: Biology 100 or 101 or Biological Science 107.

210 Mammalian Anatomy 4 hrs. Fall, Winter

A study of the gross and microscopic structure of the mammalian body with special reference to man. Prerequisite: Biology 101 or equivalent.

215 Bacteriology for Nurses 3 hrs. Winter

A specialized course dealing with microorganisms, adapted to the needs of students in the Bronson Methodist Hospital School of Nursing. For Bronson students only.

219 Human Physiology 4 hrs. Fall, Winter

The functions of the organ systems of the human body, their regulation and control. Prerequisite: Biology 210 or equivalent.

220 Botany of Seed Plants 4 hrs. Fall, Winter

The study of the gross and microscopic structure, physiology, development, classification and ecology of seed plants. The greenhouse is used in experiments with living plants and their methods of propagation. Prerequisite: Biology 100 and 102 or consent of instructor.
Biology

221 The Plant Kingdom 4 hrs. Fall, Winter
A systematic study of representative plant groups with emphasis on classification, structure, reproduction and ecology. Field studies will occupy a major portion of the laboratory time. Prerequisites: Biology 100 and 102 or consent of instructor.

224 Trees and Shrubs 2 hrs. Fall
A field course in the identification of trees and shrubs. Structural characteristics, habit of growth, geographical distribution and economic importance are included.

225 Local Flora 2 hrs.
A field course designed for those who desire an acquaintance with the common plants occurring in the region.

234 Outdoor Science 4 hrs. Fall, Winter
The aspects of the living world with emphasis on the relationship of living things to their environment.

301 Ecology 3 hrs. Fall
An introduction to the relationships of organisms to their environment and to one another. Inter-relationships of individuals and the physical environment, dynamics of populations, and structure and function in the community and ecosystem are considered. Prerequisites: At least 9 hours of biology.

306 Genetics 3 hrs. Fall, Winter
A study of the principles of variation and heredity and the mechanisms of inheritance in organisms. Prerequisites: Biology 100, 101 or 102 or consent of instructor. Organic chemistry recommended.

317 General Physiology 3 hrs. Fall, Winter
A study of the fundamental principles which underlie the functional activities of organisms. Prerequisites: Biology 100, 101 or 102, a year of chemistry or consent of instructor.

323 Plant Pathology 3 hrs. Fall
The common diseases of higher plants, caused by fungi, viruses and physiological factors, as well as those connected with the presence of animals such as nematodes and insect larvae. Prerequisite: Biology 220 or equivalent.

342 Comparative Chordate Anatomy 4 hrs. Fall, Winter
A brief study of the classification, morphology, and physiology of the prechordates followed by a detailed study of representative vertebrates, including an elasmobranch, urodele, and a choice of mammals. Dissected monkeys available for study. Class project required. Prerequisites: Biology 100, 101 and an additional laboratory course in biology.
343 Vertebrate Embryology 4 hrs. Fall

A study of the development of an individual from the origin of the germ cells to maturity, with special reference to man. Prerequisites: Biology 100, 101, 102.

403 Elementary School Science 4 hrs. Fall, Winter

A laboratory course focusing on ideas and subject matter commonly included in elementary school science curricula. Prerequisite: Completion of General Studies Science requirements.

404 Problems in the Teaching of Biology 3 hrs. Fall, Winter

Class discussions, laboratory experiences and field work concerned with the teaching of biology in high school. Required of all students who are following a secondary education curriculum and list biology as a major or minor. This course assumes a working knowledge of plants, animals, and body chemistry, and of ecology, physiology and genetics. Limited to majors and minors enrolled in a secondary education curriculum.

412 Microbiology 4 hrs. Fall

An introduction to the fundamental relationships among microbes with an emphasis on unifying principles. Laboratory work deals with techniques basic to bacteriology. Prerequisites: 2 semesters of biology or consent of instructor and a course in organic chemistry (may be taken concurrently).

500 Selected Experiences in Biology 3 hrs. Winter

Problems to be studied are selected under the guidance of the instructor. Laboratory work consists of independent studies of living plants, animals and environmental problems. This is done outside of class time, utilizing procedures outlined by the instructor. Primarily for teachers. Prerequisite: Consent of instructor.

502 Human Ecology 3 hrs. Fall

A study of the man-dominated biotic community of civilization and its inter-relationships. Lectures, assigned reading, group and individual field work. Prerequisite: At least a minor in biology.

505 Advanced Genetics 3 hrs. Winter

Special problems in genetics, including a study of the genetic systems of populations and the formation of species. Lectures include material on the nature and function of the gene, and its relation to evolution. Prerequisite: Biology 306.

506 Microbial Genetics 3 hrs. Winter

A molecular approach to microbial genetics dealing primarily with bacterial and viral systems. Prerequisites: Biology 412 and a knowledge of organic chemistry or biochemistry.
508 Recent Advances in Biology 3 hrs. Fall, Winter
Recent research findings at the frontiers of biology as reported in periodicals, symposia and biological meetings. Prerequisite: at least 12 hours in biology.

509 Evolution 3 hrs. Fall
A consideration of the evidence for and the principles involved in the evolution of plants and animals, including man. Prerequisite: Biology 306 or consent of instructor.

510 Virology 3 hrs.
A study of the structure and physiology of viruses. Relationship to host is stressed. Prerequisites: Biology 412 and a knowledge of organic chemistry or biochemistry.

511 Physiology of Reproduction 3 hrs. Winter
A comparative study of the reproductive physiology of domestic animals, laboratory animals and man. Prerequisites: Biology 317 and a working knowledge of biochemistry or consent of instructor.

512 Health Problems 2 hrs.
A course for students with special interest in the medical and public health areas. The pathology, treatment and control of the major causes of mortality and ill health are presented; broad background in biology and chemistry desirable.

513 Advanced Microbiology 3 hrs. Winter
This course deals with pathogenic microorganisms, infectious diseases, diagnostic tests and principles of immunology. Prerequisite: Biology 412 or equivalent.

514 Bacterial Physiology 3 hrs. Winter
Lectures on bacterial cytology, metabolism, physiology and genetics with emphasis on biochemical aspects. Prerequisites: Biology 412 and biochemistry (may be taken concurrently).

515 Alcohol Problems 2 hrs.
An objective study of a major social problem, examined critically with regard to its physiological, psychological, legal, cultural, and sociological aspects. Prerequisite: at least a minor in biology or sociology, or consent of instructor.

516 Experimental Microbial Physiology 3 hrs. Fall
An experimental approach to metabolism, physiology and genetics with emphasis on biochemical techniques. Prerequisite: Biology 514.

517 Cellular Physiology 3 hrs. Winter
Concerned with the details of structure and functioning of cells, both animal and plant. The current status of major problems in the field is considered. Prerequisite: Biology 317 or consent of instructor.
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518 Endocrinology 3 hrs. Fall
A study of the glands of internal secretion, the active principles produced by each, and their role in bodily activities. Prerequisite: Biology 219 or 317 or consent of instructor.

519 Comparative Animal Physiology 3 hrs. Fall
A study of the basic physiological processes as they occur in various groups of animals. Prerequisite: Biology 317 or equivalent.

520 Systematic Botany 3 hrs. Winter
The classification and relationships of vascular plants by field and laboratory studies. Attention is given to family characteristics, evolutionary trends and geographical distribution. Prerequisite: Biology 301 or consent of instructor.

521 Phycology 3 hrs.
Studies in the classification, structure, physiology, ecology and economic importance of the fresh-water algae. Prerequisite: Biology 301.

522 Phytogeography 3 hrs. Winter
A study of the geographical distribution of plants based on physical and ecological factors. Prerequisite: A course in systematic botany or equivalent.

523 Paleobotany 3 hrs. Winter
A study of the characteristics, historical and evolutionary relationships of plants based upon the fossil record. At least two extended field trips are taken. Prerequisite: 221 or equivalent.

524 Economic Botany 3 hrs. Fall
A study of plants useful to man for food, flavoring, drugs, clothing and building. Field trips required.

525 Biological Constituents 3 hrs. Fall, Winter
The chemical elements in plants and animals, as well as the synthesis, characterization, and degradation products of the more important compounds. Prerequisites: 12 hours of biology, one year of chemistry.

526 Mycology 3 hrs.
Studies in the classification, structure, physiology, development and economic importance of fungi. Prerequisites: Biology 301 and 306 or consent of instructor.

527 Plant Physiology 3 hrs. Fall, Winter
Advanced investigations into plant functions. Basic principles are examined more intensively. Advantage is taken of the discoveries and unifying principles of modern biochemistry. Prerequisite: Biology 317 or consent of instructor.
528 Biology of Non-Vascular Plants 3 hrs. Fall
The study of classification, ecology and reproductive cycles of algae, fungi and bryophytes. Culture methods of growing these plants for research occupies a part of laboratory work. Prerequisite: At least 12 hours of biology.

529 Biology of Vascular Plants 3 hrs. Winter
A detailed study of the morphology, life cycles, and evolution of vascular plants. Individual research required. Prerequisite: At least 12 hours of biology.

538 Field Natural History 3 hrs. Fall
A study of biological communities with particular emphasis on those accessible for use by public schools, e.g., school grounds, vacant lots, roadsides, parks and undeveloped areas. Primarily for teachers. Prerequisite: Biology 100 and 101 or 102 or consent of instructor.

541 Invertebrate Zoology 3 hrs. Fall, Winter
A study of the anatomy, physiology, embryology, and life history of representatives of the major groups of invertebrate animals. Prerequisite: At least 12 hours of biology.

542 Entomology 3 hrs.
A general study of insects, their structure, classification, life histories, ecological relationships and economic importance. Collection and identification of local species is required. Prerequisite: 12 hours of biology.

543 Protozoology 3 hrs. Winter
Field and laboratory studies of both free-living and parasitic protozoans, including taxonomy, morphology, life histories, ecology, heredity, evolutionary development. Prerequisite: Biology 301 or consent of instructor.

544 Developmental Biology 3 hrs.
Theories and phenomena of differentiation, cytodifferentiation and morphogenesis; concepts of inducers, organizers, etc.; experimental studies of embryos of various animals or study of some specific organs during development, including tissue culture techniques. Prerequisite: Biology 343 or consent of instructor.

545 Histology 3 hrs. Winter
A study of the microscopic structure of tissues and organs. Prerequisite: Biology 210 or equivalent.

547 Ornithology 3 hrs. Winter
Populations, life histories, anatomy, social behavior and environmental relationships of the birds of Southwestern Michigan. Shore and marsh birds are given special attention. Individual studies, bird banding, and the preparation of bird skins. Early morning field trips are scheduled. Prerequisite: Consent of instructor.
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551 Parasitology 3 hrs. Winter
A study of parasites and host-parasite relationship illustrated by typical representatives of the principal animal groups. Special attention is given to the parasites of man. Prerequisite: At least 12 semester hours of biology.

552 Plant Ecology 3 hrs. Winter
A consideration of the organization of vegetation and causal relationships between vegetation and environment. Prerequisites: Biology 301 and a course in systematic botany or equivalent.

553 Limnology 3 hrs.
Biological, chemical, and physical aspects of lakes and streams. Emphasis is on the ecological relationships of invertebrate animals and lower plants. Prerequisite: At least 12 hours of biology.

554 Animal Physiology 3 hrs. Winter
A study of cell, tissue and organ functions in the living animal with special emphasis on vertebrates. Prerequisites: Biology 317 and organic chemistry or consent of instructor.

555 Physiological Ecology 3 hrs. Fall
A study of the physiological and behavioral adaptation and responses or organisms to external environmental factors. Prerequisites: Biology 301 and 317 and a year of chemistry or consent of instructor.

556 Immunology 3 hrs. Winter
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens, and their interaction. Prerequisite: Biology 412 and a knowledge of biochemistry.

559 Radiation Biology 3 hrs.
A study of the fundamentals of radiobiology including isotope technology, radiation measurements, radioactive decay, radiation and interaction in living matter, and health and safety regulations in the laboratory. Prerequisites: A minor in chemistry and consent of instructor.

561 Biology of Lower Vertebrates 3 hrs. Fall
The biology of lower vertebrates with special reference to adaptation, evolution, behavior and ecology of major groups. Classification, museum and field methods will be stressed in laboratory. Field trips required. Prerequisite: Biology 301 or equivalent.

562 Biology of Higher Vertebrates 3 hrs. Winter
Continuation of Biology 561.

598 Readings in Biology 1-3 hrs. Fall, Winter
599 Independent Studies in Biology 1-4 hrs. Fall, Winter
For students who wish to carry on advanced work in special fields. Prerequisite: Consent of instructor.
Students majoring in chemistry may prepare for a career in high school teaching, industrial laboratory work, or graduate work in departments of chemistry or medical colleges. The course offerings for the undergraduate attempt to give a broad but thorough grounding in the elements of chemistry. They should be fortified by a minor in physics, mathematics or biology with at least Physics 210 and 211 and Mathematics 122, 123 and 222 included. Most students who intend to do advanced work in chemistry should plan to obtain a reading knowledge of a European language. At the present time German is preferred but French or Russian might well be taken.

The Chemistry Department is accredited by the American Chemical Society. Students who follow the American Chemical Society certification course sequence below are certified by the Department Chairman on graduation and considered professional chemists by the American Chemical Society. These students are eligible for membership senior grade in the American Chemical Society after two years experience in the field of chemistry rather than five years experience.

Chemistry content of the curriculum:

<table>
<thead>
<tr>
<th>American Chemical Society Certification</th>
<th>General Curriculum</th>
<th>Secondary Education and others</th>
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</thead>
<tbody>
<tr>
<td>General Chemistry 101 or 102</td>
<td>4</td>
<td>4 hrs.</td>
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<tr>
<td>Qualitative Analysis</td>
<td>4</td>
<td>4 hrs.</td>
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<tr>
<td>Organic Chemistry</td>
<td>10</td>
<td>8 hrs.</td>
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<tr>
<td>Quantitative Analysis</td>
<td>4</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Physical Chemistry</td>
<td>8</td>
<td>4 hrs.</td>
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<tr>
<td>Biochemistry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Inorganic Chemistry</td>
<td>4</td>
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<tr>
<td>Advanced Analytical Chemistry</td>
<td>3</td>
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<tr>
<td>Elective</td>
<td>2-3</td>
<td>6 hrs.</td>
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<td>42-43</td>
<td>34</td>
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<td></td>
<td>30 hrs.</td>
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</table>
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The following are required for A.C.S. certificates: reading knowledge of German or Russian; Calculus; at least one year of Physics; one advanced course in Mathematics or Physics which has a calculus prerequisite; one elective in chemistry selected from 554, 560, 590, 591.

A minimum chemistry minor will contain at least eighteen hours. Chemistry minors in Secondary Education are required to take twenty hours of chemistry and to complete one year of physics before student teaching. Transfer students completing a major or minor in Chemistry must complete a minimum of one chemistry course in residence.

101 General Chemistry

A course with emphasis on the fundamental principles, theories and problems of chemistry. This course is to prepare students who intend to enroll for more than two semesters of chemistry. Enrollment in this course is restricted to those who have had no high school chemistry or those who have had high school chemistry but do not pass the A.C.S. High School Chemistry examination.

102 General Chemistry

The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for more than two semesters of chemistry. Prerequisite: One unit of high school chemistry and one unit of algebra, pass A.C.S. High School Chemistry examination. Students well prepared may earn credit by taking final examination.

103 General Chemistry

A course primarily for students in Engineering and Technology curricula and others planning only a one or two semester terminal review of chemistry. This course surveys principles of chemistry with emphasis on calculations, descriptive and applied chemistry. It serves as a prerequisite for Chemistry 109 only. Prerequisite: One unit high school algebra.

106 Chemistry for Nurses

The fundamentals of chemistry are studied with a view to applying them to the field of nursing. Credit does not apply towards a major or minor in chemistry. Open only to Bronson Hospital Nursing students.

107 Applied Chemistry

A course for students in the curriculum in Petroleum Distribution. Fundamental principles of chemistry and an introduction to petroleum chemistry are studied.

109 General Chemistry

This terminal course is not acceptable as prerequisite for advanced chemistry, but is designed to meet the needs of those who require one year of chemistry. Descriptive chemistry of metallic and non-metallic elements with emphasis on industrial and practical applications, chemical
equilibrium and simple organic chemistry are studied. Prerequisite: 101 or 102 or 103.

120 Qualitative Analysis 4 hrs. Fall, Winter

The properties of a number of the more representative elements and the compounds which they form are studied. The descriptive chemistry of some common cations and anions is studied using the hydrogen sulfide scheme of analysis. The chemical relationships in the periodic table, electrochemistry, and the equilibrium principle are also treated. Prerequisite: 101 or 102.

222 Quantitative Analysis 4 hrs. Fall, Winter

This course includes the theory, techniques and calculations of quantitative analysis. Instrumental techniques are used to supplement classical analytical procedures. Prerequisite: 120.

265 Introduction to Organic Chemistry 4 hrs. Fall

A one semester course which surveys the chemistry of aliphatic and aromatic carbon compounds, designed for those needing a working knowledge of organic chemistry without the theoretical detail of a full year course. Credit may not be received for both 265 and 360. This course will not serve as prerequisite for 361 and 363. Prerequisite: 120.

308 Teaching of Physical Science 2 hrs. Winter

Problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of apparatus ordering, maintenance, and construction are also considered.

360 Organic Chemistry 4 hrs. Fall, Winter

The preparation and chemical properties of aliphatic and aromatic compounds are studied. Emphasis is placed upon the nature of covalent bonds and molecules and the general reactions of functional groups. The course includes lecture, laboratory and quiz. Prerequisite: 120.

361 Organic Chemistry 4 hrs. Fall

A continuation of course 360. Prerequisite: 360.

362 Organic Chemistry 5 hrs. Fall

This course is similar to Chemistry 360. Additional laboratory instruction is provided including identification of organic compounds and more advanced organic synthesis. This course is required for Chemistry Majors completing American Chemical Society certification. Prerequisite: 120.

363 Organic Chemistry 5 hrs. Winter

A continuation of course 362. Prerequisite: 362.
305 Chemical Literature  
An introduction to the use of the various types of chemical literature such as journals, handbooks, abstracts, monographs, government and institutional publications, and patents. Problems in the course require literature searches in analytical, inorganic, biological, organic and physical chemistry fields. Prerequisite: 24 hrs. of chemistry.

510 Inorganic Chemistry  
The course includes descriptive and theoretical inorganic chemistry as well as preparation of different types of inorganic compounds. Prerequisite or co-requisite: 531.

520 Instrumental Methods in Chemistry  
An introduction to the theory and application of modern chemical instrumentation is presented. General topics covered are elementary electronics, electrochemistry, spectroscopy, and other instrumental techniques. Four hours of laboratory per week. Prerequisite or co-requisite: 531.

530 Physical Chemistry  
Lectures and laboratory work in kinetic theories of gases, liquids, solids, thermodynamics, phase rule, equilibrium, solutions, etc. Prerequisites: 120, Physics 210 and 211, Math. 222; corequisite: Chem. 222.

531 Physical Chemistry  
Lecture and laboratory studies of kinetics, electrochemistry, quantum theory, spectroscopy, surface chemistry, macromolecules and crystal chemistry, etc. Prerequisite: 530.

536 Special Topics in Physical Chemistry  
The fundamentals of thermochemistry, thermodynamics, chemical kinetics and quantum mechanics (if time permits) are studied. Mathematics are reviewed as necessary.

551 General Biochemistry  
A basic course in the chemistry, properties, and metabolism of carbohydrates, lipids, proteins, and nucleic acids. Prerequisite: 360 or 265.

553 General Biochemistry  
The course consists of 551 plus a laboratory which includes basic experiments with the main groups of biochemical compounds. Prerequisites: 360 or 265, 222.

554 General Biochemistry  
Photosynthesis, chemistry of respiration, membrane transport, metabolic regulatory mechanisms and biochemical energetics. Prerequisites: 551 or 553 and 530.
560 Qualitative Organic Analysis 3 hrs.
A course in spectroscopic and chemical methods of identification of organic compounds in the pure state and in mixtures, which has as a secondary goal the development of deductive reasoning in the field of organic chemistry. Prerequisites: 361 or 363 and 24 hrs. of chemistry.

562 Advanced Organic Chemistry 3 hrs.
Covers the topics: organometallic compounds, heterocyclic compounds, dyes, introduction to photochemistry, organo-silicon compounds, etc. Prerequisite: 361.

580 History of Chemical Theory 2 hrs.
This course is taught from the point of view of the history of chemical theory in which the evidence for the theories is critically presented. Prerequisite: 16 hrs. of chemistry including at least one semester organic.

590 Special Problems in Chemistry 2 hrs. Fall
Advanced students who have completed basic work in chemistry may select a special problem in the fields of analytical, organic, biochemistry, inorganic or physical chemistry. Prerequisite: 24 hrs. of chemistry and approval of Head of Department.

591 Special Problems in Chemistry 2 hrs. Winter
A continuation of special problem work started under 590. Given on request.

Economics

Robert S. Bowers, Head
Myrtle Beinhauer  Wayland Gardner  R. Gerald Saylor
Hugh Bradley  Harish Gupta  Werner Sichel
Theodore L. Carlson  Alfred Ho  Durante Strouse
Phillip Caruso  Louis Junker  Stephen Wandner
John A. Copps  Gangaram K. Kripalani  Jared Wend
David DeShon  Kyprianos Prodromidis  Raymond Zelder
Frank Emerson  Myron Ross  David Zinn

Courses are designed (1) to contribute to general education by providing basic understanding of the economy; (2) to fulfill the requirements for the training of teachers in certain professional groups, such as social sciences, business studies, and business administration; (3) to furnish courses and explore areas of economic thought which are prerequisite to graduate study in economics; and (4) to provide areas of study as pre-professional training for business administration, engineering, foreign service, journalism, law and social work.
A minor in Economics consists of a minimum of 15 hours in the Department.

A major in Economics consists of a minimum of 30 hours of work in the Department. The following are required courses for majors: Principles of Economics (201, 202), Income Analysis and Policy (406), Price Theory (503), and a course in statistics. In addition a major should choose the remainder of his courses in consultation with his adviser, with careful attention paid to achieving a proper spread.

A major in Economics who intends to do graduate work in Economics is advised to take Mathematics 122 and 123 at least, and Econometrics 509.

The Head of the Department will assist students in selecting courses suited to their needs in fulfilling the minor and major requirements.

The Honors Program of the Department of Economics is designed for the student who possesses special talents and abilities and who is particularly interested in exploiting them to the fullest extent. Students wishing to participate in this program should consult a member of the Economics Honors Committee.

**PRINCIPLES AND GENERAL THEORY**

**201 Principles of Economics** 3 hrs. Fall, Winter

A study of the fundamental principles of economics and their application to our more persistent economic problems including economic growth, unemployment, monopoly, economic stability, income distribution, and economic development. Prerequisite: Sophomore standing.

**202 Principles of Economics** 3 hrs. Fall, Winter

A continuation of Economics 201. Prerequisite: Economics 201.

**203 Economic Issues** 3 hrs. Fall, Winter

A nontechnical study of the importance and application of economics to current social issues. Credit is not applicable to a major or a minor in economics. Not open to B.B.A. students.

**400 Managerial Economics** 3 hrs. Winter

An introductory examination of the application of tools of economic analysis to management problems and decision making. The basic concepts include marginalism and cost analysis, demand pricing, capital budgeting, and selected optimality models. Prerequisites: Econ. 201 and 202.

**404 The Structure and Performance of Industry** 4 hrs. Fall

This course deals with the ways in which the organization of sellers affects the performance of industrial markets and thus the nation's economic welfare. Particular American industries are examined and from time to time comparisons are made to industries in foreign countries. The role of government in the industrial sector is also dealt with. Prerequisites: Econ 201 and 202.
406 Income Analysis and Policy 3 hrs. Fall
An examination of macroeconomic theory with particular emphasis on business cycles, economic growth, and price level instability. The interplay between theory and policy is analyzed. Prerequisites: Econ. 201 and 202.

501 Studies in Economic Theory 3 hrs. Winter
Study and research on various major economic theories, schools of thought, and theorists. Different topics will be considered from semester to semester and will be announced in advance. Students may repeat the course for additional credit. Prerequisite: Econ. 201 and 202.

502 Studies in Quantitative Economics 3 hrs. Fall, Winter
The course deals with statistical and mathematical techniques and concepts useful in economic analysis and their application to various areas in economics. Subject matter of the course will vary from semester to semester and may be chosen from such diverse topics as: linear programming, game theory, input-output analysis, statistics, welfare economics, utility theory and business cycles. Prerequisites: Econ. 201 and 202, Math. 122 or consent of instructor.

503 Price Theory 4 hrs. Fall
A basic course in economic theory, with emphasis on the theory of consumer behavior (the derivation of the demand curve), the theory of the firm and factor pricing. Prerequisites: Econ. 201 and 202.

504 Introduction to Mathematical Economics 3 hrs. Winter
An introductory course to acquaint the student with the application of basic mathematical concepts to economic analysis including such topics as demand, revenue, costs, capital assets, growth models, multipliers, accelerators, maximum problems, differentials and difference equations and linear systems in economics. Prerequisites: Econ. 201 and 202, Math. 122 or consent of instructor.

505 History of Economic Thought 4 hrs. Fall
A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mercantilism and the evolution of the philosophy of natural liberties special emphasis will be placed on the contributions of significant economic thinkers and the influence of various schools of economic thought on national policy and economic development. Prerequisite: Econ. 201 and 202.

506 Economic Methodology 4 hrs.
A study of the methodological underpinning of extant economic theory. Special emphasis will be paid to the ways in which such concepts as causality, probability, deduction, induction, prediction, and proof enter into the logic discovery and the logic of confirmation. Prerequisites: 201 and 202 or consent of instructor.
508 Institutional Economics 4 hrs. Winter
An intensive examination of heterodox economic theory, conceived in terms of the basic social concepts of institutions and technology, and utilizing developments in modern social science for the resolution of persistent economic problems. Prerequisites: Econ. 201 and 202.

509 Econometrics 3 hrs. Winter
An introductory course in analytical and quantitative methods in economics. Applied economic problems like linear programming, input-output analysis will be considered. Simple regression models and their uses in economics are also included. Prerequisites: Econ. 201 and 202, Math. 122, or consent of instructor.

539 Economic Anthropology 3 hrs. Winter
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: Anth. 231, Econ. 201 and 202 and/or consent of instructor.

LABOR ECONOMICS

510 Labor Problems 3 hrs. Fall, Winter
An analysis of the nature and underlying causes of the problems facing the worker in modern economic society. Includes an examination of unions, collective bargaining, labor legislation, wages, unemployment and economic insecurity. Prerequisite: Econ. 201 and 202.

512 Collective Bargaining 3 hrs. Winter
An analysis of the major problems in present-day collective bargaining including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisite: Econ. 510 or the consent of the instructor.

513 Economic Security 3 hrs. Fall
An analysis of the problems of the individual workers and the efforts of the government to aid in the solution of these problems. It deals with unemployment, old age, benefits and medical care.

514 Labor and Government 3 hrs. Winter
The course deals with the government's role in the problems arising from labor-management relations and from labor's search for security. It covers the court's attitude toward labor organization from the rule of conspiracy through Taft-Hartley. It also includes protective legislation and the development of security legislation.
MONEY, CREDIT AND FINANCE

320 Money and Credit 4 hrs.  Fall, Winter
In this course an examination is made of the evolution and functions of money, credit, banking and of the financial institutions. Some attention is given to the history of currency in the United States, experiments with paper money, and price-level control, together with considerable factual material relative to credit and credit instruments. Prerequisites: Econ. 201 and 202.

507 Monetary Theory and Policy 3 hrs.  Winter
This course concentrates on the main elements of monetary theory and policy having to do with such problems as promoting economic growth, maintaining full employment and price stability, influencing the flow of capital into the various economic sectors with different possible social goals in mind, and stabilizing international trade and financial relationships. Prerequisite: Econ. 320.

524 Federal Government Finance 3 hrs.  Fall
Practices, effects, and policy issues in federal government budgeting, spending, taxation, borrowing and debt, with particular attention to individual and corporate income taxation. Prerequisites: Econ. 201 and 202.

525 State and Local Government Finance 3 hrs.  Winter
Practices, effects and issues in state and local expenditure, taxation, and borrowing, with particular attention to property and sales taxation, to the financing of education and highways, and to intergovernmental fiscal relations. Prerequisites: Econ. 201 and 202.

526 The Urban Economy 3 hrs.  Winter
The course will examine the economic structure and development of the urban complex. Among the topics to be considered are: the process of suburbanization, urban sprawl and urban blight, the pricing and production of public utilities in the local economy, economies of scale and the size of the urban area, the place of planning, the impact of public services and the tax structure on the location of economic activity, intergovernmental economic relationships. Prerequisites: 201 and 202.

CONSUMPTION ECONOMICS

536 Advanced Consumer Economics 3 hrs.  Winter
A study of the place of the consumer in the economic system. The relationships of personal income to price levels, and of consumer liquid assets and availability of consumer credit to total consumer demand will be analyzed. Special consideration will be given to the role of the consumer in determining the amount of national income and the stability of the economic system. Prerequisites: Econ. 201 and 202 or 230.
INDUSTRIAL ORGANIZATION AND PUBLIC CONTROL

445 Economic Organization 3 hrs. Fall
A study of the organization of economic enterprise, particularly large corporations. The history, financing, and control of these enterprises will be studied in an effort to determine how the public interest is affected and how public control has protected and can protect the public interest. Prerequisites: Econ. 201 and 202.

447 Economics of Transportation and Public Utilities 4 hrs. Winter
An examination of the economics and regulation of the public utility industries with particular emphasis on transportation. Prerequisites: Econ. 201 and 202.

542 Business and Government 4 hrs. Fall
A study of the regulatory policies of government and their impact on private enterprise. The course seeks to explain the needs for regulation, and to provide an analysis and evaluation of the various laws from the viewpoint of encouragement, subsidization, and control. Special attention will be directed to certain aspects of concentration of economic power, public ownership, and nationalization programs. Prerequisites: Econ. 201 and 202. Work in Political Science may be substituted in special cases by permission of the instructor.

INTERNATIONAL ECONOMICS

380 International Economics 4 hrs. Fall
A study of the fundamentals of international trade and related problems, with special reference to the implications of the international economic policies of the United States both for the economy and for the firm. Prerequisites: Econ. 201 and 202.

580 International Trade: Theory and Policy 3 hrs. Winter
This course is designed to study the pure theory of international trade and trade policy. The topics included will be: theory of international pricing and allocation, foreign trade multiplier and international monetary equilibrium; international trade and economic development. Prerequisites: Econ. 201, 202 and 380.

583 Studies in Economic Planning 3 hrs. Winter
An examination of the general methodological and theoretical foundations of planning including the planning of production, investment, labor, consumption, monetary flows, prices and macroeconomic balances. Different topics and systems of planning will be considered from semester to semester and will be announced in advance. Students may repeat the course for additional credit. Prerequisites: Econ. 201 and 202.

584 Comparative Economic Systems 4 hrs. Fall
The economic institutions and conditions of capitalism, socialism, com-
munism, fascism, and the cooperative movement are critically examined as to ideology and actual operation. Prerequisites: Econ. 201, 202 or consent of instructor.

585 The Economics of Sub-Saharan Africa 3 hrs. Winter
A survey of the indigenous economic systems of Sub-Saharan Africa and how these systems have been modified over time by the intrusion of various foreign populations. The economic progress will be examined and a detailed investigation of economic, social, and political obstacles to further progress will be made. Not open to students who previously received credit in 585 Economics of North Africa and the Near East. Prerequisites: Econ. 201 and 202 or consent of instructor.

586 Economics of the Soviet Union and Eastern Europe 3 hrs. Fall
A study of Soviet and East European planning practices including an examination of the development in commerce, agriculture, and industry in these areas. Trade among the several East bloc nations will also be covered. Prerequisites: Econ. 201 and 202.

587 Studies in Asian Economics 3 hrs. Fall
The course concentrates on the study of the Japanese, Chinese and Indian economic systems. These models are then applied as a basis of comparison to the other Asian economies.

588 Economic Development 4 hrs. Winter
An analysis of the economic factors such as population, resources, innovation and capital formation which affect economic growth. Selected underdeveloped areas will be studied to understand the cultural patterns and economic reasons for lack of development and the steps necessary to promote economic progress. Special attention will be paid to evaluating the effectiveness of the United States foreign aid program and examining the issues arising as a result of the conflict with the U.S.S.R. Prerequisites: Econ. 201 and 202.

590 Contemporary Communism—A Survey 2 hrs.
Designed to give the student an insight for the range of problems that resulted from the spread of Communism in the wake of World War II. The philosophy, economic doctrines, and government of Communism will be covered.

SPECIAL STUDIES

490, 491, 492 Economics Honors Seminar 2 hrs. Fall, Winter
Designed for honors students, the Seminar deals with issues of current importance in economic theory and policy. Permission to register must be obtained from the Departmental Honors Committee.

495 Independent Study for Honors Students 2 hrs. Fall, Winter
A program of independent study, tailored to fit the needs and interests
School of Liberal Arts and Sciences

of economics honors students, under the direction of one of the members of the Department. Permission to register must be obtained from the Departmental Honors Committee.

598 Readings in Economics 1–3 hrs. Fall, Winter

An independent program of study for qualified advanced students to be arranged in consultation with the instructor. Prerequisite: Consent of Head of Department.

English

David F. Sadler, Chairman

Donald Ackley  Clare Goldfarb  David Pugh
Elaine Albert  Russell Goldfarb  Tex Ragsdale
Harold Bahlke  Gary Goshgarian  Thordol Roberts
Larry Bearden  Carolyn Hadley  Frederick Rogers
Susan Blake  Maryellen Hains  William Rosegrant
Roseann Cacciola  Gordon Harper  Hamilton Salsich
Edward Callan  Daniel Hendriksen  Mary Saunders
Bernadine Carlson  Robert Hinkel  Herbert Scott
Norman Carlson  Mary Kay Hobbs  Helen Sellers
James Combs  Clayton Holaday  Robert Shafer
Sybil Combs  Frank Householder  Ronald Sharp
William Combs  Theone Hughes  Thomas Small
Cecelia Conway  William A. Johnston  Charles Smith
John Cooley  Laurence Jordan  Kathleen Smith
Clifford Davidson  Robert LaRue  Robert Stallman
Douglas Davies  Robert Limpus  Terry Stokes
Robert Davis  Ken Macrorie  Jon Stott
Philip Denenfeld  Jean Malmstrom  John Stokes
Kathleen Drzick  James Mariani  Larry Syndergaard
Ruth Falk  Ralph Miller  Anne Szalkowski
Philip Faustman  Jack Moyer  Frances Tamburro
John Fritscher  John Murphy  Carma VanLiere
Eugene Gabehart  Arnold Nelson  Catherine Warne
Edward Galligan  John Orr  Constance Weaver
C. J. Gianakaris  Maisie Pearson  David Wikoff
Martin Gingerich  Edward Pharr  John Woods
Elton Glaser  John Phillips

Requirements for English Majors and Minors

Major and minor slips are not required. However, all majors must, as soon as they decide to become majors, register in the English office. Anyone wishing special information or advice should consult the appropriate Associate Chairman, either undergraduate or graduate.
English majors are required to have, as a minimum, one college year of a foreign language or its equivalent (at least two years of a language in high school). The department recommends as much beyond the minimum as a student can manage. Students planning to do graduate work beyond the M.A. ought to study at least two languages. French and German are most frequently required in graduate school.

Thirty hours is the minimum requirement for an English major. However, students are urged to take as many additional hours as they can. This recommendation pertains especially to students planning to attend graduate school.

Although they do not count toward an English major or minor, the following courses taught in other departments are recommended as electives to English majors and minors: courses in ancient, medieval, English, American, and intellectual history; various philosophy and religion courses including 331 Religious Quest in Modern Literature; Language 568 Mythology and 575 Greek Drama in Translation; speech and theatre courses; Linguistics Department courses.

All students proposing to take courses in English should be aware that written work must meet the Department’s standard of competent writing.

**SPECIAL NOTE TO TRANSFER STUDENTS**

If there are questions about transferring English course credit from other colleges to Western Michigan University; about English courses taken elsewhere that may be equivalent to English courses at Western; or other questions, they should be addressed to the appropriate Associate Chairman, either undergraduate or graduate.

**ENGLISH MAJORS 30 hours required**

*General Curriculum and Liberal Arts*

Required: 110 Literary Interpretation; 270 English Language; either 310 Literary History and Criticism or 340 Development of English Verse (this requirement should be fulfilled in the sophomore year if possible); 499 Senior Seminar; plus electives to make 30 hours. 16 hours, including 499 and either 310 or 340, must be in 300, 400, or 500 level courses. One of the 300, 400, or 500 level courses must be chosen from among those courses indicated (*) on pages 335-337. These courses emphasize literature written before 1900.

In addition to the specific required courses, the following courses are recommended, especially to students who might attend graduate school: a genre, comparative literature, or modern literature course; an American literature course; Shakespeare; Chaucer; an additional period or a major author(s) course.

*Secondary Education*

Required: 110 Literary Interpretation; 270 English Language; an American literature course; either 310 Literary History and Criticism or
School of Liberal Arts and Sciences

340 Development of English Verse (this requirement should be fulfilled in the sophomore year if possible); 499 Senior Seminar; plus electives to make 30 hours. 16 hours, including 499 and either 310 or 340, must be in 300, 400, or 500 level courses. One of the 300, 400, or 500 level courses must be chosen from among those courses indicated (*) on pages 335-337. These courses emphasize literature written before 1900.

380 Teaching of English does not count toward the English major. However, since a methods course is required for certification, this course should be taken by all wishing to be certified to teach English in the secondary schools.

In addition to the required courses, the following courses are recommended, especially to students who might sometime attend graduate school: a genre, comparative literature, or modern literature course; Shakespeare; Chaucer.

Two Speech courses, 210 Oral Interpretation and 220 Introduction to the Theatre, might be particularly useful to secondary school teachers and, although they do not count toward the English major, are recommended as general electives.

Elementary Education

Required: 110 Literary Interpretation; 270 English Language; 282 Children's Literature; either 310 Literary History and Criticism or 340 Development of English Verse (this requirement should be fulfilled in the sophomore year if possible); 499 Senior Seminar; plus electives to make 30 hours. One of these elective courses must be chosen from among those courses indicated (*) on pages 335-337. These courses emphasize literature written before 1900.

In addition to the required courses, the following courses are recommended as electives: an American literature course; 242 Development of the Drama or 252 Shakespeare; another 300, 400, or 500 level course.

Students who count 282 Children's Literature toward the Elementary Education minor must substitute another English course for it in the English major.

Elementary Education majors should not take 380 Teaching of English.

Two Speech courses, 210 Oral Interpretation and 220 Introduction to the Theatre, might be particularly useful to elementary teachers and, although they do not count toward the English major, are recommended as general electives.

ENGLISH MINORS 20 hours required

General Curriculum and Liberal Arts

Required: 110 Literary Interpretation; 270 English Language; plus electives to make 20 hours.

Recommended as electives: 252 Shakespeare; an American literature course; a genre, comparative literature, or period course.
Secondary Education

Required: 110 Literary Interpretation; 270 English Language; an American literature course; plus electives to make 20 hours.

Recommended as electives: 252 Shakespeare; a genre, comparative literature, or period course.

380 Teaching of English does not count toward the English minor. However, students planning to teach English in the secondary schools would profit from the course.

Elementary Education

Required: 110 Literary Interpretation; 270 English Language; 282 Children's Literature; plus electives to make 20 hours.

Recommended as electives: an American literature course; 242 Development of the Drama or 252 Shakespeare.

Students who count 282 Children's Literature toward the Elementary Education minor must substitute another English course for it in the English minor.

Elementary Education students should not take 380 Teaching of English.

DEPARTMENTAL COURSES

110 (210) Literary Interpretation 4 hrs.

An introduction to the study of literature, aimed at developing sensitivity and skill in the critical interpretation of poetry, drama, and prose fiction.

212 (112) European Literature 4 hrs.

Readings in European literature, in English translation, from the Greek period to the present, with emphasis on the comparative study of selected periods and authors. Prerequisite: 110.

222 American Literature and Culture 4 hrs.

A study of some of the recurrent themes in American life as seen in American literature. Prerequisite: 110.

Students who take this course are advised not to take 322 Major American Writers also.

223 Black American Literature 4 hrs.

A survey of important black American writers and the historical development of the black image and experience in American literature and culture. Prerequisite: 110 or the equivalent.

238 20th Century Literature, 1900 to World War II 4 hrs.

Readings in the literature of the English speaking world either written between 1900 and World War II or by authors whose major work belongs to this period. Prerequisite: 110.
School of Liberal Arts and Sciences

239 Contemporary Literature 4 hrs.
Readings in the literature of the English speaking world either written between World War II and the present or by authors whose major work belongs to this period. Prerequisite: 110.

242 Development of the Drama 4 hrs.
Studies in the development of the drama from the Classical Period to the present with emphasis on selected periods. Prerequisite: 110.

244 Development of the Novel 4 hrs.
A study of the development and diversity of the novel as a literary form. Prerequisite: 110.

252 Shakespeare 4 hrs.
A study of Shakespeare's art through the application of several critical methods to selected tragedies, histories, and comedies. Prerequisite: 110.

264 Journalism 4 hrs.
Theory and practice of news gathering and news writing, copy editing, headline writing, news evaluation, page layout, and editorial writing.

265 Journalism Laboratory 1 hr.
Regular practice in newspaper editorial department work on the staff of a university newspaper at Western Michigan University. May be repeated for credit. Prerequisite: 264 Journalism; or 264 may be taken concurrently.

Journalism Laboratory does not count toward an English major or minor.

270 English Language 4 hrs.
Introduction to the principles which govern language study, with particular reference to their use in understanding English.

282 Children's Literature 4 hrs.
A survey and analysis of the best that has been written for children or appropriated by them.
If this course is counted toward the English major or minor, 283 Literature for Adolescents may not be counted toward the English major or minor.

283 Literature for Adolescents 4 hrs.
Critical analysis of those genres read by youth from twelve to sixteen: fiction (especially that of maturation, adventure, history, and fantasy)—drama, poetry, myth and legend, biography, and other non-fiction.
If this course is counted toward the English major or minor, 282 Children's Literature may not be counted toward the English major or minor.

310 Literary History and Criticism 4 hrs.
Discussion of important topics and problems, both historical and
critical, involved in the systematic study of literature. Emphasis includes study in the chronology of English literature, its development and continuity; and an introduction to the nature and uses of formal literary criticism. Prerequisite: 110.

322 Major American Writers 4 hrs.
Intensive reading of representative works of major American writers. Prerequisite: 110.
Students who take this course are advised not to take 222 American Literature and Culture also.

332 English Renaissance Literature 4 hrs.
Representative selections from the major writers of the period 1500-1660, by such writers as More, Spenser, Bacon, Donne, and Milton. Prerequisite: 110.

An historical study of English poetry, from its beginning to the present, emphasizing the development of poetic techniques, major verse forms and styles, and their relation to theories of poetry. Prerequisite: 110.

362 Advanced Writing 4 hrs.
Practice in writing articles, essays, biographical and critical prose with emphasis on development of the student's individual style and elimination of obstacles to clear and vital expression.

366 Creative Writing 4 hrs.
A beginning course in the writing of poetry, fiction, and drama.

372 Development of Modern English 4 hrs.
A course in the history of the language treating the historic and linguistic forces which have affected pronunciation, grammar, and vocabulary. Prerequisite: 270.

380 Teaching of English 4 hrs.
Materials, procedures, and problems of the junior and senior high school English teacher, including some initial experience in teaching a class. Does not count toward an English major or minor.
Elementary Education students should not take this course.

396 English Honors 4 hrs.
Intensive study of selected literary topics. Open only to students in the English Honors Program.

397 English Honors 4 hrs.
Continuation of 396.

410 Special Topics in Literature 4 hrs.
A study in historical perspective of selected literary works of the
School of Liberal Arts and Sciences

English speaking world or international literature in translation. Prerequisite: 110.

411 Contemporary Topics 4 hrs.
Study of a topic relevant to contemporary life (revolution; colonialism; etc.) pursued through an examination of selected literary works which embody the topic in its present and also perhaps its past forms.
A general course for students who are not English majors or minors. Does not count toward the English major or minor. Prerequisite: Limited to juniors and seniors.

496 English Honors 4 hrs.
Continuation of 397: the writing of an Honors Essay on a topic selected by the student in consultation with the instructor.

499 Senior Seminar in English 4 hrs.
Special studies in language and literature for senior English majors. Students must reserve a place in a Senior Seminar section by getting a Control ("C") Card from the English office well in advance of pre-registration.

519 Non-Western Literature in Translation 4 hrs.
Studies of significant literary forms and works in Chinese, Indian, and other non-western literatures and of their relation to the values and patterns of the societies which produced them.

*522 Movements in American Literature 4 hrs.
Study of a movement or a recurrent theme in American literature, such as romanticism, realism, naturalism, humor, racial issues. Prerequisite: 110.

*529 Medieval English Literature 4 hrs.
Studies in Old and Middle English literature, excluding Chaucer, read either in the original or in modernized versions. Prerequisite: 110.

*530 Medieval Continental Literature 4 hrs.
Readings in medieval European literature (in English translation), excluding that of England. Prerequisite: 110.

*531 Chaucer 4 hrs.
Readings in Chaucer, with emphasis on Troilus and Criseyde and The Canterbury Tales. Prerequisite: 110.

*532 16th Century Literature 4 hrs.
Selections from the major works in both prose and verse, by such writers as Wyatt, More, Sidney, and Spenser. Prerequisite: 110.

*533 17th Century Literature 4 hrs.
Selections from the major works in both prose and verse from 1600 to the Restoration, by such writers as Bacon, Browne, the metaphysical poets, and Milton. Prerequisite: 110.
534 Neo-Classical Literature
English literature from the Restoration through Pope and Swift. Prerequisite: 110.

535 18th Century Literature

536 Romantic Literature
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. Prerequisite: 110.

537 Victorian Literature
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, Browning, and Arnold. Prerequisite: 110.

538 Modern Literature
Studies in the international literature of the 20th century, with some attention to their precursors. Prerequisite: 110.

543 Elizabethan and Jacobean Drama
Studies in the non-Shakespearian drama in England during the Elizabethan and Jacobean periods, by such dramatists as Kyd, Marlowe, Jonson, Webster, Tourneur, and Ford. Prerequisite: 110.

554 Milton
An intensive study of Milton’s major poems, correlated with significant modern criticism. Prerequisite: 110.

555 Studies in the Art and Thought of Major Writers
Study of the works of individual writers of genius selected from either the classical writers, European writers, British writers, or American writers. Prerequisite: 110.

566 Creative Writing Roundtable
An advanced course in the writing of poetry, fiction, and drama, with class criticism of each student's writing. The course may be taken again for credit, but only four hours may count towards an English major or minor. Prerequisite: A beginning course or considerable experience in creative writing.

574 Linguistics for Teachers
An application of the concepts and procedures of structural and transformational linguistics to the teaching of language, literature, and composition in the English curriculum. Prerequisite: 270 or an introduction to linguistics course.
School of Liberal Arts and Sciences

598 Readings in English 1-4 hrs.

Individual reading project available to advanced students by special permission from the appropriate departmental adviser (undergraduate or graduate) and the staff member who will supervise the study.

Normally, permission is granted only to students who have well thought-out projects dealing with authors or materials not being covered currently in the schedule. Permission is usually not granted to students who want to use the course simply to get one or two hours credit to complete an English major or minor.

Geography

Albert H. Jackman, Head
David G. Dickason, Charles F. Heller, F. Stanley Moore
Val L. Eichenlaub, Oscar H. Horst, Henry A. Raup
Rainer R. Erhart, Eugene C. Kirchherr, Eldor C. Quandt
F. Stanley Moore, George Vuicich

CURRICULA FOR MAJORS AND MINORS

Students who plan to major or minor in geography should consult the departmental chairman as early as possible in their college careers.

A special Honors Program in Geography is open to students with excellent academic records. Information on this program is available in the departmental office in Wood Hall.

NON-TEACHING MAJOR

30 HOURS

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>225 Introduction to Meteorology and Climatology</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>244 Economic Geography</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>380 Geography of Anglo-America</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>560 Principles of Cartography</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>566 Field Geography</td>
<td>4 hrs.</td>
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</tbody>
</table>
| Electives in geography chosen with consent of Counselor | 12 hrs.

Supporting required course: Geology 230

NON-TEACHING MINOR

20 HOURS

<table>
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<td>3 hrs.</td>
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</tbody>
</table>
| Electives in geography chosen with consent of Counselor | 10 hrs.
### ELEMENTARY EDUCATION MAJOR

**30 HOURS**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>105</td>
<td>Physical Geography</td>
<td>4 hrs</td>
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<tr>
<td>205</td>
<td>Introduction to Human Geography</td>
<td>3 hrs</td>
</tr>
<tr>
<td>350</td>
<td>Principles of Conservation and Resource Management</td>
<td>3 hrs</td>
</tr>
<tr>
<td>380</td>
<td>Geography of Anglo-America</td>
<td>3 hrs</td>
</tr>
<tr>
<td>460</td>
<td>Instructional Methods in Geography</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

(May be waived and another geography course substituted if 507, Teaching of Social Studies in the Elementary Schools 2 hrs., is required in another sequence.)

Electives in geography chosen with the consent of the counselor will complete the total of 30 hours for the major.

One regional course from Group A and one from Group B will be included. (see page 325)

Supporting required course: Geology 112.

### ELEMENTARY EDUCATION MINORS

**20 HOURS**

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<td>Physical Geography</td>
<td>4 hrs</td>
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</table>

Electives to a total at least 16 semester hours will be chosen with the approval of the departmental counselor.

### SECONDARY EDUCATION MAJOR

**30 HOURS**

<table>
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<tr>
<td>460</td>
<td>Instructional Methods in Geography</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

(May be waived and another geography course substituted if 300, Teaching of Social Studies in the Secondary Schools 3 hrs., is required in another sequence.)

Electives in geography chosen with consent of the counselor will complete the total of 30 hours for the major.

Supporting required course: Geology 112.

### SECONDARY EDUCATION MINOR

**20 HOURS**

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<td>3 hrs</td>
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</tbody>
</table>
School of Liberal Arts and Sciences

380 Geography of Anglo-America ............................................. 3 hrs.

or


460 Instructional Methods in Geography .................................. 3 hrs.

(May be waived and another geography course substituted if 300, Teaching of Social Studies in the Secondary Schools ...... 3 hrs., is required in another sequence.)

Elective in geography chosen with consent of Counselor .......... 3 hrs.

Science Credit

The Geography courses 105, 225, 226, 350, 560, 567, 568, 580, and 582 are acceptable for science credit in appropriate science sequences.

COURSES IN SYSTEMATIC GEOGRAPHY

105 Physical Geography ..................................................... 4 hrs. Fall, Winter

(Sci. Credit) The study of several earth sciences which give an understanding of man's environment: the form of the earth, earth-sun relationships, maps, weather and climate, soils, vegetation, the oceans, landforms and earth materials. The significance of environmental factors in the life of man is stressed.

205 Introduction to Human Geography ................................... 3 hrs. Fall, Winter

An introduction to those aspects of geography concerned with man and his efforts to cope with his environment. Included are population and settlement forms, the utilization of resources, the impact of technology on human occupancy of the Earth, and the origin and dispersal of cultural elements among the various world realms.

215 Introduction to Geography ............................................. 4 hrs.

An introduction to systems and structures in the organization of earthspace. Man in his increasingly significant role as an agent in environmental systems is considered.

225 Introduction to Meteorology and Climatology ..................... 4 hrs. Fall, Winter

(Sci. Credit) A non-mathematical analysis of systematic and regional atmospheric behavior. First part of course deals with fundamental physical laws affecting the elements of weather—temperature, moisture and humidity, pressure, and winds. Second part of course examines the distribution of various types of climates over the earth's surface, with particular emphasis on the interaction of geographic factors with the major atmospheric climatic controls, and upon the effects of various climates on the economic activities of man. Prerequisite: Geography 105 or consent.

226 Advanced Physical Geography ......................................... 4 hrs. Fall

(Sci. Credit) This study of the elements of the physical environment treats the terrain, soil, vegetation, and climatic relationships in some depth. Lecture and laboratory work will be supplemented by field in-
vestigations. Three one hour lectures and one two hour laboratory. Prerequisite: Geography 105 or 225.

244 Economic Geography 3 hrs. Fall, Winter
A survey of locational economic patterns and their interrelationships, including the study of spatial variation in economic development, primary production, energy generation, manufacturing, transportation, service occupations, and trade.

350 Principles of Conservation and Resource Management 3 hrs. Fall, Winter
(Sci. Credit) Critical evaluation of the major natural resources of the United States, particularly soils, water, forests, wildlife, and minerals; examination of the utilization of these resources so as to yield the maximum benefit to man. Emphasis is placed on principles, policies and issues in the management of natural resources.

540 Political Geography 3 hrs. Fall
This course introduces the principles and concepts of political geography as they interact in the evolution of the modern political state. Geopolitical concepts such as boundaries and frontiers, the "organic" State, Geopolitik, and theories of global relationships are treated in some detail.

541 Geographic Foundations of National Power 3 hrs.
In contrast to the principles and concepts treated in Geography 540, this course applies political geography to world power relationships; analyzes the components of national power in their physical and cultural relationships; concepts of autarky, national determinism, possibilism, and supranationalism will be studied.

543 Cultural Geography 3 hrs. Fall
Techniques of spatial analysis applicable to the study of man and his adjustment to different environments. The place of origin, diffusion, and present distribution of selected cultural patterns will be traced with emphasis given to cultural traits which strongly influence human occupancy of the earth's surface.

544 Agricultural Geography 3 hrs. Winter
A course designed to acquaint the student with world patterns of farming activity. The first part of the course is concerned with the description and analysis of: (a) the distribution of major world crops and domestic animals, and (b) the most common combinations of crops and livestock on farm units. The second part of the course deals with the spatial organization of agriculture in certain selected areas.

545 Manufacturing Geography 3 hrs.
Studies in the specific location and general distribution of selected industries with particular consideration being given to the interplay
of technological, economic, and political elements affecting spatial patterns of industry. Both the traditional and current theoretical approaches to geographic investigation of industries will be critically examined. Prerequisite: Geography 244 or consent.

546 Transportation Geography 3 hrs.

Study of the space-adjusting industries which link global production and consumption. Emphasis is placed upon (1) historical evolution of transport systems in developed nations, (2) problems focusing upon the creation of effective transport systems in the underdeveloped world, (3) the role of transportation in location theory, (4) theory and technique in transport analysis, (5) the urban transportation problem—structure and alternatives, and (6) competitive and complementary characteristics of transport modes under differing political systems. Prerequisite: Geography 244 or consent.

556 Land Use Planning 3 hrs. Fall

An examination of the philosophy and role of land-use planning at the national, regional, and local levels; study of those decisions involved in the establishment and design of long-range plans for land utilization, and methods of implementation.

570 Urban Geography 4 hrs. Winter

The study of urban settlements as distinctive geographical units. Among the topics considered are (1) the historical geography of urbanization, (2) characteristics of urban forms in selected world regions, (3) approaches to the functional classification of cities, and (4) the analysis of land use patterns and transportation in the modern city and metropolitan region. Special assignments are designed to acquaint the student with source materials and field techniques utilized in urban research. Geography 244 or a background in geography or the social sciences is recommended as preparation for this course.

COURSES IN REGIONAL GEOGRAPHY

Group A Courses: 381, 382, 383, 384, 385
Group B Courses: 386, 387, 388, 389, 390

206 World Regional Geography 5 hrs.

A survey of world geography utilizing the tools of regional analysis in the study of major geographic realms

311 Geography of Michigan 3 hrs.

This course is primarily designed to provide teachers in geography with a full understanding of the distribution of population, resources, forms of economic activity, and recreational land use in the home state.
Geography

380 Geography of Anglo-America 3 hrs. Fall, Winter
An introduction to the physical and cultural patterns of the United States and Canada.

381 Geography of South America 3 hrs. Fall
Regional study of the nations of South America with attention to the interrelationships of the physical and cultural environments. Historical background necessary for the interpretation of the present political, social and economic conditions is included.

382 Geography of Middle America 3 hrs. Winter
Systematic consideration of the physical environment of Mexico, Central America and the West Indies. A problems approach is utilized to reckon with the economic, social and political trends of the region.

383 Geography of Western and Southern Europe 3 hrs.
Intensive regional study of those Western European nations situated west of the Iron Curtain. The physical elements (climate, landforms, resources, etc.) are examined and the derivative cultural elements are identified. Emphasis is placed upon the social and economic activities of contemporary Western Europe.

Introduction to the physical, cultural and economic geography of the U.S.S.R. and Eastern Europe. The primary focus is the Soviet Union with an emphasis on the characteristic spatial patterns and relationships found within the country.

385 Geography of The Pacific Realm 3 hrs.
The human and physical geography of the South and Central Pacific with concentration on Australia, New Zealand, Fiji, and Polynesia.

386 Geography of Middle and South Africa 3 hrs.
General survey of the broad physical realms and the background of contemporary political geography in Africa south of the Sahara, followed by interpretive studies of the major regions and states based on an examination of population distribution, the systems of subsistence and commercial agriculture, the availability of power and mineral resources, patterns of transportation, and current programs for regional development.

387 Geography of Middle East and North Africa 3 hrs.
Study of the diversity and uniformity—both physical and cultural—of the Middle East and Africa north of (and including) the Sahara. Special attention is given to aridity problem, economic development, petroleum, Arab re-unification movements, and the impact of the Muslim World on the current political scene.
School of Liberal Arts and Sciences

388 Geography of East Asia 3 hrs.
Study of selected physical and cultural environments of the Far East (China, Korea, Mongolia, and Japan). Characteristics and inter-relationships of population growth, the development of the agrarian base and the utilization of industrial resources are examined in view of evolving political and cultural patterns.

389 Geography of Southeast Asia 3 hrs.
Study of selected physical and cultural environments of mainland and island Southeast Asia. Characteristics and inter-relationships of population growth, the development of the agrarian base and the utilization of industrial resources are examined in view of evolving political and cultural patterns.

390 Geography of South Asia 3 hrs.
Study of selected physical and cultural environments of South Asia (India, Pakistan, Ceylon and the Himalayan countries). Characteristics and inter-relationships of population growth, the development of agrarian base and the utilization of industrial resources are examined in view of evolving political and cultural patterns.

542 Historical Geography of North America 3 hrs.
A study of environmental, economic, and cultural factors as they combined to influence routes of exploration and trade, settlement patterns, regional economies, and sectional identities in North America.

550 Studies in Historical Geography 3 hrs.
Studies of geographic and related features which have combined to influence the course of historical development. This course will concentrate on a particular region and/or period of time during each semester in which it is offered. Each specialization will be designated in the class schedule.

COURSES IN GEOGRAPHIC METHODOLOGY AND RESEARCH

460 Instructional Methods in Geography 3 hrs. Fall, Winter
Study of objectives, tools, organization and presentation of material, methods of evaluation, and scrutiny of textual material in the field of geography. Prerequisite: 10 semester hours in geography.

560 Principles of Cartography 4 hrs. Fall, Winter
(Sci. Credit) Introduction to map construction with primary emphasis on the conceptual planning and designing of maps as a medium for communication and research. Lectures are supplemented by laboratory assignments to familiarize student with drafting techniques, lettering and symbolization, the concept of scale and scale transformations, map layout and design, processes of map reproduction, the employment and construction of projections, and the compilation procedures and execution of thematic maps. Two one-hour lectures and two two-hour laboratory periods.
566 Field Geography 4 hrs. Fall
The theory and application of geographic techniques in field investigations; collection and analysis of field data; preparation and presentation of materials. The course is based primarily upon field observations. Prerequisite: Geography 560 or consent.

567 Field Mapping and Mensuration Techniques 3 hrs.
An introduction to the practical methods by which accurate, large-scale maps are constructed. Students are taught to determine the location of points in terms of distance and direction from other points by use of: the pace-and-compass method, chaining and plane tabling with open-sight and telescopic alidades. Additional environmental information is added to the map, at points, by determining altitude, slope of the land surface and hydrographic characteristics. Methods of sampling other continuous phenomena such as soils and vegetation are introduced.

568 Quantitative Methodology in Geography 3 hrs. Fall
(Sci. Credit) The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography ranging from the use of common statistical techniques to method of model formulation in the analysis of spatial interaction. A course in statistics is a desirable preparation for this course.

580 Advanced Cartography 3 hrs. Winter
(Sci. Credit) Study of the more complex map projections, the compilation of data and the design of maps and graphs for research papers, and the application of statistical techniques in mapping geographic phenomena. Students are assigned special problems to develop their proficiency in the use of cartography as a tool in research. One hour lecture and 2 two-hour labs. Prerequisite: Geography 560 or consent.

582 Aerial Photograph Interpretation 3 hrs.
(Sci. Credit) The student will acquire proficiency in the fundamental techniques and skills of photogrammetry and photo-interpretation during the first part of the course. The remainder of the semester will be spent in interpreting photos dealing with such topics as geomorphology, archaeology, vegetation and soils, water resource, rural and urban land use, as well as topics adapted to the interest and anticipated future work of the student.

598 Readings in Geography 1–3 hrs. Fall, Winter
Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Consent of departmental adviser and instructor.
Geology

Lloyd J. Schmaltz, Head
Richard A. Davis, Jr.
W. David Kuenzi
Frank Luther

Richard V. McGehee
Richard Passero
W. Thomas Straw

GEOLOGY MAJOR (MINIMUM 30 HOURS)

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Physical Geology 230</td>
<td>4</td>
</tr>
<tr>
<td>Historical Geology 231</td>
<td>4</td>
</tr>
<tr>
<td>Mineralogy 335</td>
<td>4</td>
</tr>
<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
</tr>
<tr>
<td>Structural Geology 430</td>
<td>3</td>
</tr>
<tr>
<td>Petrology and Petrography 440</td>
<td>3</td>
</tr>
<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
</tr>
<tr>
<td>Senior Seminar in Geology 460</td>
<td>1</td>
</tr>
<tr>
<td>Stratigraphy &amp; Sedimentation 535</td>
<td>4</td>
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<td>30</td>
</tr>
</tbody>
</table>

A minimum of a “C” is required in each of the required courses. Seniors must attend Geology 460 (Senior Seminar) for two semesters.

Supporting required courses: Chemistry 100 or 102 (for students with a high school chemistry background), and 120; Physics 110 and 111; Biology 100 and 101 or 107 and 101; and Mathematics 122 and 123. Some modification of these requirements may be made in consultation with the student’s departmental counselor. In addition, at least one year of foreign language (German, French, or Russian), and a summer field course in geology are recommended. Students electing to minor in chemistry as a supporting minor should take Chemistry 100 or 102, 120, 222 and 530.

GEOLOGY MINOR (MINIMUM 18 HOURS)

The geology minor is designed as a supporting minor for students preparing to do professional work in the fields of chemistry, physics, engineering, zoology, botany, and geography. It cannot be combined with earth science as a major-minor or double minor relationship. A student may arrange for a geology minor designed for his specific need.
### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Geology 230</td>
<td>4</td>
</tr>
<tr>
<td>Historical Geology 231</td>
<td>4</td>
</tr>
<tr>
<td>Mineralogy 335</td>
<td>4</td>
</tr>
<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
</tr>
<tr>
<td>Petrology and Petrography 440</td>
<td>3</td>
</tr>
<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
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<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Minerals and Rocks 301</td>
<td>3</td>
</tr>
<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
</tr>
<tr>
<td>3 additional hours in geology</td>
<td>3</td>
</tr>
</tbody>
</table>

Course substitution from other geology offerings can be made with the consent of counselor (e.g., a geography major might elect economic geology and geomorphology).

### MAJOR OR MINOR IN EARTH SCIENCE

#### Major (30 hours)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credit Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy 104</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Meteorology and Climatology 225</td>
<td>4</td>
</tr>
<tr>
<td>Physical Geology 230</td>
<td>4</td>
</tr>
<tr>
<td>Historical Geology 231</td>
<td>4</td>
</tr>
<tr>
<td>Minerals and Rocks 301</td>
<td>3</td>
</tr>
<tr>
<td>Life of the Geologic Past 310</td>
<td>3</td>
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<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
</tr>
<tr>
<td>Oceanography 538</td>
<td>3</td>
</tr>
<tr>
<td>Elementary Field Geology 539</td>
<td>3</td>
</tr>
<tr>
<td>Teaching of Earth Science 507</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Minor (21 hours)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credit Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy 104</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Meteorology and Climatology 225</td>
<td>4</td>
</tr>
<tr>
<td>Physical Geology 230</td>
<td>4</td>
</tr>
<tr>
<td>Historical Geology 231</td>
<td>4</td>
</tr>
<tr>
<td>Oceanography 538</td>
<td>3</td>
</tr>
<tr>
<td>Teaching of Earth Science 507</td>
<td>2</td>
</tr>
</tbody>
</table>

### COURSE DESCRIPTIONS

#### 112 Geological Science (See General Studies)

4 hrs. Fall, Winter

An introduction to physical and historical geology for students who do not plan to major or minor in geology or earth science. The importance to man of minerals and rocks, geologic processes, and the history of the earth including the evolution of past life are emphasized. Three lectures and a two-hour laboratory period.
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School of Liberal Arts and Sciences

230 Physical Geology 4 hrs. Fall, Winter
A study of the common rocks and minerals and the geologic processes acting upon these materials that form the structure and surface features of the earth. Three lectures and a two-hour laboratory period.

231 Historical Geology 4 hrs. Fall, Winter
Study of major changes in the elevation, size, and form of the continents through geologic time, and the evolution of plant and animal life. Geologic development of North America is emphasized. Three lectures and a two-hour laboratory. Prerequisite Geology 230 or consent.

301 Minerals and Rocks 3 hrs. Winter
A one semester course covering hand specimen mineralogy and petrology; includes introduction to crystallography, physical and chemical properties of minerals, and rock description and genesis. Will not count toward a major in geology. Prerequisite: Geology 230 or 112.

310 Life of the Geologic Past 3 hrs. Fall
Study of the progressive development of plant and animal life as illustrated by fossils. The evolution of life is related to changes of physical environment in North America through geologic time. Two lectures and one two-hour lab. Prerequisites: Geology 112 or 231.

335 Mineralogy 4 hrs. Fall
Introduction to crystallography, crystal chemistry, and determinative mineralogy. Physical and chemical properties, occurrence, uses and determination of about 80 minerals. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisites: Geology 112 or 230 and General Chemistry or consent of instructor.

336 Optical Mineralogy 3 hrs. Winter
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin section. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 335.

430 Structural Geology 3 hrs. Fall
Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Lecture 2 hours a week. Laboratory 2 hours a week. Prerequisites: Geology 231 and 336, or consent of instructor.

440 Petrology and Petrography 3 hrs. Fall
Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 336.

432 Economic Geology 3 hrs.
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, mineral fuels, and water. Lecture 3 hours a week. Prerequisite: Geology 335, or consent of instructor.
434 Problems in Geology 2 hrs. Fall, Winter
Intensive reading and research on a topic in geology under the direction of a member of the geology faculty. Prerequisite: 16 hours in Geology and permission of instructor.

460 Senior Seminar in Geology 1 hr. Fall, Winter
A seminar designed to provide senior students with the opportunity to examine and discuss important topics in geology. Oral presentations are required. Senior geology majors are required to elect this course for two semesters for one credit hour. Prerequisite: Senior standing in geology.

502 Special Problems in Earth Science 1-2 hrs. Fall, Winter
Individual problems involving topical reading and/or research problems in the earth sciences. May be repeated for credit. Prerequisite: Consent of instructor.

507 Teaching of Earth Science 2 hrs. Fall, Winter
Philosophy, objectives, and methods of teaching secondary school earth science. Designed for earth science majors and minors. One hour lecture and two hours of lab. Prerequisite: 16 hours of Earth Science or consent.

532 Geomorphology 3 hrs. Winter
A systematic study of the development of land forms as created by the processes of vulcanism, gradation, and diastrophism with interpretation of topographic and geologic maps, and aerial photographs. Prerequisite: Geology 112 and consent or 231.

533 Invertebrate Paleontology 4 hrs. Fall
Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Three lectures and a three-hour laboratory. Prerequisite: Geology 231 or consent.

534 Vertebrate Paleontology 4 hrs.
Comparative morphology, classification, stratigraphic distribution, and evolution of fossil fish, amphibians, reptiles, mammals, and birds. Three lectures and a three hour laboratory per week. Prerequisite: Geology 231 or consent.

535 Stratigraphy and Sedimentation 4 hrs. Winter
Principles of stratigraphy and sedimentation including correlation, facies, stratigraphic nomenclature, and sedimentary petrology, processes and environments. Three lectures and three hour laboratory. Prerequisite: Geology 231 and consent.

536 Glacial Geology 3 hrs.
A study of the mechanics of glacier movement, processes of glacial erosion and deposition, and the distribution of glacial features in space
and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Prerequisite: Geology 231 and consent of instructor.

538 Oceanography  3 hrs. Fall
Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography. Lecture 3 hours a week. Prerequisite: Geology 112 and consent of instructor, or 231.

539 Elementary Field Geology  3 hrs.
Field studies of rocks, structures, and land forms. Areas of geologic interest in the Great Lakes region are studied. Prerequisite: Geology 336 or 301.

History

Ernst A. Breisach, Chairman

George T. Beech        Edward O. Elsasser        Andrew C. Nahm
Alan S. Brown          Ross Gregory            Emanuel Nodel
Walter J. Brunhumer    Robert J. Hahn          Dale P. Pattison
Richard T. Burke       H. Nicholas Hamner       Mark D. Rhines
Albert E. Castel       Graham P. Hawks          Peter Schmitt
Sherwood S. Cordier     Paul L. Maier            Chris Siehl
Ronald W. Davis        A. Edythe Mange          John R. Sommerfeld
George Demetrakopoulos Gilbert W. Morell       Jing-shen Tao
Willis F. Dunbar        Howard A. Mowen          John Yzenbaard

MAJORS AND MINORS IN HISTORY

Students planning to major or minor in History should declare their intentions with the Department as early as possible in their college career, preferably before the end of their third semester. Transfer students should so do soon after they are enrolled. The prospective major or minor should call at the Department Office (1420 Sangren Hall), obtain a personal data form, fill it out and arrange for an interview with the Department's Administrative Assistant.

REQUIREMENTS FOR THE MAJOR

1. The following four basic courses or their equivalents:
   (a) Western Civilization (General Studies 100 and 101). For transfer students, two semesters of European history will be accepted as equivalent.
   (b) United States History 210 and 211.
2. **Advanced courses:** A minimum of five courses numbered 299 or above. Of the five two must be in the 500-series. One course must be selected from each of the following fields:
   (a) Advanced United States, British, Canadian, or Michigan history.
   (b) Ancient, medieval, or modern European history.
   (c) African, Asian, East European, Latin American, or Russo-Soviet history.

3. Earn an average of "C" or better for all courses counted towards the major, and a grade of "C" or better for all courses numbered 299 and above counted towards the major.

   Students in the education curricula are reminded that they must have a 30-hour major in order to fulfill teacher certification requirements.

**REQUIREMENTS FOR THE MINOR**

1. The same four basic courses required for the major.

2. A minimum of three advanced courses numbered 299 or above.

3. Earn an average of "C" or better for all courses counted towards the minor, and a grade of "C" or better for all courses numbered 299 and above counted towards the minor.

**RECOMMENDED COGNATES**

There are no required cognate courses, but since the academic discipline of History is closely allied with the social sciences and humanities, majors and minors are urged to elect courses in the following areas: Anthropology, Art history, Economics, English, Geography, Philosophy, Political Science, Religion and Sociology. Students planning to do advanced graduate work in History are strongly advised to elect two years of a foreign language.

Students planning to teach History in the secondary school are urged to elect Social Science 300, and those planning to teach in the elementary school are urged to elect Social Science 507. Credit earned in these courses cannot be counted towards a major or minor.

**TRANSFER CREDIT**

The History Department will accept towards the major and minor transfer credit from a junior or community college for courses which correspond to 100-, 200-, and 300-level courses offered by this Department.

A major in History must complete at this University a minimum of four History courses counted towards the Major, including the two required 500-level courses. This requirement might be waived with the permission of the Department, provided acceptable courses were taken at an accredited four year institution.
HONORS PROGRAM

The Honors Program in History provides an opportunity for qualified students to earn the Bachelor's degree with Honors in History. To be eligible for the Program, a student must have completed at least three semesters, attained a 3.3 grade point average in all history courses taken at the college level, and declared himself a History major.

Each honors student in History is expected to complete courses 390, 470, 598, to fulfill all the regular requirements for a History major, and earn a 3.5 grade point average for all courses counted towards the major.

BASIC COURSES

100 Early Western Civilization (to 1648) 4 hrs.
For description, see Division of General Studies.

101 Modern Western Civilization (since 1648) 4 hrs.
For description, see Division of General Studies.

210 The United States to 1877 3 hrs.
A mature approach to American history from colonial beginnings to the end of the Reconstruction.

211 The United States Since 1877 3 hrs.
A mature approach to American history since Reconstruction.

SURVEY COURSES (Courses dealing with major chronological periods or extensive areas)

310 History of Michigan 3 hrs.
The development of Michigan from a primitive wilderness to an industrial state, with emphasis on the relation of the history of the state to that of the nation.

312 Representative Americans 3 hrs.
An examination of important themes and movements in American history through the reading and discussion of the biographies of representative figures. The pattern of topics may vary from year to year, but the staples are Puritanism, the Founding Fathers, Jacksonian democracy, the Civil War, industrialization, Progressivism, the New Deal, and the Negro revolution.

316 Economic History of the United States 3 hrs.
A study of American economic growth and change from the Colonial period to the present. Among the topics considered are the shifting status of agriculture and labor, the impact of transportation improvements, banking, and war, with emphasis on the role of government, the develop-
ment of industry and its consequences, and the impact of non-economic forces.

340  Russia to 1917  3 hrs.
  Political, economic, and cultural development of Russia in the Kievan, Muscovite, and Imperial periods.

341  The Soviet Union  3 hrs.
  The development of the Union of Soviet Socialist Republics from the Russian Revolution of 1917 to the present.

342  Great Britain and the British Empire  3 hrs.
  A survey of British history from about 1500 to 1815.

343  Great Britain and the British Commonwealth  3 hrs.
  Great Britain since 1815 and the evolution of the British Commonwealth of Nations.

344  Eastern Europe  3 hrs.
  Social, political, and economic developments in Albania, Czechoslovakia, Hungary, Poland, Rumania, and Yugoslavia from the 10th Century A.D. to the present.

345  The Baltic Region  3 hrs.
  The history of the Estonians, Finns, Latvians, and Lithuanians from the earliest times to the present.

346  German History Since the Enlightenment  3 hrs.
  The significant interaction of the Central European region and the rest of Europe. Major developments in Germany's political and social experiences and its creative thought and expression.

349  The Ancient Near East  3 hrs.
  A cultural study of archaeology, early man, and the ancient civilization of the Sumerians, Babylonians, Egyptians, Hittites, Phoenicians, Hebrews, Assyrians, and Persians.

350  Ancient Greece  3 hrs.
  Aegean civilization, the Homeric Age, Athenian and Spartan civilizations, Hellenism, and the achievement and cultural legacy of the Greeks.

351  Ancient Rome  3 hrs.
  The rise and fall of the Roman Republic and Roman Empire; Roman civilization, culture, and the rise of the Christian church.

352  Early Medieval History  3 hrs.
  The genesis of European civilization from the fall of Rome to the 12th century, and the evolution of medieval institutions.
School of Liberal Arts and Sciences

353 Later Medieval History 3 hrs.
The flowering of medieval civilization, followed by the break-up of medieval unity in the Renaissance, with emphasis on medieval ideas and institutions.

370 Colonial Latin America 3 hrs.
A survey of pre-Colombian America and its conquest by the Iberians, together with a review of human and institutional development to 1825.

371 Latin American Republics 3 hrs.
A survey of the distinguishing characteristics of the Latin American area since 1825, together with an intensive historical survey of selected nations.

380 The Early Far East 3 hrs.
A survey of pre-modern cultures of China, Korea, and Japan; the political, economic, social, and cultural development of these countries from pre-historic times to about 1600 A.D.

381 The Modern Far East 3 hrs.
Changes which have occurred in the Far East, since the arrival of Western civilization, the impact of the rise of Asian nationalism, Japanese imperialism, and communism in China.

386 Introduction to African History and Civilization 3 hrs.
Designed to provide the student with an overview of the major aspects of African civilization as seen in the context of their development from pre-colonial times to the present. Special emphasis is placed upon those elements which contribute to the cultural and historical unity and uniqueness of the African continent.

HONORS AND INDEPENDENT STUDY COURSES

390 Introduction to the Study of History 2 hrs.
The history, methods, and philosophy of historical studies. Analysis of the role of history among the disciplines studying man. This course is designed for students planning to work for Honors in History.

470 Independent Research in History 2-3 hrs.
Research on some selected period or topic under the supervision of a member of the History faculty. Approval of instructor involved and Chairman of the Department's individualized courses must be secured in advance of registration.

598 Independent Reading in History 2-3 hrs.
Reading on some selected period or topic under the supervision of a member of the History faculty. Approval of the instructor involved and Chairman of the Department's individualized courses must be secured in advance of registration.
ADVANCED COURSES (Courses dealing with a restricted chronological period or special phase of history)

I. INTELLECTUAL HISTORY

506 Intellectual History of Western Man to 1500 3 hrs.
A study of the leading ideas and intellectual movements in Western civilization from the earliest times to about 1500.

507 Intellectual History of Western Man Since 1500 3 hrs.
Modes of thought and expression characteristic of the Renaissance and the Reformation; the scientific revolution of the 17th century; classicism and the baroque in literature and the arts; the 18th-century Enlightenment; 19th-century romanticism, liberalism, nationalism, materialism and socialism; formation and leading features of the contemporary world view.

508 American Intellectual History to 1890 3 hrs.
The development of American thought from colonial times to 1890. Major themes in the American experience as illustrated by philosophers, theologians, educators, political scientists, and economists, and by trends in the fine arts.

509 American Intellectual History Since 1890 3 hrs.
Major developments in American intellectual life from 1890 to the present. Reactions to urbanization and to the emergence of the United States as a world power.

II. UNITED STATES HISTORY

511 Historical Museums Workshop 3 hrs.
Lectures, demonstrations, field trips, reading, discussion, and work experiences in museum theory and technique. Prerequisite: a college course in American or Michigan History.

514 History of the Negro in American Life 3 hrs.
A survey of the history of the Negro in the United States from colonial times to the present.

Art and Architecture as aids to understanding American thought and life. Colonial aspirations, the development of national identity and contemporary movements in the arts are placed in historical perspective. Significant trends in artistic expression as related to Jeffersonian thought, the frontier experience, industrialism, and urbanization.

516 United States Constitutional History 3 hrs.
The development of constitutional theory and practice, with emphasis on the establishment of the governmental system, federal-state relations, federal regulation of the economy, and constitutional issues involving civil and human rights.
School of Liberal Arts and Sciences

518 History of United States Foreign Relations
The formation and evolution of United States foreign policy and foreign relations from the beginnings of the republic to the present.

519 United States Military History
A study of the development of American military policy and strategy. Military affairs will be examined within the broad context of social, economic, technological, political, and intellectual factors. The role and influence of the military establishment in both peace and war will be analyzed.

520 Colonial America
The American colonies: imperial foundations, political, economic, and cultural developments to 1763.

521 Era of the American Revolution, 1763-1789
The causes, character, and consequences of the American Revolution.

522 The Early National Period, 1789-1848
The establishment of the national government; political, social, and cultural development; Jacksonian democracy; westward expansion.

524 The Civil War and Reconstruction
Causes and course of the Civil War; its significance and aftermath.

525 Recent United States History, 1877-1914
American history from the end of reconstruction to the start of the First World War, with major attention to industrialization and its impact on society, overseas expansion, and the Progressive movement.

526 Recent United States History, 1914-1940
American history from the beginning of the Second World War to the end of the New Deal, with emphasis on the war, 1920s, the depression and the New Deal.

527 Recent United States History Since 1940
American history from the beginning of the Second World War to the present, including such topics as the background to war, American participation in the war and its impact on society, and recent foreign and domestic problems.

III. HISTORY OF EUROPEAN NATIONS

534 Medieval France
History of medieval France from the Germanic invasions and settlement through the 15th century, including the study of such topics as the monarchy, rural and urban economic development, social classes, the church and French culture.
535  Medieval England  
   English history from the 5th to the 15th centuries, with emphasis on governmental, religious, economic, and social institutions.

536  Tudor-Stuart England  
   The history of England during the reigns of the Tudors and the Stuarts, 1485-1714.

537  Hanoverian England  
   Britain during the reigns of the Hanoverian kings, 1714-1837.

538  Victorian England  
   The character of Victorian England and its impact on the world.

539  Twentieth-Century Britain  
   British development since 1900 and the changing character of the Empire and Commonwealth.

540  Social and Cultural History of Tsarist Russia  
   Significant intellectual currents in 18th-19th-century Russia, with emphasis on the relationship between ideas and society.

541  The U.S.S.R. in World Affairs  
   The ideological, psychological, political, and economic factors in the evolution of Soviet foreign policy with respect to individual countries, international problems, and outer space.

542  Social and Cultural History of the U.S.S.R.  
   The history of the principal ethnic groups of the U.S.S.R., Soviet policy towards these groups, and the extent of their assimilation into Soviet Society.

IV. EUROPEAN HISTORY

551  Imperial Rome, 30 B.C. - 70 A.D.  
   A study in depth of Roman politics and culture from the close of the Republican period through the Julio-Claudian Empire.

552  The Medieval Church  
   The impact on Christianity of classical culture, and the barbarian invasions; the church and feudalism; church-state relations; the rise and fall of papal theocracy, scholasticism, and mysticism.

553  Medieval Social and Economic History  
   A study of the development of medieval social classes and rural and urban economy from the fall of the Roman Empire to the 15th century. Special attention will be given to feudalism, the manorial system, and the rise of towns, commerce, and business institutions.
School of Liberal Arts and Sciences

554 The Renaissance 3 hrs.
A survey of man's endeavors in politics, thought, art and literature in Renaissance Europe.

555 The Reformation 3 hrs.
The break-up of the Medieval church and its significance.

557 Seventeenth-Century Europe 3 hrs.
The Thirty Years War and the shifting of power relationships; colonial enterprise and colonialism; absolutism, the rise of science; the baroque spirit.

558 Eighteenth-Century Europe 3 hrs.
Social structure and economic development in the period; domestic politics and international relations; currents in religion and the arts; and the Enlightenment.

559 The French Revolution and Napoleon 3 hrs.
Theories respecting the French and Atlantic Revolutions and the nature of revolution; the 18th-century background; the moderate and radical phases of the Revolution proper; the rise and fall of the Napoleonic Empire.

560 Nineteenth-Century Europe 4 hrs.
The reaction following the Napoleonic wars; revolutions in behalf of liberalism and nationalism; the emergence of new states; the growth of nationalism and liberalism.

562 Europe, 1914-1945 3 hrs.
The origins and nature of World Wars I and II; the Great Depression; the rise of Fascism, Nazism, and Communism.

563 Europe Since 1945 3 hrs.
The recovery of Europe from World War II; the movement towards European unity; the Cold War; NATO and the defense of free Europe.

V. LATIN AMERICAN AND CANADA

571 History of Mexico 3 hrs.
The evolution of Mexico since 1810, with particular emphasis on the continuing influence of significant institutions, concepts, and individuals.

572 History of the Plata Region: Argentina, Paraguay, Uruguay 3 hrs.
A study of the social, economic, and institutional evolution of a significant politico-geographic region of Latin America.

575 Canadian History 4 hrs.
A survey of Canadian history from the time of the first French settlements to the present, with emphasis on Canada's political and economic development since Confederation.
VI. THE FAR EAST AND AFRICA

580 Early China 3 hrs.
The history of China to the Western inroads in the 19th century, and a survey of the development of Chinese civilization and its influence on other Asiatic countries.

581 Modern China 3 hrs.
The impact of the West on China; the Nationalist Revolution; relations with Japan, Russia, and the United States; the transition from the Republic to the Communist regime; and Communist China today.

582 Japan to 1853 3 hrs.
A study of political, economic, social, and cultural history of traditional Japan up to the “opening” of Japan to the West.

583 Japan Since 1853 3 hrs.
The “opening” of Japan to the West; the rise of modern Japan; nationalism, militarism, and colonialism; the Allied occupation; domestic and foreign affairs since 1952.

584 Modern Korea 3 hrs.
The last stage of the Yi dynasty; Korea’s struggle against foreign powers; the era of Japanese rule; Korea’s independence and the emergence of two Koreas.

585 Southeast Asia in the Twentieth Century 3 hrs.
Nationalism in southeast Asia and the Struggle against Western colonialism; the rise of social and economic revolutions; problems of independence and modernization in the newly emerging nations of the region.

587 Early African History 3 hrs.
The history of Africa from earliest times until the emergence of the slave trade as the dominant factor in African relations with the rest of the world.

588 Recent African History 3 hrs.
The history of Africa from the period when the slave trade became the dominant factor in African relations with the rest of the world until the successful imposition of colonial rule upon most of the continent. Brief examination of the interaction of traditional elements and colonialism and the resulting character of Africa during colonial, nationalist and independent periods.

VII. GENERAL COURSES

592 The Literature of History 2 hrs.
Selected writings of great historians, with the purpose of evaluating different approaches to history, the use of sources, the handling of controversial matters, and developing appreciation of good history.
593 The Philosophy of History 2 hrs.
An inquiry into the conscious and unconscious attitudes towards history, which, when systematized, are philosophies of history. The thought and positions of Greek and Roman thinkers as well as St. Augustine, Marx, Spengler, Toynbee, and the existentialists.

594 Problems in Modern Warfare 3 hrs.
Selected topics in the history of warfare from the 17th century to the present. Topics for each semester will appear in the schedule of classes.

595 History of War Since 1600 3 hrs.
An examination of the evolution of war in the modern era, the role of power, force and conflict in international relations, and development of warfare in Asia, Europe and the Middle East.

SERVICE COURSES (Courses designed especially for students in the education curricula)

569 Background For Recent European History 2 hrs.
For seniors and graduate students not majoring in History. The movement towards European unity; the Cold War; currents of contemporary thought; economic developments; changing political and cultural patterns.

Modern and Classical Languages

Clifford J. Gallant, Chairman

Helle Ajango  Elizabeth Giedeman  Genevieve Orr
Elsa Alvarez  Paule M. Hammack  George F. Osmun
Mercedes Cardenas  Herb B. Jones  Barbara N. Paradis
Roger L. Cole  Bernard Joseph  Marcel Pichot
Ramona Coleman  Johannes A. Kissel  Herman E. Rothfuss
Victor Coutant  Peter W. Krawutschke  James D. Semelroth
Monique Y. Coyne  John W. Lawson  Alexander R. Sohodski
Juan Duran  Barry H. Mann  Irene V. Storoshenko
Benjamin Ebling  Lois B. Monroe  James R. Underwood
Marie Louise Frey  Frances E. Noble  Lindsey Wilhite

GENERAL
For students majoring or minoring in a modern foreign language a course in modern European history is desirable. For Latin majors and minors a course in Roman history is recommended. A student may apply
up to seven credits toward a Latin major from any three of the following courses: Classical Drama in Translation, Mythology, Greek 100-101. Both Greek 100 and 101 must be taken in order to apply four credits toward the Latin major. English majors are encouraged to take as much beyond the minimum in a foreign language as they can handle.

No credit will be given for a 100-course unless the 101-course is also completed.

All in-coming students (freshmen or upper classmen) who wish to continue in a language they have studied in high school must take a placement examination. It will be used as a qualifying examination to exempt students from specific language requirements in Liberal Arts and General Studies. The examination is given prior to each registration period and scores are posted in time for registration.

The department considers one year of high school work equivalent to one semester of university work. Consequently:

1. A student underplacing receives university credit but no credit towards a major or a minor until he reaches the level where he should have been.

2. A student may overplace by one or two courses. This student is allowed to decide on whether or not he wants to omit the course for which he has overplaced. If he chooses to omit the course, he is eligible to receive credit. In order to qualify for this, he must check with the Departmental Advisor for his language.

Native speakers of a given language must consult with departmental advisor before registering for courses up through the 300 level. A student planning a language major should consult with a departmental advisor as early as possible and obtain a recommendation form to insure proper planning and avoid subsequent difficulties.

The undergraduate major consists of a minimum of 30 credit hours to include at least two 500-level courses (minimum of 20 credit hours for an undergraduate minor) beyond the 100-level (basic) or equivalent of the languages offered by the Department to include the following requirements (all majors and minors follow these course patterns in the appropriate language or languages):

**French major**
Thirty hours beyond 100 level to include 328, 329; a selection of 6 hours from this group: 316-317-320-322; and two 500-level courses (one of them must be 560). Students in the Secondary Education Curriculum who are required to take Modern Language Instruction 558 may count this course as one of the 500 courses.

**French minor**
Twenty hours beyond 100 level to include a selection of 3 hours from this group: 316-317-320-322. Modern Language Instruction 558 may not be counted toward a minor.
German major
Thirty hours beyond 100-level to include 316-317 and two 500 level courses.

Latin major
Thirty hours beyond the 100-level with courses selected from the 200-500-series. Teaching majors must include 552 and 557.

Russian major
Thirty hours beyond the 100-level to include section 316.

Spanish major
Thirty hours beyond 100 level to include 328 or 329 and two 500-level courses, one of which must be 560. Students in the Secondary Education Curriculum, who are required to take Modern Language Instruction 558 may count this course as one of the 500 courses.

German minor
Twenty hours beyond 100-level to include a selection of 3 hours from this group: 316-317. Modern Language Instruction 558 may not be counted toward a minor.

Latin minor
Twenty hours beyond the 100-level with courses selected from the 200-500-series. Teaching minors may include 552 and/or 557.

Russian minor
Twenty hours beyond the 100-level to include section 316.

Spanish minor
Twenty hours beyond 100 level to include 328 or 329. Modern Language Instruction 558 may not be counted toward a minor.

Teaching certification is approved for majors or minors in both secondary and elementary education for the following languages: French, German, Latin (secondary only), Russian, and Spanish.

A language methods course is required for all teaching majors in the modern languages and Latin (557 is required for Latin majors). Exceptions to the patterns may be granted only by Departmental permission.

For details concerning additional graduate offerings and the Master's Degree in Language (in French, German, Latin or Spanish) consult the current Bulletin of the School of Graduate Studies.

For courses in Independent Study, consult listings under the individual language concerned.

FOREIGN CREDITS
Credit for language study at a foreign university may be granted on official proof that the student has completed his course work successfully. For courses where no examinations or grades are given, the student may be recommended for appropriate credit upon his return to Western on the basis of papers, colloquies, or comparable work to be determined by the department.
HONORS COURSES

400-401 Language Honors 4 hours each

A special program designed for selected students of Language. Departmental permission required for admission. Each course carries four hours credit; although both semesters, totaling eight hours, are required to complete the program, the courses need not be taken in sequence.

CRITICAL LANGUAGES

505 Basic Critical Languages 4 hrs.

Independent learning, at the basic stage, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist.

506 Intermediate Critical Languages 4 hrs.

Independent learning, at the intermediate stage, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist. Prerequisite: Lang. or Ling. 505 or equivalent.

507 Advanced Critical Languages 4 hrs.

Independent learning, at the advanced stage, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist. Prerequisite: Lang. or Ling. 506 or equivalent.

508 Reading Critical Languages 4 hrs.

Independent reading of "critical" language materials in the standard script by utilizing programmed materials under the supervision of a linguist. Prerequisite: Lang. or Ling. 505 or equivalent.

509 Writing Critical Languages 4 hrs.

Independent study of writing a "critical" language in the standard script by utilizing programmed materials under the supervision of a linguist. Prerequisite: Lang. or Ling. 505 or equivalent.

LANGUAGE TEACHING COURSES

Language 558 (French), or (German), or (Spanish), or (other language)

Modern Language Instruction

Required for modern language teaching majors; recommended for teaching minors. The principles underlying language learning and teaching methodology are treated, with particular attention to the audiolingual method of instruction. Emphasis is placed on practical problems encountered by the language teacher. Preferably, students should complete this course before beginning directed teaching.

Courses for French and Spanish are in the Fall Semester only, and for German in the Winter Semester.

The comparable methods course for Latin, 557 Teaching of Latin, is described under Latin offerings.
School of Liberal Arts and Sciences

FRENCH

100 Basic French 4 hrs.

101 Basic French 4 hrs.
Continuation of 100. Prerequisite: French 100 or equivalent.

200 Intermediate French 4 hrs.
Level two French. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: 101, two years of high school French, or equivalent.

201 Intermediate French 4 hrs.
Continuation of 200. Prerequisite: French 200 or equivalent.

316 French Composition 3 hrs.
Emphasis upon increasing the student's command of written French. Prerequisite: French 201 or equivalent.

317 French Conversation 3 hrs.
Exercises to develop ease and accuracy in the use of everyday French. Emphasis on oral aspects of the language. Prerequisite: French 201 or equivalent.

320 French Phonetics 3 hrs.
Study and practice to correct typical difficulties encountered by students of French with Anglo-American patterns of pronunciation; also to study the teaching of French patterns. Prerequisite: French 201 or equivalent.

322 French Civilization 3 hrs.
A study of selected aspects of French life and culture and their historical settings. Prerequisite: French 201 or equivalent.

328 Survey of French Literature 3 hrs.
Readings in French Literature from its beginnings to the French Revolution. Prerequisite: French 201 or equivalent.

329 Survey of French Literature 3 hrs.
Continuation of French 328. Readings in nineteenth and twentieth century literature. Prerequisite: French 201 or equivalent.

Open to Upperclassmen and Graduate Students

400 Elementary Reading for Graduate Proficiency 4 hrs.
Basic grammar and elementary reading for translation and research purposes. The course is for the graduate student who has had little or no study in the language. Course open to advanced undergraduates upon recommendation of major adviser and by "C" card. No oral work.
401 Intermediate Reading for Graduate Proficiency 4 hrs.
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student's major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Open to advanced undergraduates upon recommendation of major adviser and by "C" card.

544 Seminar in France 4 hrs.
A summer study of French language, literature, and culture concentrated at Grenoble and Paris. Designed especially for teachers and advanced college students of French, the course consists of three weeks of formal classes at the University of Grenoble with regularly scheduled lectures and discussions in the French language on questions relating to French history, institutions, social problems, linguistics, and teaching methods. The session at Grenoble is supplemented by twelve days of organized inspection of cultural monuments in Paris with full explanations by an instructor for all points visited. Each student submits a term paper investigating one phase of his studies of particular interest to him. Graduate or undergraduate credit. Offered in summer of 1968.

550 Independent Study in French 1-3 hrs.
Directed, individual study of a specific topic in a French literary or linguistic area. Departmental approval required for admission. Prerequisite: A minimum grade point average of 3.0 in the major. Not open to minors.

551 Advanced French Composition 3 hrs.
Intensive practice with written French. Prerequisite: six hours of French 316-317 or equivalent.

552 Advanced French Conversation 3 hrs.
Intensive practice with spoken French. Prerequisite: six hours of French 316-317 or equivalent.

560 Studies in French Literature 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: six hours selected from French 322-328-329. Representative topics which may be treated in this area include:

Medieval and Renaissance Literature—Outstanding works from the Chanson de Roland (in modern French) to the end of the sixteenth century.

Seventeenth Century Literature—Preclassic period: Reforms of Malherbe, Préciosité, Descartes, beginnings of classical drama, and Corneille. Also, Classic period: significant works from the beginning of the reign of Louis XIV to his death.
Eighteenth Century Literature—Analysis of outstanding works of the period.

Nineteenth Century Literature—Romanticism, Realism and Naturalism.

Twentieth Century Literature—General analysis of representative works from the beginning of the century to the end of the Second World War. Contemporary drama and post-war literature.

GERMAN

100 Basic German 4 hrs.
Fundamentals of German with audiolingual emphasis. German cultural readings. No prerequisite.

101 Basic German 4 hrs.
Continuation of 100. Prerequisite: German 100 or equivalent.

200 Intermediate German 4 hrs.
Level two German. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: German 101, two years of high school German, or equivalent.

201 Intermediate German 4 hrs.
Continuation of 200. Prerequisite: German 200 or equivalent.

316 German Composition 3 hrs.
Emphasis upon increasing the student's command of written German. Prerequisite: German 201 or equivalent.

317 German Conversation 3 hrs.
Emphasis upon increasing the student's command of spoken German. Prerequisite: German 201 or equivalent.

326 Readings in German Literature 4 hrs.
Masterworks of German literature from the 18th and 19th centuries, including such authors as Lessing, Schiller, Kleist. Prerequisite: German 201 or the equivalent.

327 Readings in German Literature 4 hrs.
Selected dramas and prose from the 19th and 20th centuries, including such writers as Brecht, Dürrenmatt, Boll, Bergengrün. Prerequisite: 201 or the equivalent. 326 is not a prerequisite for 327.

Open to Upperclassmen and Graduate Students

400 Elementary Reading for Graduate Proficiency 4 hrs.
Basic grammar and elementary reading for translation and research purposes. The course is for the graduate student who has had little or no study in the language. Course open to advanced undergraduates upon recommendation of major advisor and by "C" card. No oral work.
401 Intermediate Reading for Graduate Proficiency  
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student’s major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Open to advanced undergraduates upon recommendation of major adviser and by “C” card.

510 The Central European Area  
Investigates cultural aspects necessary for an understanding of Central Europe. Countries included are Germany, Austria, Switzerland, and Czechoslovakia. Historic, geographic, social, and religious factors are treated. No foreign language prerequisite.

528 Survey of German Literature  
A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: 316 or 317, and 326 or 327.

529 Survey of German Literature  
A comprehensive study of German literature from German Realism to the present. Prerequisites: 316 or 317, and 326 or 327.

550 Independent Study in German  
Directed, individual study of a specific topic in a German literary or linguistic area. Departmental approval is required for admission. Prerequisite: one course at 500 level, preferably from among 528, 529, and 560.

552 Advanced German Composition  
Intensive practice in composition and stylistics directed towards appreciation of literary and other written expression in German with work in free composition at an advanced level. Prerequisites: German 316 and 317.

553 Advanced German Conversation  
Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: German 316 and 317.

559 History of the German Language  
Survey of the development. Prerequisite: 6 hours of 300-level German or above.

560 Studies in German Literature  
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: German 326 or 327 or equivalent. Representative topics which may be treated in this area include:

The Novelle—Survey of the development with representative selections.

Lyric Poetry—Survey of the development with significant selections.
Nineteenth Century Drama—Primary Kleist, Gillparzer, Hebbel, and Hauptmann.
Twentieth Century Drama—Representative selections.

575 German Literature in English Translation 3 hrs.
A comparative study of literary themes and techniques of major German writers from Hauptmann to the present, including Mann, Brecht, Kafka, and Borchert. This course does not apply toward a major or minor in German.

GREEK

100 Basic Greek 4 hrs.
Introduction to the fundamentals of classical Greek emphasizing essential grammar, syntax, and vocabulary required for the reading of simple texts. No prerequisite.

101 Basic Greek 4 hrs.
Continuation of 100. Simple selections from Greek literature as well as from New Testament literature. Prerequisite: Greek 100 or equivalent.

200 Intermediate Greek 3 hrs.
Review of basic grammar and syntax. Selections from Xenophon and Plato. Prerequisite: Greek 101 or equivalent.

201 Intermediate Greek 3 hrs.
Continuation of 200. Prerequisite: Greek 200 or equivalent.

ITALIAN

Italian 100—Basic Italian 4 hrs.
Fundamentals of Italian with audiolingual emphasis. Italian cultural readings.

Italian 101—Basic Italian 4 hrs.
Continuation of 100. Prerequisite: Italian 100 or equivalent.

LATIN

100 Basic Latin 4 hrs.
Fundamentals of Latin designed for students needing two years of Latin for admission to the AB curriculum or to a medical, law, or other professional program, and for those planning a Latin teaching major or minor. With Latin 101 it covers the work of two years of high school language requirement. No prerequisite.

101 Basic Latin 4 hrs.
Continuation of 100. Prerequisite: Latin 100 or equivalent (a student presenting one year of high school Latin may enter the course at this point).
Languages

200 Cicero  
Intermediate Latin. Before reading orations and letters of Cicero, basic vocabulary, grammatical usage, and special constructions are reviewed. One hour weekly is devoted to Latin composition. Prerequisite: Latin 101 or two years of high school Latin. (Courses 200-201 alternate with 204-205.)

201 Ovid  
Reading from the *Metamorphoses* with special attention to grammar, prosody, and myth. Prerequisite: Latin 101 or two years of high school Latin.

204 Vergil  
Intermediate Latin. Before reading the first books of the *Aeneid*, basic vocabulary, grammatical usage, and special constructions are reviewed. Prerequisite: Latin 101 or two years of high school Latin or equivalent. (Courses 204-205 alternate with 200-201.)

205 Vergil  
Continuation of 204. Prerequisite: Latin 204 or equivalent.

324 Latin Literature  
A survey of Latin Literature with reading of representative Latin authors from early times to the Golden Age. Prerequisite: Latin 201 or 205 or equivalent.

325 Latin Literature  
Continuation of 324, with reading of representative authors from the Golden Age through the late Silver Age. Prerequisite: Latin 201 or 205 or equivalent.

326 Horace  
The *Odes*, *Epodes*, and *Satires* accompanied by a study of the philosophy of Horace. Prerequisite: Latin 201 or 205 or equivalent.

327 Latin Comedy  
The epistles of Horace. The *Ars Poetica* serves as an introduction to a study of the rise and development of Latin comedy represented by selected plays of Plautus and Terence. Prerequisite: Latin 201 or 205 or equivalent.

Open to Upperclassmen and Graduate Students and Others by Permission of the Instructor

550 Independent Study in Latin  
1–3 hrs.  
Directed, individual study of a specific topic in a Latin literary or linguistic area. Departmental approval required for admission.

552 Latin Writing  
3 hrs.  
Practice in the fundamentals of correct expression. Required for Latin majors. Prerequisite: Latin 326 or 327 or equivalent.
School of Liberal Arts and Sciences

557 Teaching of Latin  

3 hrs.

560 Studies in Latin Literature  
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: Latin 326 or 327 or equivalent. Representative topics which may be treated in this area include:

Satire—Rome as pictured in the conversations of Horace and the invectives of Juvenal. Readings on the origins and development of satire as a genre.

History—Reading and appraisal of Livy and of Tacitus as historians and literary artists.

Bucolic Poetry—Readings from Vergil’s Eclogues and Georgics plus selections from later writers of bucolic poetry and discussion of its development as a literary form.

Lyric and Elegiac—Broad readings in Roman poetry, centering around Catullus, Ovid, Martial, and the other poets of love. Discussion of the origin and influence of elegy as a poetic form.

Medieval Latin—A study of the period 500-1500 A.D. when Classical Latin was blending into the new vernaculars to form eventual Romance Languages. Prose and poetic readings include a variety of themes reflecting the intellectual, cultural, and religious thinking of the times.

3 hrs.

568 Mythology  
Investigates the origins, elements, and interpretations of the principal myths and legends of Greece and Rome and their preservation not only in literature, but also in painting, music, and sculpture. No prerequisite.

3 hrs.

575 Classical Drama in Translation  
Reading and analysis of selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes as dramas and as expression of the Greek view of life. Some attention to Roman drama.

3 hrs.

RUSSIAN

100 Basic Russian  
Fundamentals of Russian with audiolingual emphasis. Russian cultural readings. No prerequisite.

4 hrs.

101 Basic Russian  
Continuation of Russian 100. Prerequisite: Russian 100 or equivalent.

4 hrs.
200 Intermediate Russian 4 hrs.
Level two Russian. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: Russian 101, two years of high school Russian, or equivalent.

201 Intermediate Russian 4 hrs.
Continuation of 200. Prerequisite: Russian 200 or equivalent.

316 Russian Composition and Conversation 3 hrs.
Emphasis upon increasing the student's command of written and spoken Russian. Prerequisite: Russian 201 or equivalent.

326 Russian Readings 3 hrs.
Literary selections from Tolstoy, Chekhov, Turgenev, and Pushkin. Prerequisite: Russian 201 or equivalent.

327 The Russian Novel 3 hrs.
Introduction to the Russian novel with consideration of the historical, social, and cultural settings. Prerequisite: Russian 201 or equivalent.

328 Survey of Russian Literature 3 hrs.
Development of Russian literature from its beginnings to the present with emphasis on major works of nineteenth and twentieth century writers and poets in the context of Russian cultural evolution. Prerequisite: Russian 201 or equivalent.

Open to Upperclassmen and Graduate Students

550 Independent Study in Russian 1–3 hrs.
Directed, individual study of a specific topic in a Russian literary or linguistic area. Departmental approval required for admission.

510 Russian Civilization 3 hrs.
Survey of the historical, cultural, and philosophical development of Russian from its origins to the present. Prerequisite: Russian 201 or equivalent.

560 Studies in Russian Literature 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: six hours of 300-level Russian or equivalent. Representative topics which may be treated in this area included:

- Poetry—Selections from classic masterpieces and contemporary poetry.
- Eighteenth Century Literature—Survey of the classical and preromantic periods.
- Nineteenth Century Literature—Representative selections from the period.
- Twentieth Century Literature—Primarily Gorky, Blok, Mayakovsky, Lenov, and Sholokhov.
SPANISH

100 Basic Spanish 4 hrs.
Fundamentals of Spanish with audiolingual emphasis. No prerequisite.

101 Basic Spanish 4 hrs.
Continuation of 100. Prerequisite: Spanish 100 or equivalent.

200 Intermediate Spanish 4 hrs.
Level two Spanish. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: Spanish 101, two years of high school Spanish, or equivalent.

201 Intermediate Spanish 4 hrs.
Continuation of 200. Prerequisite: Spanish 200 or equivalent.

316 Spanish Composition 3 hrs.
Emphasis upon increasing the student's command of written Spanish. Prerequisite: Spanish 201 or equivalent.

317 Spanish Conversation 3 hrs.
Emphasis upon increasing the student's command of spoken Spanish. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).

322 Life and Culture of Spain 3 hrs.
A study of the ethnic, sociological development, music, art, and folklore of Spain as a basis for comprehension of the Spanish peoples with emphasis on individualism. A background for study of Hispanic literature, history, or culture. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).

323 Life and Culture of Latin America 3 hrs.
A study of Latin-American life and culture based on ethnic, historical, social, religious, and literary considerations. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).

328 Introduction to Spanish Literature 3 hrs.
Synoptic literary selections with cultural and historical background. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).

329 Introduction to Spanish-American Literature 3 hrs.
Synoptic literary selections with cultural and historical background. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).

Open to Upperclassmen and Graduate Students

550 Independent Study in Spanish 1-3 hrs.
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission.*

*Prerequisite: a minimum grade point average of 3.0 in the major, not open to minors.
552 Advanced Spanish Grammar and Composition 3 hrs.
An advanced study of the intricacies and problems of Spanish grammar, syntax, and style with attention to improving written expression in Spanish at an advanced level. Taught in Spanish. Prerequisite: Spanish 328 or 329 or equivalent.

560 Studies in Spanish Literatures 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: Spanish 328 or 329 or equivalent. Representative topics which may be treated in this area include:

Cervantes—Don Quixote and other works of Cervantes together with his life and thought.
Seventeenth Century Theater—Main works of Lope de Vega through Calderon de la Barca.
Nineteenth Century—The Romantic Movement.
Nineteenth Century Novel—Development of the regional novel from Fernán Caballero through Blasco Ibáñez.
Generation of '98—Thought and works of typical representatives as Unamuno, Ortega y Gasset, and Azorin.
Contemporary Theater—Evolution and analysis of the characteristics.
Spanish-American Short Story—Significant short stories along with the cultural and social background.
Contemporary Spanish-American Novel—The twentieth century novel along with the cultural and social background.

Linguistics

Robert A. Palmatier, Chairman
D. P. S. Dwarikesh
Daniel P. Hendriksen

Linguistics is the scientific study of language—its nature and development, its universal properties, its diversified structures and their dialectal variants, its acquisition by children and non-native speakers, its systems of writing and transcription, its cultural role in the speech community, and its application to other areas of human knowledge.

The interdisciplinary aspects of this study are reflected in the unique
organization of the Linguistics Department, which functions as a combined department-institute. The Department not only offers its own core of general linguistics courses for Linguistics credit but recognizes linguistically-related courses in other departments of the University. This recognition, which provides for liberal selection of courses from at least ten different departments in the School of Liberal Arts, characterizes the Linguistics program as both interdepartmental and interdisciplinary.

The Linguistics major is intended either as a "second" major for undergraduates with a major in another department or as a "first" major for undergraduates who expect to pursue a master's degree in linguistics. The program for majors requires a minimum of thirty hours of credit, of which twenty hours must be taken for Linguistics credit and ten hours may be taken in approved courses in other specified departments. One college year of a foreign language, or its equivalent, is required for majors.

The Linguistics minor is intended as a supporting minor for undergraduates with a major in another department. The program for minors requires a minimum of twenty hours of credit, of which twelve hours must be taken in the Linguistics Department and eight hours may be taken in approved courses in other specified departments.

Linguistics is suggested as a supporting major or minor for majors in Anthropology, English, French, German, Latin, Philosophy, Psychology, Russian, Sociology, Spanish, Speech, and Speech Pathology and Audiology. General Studies 400, Human Communication, is recommended for both majors and minors, although it does not count in the Linguistics programs.

PROGRAMS IN LINGUISTICS

I. INTRODUCTORY COURSES

(all majors and minors—4 hrs.)

<table>
<thead>
<tr>
<th>Undergraduates Only</th>
<th>Linguistics 200 Linguistic Analysis</th>
<th>4 hrs.</th>
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</thead>
</table>

II. PHONOLOGY COURSES

(majors—4 hrs.; minors—2-4 hrs.)

<table>
<thead>
<tr>
<th>Undergraduates Only</th>
<th>Physics 100 Acoustics</th>
<th>2 hrs.</th>
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<tbody>
<tr>
<td>Speech Pathology 202 Anatomy and Physiology</td>
<td>2 hrs.</td>
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<tr>
<td>Speech Pathology 204 Phonemics</td>
<td>2 hrs.</td>
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<tr>
<td>Speech Pathology 300 Speech and Hearing Science</td>
<td>2 hrs.</td>
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<tr>
<td>Speech 304 Physiological Processes</td>
<td>4 hrs.</td>
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<tr>
<td>French 320 French Phonetics</td>
<td>3 hrs.</td>
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</tr>
</tbody>
</table>

| Graduates/Undergraduates | Linguistics 520 Phonological Analysis | 4 hrs. |
III. STRUCTURE COURSES
(all majors and minors—4 hrs.)
Undergraduates Only
English 270 English Language .................. 4 hrs.
Graduates/Undergraduates
Linguistics 530 Grammatical Analysis .......... 4 hrs.
Linguistics 570 Studies in Linguistic Structures 4 hrs.

IV. HISTORY COURSES
(majors—3-4 hrs.; minors—*0-4 hrs.)
Undergraduates Only
Linguistics 300 Historical Linguistics .......... 4 hrs.
English 372 Development of Modern English .... 4 hrs.
Graduates/Undergraduates
Linguistics 560 Comparative Linguistics ....... 4 hrs.
German 559 History of the German Language ... 3 hrs.

V. VARIATION COURSES
(majors—3-4 hrs.; minors—*0-4 hrs.)
Undergraduates Only
Linguistics 310 Dialectology .................. 4 hrs.
Anthropology 370 Language in Culture ........ 3 hrs.
Graduates/Undergraduates
Linguistics 575 Studies in Languages of the World (548) .... 4 hrs.

VI. COMMUNICATION COURSES
(majors—2-4 hrs.; minors—*0-4 hrs.)
Undergraduates Only
Speech Pathology 203 Speech and Language Development 2 hrs.
Speech 302 Communicative Processes ........... 3 hrs.
Philosophy 330 Philosophy and Language ....... 4 hrs.
Graduates/Undergraduates
Speech 570 Studies in Communication .......... 3 hrs.

VII. METHODS COURSES
(majors—3-4 hrs.; minors—*0-4 hrs.)
Graduates/Undergraduates
Linguistics 510 Teaching English as a Foreign Language (400) .... 4 hrs.
Linguistics 580 Linguistic Field Techniques .... 4 hrs.
Language 558 Modern Language Instruction .... 3 hrs.
Speech 561 Teaching Speech in Elementary School ... 3 hrs.
English 574 Linguistics for Teachers .......... 4 hrs.

VIII. ELECTIVE COURSES
(majors—2-8 hrs.; minors—*0-4 hrs.)

*Minors are not required to take credits in the starred areas but may elect up to 4 hours.
School of Liberal Arts and Sciences

Graduates/Undergraduates
Language or Ling. 505 Basic Critical Languages (500) 4 hrs.
Or one or more courses in Areas II to VII.

LINGUISTICS COURSES

110 Introduction to American English 4 hrs.
Instruction in oral and written English for non-native speakers by means of individual tutoring, laboratory work, and classroom orientation. Permission of instructor.

200 Linguistic Analysis 4 hrs.
An introduction to the linguistic principles underlying the phonological, morphological, syntactic, and semantic analysis and description of languages.

300 Historical Linguistics 4 hrs.
An introduction to the processes of language change and the principles which govern the historical and comparative study of languages.

310 Dialectology 4 hrs.
An introduction to the linguistic principles and methods involved in the study of geographical, social, and stylistic variation within languages.

500 Introduction to Linguistics 4 hrs.
An introduction to the principles and practices in the major schools (e.g. structural, transformational), fields (e.g. historical, comparative), and applications (e.g. dialectology, lexicography) of modern linguistics study.

510 (400) Teaching English as a Foreign Language 4 hrs.
Study of the application of linguistics to the teaching of English to non-native speakers, with emphasis on current methods and materials for instruction and testing.

520 Phonological Analysis 4 hrs.
An examination of theories of phonological structure and methods of phonetic and phonemic analysis, correlated with field work in the analysis and description of phonological structures.

530 Grammatical Analysis 4 hrs.
An examination of ancient, medieval, and modern theories of morphology and syntax, with emphasis on conflicts and correlations among current systems of grammatical analysis. Prerequisite: Ling. 500 or equivalent.

560 Comparative Linguistics 4 hrs.
This course introduces the student to the branch of linguistics which deals with the similarities and differences between related languages.
Linguistics

and the methodology through which the linguist is able to make statements about correspondences and divergences between related languages. Prerequisite: Ling. 500 or equivalent.

570  Studies in Linguistic Structures  4 hrs.
This course presents a detailed examination of the phonological, morphological, and syntactic structure of a given language. Various models for describing the structure of the language will be considered. The language under analysis will be announced prior to the beginning of the term in which the course is offered. Prerequisite: Linguistics 500 or equivalent. May be repeated for credit.

575 (548)  Studies in Languages of the World  4 hrs.
Intensive study of a group of languages (varying from semester to semester) that are either genetically related (e.g. Slavic languages), typologically similar (e.g. “tone” languages), or geographically proximate (e.g. African languages). May be repeated for credit.

580  Linguistic Field Techniques  4 hrs.
Interview techniques for the elicitation of oral language data, and methods of analysis of the data into significant linguistic units for their eventual arrangement in the form of a grammar and dictionary. Prerequisite: consent of instructor.

CRITICAL LANGUAGES COURSES  (See Department of Modern and Classical Languages for course descriptions.)

505 (500)  Basic Critical Languages  4 hrs.
506  Intermediate Critical Languages  4 hrs.
507  Advanced Critical Languages  4 hrs.
508  Reading Critical Languages  4 hrs.
509  Writing Critical Languages  4 hrs.
Major and Minor requirements in Mathematics are summarized in the following tables. Major programs must be approved by a departmental advisor.

**Non-Teaching: Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Calculus through Math 223</td>
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<tr>
<td>Math 332</td>
<td>(3 hrs)</td>
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<tr>
<td>Math 333</td>
<td>(3 hrs)</td>
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<tr>
<td>One of: Math 340, 342, 520, 540, 542</td>
<td>(3 hrs)</td>
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<tr>
<td>Math 570 or 572</td>
<td>(3 hrs)</td>
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<tr>
<td>One elective at 300-level</td>
<td>(3 hrs)</td>
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<tr>
<td>or above</td>
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<tr>
<td>One elective at 500-level</td>
<td>(3 hrs)</td>
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<td>or above</td>
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**Teaching: Major**

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<tbody>
<tr>
<td>Calculus through Math 222</td>
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<td>(3 hrs)</td>
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<tr>
<td>Math 550</td>
<td>(3 hrs)</td>
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<tr>
<td>Math 223 or approved elective</td>
<td>(4 or 3 hrs)</td>
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<tr>
<td>One elective at 300-level</td>
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<td>or above</td>
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**Non-Teaching: Minor**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Calculus through Math 222</td>
<td>(12 hrs)</td>
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<tr>
<td>Math 223 or 332</td>
<td>(4 or 3 hrs)</td>
</tr>
<tr>
<td>Mathematics elective</td>
<td>(0 or 1 hr)</td>
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**Teaching: Minor**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Calculus through Math 222</td>
<td>(12 hrs)</td>
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<tr>
<td>Math 332</td>
<td>(3 hrs)</td>
</tr>
<tr>
<td>Math 223 or 333</td>
<td>(4 or 3 hrs)</td>
</tr>
<tr>
<td>Mathematics elective</td>
<td>(1 or 2 hrs)</td>
</tr>
</tbody>
</table>

Minor electives can be any mathematics courses, including Math 100, 106, if approved by mathematics advisor.

Selected students may qualify for a major with Honors in Mathematics. The purpose of this Honors Program in Mathematics is to give to the conscientious, industrious student the special attention which his superior performance and interest in mathematics have warranted. Students
who are enrolled in, or have completed, Mathematics 332 may be recommended by a member of the mathematics faculty for consideration as honors students. For further information, see the Chairman of the Departmental Honors Program.

Students who fail to earn a “C” or better grade in Mathematics 100, or in Mathematics IA-III will not be permitted to enroll in the next sequence course.

090 Mathematical Skills

A remedial course dealing with those topics from elementary algebra and geometry necessary for further work in mathematics. This course carries no credit in any degree program. Entering students may be advised to take this course on the basis of the A.C.T. mathematics proficiency test.

100 Algebra

A course dealing with high school intermediate and advanced algebra. Review and practice with basic algebraic skills. Definitions, graphical properties, and manipulation with polynomial, exponential and logarithmic functions. Brief discussion of trigonometric functions. No credit for students presenting three years or more of high school mathematics including trigonometry. Prerequisite: One year of h.s. algebra and one year of h.s. geometry.

106 Introduction to Computers I

Historical background. Flow charts and concepts of programming, including use of an Automatic Programming System with applications to selected problems to be run on the IBM 1620. Prerequisite: 1½ yrs. h.s. algebra or Math 100.

107 Introduction to Computers II

Flow charts and programs will be prepared in Machine Language to be run on the IBM 1620. Additional problems will be programmed using the Symbolic Programming System. Prerequisite: Math 106.

120 Mathematics IA

Substantial review of algebra. Graphs and the foundations of analytic geometry. Introduction to calculus: functions, limits, derivatives, and applications. Followed by Math 121. The sequence 120, 121 is recommended for students whose high school background is insufficient to permit them to start with the regular beginning calculus course, Math 122. Prerequisite: Three years of college preparatory mathematics, or Math 100.

121 Mathematics IB

Trigonometry and a continuation of the calculus in Math 120. Algebraic and graphical properties of the trigonometric functions. Further discussion of derivatives and an introduction to integration. Math 120 and 121 together contain the calculus content of Math 122. Prerequisite: Math 120.
School of Liberal Arts and Sciences

122 Mathematics I 4 hrs. Fall, Winter

The first of a four semester sequence of courses dealing with the differential and integral calculus and selected topics from analytic geometry and linear algebra. This course devotes special attention to functions, limits, derivatives, applications of derivatives, and integrals. Prerequisite: at least 3½ years of college preparatory mathematics including trigonometry.

123 Mathematics II 4 hrs. Fall, Winter

A continuation of Mathematics I. Topics include: the definite integral, differentiation and integration of elementary transcendental functions, techniques of integration, analytic geometry. Prerequisite: Math 122 or 121.

150 Structure of Arithmetic 4 hrs. Fall, Winter

This course is designed to provide the elementary teacher with a minimal foundation in the structure of arithmetic. Included will be a discussion of sets, relations, the properties of natural numbers, integers, rational and real numbers, as well as selected topics from number theory, algebra and geometry. The nature of proof will be demonstrated through selected exercises. This course is restricted to students in Elementary Education, Elementary Music, Librarianship, and Special Education curricula. No others can receive credit.

200 Analysis and Applications 4 hrs. Fall, Winter

Topics include: sets, functions, trigonometry, rates, limits, differentiation, integration, applications. The course should not be elected by those students who wish to take courses in the Mathematics 120, 121 or 122, 123 sequences. Prerequisite: Math 100 or 1½ years h.s. algebra and 1 year h.s. geometry.

222 Mathematics III 4 hrs. Fall, Winter

A continuation of Mathematics I and II. Topics include: Linear algebra, differential calculus of functions of several variables, and multiple integration. Prerequisite: Math 123.

223 Mathematics IV 4 hrs. Fall, Winter

A continuation of Mathematics I, II and III. Topics include: Vector analysis, infinite series, and ordinary differential equations with applications. Prerequisite: Math 222.

260 Elementary Statistics 4 hrs.

A study of probability distributions, sampling, estimation, testing hypotheses, correlation and regression. Prerequisite: Math 200 or equivalent.

332 (380) Algebraic Structures 3 hrs. Fall, Winter

An introduction to set theory and number systems. Topics covered include: Intuitive set theory, elementary symbolic logic, mathematical induction, a descriptive treatment of the real number system, simple
algebraic systems and elementary number systems. Prerequisite: Math 222.

333 (330) Modern Algebra 3 hrs. Fall, Winter
A continuation of Math 332. Topics include: Elementary group theory, complex numbers, fields, and polynomial rings. Prerequisite: Math 332.

340 Fundamental Concepts of Geometry 3 hrs.
A critical reexamination of plane and solid euclidean geometry followed by euclidean geometry of four dimensions and noneuclidean geometry. Prerequisite: Math 222.

342 Introduction to Projective Geometry 3 hrs.
A survey of analytic geometry using vector methods followed by an axiomatic development of projective geometry. Prerequisite: Math 222.

360 Statistical Methods for Industry 4 hrs. Fall, Winter
A study of histograms and empirical distributions, random variables and probability distributions, normal, chi-square, t, F, binomial, Poisson distributions, central limit theorem, significance tests both one- and two-sided, point and interval estimation, correlation, analysis of variance. Control charts, sampling inspection both by attributes and variables. Prerequisite: Math 222.

500 Differential Equations
(See Mathematics 574.)

506 Programming for Computers 3 hrs.
Designed to give preparation in the organization and general use of high speed computing machines used in scientific and engineering computations. The language of the Computer, Symbolic Programming System, and Fortran II will be used to prepare programs. Problems such as exponential, multiplication of matrices, inverse of a matrix, solution of polynomials, numerical integration, and solution of a differential equation will be prepared to be run on the Computer. Prerequisite: Math 222, (223 recommended).

507 Numerical Analysis 3 hrs.
Numerical methods involving polynomial evaluation, Legendre polynomials, Čebysev polynomials, differences, integration, solution of differential equations and linear programming. Prerequisites: Math 223 and Math 506.

508 Automatic Programming Systems 3 hrs.
A thorough study of the internal organization of the Fortran Compiler. Each student will be required to construct a compiler. Prerequisite: Math 506.
520 Introduction to Topology 3 hrs.
Topics include: Metric spaces, convergence and sequential compactness, principle of contraction mapping and its application in analysis, topological spaces, product spaces, continuity and other related topological properties, compactness, separation axioms, metrizable spaces, applications. Prerequisite: Math 332 (or 380).

530 Linear Algebra 3 hrs.
Properties of n-dimensional vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: Math 333 (or 330).

540 Introduction to Algebraic Geometry 3 hrs.
A study of the basic properties of projective space of n-dimensions utilizing both the algebraic and synthetic definitions, representation of projective geometry as the geometry of subspaces of a vector space, and the algebraic approach to affine geometry. Prerequisite: Math 332 (or 380). (Math 333 recommended.)

542 Differential Geometry 3 hrs.
Topics include: directional derivatives, differential forms, curvature and torsion of curves, transformations and tensor calculus, geodesics and other curves on surfaces, conformal and isometric mappings, minimal surfaces. Prerequisite: Math 570 or 572.

550 Teaching of Secondary Mathematics 3 hrs.
In this course consideration is given to curriculum problems and trends in secondary school mathematics and to specific problems of teaching mathematics effectively to secondary school students. Prerequisite: Math 332 (or 380).

552 Teaching of Elementary Mathematics 2 hrs.
In this course consideration is given to curriculum problems and trends in elementary school mathematics and to specific problems of teaching mathematics effectively to elementary school children. Prerequisite: Math 150 or equivalent.

560 Probability 3 hrs.
Probability spaces; mathematical expectation; moment-generating functions; special discrete and continuous distributions; independence; transformations of variables; sampling theory; statistical inference. Prerequisite: Math 223 and 332 (or 380).

561 Mathematical Statistics 3 hrs.
A continuation of Math 560. Point estimation, maximum likelihood estimates, sufficiency and stochastic independence, limiting distributions, some distribution-free problems, statistical hypotheses, quadratic forms and some multivariate distributions. Prerequisite: Math 560.

562 Statistical Analysis I 4 hrs.
Elementary probability theory; combinatorial probability; binomial,
Poisson and hypergeometric distributions and applications; normal, chi-
square, F, and t distributions with applications to estimation, hypothesis
testing, and confidence intervals; curve fitting; linear regression; non-
parametric techniques; emphasis on applications. Followed by Math-
ematics 662. Prerequisite: Mathematics 222 (Mathematics 223 recom-
manded).

570 Advanced Calculus I 3 hrs.
Elementary analysis on the real line: Bound properties of real numbers,
convergence of sequences and series; continuous functions, differentiable
functions, mean value properties; Riemann integration. Prerequisite:
Math 223 and 332 (or 380).

571 Advanced Calculus II 3 hrs.
Methods of calculus beyond those of Math I-IV: Calculus of several
variables, implicit functions, maxima and minima; line and surface
integrals, vector differential calculus, Stokes’ Theorem. Prerequisite:
Math 570 (530 recommended).

572 Mathematical Analysis 3 hrs.
The real number system. Elementary topology and differentiation in
Euclidean spaces. Uniform convergence. Prerequisite: 570 or consent
of adviser.

574 (500) Introduction to Ordinary Differential Equations 3 hrs.
Methods of solution, linear differential equations, ordinary and singu-
lar points, series solutions, Bessel and Legendre functions, boundary
value problems, systems of equations, non-linear equations. Prerequisite:
Math 223.

575 Introduction to Partial Differential Equations 3 hrs.
Quasi-linear equations of the first order, linear and quasi-linear
equations of the second order, separation of variables and Fourier series;
solutions of Laplace equations, heat equations and wave equations, as
examples of elliptic, parabolic, and hyperbolic equations. Prerequisite:
Math 574 or consent of instructor.

576 Introduction to Complex Analysis 3 hrs.
Complex numbers, elementary functions, differentiation of complex
functions, integration, series, residue theory, conformal mappings. Pre-
requisite: Math 223.

580 Number Theory 3 hrs.
Diphantine equations, congruences, quadratic residues, and properties
of number theoretic functions. Prerequisite: Math 332 (or 380).

598 Independent Study in Mathematics 1-3 hrs.
Advanced students with good scholastic records may elect to pursue
independently the study of some topic having special interest for them.
Topics are chosen and arrangements are made to suit the needs of each
particular student. Prerequisite: Approval of head of department.
The Department offers courses leading to the Bachelor of Music, Bachelor of Arts, and the Bachelor of Science degrees. The Bachelor of Arts degree allows for a broad liberal arts background. The Bachelor of Science degree is an Elementary Education-Music degree. The Bachelor of Music degree is highly professional in its requirements and permits the student to do extensive work in the field of music. A Bachelor of Music degree in Music Therapy is also offered. Specific requirements relative to all music degrees are found in the Music Supplement which may be procured from the Music Office.

Those students who want both elementary and secondary teaching certification in music should work for the B.Mus. degree. Elementary certification with a music major may be secured with the B.S. degree.

Those students who want a music major without teacher certification may work for the Bachelor of Music degree in applied music, theory, composition, or music history, or for the Bachelor of Arts degree.

Education students minoring in music must complete Basic Music 160, 161, Music Methods as counseled, Piano as counseled, Conducting 330 or 331, and Music Electives, except ensembles. Total requirement, 20 semester hours.

Those students not seeking teacher certification who wish to major or minor in music should secure major and minor slips from the Music Department counselor.

Credit from another institution in any branch of theory will be accepted only upon satisfactory completion of an examination covering the field for which the student desires transferred credit. All transferred credit is tentative and is conditioned upon the successful completion of a
semester's work at Western Michigan. No credit hours exceeding the number granted for parallel work at Western Michigan will be accepted for transfer from another institution.

All music majors must be enrolled in Music Convocation 101 as described below.

The University is a member of the National Association of Schools of Music. The requirements for entrance and for graduation as set forth in this catalog are in accordance with the published regulations of the NASM and the National Council for Accreditation of Teacher Education.

**MUSIC COURSES**

101 Music Convocation  
No Credit  Fall, Winter

A series of special musical events required of music majors. Programs include lectures and recitals by faculty, selected students, and guest artists.

120 Piano Class  
1 hr.  Fall, Winter

A basic course required of music majors and minors who have inadequate proficiency on piano. Opportunity is provided for some individual instruction. Recommended for piano majors to gain knowledge of piano class instruction.

121 Piano Class  
1 hr.  Fall, Winter

A continuation of 120.

122 Voice Class  
1 hr.  Fall, Winter

A study of the fundamental processes of breath control and tone production, providing some individual instruction in preparing and singing standard song literature. The course is designed to benefit students interested in solo and choral singing.

128 Violin Class  
1 hr.  Fall, Winter

This course is designed to acquaint the student with basic problems encountered in playing the violin, including terminology and conventions of string performance. The course is intended for students with a piano or vocal major in Public School Music who are occasionally faced with the need to include string groups in the preparation of operettas, cantatas, or solo accompaniments.

129 String Class  
2 hrs.  Fall, Winter

A thorough examination of all string instrument performance, pedagogy, materials, methods and maintenance. For wind and percussion majors in Public School Music.

130 Percussion Class  
1 hr.  Fall, Winter

Fundamentals of percussion instrument pedagogy and performance. The student is required to perform on the snare drum in an acceptable manner and to demonstrate a working knowledge of percussion instru-
131 Flute Class
Fundamentals of flute pedagogy and performance. For music majors only.
1 hr. Fall, Winter

132 Oboe Class
Fundamentals of oboe pedagogy, performance and reed-making. For music majors only.
1 hr. Fall, Winter

133 Clarinet Class
Fundamentals of clarinet pedagogy and performance. For music majors only.
1 hr. Fall, Winter

134 Bassoon Class
Fundamentals of bassoon pedagogy, performance, reed-making, and instrument maintenance. For music majors only.
1 hr. Fall, Winter

135 Saxophone Class
Fundamentals of saxophone pedagogy and performance. For music majors only.
1 hr. Fall, Winter

136 Trumpet Class
Fundamentals of trumpet pedagogy and performance. For music majors only.
1 hr. Fall, Winter

137 French Horn Class
Fundamentals of French horn pedagogy and performance. For music majors only.
1 hr. Fall, Winter

138 Trombone Class
Fundamentals of trombone pedagogy and performance. For music majors only.
1 hr. Fall, Winter

139 Tuba Class
Fundamentals of tuba pedagogy and performance. For music majors only.
1 hr. Fall, Winter

140 Music for Classroom Teachers
4 hrs. Fall, Winter
Designed for elementary education students without regard to previous musical training. Students are prepared to use music functionally and developmentally in the elementary classroom through singing, through playing the piano and informal instruments, and through responding to music rhythmically. Creative aspects and values of music are emphasized, and materials are studied in relation to their future use in the classroom.

Students who need special help in singing are required to enroll in 141. Prerequisite: Ed. 230 for Elementary Teachers in Creative Arts minor. Otherwise no prerequisite.
141 Vocal Clinic for Non-Singers  No credit  Fall, Winter

Students are taught to sing through the development of pitch and breath control. Prerequisite: Must be enrolled in 140.

142 Piano for Classroom Teachers  1 hr.  Fall, Winter

A beginning piano course for elementary education students who are not majors or minors in music. Emphasizes the fundamentals of music through the medium of the keyboard. Provides some opportunity for individual instruction.

160 Basic Music  3 hrs.  Fall, Winter

A study of the structure and function of the language of music integrated with basic skills in music-reading, ear-training, keyboard and written harmony. Students with no piano facility or a limited background in piano must also be enrolled in piano class (120, 121, 220, 221).

161 Basic Music  3 hrs.  Fall, Winter

A continuation of 160. Students with a limited piano background must also be enrolled in piano class (121, 220, 221). Prerequisite: 160.

170 Music Appreciation  4 hrs.  Fall, Winter

This introductory course is designed to cover significant musical repertoire of the western world and stresses fundamental knowledge of music through guided listening and descriptive analysis.

180 Music in Special Education  4 hrs.

Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmic, and creative activities in classes for mentally and physically handicapped. The student learns functional use of piano and informal instruments. Values of musical activities for all exceptionalities are emphasized. No prerequisite. For Special Education majors only. Substitutes for M140.

190 Accompanying  1 hr.  Fall, Winter

Supervised experience in accompanying vocal and instrumental music, both solo and ensemble. (This course may be repeated for credit not to exceed a total of four semester hours.)

220 Advanced Piano Class  1 hr.  Fall

A continuation of 120-121. Prerequisite: 120-121 or consent of instructor.

221 Advanced Piano Class  1 hr.  Winter

A continuation of 220.

224 Cornet Class  1 hr.  Fall, Winter

226 Clarinet Class 1 hr. Fall, Winter

228 String Class 1 hr. Fall
A specialized course for the string major presenting the techniques and materials of string instruments other than his major. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string majors in Public School Music.

229 String Class 1 hr. Winter
A continuation of 228. Prerequisite: String majors in Public School Music.

230 (131) English and Italian Diction and Song Literature 1 hr. Fall, Winter
Required of all students whose field of concentration is voice. English and Italian diction and song literature are studied, and opportunity is provided for solo performance.

231 French Diction and Song Literature 1 hr. Fall, Winter
Required of all students whose field of concentration is voice. French diction and song literature are studied, and opportunity is provided for solo performance.

232 German Diction and Song Literature 1 hr. Fall, Winter
Required of all students whose field of concentration is voice. German diction and song literature are studied, and opportunity is provided for solo performance.

233 Major Performance Literature 2 hrs. Winter
Literature for the major performance instrument is studied, and opportunity is provided for solo performance. Required of applied music (except voice) majors during the junior or senior year. (This course may be repeated for credit not to exceed a total of four semester hours.) Piano majors in the public school music curriculum are required to take this course for two semester hours during either the sophomore or junior year.

240 General Music Methods 3 hrs. Fall, Winter
A study of the methods of teaching and an evaluation of the materials to be used in the singing, rhythmic, instrumental, creative, and listening activities in General Music classes. Special emphasis on the basic music program in the elementary schools. Prerequisite: 160-161.

244 Elementary Music Practicum 3 hrs. Fall
This course is designed to meet the needs of the elementary music teacher in the areas of theory and piano. Special emphasis is given to
keyboard facility in accompaniments in the elementary classroom, harmonizations of melodies, the playing of rhythms, modulations, and a continuation of ear-training. Prerequisite: 160-161.

245 Elementary Music Practicum
   A continuation of 244. Prerequisite: 244.

260 Basic Music
   A continuation of 161. Students with a limited background in piano must also be enrolled in an appropriate piano class. Prerequisite: 161 with a grade of C or better.

261 Basic Music
   A study of the structure and function of chromatic harmony. Students with a limited background in piano must also be enrolled in an appropriate piano class. Prerequisite: 260 with a grade of C or better.

262 Composition
   Beginning work in composition, with emphasis on the phrase, period, and double period. Attention given to melodic, rhythmic, and harmonic devices. Prerequisite: 161.

263 Composition
   A continuation of 262.

266 Musical Acoustics
   A course specifically for the music student. Study includes overtone series, frequency, tone quality, wave lengths, air columns, noise, and temperaments. Prerequisite: 161.

281 Introduction to Music Therapy

290 Recreational Music
   Function of music in a recreation program. Fundamentals of non-symphonic instruments. Techniques and materials to be used in leading singing and other group music activities.

291 Functional Piano
   Designed to develop pianist's ability to invent and organize musical ideas at the piano. Emphasis is placed on the use of piano in children's rhythmic activities, the harmonization and transposition at sight of songs with appropriate accompaniment, and the improvisation of music in various forms.

292 String Technology
   An introduction to string instrument maintenance and repair, this
course is designed to train the music teacher in rudimentary repairs and adjustments of an emergency nature which may arise in the teaching situation. Not intended to train repairmen.

293 Piano Technology 1 hr. Winter

An introduction to piano technology in which various aspects of the technician's art are investigated. Important topics covered include mechanics of the musical scale, art of tuning in equal temperament, and construction of modern grand and upright pianos. The course is designed to give the student valuable insights into the field of piano technology in order that he might intelligently purchase and care for this instrument. Not intended to train tuners.

322 Vocal Pedagogy 2 hrs. Winter

A course designed to acquaint the voice major with the physiological, psychological and acoustical problems involved in singing. Consideration will be given to pedagogy, breathing, phonation, resonance, range, dynamics, ear training, diction, and interpretation. An opportunity for individual voice analysis and solo performance will be provided.

330 Choral Conducting 2 hrs. Fall, Winter

The fundamentals of choral conducting are presented, including patterns and rehearsal techniques. The student prepares and conducts choral literature with respect to tempo, nuance, phrasing, and fundamental choral techniques. The study and selection of literature is included. One class meeting per week is video taped in the television studio and viewed at the following class meeting. Control card required.

331 Instrumental Conducting 2 hrs. Fall, Winter

A beginning course in the techniques of preparing and conducting orchestral and band literature.

340 Vocal Methods and Materials for the Junior High School 2 hrs. Fall

A study of vocal music activities in the education of the adolescent. Total sequence of musical experiences in the general music program, choir, and ensembles. Technical problems such as the changing voice and voice testing will be discussed. A presentation of rehearsal techniques, lesson plans, materials, equipment and methods of organizing and teaching music at this level. Administration, curriculum organization, programming, and interdepartmental relations. Practical experience will be gained by teaching units and songs to members of the class. Prerequisite: 240 for music majors; otherwise, no prerequisite.

341 Vocal Methods and Materials for the Senior High School 2 hrs. Winter

A continuation of 340 with emphasis upon materials for the high school vocal program. Preparation of concerts and musicals. Library organization, budget construction, scheduling, and plans for vocal rooms. Appropriate testing procedures and interpretation is presented. Practical
experience is gained by rehearsing several musical selections with members of the class. Prerequisite: 240 for music majors; otherwise, no prerequisite.

342 Organization and Administration of Church Choral Groups
1 hr. Fall

A course designed for vocal teachers who may be involved in the directing of church choirs. A short history and philosophy of church music and an extensive survey of church music literature. Prerequisite: 240 for music majors; otherwise, no prerequisite.

343 Teaching Strings in the Public Schools
2 hrs. Winter

A course designed to help the prospective teacher apply his knowledge of strings to the classroom situation. Special attention is given to the principles of learning and the principles of group teaching and how they apply to the elementary, the junior high, and the senior high string class and orchestra. The course also includes a study of basic repertoire at all levels with special emphasis on appropriate solo and ensemble materials. Prerequisite: 240 for music majors; otherwise, no prerequisite.

344 Methods and Music for Teaching Band Instruments
2 hrs. Fall

The purpose of this course is to assist the prospective teacher in applying his knowledge of band instruments to the public school music classroom situation. Special emphasis is given to the principles of group teaching and how they apply to the effective teaching of music through band instruments at the elementary, the junior high, and the senior high levels. Basic literature and methods for teaching are studied and a unit in maintenance and emergency repair of wind instruments is included. Prerequisite: 240 for music majors; otherwise, no prerequisite.

345 Administration of the Instrumental Music Program
2 hrs. Winter

An introduction to the organizational facets of an instrumental music program, to include such topics as public school organization, scheduling, student evaluation, student records, public relations, contest and festival, public performance, music rooms and equipment, library, uniforms, inventory tests and measurements, and finance. Prerequisite: 240 for music majors; otherwise, no prerequisite.

346 Marching Band Techniques
2 hrs. Fall

An introduction to the techniques and administrative problems peculiar to the school marching band. Marching techniques, charting, show design, selection of music, and rehearsal techniques are topics included. Prerequisite: 240 for music majors; otherwise, no prerequisite.

347 Music in the Humanities in Secondary Schools
2 hrs.

This course attempts to prepare the music student to participate in the teaching of humanities in secondary schools. The student learns to
### School of Liberal Arts and Sciences

participate in setting the goals, content, and techniques for the humanities program. Prerequisite: 240 for music majors; otherwise, no prerequisite.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Session</th>
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<tbody>
<tr>
<td>348</td>
<td>Public School Music Production</td>
<td>2 hrs.</td>
<td>Winter</td>
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<td></td>
<td>A course in methods and materials for use in public school music productions with particular attention to the selection and evaluation of materials for such productions. Prerequisite: 240 for music majors; otherwise, no prerequisite.</td>
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<td>360</td>
<td>Analysis of Basic Forms</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
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<td></td>
<td>An analytical study of music in the smaller forms. Prerequisite: 261 with a grade of &quot;C&quot; or better.</td>
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<td>361</td>
<td>Analysis of Instrumental Forms</td>
<td>2 hrs.</td>
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<td></td>
<td>A continuation of 360 with special emphasis on the larger forms such as the sonata, symphony, quartet, concerto, etc. Prerequisite: 360 with a grade of &quot;C&quot; or better.</td>
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<tr>
<td>362</td>
<td>Composition</td>
<td>2 hrs.</td>
<td>Fall</td>
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<td></td>
<td>A study of the techniques of twentieth century composition with original work in vocal and instrumental forms. Prerequisite: 263.</td>
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<tr>
<td>363</td>
<td>Composition</td>
<td>2 hrs.</td>
<td>Winter</td>
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<td></td>
<td>A continuation of 362.</td>
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<tr>
<td>364</td>
<td>Analysis of Vocal Forms</td>
<td>2 hrs.</td>
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<td></td>
<td>An extension of Music 360 placing special emphasis on vocal literature: lieder, opera, oratorio, etc. Prerequisite: 360.</td>
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<tr>
<td>365</td>
<td>Contemporary Music Literature</td>
<td>2 hrs.</td>
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<td></td>
<td>Survey of contemporary music literature through listening. Some study of the chronological evolution of modern structure and harmony. Special emphasis on the atonal concepts and electronic media.</td>
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<td>366</td>
<td>Instrumental Arranging</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
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<td>A course designed to give the student experience in arranging music for instrumental groups with emphasis placed on making use of available resources. Prerequisite: 261 with a grade of &quot;C&quot; or better.</td>
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<tr>
<td>367</td>
<td>Contemporary Techniques</td>
<td>2 hrs.</td>
<td>Winter</td>
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<td></td>
<td>Recent compositional techniques including total serialization, aleatoric procedures, musique concrete, electronic and computer music. Written assignments. Prerequisite: 261.</td>
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<tr>
<td>368</td>
<td>Survey-Review of Basic Music</td>
<td>2 hrs.</td>
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<td>A course required of transfer students who have satisfactorily completed their music theory (equivalent to Basic Music 160, 161, 260, and 261 at WMU) requirements at another institution. The course consists of a review of chromatic harmony and contemporary techniques, with</td>
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emphasis on correlation and reconciliation of the various terminologies used in music theory. This course may not be applied as credit earned toward the theory requirements of the Bachelor of Music degree.

369 Jazz 2 hrs.
A comprehensive study of jazz as a musical art from both a theoretical and historical perspective. Special attention to the musical contribution of black Americans, outstanding jazz composers and performers. Study of the “blues”, jazz melodic and harmonic structures, arranging for jazz ensembles, the art of improvisation and rhythmic analysis. Prerequisite: Basic Music 261.

370 Music History and Literature 3 hrs. Fall, Winter
A survey of the growth of music from the earliest times through the Medieval, Renaissance, and Baroque periods.

371 Music History and Literature 3 hrs. Fall, Winter
A continuation of 370 from the Classic period forward.

374 Grademom Music Literature 3 hrs. Winter
Designed to meet the needs of the elementary teacher in music literature and application in the classroom. Included are: (1) works of great composers in relation to the age and culture; (2) native and foreign folk music; (3) historical development, structure, timbre, and use of instruments. Prerequisite: 140 or 240.

380 Motivational Aspects of Music 2 hrs. Fall
The psychic and physiological effect of sound on the individual, and systems of tonal relationships. The effect of music on personality and the consideration of music as a form of communication. The nature of musicality and its measurement. The nature of musical memory. The underlying bases for musical taste and for aesthetic experience in music. Prerequisite: Psychology I.

382 Influence of Music on Behavior 2 hrs. Fall
Review of the relationship between music and personality. The function of music in personality adjustment and development. A study of pertinent research methods by analysis and evaluation of published studies. Prerequisite: Psychology I.

383 Influence of Music on Behavior 2 hrs. Winter
Development of skills essential to research. An analytical survey of pertinent recent publications. Prerequisite: 382.

462 Composition 2 hrs. Fall
Original work in composition with emphasis on chamber music and orchestral music. Prerequisite: 363.

463 Composition 2 hrs. Winter
A continuation of 462.
466 Theories of Musical Practice 2 hrs. Fall
The musical principles of important authors, past and present, of treatises dealing with composition, counterpoint, and harmony. Written assignments exploiting these principles. Prerequisite: 261.

467 Theories of Musical Practice 2 hrs. Winter
A continuation of 466.

480 Music Therapy Methods and Materials 2 hrs. Winter
Survey of materials available for use in music therapy programs and methods of adapting such materials to institutional use. Study of publications and techniques developed specifically for use in music therapy programs. Prerequisite: Music therapy major.

490 Undergraduate Workshop in Special Problems 1–3 hrs.
Designed for students interested in some special field of music not formally listed for instruction. All special problems must be approved by the Chairman of the Department of Music, but may be under the direct guidance of any member of the music faculty. This course may be elected as many as three times.

530 Advanced Choral Conducting 2 hrs.
Supervised experience in conducting vocal ensembles. The complete preparation of choral music will be stressed. The student may be called upon to prepare an ensemble for public performance. Prerequisite: 330.

531 Advanced Instrumental Conducting 2 hrs.
Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: 331.

540 Elementary School Music 2 hrs. Summer
Emphasizes the place of music in the curriculum and the use of music in the day-to-day activities of the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

541 Music Supervision and Consultation 2 hrs.
A study of the structuring and implementation of a music education program in the schools, in terms of three organizational relationships: the music administrator or supervisor, the scheduled music teacher, and the unscheduled music consultant. Relation of music specialist to classroom teacher.

542 Studies in Music Education 2 hrs.
Topics to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Education Materials, and Curriculum Planning for Innovation in Music Education. This course may be repeated to an accumulation of not more than four credits.
543 Psychology of Music Education 2 hrs. Winter
   Personal and social needs, motives and goals in relation to music in education. The function of musical achievement and aptitude tests in music education. Psychological aspects of behavior pattern in musical organizations. Physical, social and psychological factors involved in a developmental music program.

544 Analysis and Evaluation of Music Education Materials 2 hrs.
   A study of the theoretical bases for, and practice in, analyzing and evaluating music for use in music education programs.

560 Counterpoint 2 hrs. Fall
   Modal and harmonic counterpoint as exemplified by the composers of the sixteenth, seventeenth, and eighteenth centuries. Practical application through the writing of strict counterpoint in the five species—double counterpoint, obligatos, descants, canons, and fugues. Prerequisite: 261 with a grade of "C" or better.

561 Counterpoint 2 hrs. Winter
   A continuation of 560.

562 Advanced Composition 2 hrs. Fall
   A study of twentieth century techniques in composition with original work in vocal and instrumental forms. Prerequisite: 560.

563 Advanced Composition 2 hrs. Winter
   A continuation of 562.

564 Form in Music 2 hrs.
   A survey of the musical forms, large and small, used from the Baroque period to the present day. Analysis of both structure and texture of representative works of the various periods and styles. Prerequisite: 261 or consent of instructor.

567 Orchestration 2 hrs. Fall
   A study of the characteristics of instruments, arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: 366.

568 Orchestration 2 hrs. Winter
   A continuation of 567.

570 Introduction to Musicology 3 hrs. Fall
   History, purposes, scope of musicology; leading historians, past and present; modern methods of research, with special emphasis on primary sources and bibliography of the field.

571 Introduction to Musicology 3 hrs. Winter
   A continuation of 570.
572 Baroque Music (1600-1750) 2 hrs.
A survey of the choral and instrumental music of the Baroque masters such as J. S. Bach and G. F. Handel. Special attention to the development of style from monody through harmonic polyphony. Prerequisite: 370-371.

573 Classical Music (1750-1800) 2 hrs.
Examination of the chief works of Mozart and Haydn, with intensive study in symphonic form and the development of the classic opera. Prerequisite: 370-371.

574 Romantic Music (1800-1910) 2 hrs.
Music of the important composers of the period beginning with Beethoven, along with the historical, cultural, and political background of the era. Special attention is given to the development of Nationalism. Prerequisite: 370-371.

575 Musicology and Research 3 hrs. Fall
Presentation of musicological material in formal writing as well as informal classroom lecture; specific research projects with emphasis on selection and qualitative judgment of materials used.

576 Musicology and Research 3 hrs. Winter
A continuation of 575.

580 Music Therapy Internship 2 hrs.
Six months clinical training through resident internship in an approved neuropsychiatric hospital with an established music program. Prerequisite: Completion of music therapy major and staff approval.

591 Piano Pedagogy 2 hrs. Winter
A study of the teaching of piano at beginning level, to children and adults in private studio or in groups. The ideas developed in beginning piano will be extended through the intermediate and advanced levels.

598 Readings in Music 2 hrs. Fall, Winter
Graduate students may enroll in this course after consultation with the graduate adviser.

APPLIED MUSIC

Individual lessons in applied music can be elected for academic credit by any student in the University. Students who wish individual instruction in some field of applied music should contact the Department of Music to register and receive assignment of instructor. Such requests will be granted to the extent that the instructor's time and practice facilities are available beyond the needs of the music major degree candidates.
All B.Mus. degree candidates are required to have one class hour per week of individual instruction in their major performance field of concentration through the entire four-year course. Applied music requirements in fields other than the major performance area are listed in the *Music Supplement*.

Eight levels of study in the various areas of applied music are indicated in the *Music Supplement*.

H20 through H35—Harp
H40 through H55—Piano
H60 through H75—Organ
H80 through H95—Voice
Z20 through Z35—String Instruments: Violin, Viola, Cello, String Bass
Z40 through Z55—Brass Instruments: Cornet or Trumpet, Trombone, French Horn, Tuba, Baritone
Z60 through Z75—Woodwind Instruments: Flute, Oboe, Bassoon, Clarinet, Saxophone
Z80 through Z95—Percussion

**MUSIC ENSEMBLES**

All B.Mus. degree candidates are required to participate in some large music ensemble, e.g., orchestra, choir, band, wind ensemble, glee club, or chorale throughout their four years of study (Marching Band not included). It is expected that each student will take part for his first two years in a large ensemble employing his major performance area. The student will remain in that large ensemble for the entire academic year. All public school music wind and percussion majors are required to be in Marching Band through their junior year. Sometime during the student's residence he is expected to take one year of small ensemble. All music ensembles grant one hour of credit for each semester of participation. Not more than eight hours credit will be granted for participation in any one ensemble. Not more than twelve hours of ensemble credit will be accepted toward any degree. Students who want to participate in an ensemble should contact the director.

**LARGE ENSEMBLES**

109 University Marching Band 1 hr. Fall only

The University Marching Band is the major performing ensemble for Fall football activities. Positions are open only to all male students who play wind or percussion instruments. Male Public School Music Education majors with a wind or percussion instrument minor are required to take this course through their junior year. Membership by audition. (May be substituted for Physical Education requirement, except that a minimum of one semester hour of credit must be earned in a general physical education course.)
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110 Symphonic Band Mr. Meretta
An organization which performs a wide range of symphonic band literature. This group furnishes music at many University events. Membership by audition.

111 University Orchestra Mr. Butler
The orchestra is open to all students who have had a reasonable amount of orchestra experience. Many fine compositions are studied and played during the year, and the orchestra sometimes joins with other campus organizations in programs. Instruments are available for the use of students. Membership by audition.

112 University Choir Mr. Hardie
The University Choir, open to all students, is an a cappella choir with selected membership. The ensemble seeks to develop and to perpetuate a high standard of choral singing. Each year the choir performs frequently on campus, for regional high schools, and for professional organizations. Membership by audition.

113 University Singers Staff
University Singers is open to all students who wish to obtain a knowledge of choral music. The Singers present concerts on campus and for organizations in the area.

114 The Wind Ensemble Mr. Bjerregaard
An organization which performs a wide range of literature for the modern wind ensemble. This group performs both on and off campus. Membership by audition.

115 Men's Glee Club Mr. Frey
Open to all men with musical ability who have had experience in singing. The club makes a concert tour during the spring in addition to filling numerous other engagements and taking an active part in the musical life of the campus.

116 Women's Glee Club Miss Zastrow
Membership in the Women's Glee Club is open to all women of the University and seeks to provide and develop artistic training in ensemble singing. In addition to such traditional campus appearances as the Christmas Chocolate and the Spring Concert, the group sings before a number of high schools throughout the state every year and appears before various local and civic organizations, taking an active part in the musical life of the campus and the community.

118 Campus Chorale Mr. Appel
This choir prepares traditional choral literature for performance on campus and for area high schools. The University Choir and the Campus Chorale are joined for performance of major choral compositions. Membership by audition.
SMALL ENSEMBLES

117 Special Music Ensembles  The Staff

Special instrumental or vocal ensembles may be formed with the permission of the Chairman of the Department of Music. Where a sufficient number of hours of rehearsal per week warrant it, one hour of credit will be granted. String, woodwind, brass, vocal, and percussion ensembles are regularly active.

119 Varsity Choir  Dr. Carter

A highly selective mixed vocal group which specializes in folk music, specialty numbers, and popular arrangements. The repertoire of the group is designed to please all ages and musical tastes with high quality entertainment. Quartets, dance routines, and a Dixieland Combo are included. Membership by audition.

210 Jazz Lab Band  Mr. Davidson

This organization affords the student an opportunity to develop in all areas of modern jazz and dance music. Concerts may be given both on and off campus. The band may also provide music for some athletic events.

211 Studio Accompanying  1 hr.

A laboratory experience in accompanying solo music. This course may serve as a substitute for two semesters of the Public School Music—Keyboard majors eight semester large ensemble requirement. Students will be assigned three to four hours of studio accompanying per week. This course may be repeated for credit not to exceed a total of two semester hours.

219 Madrigal Singers  Staff

Membership is open to a limited number of students who are interested in madrigal singing. This group sings concerts on campus and for other organizations in the area. Membership by audition.

317 Opera Workshop  Mr. Appel

A production experience in the acting, singing, accompanying, and producing of musical theatre. The class is offered each semester and culminates in the performance of an opera or operatic scenes. Open to advanced singers, pianists, and persons interested in production techniques. Admission by personal interview with the instructor.

517 Collegium Musicum  Staff

Performance of early Western music. Open to all students of the University. Required of Music History majors. Additional transcription, arranging, editing, and conducting of early music is required of Music History majors. Graduate students may count not more than two hours of this course for graduation. Membership by audition.
A student may decide to elect philosophy as a major with one of several educational objectives in mind. He may desire to pursue graduate work in philosophy. In addition to teaching philosophy courses at the college level, people with advanced degrees in philosophy may find a place in industry, education, or government in advanced phases of programming and operations research. Many who plan to enter a profession such as medicine, journalism, or law find that philosophy contributes to achieving a depth in analysis and a breadth of view which contribute to their professional education and achievement.

The department offers an Honors Program for outstanding students.

MAJOR AND MINOR REQUIREMENTS

A major in philosophy consists of not more than 40 nor less than 28 hours of course work. Prospective majors are urged to elect Phil. 200 as soon as possible, preferably not later than their third semester. Phil. 200 will not be accepted for credit toward the major if elected after the student has completed his Sophomore year.

Course requirements for the major are: Phil. 300-301 (History of Philosophy), one seminar, and a distribution requirement of one course chosen from three of the four categories: History of Philosophy, Value Theory, Logic and Philosophy of Science, Theory of Knowledge and Reality.

Students planning to do graduate work in philosophy must elect Phil. 220 (Elementary Logic) as soon as possible.

A minor consists of 16 hours. The restriction concerning Phil. 200 applies. The minor includes Phil. 300-301, but there is no distribution requirement. For term courses offered, please see Schedule of Classes.

INTRODUCTORY COURSES

200 Introduction to Philosophy 4 hrs.

An introduction to the nature of philosophy by a consideration of major types of philosophical questions, such as the principles of rational belief, the existence of God, what is the good life, the nature of knowledge, the problem of truth and verification. Selected texts from representative philosophers are used to define the questions and to present typical answers.
201 Introduction to Ethics 4 hrs.
An introduction to the philosophic study of morality. Deals with questions such as: What is the good life? Why should I be moral? What is the meaning of right and wrong?

HISTORY OF PHILOSOPHY

300 History of Ancient Philosophy 4 hrs.
A study of Greek philosophical thought from Thales to Plotinus with an emphasis on Plato and Aristotle.

301 History of Modern Philosophy 4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with emphasis upon Descartes, Liebniz, Locke, Berkeley, Hume, and Kant.

302 American Philosophy 4 hrs.
Philosophical thought in America from colonial times to the present, studied through the works of such thinkers as Jonathan Edwards, Jefferson, Emerson, Thoreau, James, Dewey, Niebuhr, Lippmann, and others. The course will sketch the broad movement of American thought and focus on the five major attitudes of the American mind: Puritan fundamentalism, revolutionary rationalism, Transcendentalism, pragmatic naturalism, and neo-conservatism.

303 Existentialist Philosophies 4 hrs.
A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

304 Analytic Philosophy 4 hrs.
Contemporary philosophical analysis: an evaluative examination of Russell's Logical Atomism, and a study of the rise of ordinary language philosophy as represented by the later Wittgenstein, Ryle, Strawson, Austin, and others.

306 Asian Thought: China 4 hrs.
A study of the major trends of Chinese thought, notably Confucianism and Taoism, with particular emphasis on their relevance to recent developments in China.

307 Phenomenology 4 hrs.
A systematic study of the origins and developments of the phenomenological movement. The writings of several major phenomenologists will be considered, e.g. Husserl, Heidegger, Merleau-Ponty, etc. Prerequisite: Phil. 200.

500 Seminar in Medieval Philosophy 4 hrs.
Medieval philosophical thought from Augustine to Ockham.
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501 Seminar in History of Philosophy 4 hrs.
Topic to be announced. The topic selected may be either the concentrated study of an individual philosopher, or an identifiable philosophical school, or the historical examination of a philosophical problem or concept. Prerequisite: Permission of the instructor.

VALUE THEORY

310 Moral Philosophy 4 hrs.
A study of some basic problems in moral philosophy. Special attention is given to the question of the relationship between the justification of actions, and motives, excuses, intentions, consequences. Contemporary works are emphasized. Prerequisite: 200 or 201.

311 Social Philosophy 4 hrs.
The meaning of justice, human rights, and freedom in the context of the philosophy of law. Questions such as the nature of a legal system, the significance of judicial interpretation, the justification of law and the right to resist, the function of punishment, and the connection of law and morality will be studied. The course will consider the views of historical figures (such as St. Thomas, Hobbes, Thoreau, Marx, and Gandhi) in order to illuminate contemporary problems. Prerequisite: One course from among the following: Phil. 200, General Studies 202 (Man and Society), General Studies 204 (Institutions and Ideologies).

312 Philosophy of Art 4 hrs.
Readings in major contemporary theories of aesthetics. Topics include the creative process, aesthetic experience, standards of criticism, and the role of art in human experience.

510 Seminar in Theory of Value 4 hrs.
An analysis of the value concepts as employed in the general theory of value, or in the value disciplines, ethics, political philosophy, and aesthetics.

LOGIC AND THE PHILOSOPHY OF SCIENCE

220 Elementary Logic 4 hrs.
A study of the rules and techniques of deductive reasoning and the sources of some common fallacies. Topics included are syllogisms and the logic of propositions. Open to freshmen. Students with a background in college mathematics should take Intermediate Logic instead.

320 Intermediate Logic 4 hrs.
Symbolic logic: the logic of propositions, the predicate logic, and an introduction to the theory of identity and definite descriptions. Prerequisite: Phil. 220 or some college mathematics or permission of the instructor. Open to qualified freshmen.
321 Advanced Logic

Continuation of 320. Topics included are identity, definite descriptions, elementary set theory and relations; introduction to axiomatic systems of logic and metatheorems. Prerequisite: Phil. 320 or permission of the instructor.

322 Philosophy of the Social Sciences

A critical examination of the concepts, methods, presuppositions, and conclusions of the social and behavioral sciences. Prerequisite: one course from among the following: Phil. 200, General Studies 202, 203, 204, or any course in the social sciences.

520 Seminar in Logic

Selected topics in one or more of the following areas: foundations of logic and mathematics, meta-mathematics, set theory, modal and many-valued logics, inductive logic, formal semantics and linguistics, the history of logic. Prerequisite: Math 380 or two courses in logic (or their equivalent) or permission of the instructor.

521 Philosophy of Science

An examination of the nature of scientific explanation, inductive reasoning, and probability. Particular problems arising in the physical and social sciences which may be included are the nature of scientific laws and theories, an analysis of the concepts of space, time, and causality, the existence of unobservable entities, and the requirement of simplicity. Prerequisite: One course in logic or its equivalent or permission of the instructor.

THEORY OF KNOWLEDGE AND REALITY

330 Philosophy and Language

A study of the nature and criteria of meaning and truth in the context of different types of discourse such as ethical, religious, or scientific. Prerequisite: Phil. 220 or permission of the instructor.

331 Philosophy of Religion

An examination of the place of religion in human experience with special attention to the problem of whether there is rational ground for validating religious beliefs. This is done through an examination of the nature of religious language and the problem of religious knowledge.

332 Theory of Knowledge

An examination of basic problems concerning knowledge and belief, discussing traditional approaches but stressing recent analyses. Possible topics: skepticism and certainty, knowing and believing, perception, memory, 'a priori' vs. 'a posteriori' knowledge, self-knowledge, knowledge of others.
333 Metaphysics 4 hrs.

A study of basic metaphysical questions, discussing traditional solutions but emphasizing recent approaches. Questions will be selected from such topics as: substances, qualities and relations, universals and particulars, identity, space and time, causation, mind and body, persons, free will.

530 Seminar in Theory of Knowledge 4 hrs.

A detailed study of one or more selected problems in the theory of knowledge. Prerequisite: Phil. 332 or permission of instructor.

531 Seminar in Metaphysics 4 hrs.

A detailed study of one or more selected metaphysical questions. Prerequisite: Phil. 333 or permission of instructor.

498 Independent Study 2–4 hrs.

Independent study is for those students who have attained a degree of competence in philosophy and wish to embark upon a project to be carried out without the usual close guidance of the instructor in the classroom. Independent study may not be elected as a substitute for a regularly scheduled course. Prerequisite: Permission of the instructor with whom the student wishes to work.

Physics

George Bradley, Head

Eugene Bernstein    Gerald Hardie    Nathan Nichols
David Carley        John Herman     Larry Oppliger
Stanley Derby       Dean Kaul       Robert Shamu
Jacob Dewitt        Haym Kruglak    Michitoshi Soga
Ollin Drennan       John Kusmiss    James Zietlow
Allen Dotson

The Department of Physics offers two programs of study leading to a major in physics. One program is the physics major for those preparing for graduate study or professional employment in physics. The second program is designed for those in Secondary Education who desire to major in physics. Both programs require 32 credit hours in physics but differ according to the goals of the representative programs.
The requirements for the physics major in each program are:

**Physics Major**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>Mechanics and Heat</td>
<td>4</td>
<td>210</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>211</td>
<td>Electricity and Light</td>
<td>4</td>
<td>211</td>
<td>Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>212</td>
<td>Atomic and Nuclear Physics</td>
<td>4</td>
<td>212</td>
<td>Atomic and Nuclear Physics</td>
<td>4</td>
</tr>
<tr>
<td>342</td>
<td>Electrical Measurements and Electronics</td>
<td>5</td>
<td>342</td>
<td>Electrical Measurements and Electronics</td>
<td>5</td>
</tr>
<tr>
<td>520</td>
<td>Analytical Mech.</td>
<td>3</td>
<td>360</td>
<td>Introduction to Theoretical Physics</td>
<td>4</td>
</tr>
<tr>
<td>540</td>
<td>Electricity and Magnetism I</td>
<td>3</td>
<td>470</td>
<td>Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>560</td>
<td>Modern Physics I</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

The remaining credit hours necessary to complete the major must be elected from the following list for each program.

**Secondary Education Physics Major**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>352</td>
<td>Optics</td>
<td>4</td>
</tr>
<tr>
<td>470</td>
<td>Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>498</td>
<td>Special Problems</td>
<td>1-3</td>
</tr>
<tr>
<td>541</td>
<td>Electricity and Magnetism II</td>
<td>3</td>
</tr>
<tr>
<td>552</td>
<td>Applied Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>561</td>
<td>Modern Physics II</td>
<td>4</td>
</tr>
<tr>
<td>563</td>
<td>Introduction to Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>598</td>
<td>Selected Topics</td>
<td>1-4</td>
</tr>
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**Secondary Education Physics Major**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>104</td>
<td>Astronomy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(3 hours credit toward major)</td>
<td></td>
</tr>
<tr>
<td>202</td>
<td>Photography</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(2 hours credit toward major)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any physics course numbered above 300 except 308.</td>
<td></td>
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</table>

Suggested courses of study for a student majoring in physics under either program are:

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Math 122</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 102</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Freshman Reading 140</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Western Civilization 100 or 101</td>
<td></td>
<td>4</td>
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<tr>
<td>Physical Education</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Math 123</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Physics 210</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Freshman Writing 116</td>
<td></td>
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<tr>
<td>General Studies</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>(Soc. Science)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
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</tr>
</tbody>
</table>

| Credits | |
|---------||
| 15      | |
| 17      | |
### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Math 222</td>
<td>4</td>
</tr>
<tr>
<td>Physics 211</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120</td>
<td>4</td>
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<tr>
<td>General Studies (Elective)</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
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### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>Physics Major</strong></td>
<td></td>
</tr>
<tr>
<td>Math 223</td>
<td>4</td>
</tr>
<tr>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td>General Studies (Arts &amp; Ideas)</td>
<td>4</td>
</tr>
<tr>
<td>Physics 330</td>
<td>3</td>
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<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Secondary Education</strong></td>
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</tr>
<tr>
<td>Math 223</td>
<td>4</td>
</tr>
<tr>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td>General Studies (Arts &amp; Ideas)</td>
<td>4</td>
</tr>
<tr>
<td>Education 250</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
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### Fifth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Physics 342</td>
<td>5</td>
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<tr>
<td>Physics 520</td>
<td>3</td>
</tr>
<tr>
<td>Math 575</td>
<td>3</td>
</tr>
<tr>
<td>General Studies 304</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Physics 360</td>
<td>4</td>
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<tr>
<td>Math 380</td>
<td>4</td>
</tr>
<tr>
<td>Physics 104</td>
<td>4</td>
</tr>
<tr>
<td>General Studies (Elective)</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

### Sixth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Physics 540</td>
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</tr>
<tr>
<td>Math 576</td>
<td>3</td>
</tr>
<tr>
<td>General Studies 400's</td>
<td>4</td>
</tr>
<tr>
<td>Physics Elective</td>
<td>3, 4</td>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16, 17</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 342</td>
<td>5</td>
</tr>
<tr>
<td>General Studies 304</td>
<td>4</td>
</tr>
<tr>
<td>Education 300</td>
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</tr>
<tr>
<td>Physics 308</td>
<td>2</td>
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<tr>
<td>(Teaching of Phy. Sci.)</td>
<td>1</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
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</table>

### Seventh Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 560</td>
<td>4</td>
</tr>
<tr>
<td>Cognate Elective</td>
<td>3, 4</td>
</tr>
<tr>
<td>General Studies (Elective)</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>5, 6</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>
ANY STUDENT CONTEMPLATING MAJORING IN PHYSICS SHOULD CONTACT THE PHYSICS DEPARTMENT AS EARLY AS POSSIBLE. This is especially true for transfer students from community colleges in regard to transfer credit and course of study. Students will want to take advantage of the advisor system in the department for direction regarding courses, employment opportunities, and continuing education in graduate school.

Any physics major may qualify for departmental Honors in Physics by fulfilling the following requirements:

1. Attain by the end of the semester preceding graduation an accumulated honor point ratio of at least 3.5 (B+) in his physics courses, and an accumulated honor point ratio of 3.0 or more in his other courses.

2. Carry out an advanced project involving either laboratory experience or reading.

3. Give a report on the above project before a Physics seminar.

A Physics Minor consists of 20 credit hours including courses 210, 211, 212. With the consent of the Department, General Physics 110, 111 may be substituted for 210, 211. Those in Secondary Education who minor in physics must also take Physics 360 and either 342 or 352. The remaining hours for others who minor in physics may be selected from any of the courses listed above under Physics Major.

The Physics Department offers seminar and colloquium programs for undergraduate and graduate students. The regular Physics Seminar is a series of talks given bi-weekly, usually by visitors from other institutions, on topics of general interest. Attendance is expected of all physics majors. The Graduate Colloquium is a weekly program for graduate students and physics staff presented usually by WMU physics staff members or visitors from other universities on topics related to their research specialties.

PHYSICS COURSES

108 Physical Science (see General Studies)

100 Acoustics 2 hrs. Fall

In this course are studied the nature and transmission of sound, how sounds are produced with special emphasis on pipes and strings, inter-
ference of waves, the physics of speaking and hearing, pitch, quality, and loudness of sounds, overtones and harmonic series. This course may not be applied toward either a major or minor in physics.

104 Astronomy 4 hrs. Fall, Winter

This non-mathematical course in astronomy is for students who desire an acquaintance with the solar system, with stars and constellations, and with the great galaxies of stars which nature has spread so abundantly throughout the known universe. Three lecture-recitations and two hours of evening observation and laboratory per week are required. Astronomy may count as three hours toward a physics major or minor only for those in the Secondary Education Curriculum.

106 Elementary Physics 4 hrs. Fall, Winter

This course surveys physics from mechanics to modern physics in one semester. It is designed for students in curricula requiring four credit hours at the level of general college physics. The course consists of four lectures and one two-hour laboratory per week.

110 General Physics 4 hrs. Fall, Winter

A general college physics course in the principles and practical application of mechanics, sound, and heat. Required of all medical and dental students. Recommended for students in curricula other than science and students desiring a non-calculus course in physics. The course meets for three lectures, one recitation, and a two-hour laboratory per week.

111 General Physics 4 hrs. Fall, Winter

This course follows 110 and consists of studies in electricity, magnetism, light, and atomic and nuclear physics. Prerequisite: Physics 110.

202 Photography 3 hrs. Fall, Winter

This is an elementary course in the theory and use of photographic materials. It is open to all students but is applicable toward a major or minor in physics only for those in the Secondary Education Curriculum. The course consists of one two-hour lecture-recitation and one two-hour laboratory per week.

210 Mechanics and Heat 4 hrs. Fall, Winter

This first course of a sequence of three in general college physics employing calculus deals with mechanics and heat. It is required of physics majors and recommended for pre-engineering students, majors in other sciences, and future physics teachers. The course consists of 3 lectures, 1 recitation and a two-hour laboratory per week. Prerequisite: Math II concurrently or consent of instructor. Open to qualified freshmen.

211 Electricity and Light 4 hrs. Fall, Winter

This course follows 210 and consists of studies in electricity, magnetism, and light. Prerequisite: Physics 210 or consent of instructor.
212 Atomic and Nuclear Physics 4 hrs. Fall, Winter

This course, with 210 and 211, completes the sequence making up the introductory course in physics with calculus. Students transferring from community colleges with one year of physics will normally be expected to take this course. The course consists of four lecture-recitations per week and 10-12 three-hour laboratory periods per semester. Prerequisite: Physics 211 or consent of instructor.

308 Teaching of Physical Science 2 hrs. Winter

This course deals with problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of selection, maintenance, and construction of apparatus are also considered. Prerequisites: One year of college chemistry and one year of college physics.

330 Thermodynamics and Kinetic Theory 3 hrs. Winter

An intermediate course dealing with the basic principles of thermodynamics and their applications to homogeneous solids, liquids, and gases. Introductory kinetic theory with selected applications is also included. Prerequisite: Physics 211.

342 Electrical Measurements and Electronics 5 hrs. Fall, Winter

This course deals with the theory and practice of electrical measurements and electronic circuits, the more important uses of vacuum tubes and transistors. There are three lectures and two 2-hour laboratories per week. Prerequisite: Physics 211.

352 Optics 4 hrs. Fall

This is a course in geometrical and physical optics in which the main topics discussed are: reflection, refraction, wave motion, interference, diffraction, polarization, double refraction, lasers. Three lectures and one 3-hour laboratory per week. Prerequisite: Physics 212.

360 Introduction to Theoretical Physics 4 hrs. Fall

Selected topics and problems from mechanics, electromagnetic theory and quantum mechanics will be discussed in detail and solutions to some problems will be obtained. In particular the harmonic oscillator, the use of effective potentials, application of boundary conditions in electromagnetism, electromagnetic waves and radiation, and some solutions of the Schroedinger equation will be treated. Enrollment in this course is limited to students in Secondary Education who are majoring or minoring in Physics. Prerequisites: Physics 212, Math III.

470 Historical Developments of Concepts of Physical Science 3 hrs. Winter

This course, which is designed for the science major at the junior-senior level, considers the logic and interpretation of contemporary physical problems through a study of their historical development. Representative of discussed topics are: physical characteristics of matter,
conservation and symmetry, casualty, field representation versus particle representation, relativity and role of mathematics in explanation. (Although oriented toward philosophy and history this course is primarily a course in physics and it will emphasize care and depth in its analyses.) Prerequisite: Physics 212 and junior status as a science major.

498 Special Problems 1-3 hrs. Fall, Winter

In this course a student works on a laboratory project or a reading project under the direction of a staff member. Prerequisite: Consent of instructor.

520 Analytical Mechanics 3 hrs. Fall

The topics include statics, dynamics of a particle and of a rigid body. Lagrange's and Hamilton's equations are introduced. Vector methods are used frequently. Prerequisites: Physics 212, Math III.

540 Electricity and Magnetism I 3 hrs. Winter

This is a theoretical course providing a thorough investigation of electric and magnetic fields. The applications of the theorems of Stokes and Gauss are emphasized, and Maxwell's equations are developed. Prerequisites: Physics 212, Math IV.

541 Electricity and Magnetism II 3 hrs.

This course is a continuation of 540 and is an elective for majors wishing advanced work in field theory. Maxwell's equations and their applications to topics such as time-dependent fields, wave guides, and radiation will form the principal topics of the course. Prerequisite: Physics 540.

552 Applied Spectroscopy 3 hrs. Winter

This is a combined class and laboratory course on methods of spectrographic analysis. The topics studied include the history of spectroscopy, the origin of line spectra, spectrographic instruments, and modern techniques of qualitative and quantitative analysis. Prerequisite: Physics 212 or consent of instructor.

560 Modern Physics I 4 hrs. Fall

This course includes an introduction to quantum mechanics with selected applications, the one-electron atom, radiative transitions, atomic shell structure, and atomic and molecular spectroscopy. A knowledge of elementary differential equations is assumed. Recommended for seniors. Prerequisites: Physics 520, or consent of instructor.

561 Modern Physics II 4 hrs. Winter

The first part of this course covers quantum statistics and an introduction to solid state physics. The latter part is a study of nuclear physics including properties of nuclei, nuclear reactions and models, and the particles of physics. Prerequisite: Physics 560.
563 Introduction to Solid State Physics 3 hrs. Winter

This course is designed to acquaint the student with modern theories of the structure of solids. Included in the course are discussions on the symmetry properties of solids; bond structure; electrical and thermal properties of insulators, semi-conductors and metals; and theories of magnetism. Attention will be given to both theoretical and experimental aspects of these topics. Prerequisite: Consent of instructor.

572 Techniques in the Use of Radiation and Radioisotopes 2 hrs. Winter

Increasing use of radioisotopes and radiation in research in biology, chemistry and physics make it necessary to provide formal training for graduate students and advanced undergraduates in the principles and practices of safe radioisotope use. The course is interdisciplinary in content and consists of one lecture and one laboratory per week. It does not count toward a physics major or minor. Prerequisites: one year of college chemistry and one year of college physics.

598 Selected Topics 1–4 hrs. Fall, Winter

This course affords an opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Prerequisite: Consent of the instructor.

The following courses are for graduate students only and may be selected only after consultation with the physics graduate adviser.

622 Quantum Mechanics I 3 hrs. Winter

This course is designed to provide a foundation of fundamental techniques of calculation for more advanced work in physics and chemistry of atoms, molecules, nuclei and solids. An attempt will be made to provide an understanding of the principles of the subject through the Schroedinger-Heisenberg equations. Discussing the simple and representative systems of the simple harmonic oscillator and the one electron atom, the course will confine itself almost solely to the non-relativistic approximation.

623 Quantum Mechanics II 3 hrs.

This course is a continuation of 622. It employs state-vector formulation to study several problems of general interest such as time-dependent perturbation theory, systems of identical particles, introductory relativistic quantum mechanics. Prerequisite: Physics 622.

624 Statistical Mechanics 3 hrs. Winter

This course deals with concepts of probability and statistics as applied to physics with particular emphasis on the kinetic theory of gases. Topics covered will include Laplace's formula, Stirling's formula, normal distribution law, Maxwell's distribution of velocities, canonical ensemble, and Gibbsian ensemble.
School of Liberal Arts and Sciences

630 Classical Mechanics 3 hrs. Fall
This course deals with the Hamiltonian method of mechanics and develops the variational principles and the equations of Lagrange. Examples of point mass and rigid body problems are examined by these methods. The principles of relativity are introduced by establishing the Lorentz invariance requirement for the Hamiltonian. Canonical transformations, angle and action variables, and theory of small vibrations, are introduced in a way that makes the historical bridge between classical and quantum mechanics.

660 Nuclear Physics 3 hrs. Fall
This course emphasizes experimental low-energy nuclear physics and covers the following areas: basic properties of nuclei, the two body problem, scattering, electromagnetic decay of nuclear levels, and nuclear models.

662 Electricity and Magnetism 3 hrs. Fall
This course deals with static and time dependent electromagnetic fields and their interaction with matter. Radiation, wave motion, scattering, and relativity, are several of the topics in the latter part of the course. Vector analytical notation is used exclusively.

Political Science

Roy Olton, Chairman

Samuel I. Clark  Helenan S. Lewis  Chester B. Rogers
Kenneth A. Dahlberg  Richard L. McAnaw  Ernest E. Rossi
Alan C. Isaak  James E. Nadonly  Leo C. Stine
Robert W. Kaufman  Claude S. Phillips, Jr.  Frank L. Van Voorhees
C. I. Eugene Kim  Jack C. Plano  Howard A. Wolpe
George Klein  William A. Ritchie  Lawrence Ziring

Courses in the Department are designed to prepare a student to: (1) become a functioning citizen; (2) become a teacher of government or civics; (3) become a governmental employee or officer; (4) understand the part government plays in everyday business or other activities; (5) develop sound methods of investigation and reflection as well as the ability to evaluate political information critically; (6) understand the role which individuals and organized groups can play in the political process; and (7) appreciate the relationship of the study of government and public affairs to other social sciences.

A major in Political Science consists of a minimum of 30 semester hours of work in the Department. A minor consists of 20 semester hours in the Department. The following are required courses for majors and minors:
The major core requirements are:
200 National Government
250 International Relations
340, 341, 342, or 343 (choose one) Comparative Politics
One course in Theory (except 590 and 591)

The additional courses taken by the student to complete his 30 hour major may not include more than 16 hours in any one field (including the core requirement in that field).

A minor shall take a minimum of one course in two of the following fields:
American Political System
International Relations
Foreign and Comparative Political Systems
Political Theory and Methodology.

Requirements may be waived with the written permission of the Chairman of the Department.

The Department of Political Science cooperates with the School of Business in offering a curriculum in Public Administration designed for students planning careers in the public service or in other employment where their work will bring them into continuing contact with governmental agencies and activities. The student may take a Bachelor of Arts Degree with a Major in Political Science and a Minor in Business, or a Bachelor of Business Administration Degree consisting of a Business Administration Major plus a Minor in Political Science. For further details see page 180 under Business Administration.

A program of graduate study leading to the Degree of Master of Arts is offered by the Political Science Department. For information on courses offered, see the Graduate Bulletin.

The Honors Program in Political Science provides an opportunity for students to earn the Bachelor's degree with Honors in Political Science. To be eligible, a student must have sophomore standing, a better than "B" average, and a willingness to do original and independent work. Students interested in the program should consult the departmental Honors Adviser.

The Institute of Public Affairs is involved in a number of activities designed to promote research. In this connection it strives to (1) contribute to the knowledge of political science; (2) encourage faculty members to participate in research and discussion; (3) train graduate and undergraduate students through participation and research; (4) communicate to interested public officials and citizens the knowledge of the academic community; and (5) make available data processing equipment for training and research. For further information see Chester B. Rogers, Director, Institute of Public Affairs.
AMERICAN POLITICAL SYSTEM

200 National Government 3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions.

202 State and Local Government 4 hrs.
A study of the institutions, the problems, and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

204 Politics of Race 3 hrs.
Examines the sources of racial conflict and the dominant and alternative models of American social organization. Special emphasis is placed on the psychology of racial conflict in the American political system.

300 Urban Politics in the United States 3 hrs.
A study of those factors having an impact on the governing of American cities, including social and economic conditions in the cities, the organization of local political systems, and the actions of the state and federal governments. The city will be viewed as a center of economic and social problems that necessitate political activity and as a laboratory for the advancement of general knowledge of politics.

304 Political Perspectives of Black America 3 hrs.
Analyses the development of black political perspectives and activities in the United States, with particular reference to the contemporary period. Prerequisite: 204.

310 Political Parties and Pressure Groups 4 hrs.
An introduction to the theories and practice of politics. The course considers the nature of politics, organization and functions of political parties, and the role of pressure groups on policy development. Parties and groups are related to the legislative process and to the operation of the political system. Prerequisite: Junior standing.

312 Public Opinion and Voting Behavior 3 hrs.
Introduction to the theory of public opinion and techniques for its measurement. The role of mass communication and propaganda in influencing public opinion and public policy. A study of public opinion and other factors entering into the voting behavior of citizens. Prerequisite: Junior Standing.

320 The American Judicial Process 4 hrs.
Analysis of judicial systems, functions and procedures with attention to the role of judges, counsel, juries, interest groups and other factors in the judicial process.
415

Political Science

330 Introduction to Public Administration 3 hrs.
An introductory course in the administrative process in the public service. Special attention given to the environment and politics of administration, the role of the chief executive and the legislature. Detailed consideration of personnel and financial problems of administration.

332 The Chief Executive 3 hrs.
A study of the increasing importance of the chief executive in American governments at all levels. The roles, responsibilities, and powers of the chief executives are analyzed and the centrality of the executive in the political process is stressed.

504 Making of Public Policy in the U.S. 3 hrs.
A study of the formation of public policy at the local, state, and national levels with emphasis on the impact of decision processes upon policy outcomes.

506 Problems of American Government 3 or 4 hrs.
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. Topics will vary from semester to semester and students may repeat the course.

512 Legislative Process 3 hrs.
A study of the politics of legislative bodies. Attention is given to theories and practice of legislative behavior, representative systems, and democratic procedures in law making. The role of political parties and interest groups is emphasized. The executive, the bureaucracy and the courts are studied as influences on the development of public policy. Prerequisite: 310.

520 Constitutional Law 3 hrs.
Study of leading American constitutional principles as they have evolved through major decisions of the U.S. Supreme Court. Emphasis on judicial review, federalism, separation of powers, commerce and taxation.

522 Civil Liberties and Civil Rights 3 hrs.
Study of freedom of expression, religious liberty, rights of defendants, protection against discrimination. The social, political and legal frameworks of liberty are considered.

524 Judicial Behavior 3 hrs.
Role of the judiciary as policy maker. Study of judicial behavior and decision making processes utilizing modern research tools for analysis.

526 Administrative Law and Public Regulation 3 hrs.
A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant
aspects of the social and economic life of the nation. Special attention is paid to the extent of governmental regulation and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: 200 or a course in Economics.

530 Problems in Public Administration 3 or 4 hrs.
Consideration of issues and problems of current interest in the field of public administration. The course is intended to provide advanced work for undergraduates and to serve as an introduction to the field for graduate students without previous training in public administration.

532 The Bureaucracy 3 hrs.
An analysis of the role of public bureaucracies in the decision process of government.

534 Administrative Theory 3 hrs.
A study of descriptive theories of organizational and administrative behavior relevant to governmental administrative agencies. Theories of complex formal organizations, decisional theories and systems theories will be analyzed.

530 Seminar: National Politics 3 hrs.
Research and study in selected topics in National politics. Topics will vary from semester to semester and students may repeat the course.

600 Seminar: State Politics 3 hrs.
Research and study of selected topics in state politics. Topics will vary from semester to semester and students may repeat the course.

602 Seminar: Urban Politics 3 hrs.
Examination of the literature on American urban politics and application of this literature to the development or refinement of some theories of community political behavior. The city will be used as a laboratory for the advancement of theoretical and empirical knowledge of politics.

620 Seminar: Public Law 3 hrs.
Study and research of major topics of interest in constitutional law, civil liberties or administrative law. Topics will vary from semester to semester and students may repeat the course.

622 Seminar: The Judiciary 3 hrs.
Study and research of major topics of interest in the judicial process, judicial behavior, decision making and judicial systems. Topics will vary from semester to semester and students may repeat the course.

630 Seminar: Public Administration 3 hrs.
Study and research of selected major topics in public administration. Independent reports will be made. Subject matter will vary and the course may be repeated.
FOREIGN AND COMPARATIVE POLITICAL SYSTEMS

340 European Political Systems 4 hrs.
Consider the organization, political behavior and decision-making process of the major countries of Europe. Political trends and forces challenging and reshaping democratic institutions are examined.

341 African Political Systems 4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, are examined in detail. Major political problems, dealing with political modernization are analyzed.

342 Asian Political Systems 4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes are examined in detail. Major political problems, country differences, and various paths to modernization, are analyzed.

343 Latin American Political Systems 4 hrs.
A systematic survey of the social, economic, and political characteristics of the area. Political culture, institutions and processes are examined in detail. Intra-regional differences and major political problems are analyzed.

540 Western Democratic Systems 3 hrs.
A comparative study of the established democracies of North America, Western Europe, and older Commonwealth states. Examines the conflict in western democracies between traditional ideology, structures, procedures and contemporary conditions. Analyzes comparatively and theoretically the constitutional and political party systems, political culture and behavior.

542 Administration in Developing Countries 3 hrs.
A consideration of the relation of administrative structure and technique to the political, economic and social problems of the developing countries. Special attention to the role of the bureaucracy in the political system and the nature of, and obstacles to, administrative modernization.

543 Politics and Institutions of South Asia 3 hrs.
Twentieth century experiments in Asian democracy are analyzed in India and Pakistan. Consideration is given to historical origins and contemporary problems. Particular emphasis is on the dynamics of the political process, the place and nature of ideologies, patterns of leadership, the quest and adaptability of political parties, the quantitative and qualitative aspects of articulate interests, the limits of political communication, methods of decision-making the implementation of rules and the available devices for conflict resolution. Prerequisite: 342.
544 The Military and Political Systems 3 hrs.
Old states as well as new ones are confronted with problems of a military nature which have an important bearing on the operation and development of their respective political systems. This course is designed to study the role of the military in advanced and less developed countries. Attempts will be made to identify the advantages and disadvantages, the strengths and weaknesses of the military nexus. Organized as a pro-seminar. Prerequisite: Course in 340 series.

545 Theories of Political Development 3 hrs.
Examines various theories of political development and analyzes their relevance to both underdeveloped and modernized states. Considers such problems as national integration, political socialization and communication. Organized as a pro-seminar. Prerequisite: Course in 340 series.

546 Governments of the Soviet Union and Eastern Europe 4 hrs.
The governmental organization and political structure of the Soviet Union and the States of Eastern Europe. Special attention is directed to the Communist Party and its relationship to the organization of the state. The social and economic bases of the current system are stressed. Prerequisites: Junior standing.

547 Political Modernization of Japan and Korea 3 hrs.
Intensive analysis of the political systems of Japan and Korea with developmental perspective. Their different political styles will be compared. Their different rates of development will be compared in terms of performance of the various political functions. Prerequisite: 342.

548 Asian Communism 3 hrs.
Compares several communist states and communist parties in non-communist states of Asia in terms of their ideologies, revolutionary tactics, goals and achievements. Organized as a pro-seminar. Prerequisite: 342 or equivalent.

549 Problems of Foreign Political Systems 3 or 4 hrs.
Course will consider selected problems of the governments and political systems of Western and Eastern Europe, Asia, Africa, and Latin America. The specific problems, topics, and countries to be studied will be announced each semester. May be repeated.

640 Seminar: Foreign Political Systems 3 hrs.
Study and research on major topics dealing with the political systems of selected countries. Independent research and seminar presentations for each student are stressed. The country to be studied may be located in Europe, Asia, Africa or Latin America, and will be announced each semester. May be repeated.

642 Seminar: Cross-National Political Analysis 3 hrs.
Cross-National study and research on major topics of comparative interest. Independent research and seminar presentations for each student
are stressed. The topic to be studied will be announced each semester. May be repeated. Prerequisite: Any course in 340 or 540 series or equivalent.

644 Seminar: Political Modernization 3 hrs.
Focusing on the developing areas and using an interdisciplinary approach, the process of political modernization is examined in selected countries or topically on a cross-national basis. The topic to be studied will be announced each semester. Each student will conduct independent research.

INTERNATIONAL RELATIONS

250 International Relations 4 hrs.
A study of the nature of the international community and the forces which produce cooperation and conflict. Particular attention is given to analyzing power in terms of its acquisition and uses.

350 American Foreign Policy 4 hrs.
An analysis of the institutions and processes by which the American people and their government determine and seek to achieve the national interest of the United States in the international community. Prerequisites: 200, 250 or equivalent.

354 International Organization 4 hrs.
Explores systems, methods, and agencies developed by states for meeting their common problems. Examines also the legal relations of nations in war and peace, international legal theory and institutions. Emphasis is placed on the United Nations and regional political, military, and economic agencies. Prerequisite: 250.

552 Studies in International Relations 3 or 4 hrs.
Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. Course may be repeated. Prerequisite: 250 or equivalent.

553 United Nations 3 hrs.
A study of the United Nations in action. Attention is focused on significant political problems confronting world organization, i.e., functional and dysfunctional aspects of the UN Charter; nationalism vs. internationalism within the UN; conflict resolution and UN peace-keeping efforts; specific UN accomplishments in maintaining a dynamic international equilibrium; UN weaknesses and the future of world organization. Prerequisite: 250 or equivalent.

555 International Law 3 hrs.
The theory, sources, development, and general principles of international law, and the relationship of law to the dynamics of international politics. Decisions of international and municipal tribunals and the prac-
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ticides of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties and neutrality will also be discussed. Prerequisite: 250 or equivalent.

556 Comparative Foreign Policy 3 hrs.
Analysis of foreign policy theories and practices in selected nations. Particular emphasis is given to the interactive process of conflict and competition, cooperation and compromise in the pursuit of national interests. Prerequisite: 350 or equivalent.

557 Studies in American Foreign Policy 3 or 4 hrs.
The course treats American Foreign Policy as a process and emphasizes both policy formation and policy execution through the vehicle of specific case problems, such as: the nature and role of foreign policy, Congress and foreign policy, the role of the military, the United Nations and American foreign policy, and changing American attitudes on the objectives of foreign policy. Prerequisite: 350 or equivalent.

650 Seminar: International Relations 3 hrs.
Study and research on a common topic of current international, political, organizational, or legal significance. Individual papers and reports will be presented. Prerequisite: A 500-level international relations course, or equivalent.

651 Seminar: Foreign Policy 3 hrs.
Study and research on a common topic of American or comparative foreign policy significance. Individual papers and reports will be presented. Prerequisites: 350, a 500-level course in international relations, or equivalent.

652 Seminar: Case Studies in Decision Making 3 hrs.
An analysis of specific international disputes. The course will consider how statesmen and diplomats negotiate, why certain instruments are employed in one situation and not another, and what factors are vital in given cases. Efforts will be made to understand the consequences of decisions and their continuing effect on related policy-problems. Prerequisite: a 500-level international relations course.

POLITICAL THEORY AND METHODOLOGY

360 Introduction to the History of Political Theory I 3 hrs.
A survey of significant political theories and ideologies. Emphasis is placed on post-Socratic Greek theories, and the characteristic theories of the Medieval, Renaissance, and Reformation periods. Prerequisite: Junior standing.

361 Introduction to the History of Political Theory II 3 hrs.
A survey of significant political theories and ideologies. Emphasis is
placed on the Enlightenment, the Nineteenth and early Twentieth Centuries. Prerequisite: Junior standing.

366 Introduction to the Scope and Methods of Political Science 3 hrs.
A consideration of the nature and scope of political science and various approaches to the study of politics and their methods, primarily the application of scientific methodology to political inquiry.

560 Comparative Political Ideology 4 hrs.
A consideration of the concept of ideology and significant classical and contemporary ideologies, including their nature, causes and functions in various political systems.

561 Contemporary Political Theory 4 hrs.
An examination of contemporary theories of politics. An attempt will be made to delineate the most important recent developments in the construction of theories of political systems.

562 Modern Democratic Theory 3 hrs.
The course consists of two parts. First, a consideration of traditional democratic theories, and the criticism of these theories emanating from modern elitists such as Mosca, Michels, Pareto and Ostrogorski. Second, an analysis of the attempts by contemporary economists, political scientists, and sociologists to meet these criticisms by revising democratic theory.

563 Theories of Revolution 4 hrs.
Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

564 Political Inquiry and Analysis 4 hrs.
Analysis of the application of scientific method to the study of political phenomena; problems of concept formation; law; cause and explanation; theory construction; the place of values in political inquiry.

590 Research Methods 3 hrs.
Study of the formulation of research questions, the design of research, the methods of data collection, and the procedures for analyzing data concerning political institutions and behavior. The course is primarily designed for graduate students in political science, but it will open to undergraduates planning to pursue graduate studies. Undergraduates should obtain the permission of the instructor to enter the course.

660 Seminar: Political Thought 4 hrs.
An analysis of problems and subject matter considered by political philosophers and significant to the social sciences. Various issues arising in political thought, certain periods in history, or regions of the world may be considered. Subject considered will vary and the course may be repeated.
SPECIAL STUDIES

490 Political Science Honors Seminar 3 hrs.
An undergraduate seminar for Honor students and others admitted by consent of the Departmental Honors Committee. The content of the seminar varies and will be announced in advance. May be repeated. Prerequisite: Admission by invitation by Departmental Honors Committee.

598 Studies in Political Science 1 to 4 hrs.
An opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Prerequisite: Approval of Chairman of Department or instructor.

Psychology

Paul Mountjoy, Chairman

Douglas Anger
Eston J. Asher
Howard Farris
Frank A. Fatzinger
Fred Gault
Robert Hawkins
Wade Hitzing
Bradley Huitema

Ronald Hutchinson
Fred Keller
Louise R. Kent
Neil D. Kent
Chris Koronakos
Stanley Kuffel
David O. Lyon
Richard Malott

Jack Michael
John Nangle
Malcolm Robertson
Richard Schmidt
Robert M. W. Travers
Roger Ulrich

There are three majors in the Department: (a) a basic (pre-graduate) major, (b) a general major, and (c) a secondary school teaching major. All majors are required to complete the departmental core curriculum which consists of (a) a minimum of 24 hours in psychology including 150 (Psychology I), 160 (Psychology II), 250 (Behavior Modification I), 260 (Behavior Modification II), 350 (Analysis of Behavior I), 360 (Analysis of Behavior II), 450 (Methodological Foundations of Psychology I), and 460 (Methodological Foundations of Psychology II), and (b) a minimum of 8 hours of mathematics including 200 (Analysis and Applications) and 260 (Elementary Statistics) or 122 (Mathematics I), 123 (Mathematics II) and 260 (Elementary Statistics).

The basic major is designed for students who plan to pursue graduate study in psychology. Students in this program are required to complete, in addition to the departmental core curriculum, (a) Engineering and Technology 240 (Electrical Circuits) and 241 (Electronic Circuits) or Physics 110 (General Physics) and 111 (General Physics) and (b) the requirements for the B.A. degree in the General Curriculum or the Liberal Arts Curriculum with a minor in biology, chemistry, mathematics, or physics. Students are advised to choose French, German, or Russian to satisfy their language requirements and to include Biology 219 (Systemic
Psychology

Physiology), Mathematics 106 (Intro. to Computers I) and 107 (Intro. to Computers II), and Philosophy 220 (Elementary Logic) and 521 (Philosophy of Science) in their program of study. Students who complete this program will satisfy the major requirements for the Bachelor of Arts degree.

The general major is designed for students whose primary goal is a liberal education terminating with the baccalaureate degree. Students satisfy the requirements of this program by completing the departmental core curriculum and the requirements specified in the General Curriculum. Students who complete this program will satisfy the major requirements for the Bachelor of Science degree. Although the basic major is designed to provide an optimal preparation for graduate study in psychology, students may do graduate work with only the general major as preparation. Students who are unable to complete all of the requirements for the basic major are encouraged to complete as many of them as possible.

The secondary school teaching major is designed to train secondary school teachers of psychology as behavioral scientists. Students who elect this program are required to complete, in addition to the departmental core curriculum, (a) Psychology 505 (Teaching Psychology in the Secondary School) and (b) a secondary school teaching minor in biology, chemistry, mathematics, or physics.

PSYCHOLOGY MAJORS UNABLE TO SEQUENCE PROPERLY THE REQUIRED COURSES INTO THEIR SCHEDULE SHOULD OBTAIN PERMISSION FROM THE DEPARTMENTAL ADVISER TO TAKE SOME COURSES CONCURRENTLY.

Students with the specified prerequisites (see Honors Courses) are encouraged to enroll in the honors sections offered concurrently with the core courses.

Students in any of the above programs may graduate with Departmental Honors by completing a minimum of 8 hours of Honors Sections with a grade of A. Psychology 451 (Methodological Foundations of Psychology I—Honors Section) and 461 (Methodological Foundations of Psychology II—Honors Section) must be included in the eight hours.

A minor in psychology (for other than business or education students) consists of Psychology 150 (Psychology I), 160 (Psychology II), 250 (Behavior Modification I), 260 (Behavior Modification II), and 350 (Analysis of Behavior I). A minor for business students consists of fifteen hours including Psychology 150 (Psychology I), 160 (Psychology II), 250 (Behavior Modification I), and 260 (Behavior Modification II).

A teaching minor in Psychology consists of Psychology 150 (Psychology I), 160 (Psychology II), 250 (Behavior Modification I), 260 (Behavior Modification II), 350 (Analysis of Behavior I), and 505 (Teaching Psychology in the Secondary School) or 517 (Psychology of Learning for Teachers). Note: 380 (Psychological Testing in Education) may be substituted for either 250 or 260.
CORE COURSES

150  Psychology I: An Introduction to the Science of Behavior  
     3 hrs. Fall, Winter

An introduction to the basic principles of the science of behavior of organisms, their biological and environmental bases, and the application of these principles to the understanding, prediction, and control of behavior. This course consists of one lecture hour, two seminar hours, and two laboratory hours per week. Open to freshmen.

160  Psychology II: Personality and Developmental Psychology  
     3 hrs. Fall, Winter

The application of the principles of behavior in the analysis of complex behavior. An emphasis is placed on the topics of personality and developmental psychology. Elementary quantitative concepts needed to understand psychological literature will also be presented. Prerequisite: Psychology 150 (or 200 or 201) or permission of the instructor.

250  Behavior Modification I: Abnormal Behavior  3 hrs. Fall, Winter

An introduction to the modification of behavior. Particular attention is paid to variables related to the development, physiological bases, maintenance and modification of abnormal behavior. In addition an introduction to research methodology and selected basic research areas will be considered. Prerequisite: Psychology 160 (or 205, 220, or 270) or permission of the instructor.

260  Behavior Modification II: Normal Behavior  3 hrs. Fall, Winter

A study of normal human behavior. The subject matter of educational and social psychology will be emphasized. Concepts of experimental methods and philosophy of science will also be considered. Prerequisite: Psychology 250 or permission of the instructor.

350  Analysis of Behavior I: Stimulus Control of Behavior  
     5 hrs. Fall, Winter

An analysis of the stimulus control of both operant and respondent behavior. Areas covered are sensory processes, verbal behavior, imitation, concept formation, sensory scaling, perception, generalization, discrimination and psychophysics. Emphasis is placed on experimental methodology. This course consists of five laboratory hours and one lecture hour per week. Prerequisite: Psychology 260 or permission of the instructor.

360  Analysis of Behavior II: Contingencies and Consequences  
     5 hrs. Fall, Winter

A study of the various approaches to response measurement, experiment methodology, and theoretical interpretations of data in the areas of classical conditioning and operant behavior. This course consists of five laboratory hours and one lecture hour per week. Prerequisite: Psychology 350 or permission of the instructor.
450 Methodological Foundations of Psychology I: Principles
3 hrs. Fall, Winter

Interpretation and application of descriptive and inferential statistical techniques necessary in the understanding of data in behavioral research. Other topics will be the methodology of the experimental analysis of the behavior of individual organisms, the methodology of research with groups, non-statistical quantitative techniques, and philosophy of science. Prerequisites: Psychology 360 and Mathematics 260 or permission of the instructor.

460 Methodological Foundations of Psychology II: Applications
3 hrs. Fall, Winter

Applications of the concepts learned in Psychology 450. Prerequisite: Psychology 450 or permission of the instructor.

ADVANCED COURSES

505 Teaching Psychology in the Secondary School 3 hrs. Fall, Winter

Class discussions, laboratory experiences and field work concerned with the teaching of psychology in high school. Prerequisite: Permission of the instructor.

512 Physiological Psychology
3 hrs. Fall, Winter

A survey of the relationships of physiological and behavioral processes. Lecture and laboratory. Prerequisite: Permission of the instructor.

513 Animal Behavior
3 hrs. Fall, Winter

A phylogenetic approach to the study of behavior. Lecture and laboratory. Prerequisite: Permission of the instructor.

516 Conditioning and Learning
3 hrs. Fall, Winter

A study of the various approaches to response measurement, experimental methodology, and theoretical interpretations of data in the area of conditioning and learning. Prerequisite: Permission of the instructor.

518 Sensory and Perceptual Processes
3 hrs. Fall, Winter

A survey of sensory and perceptual phenomena with an emphasis on vision and audition. Lecture and laboratory. Prerequisite: Permission of the instructor.

535 Instrumentation in Psychology
3 hrs. Fall, Winter

A survey of problems in response measurement in experimentation. Lecture and laboratory. Prerequisite: Permission of the instructor.

542 Human Factors in Engineering
3 hrs. Fall, Winter

A survey of research on the adaptation of equipment, products, and environment to man's use. Prerequisite: Permission of the instructor.

574 Experimental Social Psychology
3 hrs. Fall, Winter

Methodology of research with groups with emphasis on experimental
design and application. Lecture and laboratory. Prerequisite: Permission of the instructor.

595 History of Psychology 3 hrs. Fall, Winter
The historical and philosophical foundations of contemporary American psychology.

SEMINARS AND INDEPENDENT STUDY

397 Seminar in Contemporary Problems 1-5 hrs. Fall, Winter
Survey and discussion of selected topics in contemporary psychology. Prerequisite: Permission of instructor. May be repeated for credit.

398 Independent Study 1-5 hrs. Fall, Winter
This course provides an opportunity for independent reading and/or research under the direction of a faculty member. Prerequisite: Permission of instructor. May be repeated for credit.

597 Topical Seminar 1-5 hrs. Fall, Winter
A survey in depth and discussion of a research topic of current interest. Prerequisite: Permission of instructor. May be repeated for credit.

598 Special Projects in Psychology 1-5 hrs. Fall, Winter
Prerequisite: Permission of instructor. May be repeated for credit.

HONORS COURSES

151 Psychology I: Honors Section 2 hrs. Fall, Winter
This course is designed to provide an opportunity for more depth in reading, laboratory work, and report writing. Emphasis will be placed on the theoretical aspects of psychology. This course consists of three laboratory hours. Prerequisites: The student must be concurrently enrolled in Psychology 150. Enrollment by permission of the Honors College only.

161 Psychology II: Honors Section 2 hrs. Fall, Winter
Similar to Psychology 151. This course consists of five laboratory hours. Prerequisites: Students enrolling in this course must have completed Psychology 150 (or 200 or 201) with a grade of A, be concurrently enrolled in Psychology 160, and obtain permission of the instructor.

251 Behavior Modification I: Honors Section 2 hrs. Fall, Winter
This course will consist of laboratory experience in the modification of abnormal behavior with human subjects. Prerequisites: In order to enroll in this course a student must have completed Psychology 160 (or 205, 220, or 270) with a letter grade of A, be concurrently enrolled in Psychology 250, and obtain permission of the instructor.

261 Behavior Modification II: Honors Section 2 hrs. Fall, Winter
This course consists of five laboratory hours per week in the modification
of normal behavior. Prerequisites: A student enrolled in this course should have completed Psychology 250 with the grade of A, be concurrently enrolled in Psychology 260, and obtain permission of the instructor.

351 Analysis of Behavior I: Honors Section 2 hrs. Fall, Winter

This course consists of two seminar hours and one lecture hour per week. Students enrolled in this course must have completed Psychology 260 with the grade of A, be concurrently enrolled in Psychology 350, and obtain permission of the instructor.

361 Analysis of Behavior II: Honors Section 2 hrs. Fall, Winter

This course consists of two seminar hours and one lecture hour per week. Prerequisites: A student enrolled in this course should have completed Psychology 350 with the grade of A, be concurrently enrolled in Psychology 360, and obtain permission of the instructor.

451 Methodological Foundations of Psychology I: Honors Section 2 hrs. Fall, Winter

This course consists of five laboratory hours. Prerequisites: A student enrolled in this course should have completed Psychology 360 with a grade of A, be concurrently enrolled in Psychology 450, and obtain permission of the instructor.

461 Methodological Foundations of Psychology II: Honors Section 2 hrs. Fall, Winter

This course consists of five laboratory hours. Prerequisites: A student enrolled in this course must have completed Psychology 450 with a grade of A, be concurrently enrolled in Psychology 460, and obtain permission of the instructor.

SPECIAL COURSES (Three hours of introductory psychology is a prerequisite to all special courses.)

205 Intermediate Psychology 5 hrs. Fall, Winter

This course is designed as an orientation for students who have had one or more psychology courses at institutions other than Western Michigan. An emphasis is placed on the basic principles of behavior and their applications to personality and developmental psychology. Elementary quantitative concepts needed to understand psychological literature will also be presented. This course is not open to students who have had Psychology 150 or 160. Prerequisite: One psychology course outside this department.

380 Psychological Testing in Education 3 hrs. Fall, Winter

An introduction to psychological testing with an emphasis on educational applications.

381 Psychological Testing in Business and Industry 3 hrs. Fall, Winter

An introduction to psychological testing with an emphasis on applica-
System Selection and Placement 3 hrs. Fall, Winter
Application of testing procedures to selection and placement problems in industry. Prerequisite: Psychology 150.

517 Psychology of Learning for Teachers 3 hrs. Fall, Winter
An introduction to the basic principles of learning with particular emphasis on application. (A student may not receive credit for both 516 and 517)

530 Statistics for Education 3 hrs. Fall, Winter
An introduction to basic procedures and concepts. (Not open to psychology majors)

540 Industrial Psychology 3 hrs. Fall, Winter
Application of psychological principles to industry. An examination of employee selection, occupational analysis and classification, training, evaluation of performance, supervision, and working conditions.

580 Testing and Measurement in Education 3 hrs. Fall, Winter
Educational applications of testing and measurement procedures.

581 Personnel Selection and Placement 3 hrs. Fall, Winter
Application of testing procedures to selection and placement problems in industry. Prerequisite: Psychology 380 or 381 and one of the following:

- Mathematics
- Psychology
- Psychology
- Educational Leadership

- General Business
- General Business
- Sociology
- 676

Religion

E. Thomas Lawson, Head
Nancy Falk
Otto Grundler
Byron Earhart
Guntram Bischoff
Maynard Kaufman
Jerome Long
Rudolf Siebert

The study of religion in a public university is universal in scope and theoretical in intent. It is universal rather than parochial because the course offerings are not confined to any particular religious tradition, such as the Judeo-Christian heritage peculiar to Western culture, but are attempts to consider the religious experiences and expressions of man-
Religion

kind. It is theoretical rather than practical in that students are challenged to learn and think about religion both critically and constructively. There is no explicit attempt to make the students more religious.

Since religion is a basic mode of experiencing, expressing, and appropriating humanness, the study of religion can contribute to an appreciative awareness of that humanness. Thus its purpose is generally humanistic, at least as far as the education of undergraduates is concerned. The various courses which comprise the curriculum in Religion can serve to deepen the student's self-understanding both within the context of Western culture and in the light of cross-cultural perspectives. This humanistic emphasis should not, however, obscure the fact that courses in Religion can be useful to students who wish to continue the study of religion on a graduate level, to students who plan to go into professional religious work, or to students who need to deepen their knowledge of other cultures.

The data for the study of religion are drawn from many sources, including the disciplines of anthropology, archaeology, sociology, psychology, history, philosophy, and from the arts. But in the Department of Religion these data are structured and interpreted in terms of an autonomous discipline which is specifically designed to consider the nature and history of man's encounter with the sacred. In the context of this discipline the data are approached in four different ways, and the courses are thus listed under four specific fields of study. In the Field of Historical Studies the focus is on the development of various religious traditions and on the development of religion in different periods and places. The Field of Morphological and Phenomenological Studies approaches religious phenomena through the study of recurring religious patterns, forms or structures as they can be discerned regardless of time or place. This Field is concerned with the structure of religion rather than with the history of religion. The Field of Methodological Studies is analytical and critical in its approach to religion. An important element in this Field is a disciplined consideration of how to study religion. The Field of Constructive Studies is especially concerned with the power of religion as it explores issues and proposals in the contemporary religious situation, the significance of new religious forms, and the religious possibilities for the future which emerge in and through ecumenical and cross-cultural perspectives.

REQUIREMENTS FOR MAJORS AND MINORS

A major in religion consists of a minimum of 28 hours and includes Rel. 200 (Introduction to Religion), two courses in the Field of Historical Studies, and at least one course from each of the remaining three fields (Morphological studies, Methodological studies, constructive studies). Two of these courses should be at the 500 level.

A minor in religion consists of a minimum of 16 hours and includes Rel. 200 (Introduction to Religion). One course is required in the field of Historical Studies. The two remaining courses should be taken in two of the three remaining Fields.
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COURSE DESCRIPTIONS

200 Introduction to Religion 4 hrs.
An introduction to the study of religion emphasizing the historical and structural aspects of religion and developing the methodological and constructive issues involved in the discipline.

HISTORICAL STUDIES

300 Prehistoric and Primitive Religions 4 hrs.
The purpose of this course is to introduce the student to the religious life of prehistoric and primitive peoples. Primary attention will be placed on various religious forms created and used by these people. Such religious forms will include burial rites, mother goddess, sacrifices, pictographs, cave art, myths, ideas of the soul, initiation ceremonies, etc. In focusing upon the emergence and modifications of religious forms the religious continuity and discontinuity between prehistoric and primitive peoples will be indicated.

301 Protohistoric Religions: Ancient Near East, Greece and Rome, Meso-America 4 hrs.
Cities were once a new mode of human existence on the face of the earth, and they brought with them many new religious forms. This course will consider some of the major religious discoveries made in the urban centers of the Ancient Near East, Greece and Rome, and Meso-America with an attempt to find answers to questions such as: What is a city? What has man discovered about himself and his world through the experience of living in cities? Is the city itself a religious form?

302 Religion in the Indian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions native to India—i.e. Brahmanism, Buddhism, Jainism, and Hinduism. Particular attention is paid to the continuities of motif and practice that allow one to speak of "Indian Religion" as a unified phenomenon with a single history. Means of instruction are, insofar as it is possible, primary texts in translation and archeological data.

303 Religion in the Chinese and Japanese Traditions 4 hrs.
A study of two important religious traditions in their historical continuity and overall unity, taking each tradition separately. In each tradition a historical analysis reveals a number of rather diverse religions which coexist within the unity of a larger tradition. In China the formal religions of Confucianism, Taoism, and Chinese Buddhism, as well as the informal religious movements of "ancestor worship", family religion, and state religion will be studied. In Japan the formal religions of Shinto and Japanese Buddhism, as well as the informal religious factors of reverence for the dead, agricultural festivals, family religion, religious Taoism and Confucianism will be studied. An attempt is made to assess the meaning of religion in Chinese and Japanese history.
304 African Religions

This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focussing on the myriad religious forms, e.g. Idea of the soul, cosmology, initiation rites, etc. which have emerged during the long history of Africa. The course pays attention to religious forms which either came into being with or define a specific cultural stratum. For example, Hunters and Foodgatherers, Horticulturalists, Agriculturalists, Nomadic Herders. Finally an attempt is made to see what changes Westernization has made in the appropriation by the Africans of their traditional religious symbols.

305 The Christian Tradition

A historical survey of the development of Christianity with an emphasis upon its rites and symbols, its theological ideas, its institutional patterns, its continuity and discontinuities.

306 The Jewish Tradition

A comprehensive survey of the development of Judaism from its pre-exilic roots to the present. Attention will focus on the problem of the nature and continuity of the Jewish religion within the context of Near Eastern, Greek, and Western culture.

307 The Islamic Tradition

A study of Islam in its historical continuity and overall unity, from its appearance on the Arabian peninsula to its later expansion. Topics to be covered will include Pre-Islamic influence, the life of Muhammed, the early Muslim community, the Koran and "tradition", prayer, pilgrimages, Muslim law, theology, mysticism, sect developments, and geographical expansion.

500 Historical Studies in Religion

The topic to be announced in the time schedule. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Special problems in prehistoric and primitive religions, Japanese, Chinese, and Indian Buddhism, The Protestant Reformation, Early and Medieval Christianity, Romantic Spirituality, 20th Century Neo-Orthodoxy, the Evolution of Modern Catholicism.

MORPHOLOGICAL AND PHENOMENOLOGICAL STUDIES IN RELIGION

310 The Morphology and Phenomenology of Religion

Method in the most general sense refers to a way of organizing data with a specific goal in mind. This course will attempt to organize selected religious data in terms of forms (morphe) and structures (phenomenology). The specific purpose of the course will be to elucidate both the specificity of religious structures and their comprehensiveness. Types of data to be included are Divine forms, cultic practices, initiatory scenarios, religious symbols, etc.
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311 Myth and Ritual 4 hrs.
Eric Dardel, an anthropologist has written: "Myth says with utmost seriousness something that is of essential importance." In this course an attempt will be made to discover just what this important something is and how it is actualized in certain rituals. Myths and rituals will be taken from a variety of historical traditions in order to reflect the cultural milieu of the communities whose lives are governed by them. Special problems to be considered will be the relationship between myth and cult, the problem of time and myth, the logic of mythic forms, etc.

312 Religious Forms in Modern Literature 4 hrs.
A study of the correlation between various religious forms and literary forms. Particular attention will be devoted to the structural function of religious forms in modern literature. Specific religious forms such as the Saviour, the Divine Child, the Earth Mother, the Hero, the Adrogyne, Demons, Initiation, Vocation, The Eschaton, and Cosmic and spiritual regeneration will be identified and exemplified in particular works of literature.

510 Morphological and Phenomenological Studies in Religion 2-4 hrs.
The topic to be announced in the time schedule. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Divine Forms in West African religions, Christian rites and symbols, theology as a religious form, Sacred texts, sacrifice, initiation.

METHODOLOGICAL STUDIES IN RELIGION

320 The Philosophy of Religion 4 hrs.
An examination of the place of religion in human experience with special attention to the nature of religious language, the role and structure of religious concepts, the relation between religion and theology, and the logic of religious symbols.

321 The History of the Study of Religion 4 hrs.
In calling mythology a "disease of language", and religion an error founded on dreams, a projection of society, an Oedipus complex, etc. a number of great thinkers helped to found a discipline—and to endow it with some massive problems. This course will introduce students to these major thinkers and the contributions of their various fields: philology, anthropology, sociology, psychology, psychoanalysis, and even theology. Special attention will be devoted to the problem of the autonomy of the discipline of religion in relation to the "parental" human sciences.

520 Methodological Studies in Religion 2-4 hrs.
Topic to be announced in the time schedule. The content of the course will vary from semester to semester. Students may repeat the course
for credit as long as the subject matter is different. Topics such as the following will be studied: Philosophical and Cultural Approaches to Religion, Psychological and Sociological Approaches to Religion, Myth and Symbol in Religion and Literature, Theological Method, Hermeneutics and Exegesis, Theological Method.

CONSTRUCTIVE STUDIES IN RELIGION

330 Studies in Contemporary Theology 4 hrs.
Topics such as the following will be studied: Radical Theology, Modern Catholic theology, Ecumenical theology, Christian-Marxist dialogue, etc. Radical theology involves a study of the issues involved in Death of God Theology as well as secular theology as represented by Catholic, Protestant, and Jewish thinkers. Modern Catholic theology involves a study of the problems and promises of the Church’s affirmative response to the reality of the modern world, particularly since Vatican II. Ecumenical theology involves a study of the issues which divide Christians and the attempt to resolve these issues in a conciliatory manner. The Christian-Marxist dialogue involves a study of the theological and ethical issues which separate a religious point of view, particularly a Christian one, from a Marxist's view of the world as well as the similarities of these perspectives.

331 The Religious Quest in Modern Literature 4 hrs.
Several novels and plays are read as concrete and dramatized forms of different religious options or “quests” which students are challenged to evaluate in the context of their dramatic efficacy and power. A disciplined attempt is made to recognize secularized aspects of the Judeo-Christian tradition as well as the neo-pagan religious motifs of modern literature.

332 Religion and Social Ethics 4 hrs.
A study of the creative socio-ethical ideas, problems, and attitudes in religion with particular reference to modern revolutionary changes in family life, economics, politics, and culture.

530 Constructive Studies in Religion 4 hrs.
Topics to be announced in the time schedule. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: The nature and function of religion in contemporary society, the possibility of a post-Christian theology, a constructive theory of religious symbolism, the possibility of a religious humanism, religious dimensions of social evolution.
Courses are designed (1) to give students a better understanding of the significant factors and processes of modern life; (2) to meet the needs of students preparing to teach in the social science field; (3) to prepare students to do graduate work in the field of sociology; and (4) to stimulate interest in and provide prerequisite study for the profession of social work.

A major in Sociology consists of a minimum of 30 hours. Courses 200, 504, and 582 are required. Six hours of Social Work or Anthropology may be counted toward the major. (See below for exceptions applying to Social Work minors.)

A minimum of 24 hours of sociology is required for Sociology majors with Social Work minors. Required sociology courses for this major are Sociology 200, 210, 320, and 580. Sociology 582 is also recommended. (See “Social Work” for the Social Work requirements.)

A combined major in Sociology and Anthropology consists of a minimum of 30 hours. Sociology 200, 504, and 582, and Anthropology 200 and 220 are required. At least 12 hours of course work in each of the two fields are required.

A minor in Sociology consists of a minimum of 20 hours. Courses 200 and 210 are required. Four hours of social work or anthropology courses may be counted toward the minor.

Courses 500 and 580 are recommended for those planning to do graduate work in sociology. All courses may be taken separately and taken in any order by students who have had the prerequisite courses.

Certain students majoring in sociology or following the social work curriculum may spend one semester at the Merrill-Palmer Institute of Human Development and Family Life in Detroit, receiving credit towards graduation at Western.

Students planning to major or minor in Sociology should contact the department secretary for further information and for academic advising.

Center for Sociological Research has conducted studies of group dynamics, marital roles, race relations, voting behavior, migrancy, alco-
holism, and mental health since it was established in 1956 within the Department of Sociology. As the research arm of the Department, it aims (1) to contribute to the field of sociology; (2) to assist and provide research facilities to faculty members engaged in research projects; (3) to enable students to participate in current research; and (4) to provide factual information for the community and region. Part-time training and employment is offered to a limited number of superior undergraduate and graduate students. See the secretary for The Center for Sociological Research for further information.

THEORY

200 Principles of Sociology 3 hrs. Fall, Winter
A study of man's social nature and of the social world in which he lives. The biological, social, and cultural factors underlying the development of human personality and the various forms and processes of group association are analyzed.

500 History of Social Thought 3 hrs. Fall
A critical survey of the social thinking of outstanding students of society from Plato to those of modern social science. Prerequisite: 9 hours of sociology.

504 Sociological Theory 3 hrs. Fall, Winter
A study of the major theoretical approaches in contemporary sociology. Prerequisite: 9 hours of sociology.

SOCIAL PROBLEMS

210 Modern Social Problems 3 hrs. Fall, Winter
A general survey of some of the major social problems now confronting American society, such as inter-group conflict, physical and mental ill health, economic insecurity, juvenile delinquency and crime, population changes, and mass communication. Prerequisite: Soc. 200.

312 Criminology 3 hrs. Fall, Winter
A study of crime as a social problem. Course includes (1) an analysis of causative factors in crime, (2) a study of American police and court systems, (3) a survey of problems of penology, and (4) a consideration of crime prevention. Visits to institutions are made. Prerequisite: Soc. 200.

314 Race Relations 3 hrs. Fall, Winter
A study of race and intergroup relations, stressing (1) the meaning of race, (2) the nature and roots of race prejudice, race discrimination, and intergroup conflict, and (3) the character and effectiveness of various means of adjustment to the problem. Prerequisite: Soc. 200.
510 Selected Social Problems: Variable Topics 3 hrs.
An examination of a selected area of concern in social problems not intensively covered in other courses. This course may be repeated for credit with consent of adviser. The focus of the course will be substantive, rather than theoretical or methodological. Topics may include such areas as poverty, mental illness, narcotic addiction, alcoholism, aging, international tensions, etc. Prerequisites: Soc. 200, 210 or consent of instructor.

512 Seminar in Criminological Theory 3 hrs.
A critical analysis and evaluation of the leading theories concerning the causes of crime, the nature of criminal personality and the treatment of convicted offenders. Prerequisite: Soc. 312 or 514 or consent of instructor.

514 Juvenile Delinquency and the Community 3 hrs. Fall, Winter
A study of juvenile delinquency as a social problem. Extent, causative factors, methods of treatment, and programs of prevention and control are covered. When possible, extensive use of community resource people is made. Prerequisite: Soc. 200 or 600*, or equivalent.

515 Social Conflict 3 hrs. Winter
An examination of causes of social conflict, strategies in pursuing conflict, and forms of conflict resolution in conflicts between individuals, between groups, and between nations. Prerequisite: 15 hours of sociology, political science and economics.

SOCIAL PSYCHOLOGY

320 (220) Introduction to Social Psychology 3 hrs. Fall, Winter
An introduction to social psychological theory and research. Includes such topics as social influence, interaction, attitudes, and personality. Prerequisite: Soc. 200.

520 Selected Topics in Social Psychology: Variable Topics 3 hrs. Fall, Winter
Further analysis of selected topics, as indicated in schedule of classes. May be repeated for additional credit with permission of instructor. Prerequisite: Soc. 320.

523 Contemporary Social Movements 3 hrs. Fall
A study of the growth and place in contemporary society of selected social movements, including communism, fascism, Ku Klux Klan, the Townsend movement, and the like. Prerequisite: Soc. 200 or 600* or equivalent.

*600 Social Dynamics of Human Behavior is a foundational course in sociology at the graduate level.
525 Social-Psychology of Education 3 hrs.
An intensive examination of student, teacher, and administrative roles. Particular attention will be given to the import of peers, family, and social structure. Prerequisite: Soc. 320 or equivalent.

532 Introduction to Comparative Sociology 3 hrs.
An introduction to the history, major theoretical viewpoints and methodological issues associated with cross-national and cross-cultural studies. Particular emphasis will be placed upon those studies of major institutions and problem areas which have been central to the development of the comparative approach in sociology. Prerequisite: 9 hrs. of Soc. or consent of instructor.

COMMUNITY AND CLASS

353 The City 3 hrs. Fall
A study of city life as influenced by the processes of industrialization and urbanization. Community problems and social planning for community life are given appropriate consideration. Prerequisite: Soc. 200.

554 Sociological Analysis of Population 3 hrs. Fall
Application of selected sociological theories to analyze and interpret population characteristics and processes such as size, growth, social structure and social change. Prerequisite: 6 semester hours in Sociology or consent of instructor.

556 Social Stratification 3 hrs. Winter
An analysis of the structuring of societies along social class and caste lines. Emphasis is placed on the class structure of the United States and its implications for educational, occupational, and political policies. Prerequisites: Soc. 200 or 600 or consent of instructor.

557 Changing Social Systems—Sub-Saharan Africa 3 hrs. Winter
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems in sub-Saharan Africa resulting from the impact of European Culture and other contemporary world influences. Prerequisite: Soc. 200 or Anth. 201 or consent of instructor.

558 Social Forces in Underdeveloped Areas 3 hrs. Winter
An examination of the social factors which influence the growth of industrialization in underdeveloped areas. These factors include cultural tradition, social class stratification and the problems involved in a shift from rural to urban residency. Case materials from private business enterprises, missionary and educational ventures, U. S. Foreign Aid projects and U. N. projects included. Prerequisite: Soc. 200 or 600, or Anthro. 201.
571 Social Change: designated areas 3 hrs.
This course deals with institutional change in specific geographic areas designed in the full course title as scheduled.

573 The Sociology of Political Behavior 3 hrs. Winter
Systematic sociological theory and research applied to the study of political organization and behavior in the United States and in selected countries abroad. Such topics as political parties, voting, bureaucracy, and political ideology will be considered. Prerequisite: 6 hours of sociology or consent of instructor.

574 Sociology of Religious Institutions 3 hrs. Winter
A study of the social role of religious institutions and beliefs, with particular reference to the United States; the relation between religion and other aspects of society. The course considers social factors affecting the development of different types of religious institutions and the influence of religion on American society. Prerequisite: Soc. 200 or 600 or equivalent.

575 Industrial Sociology 3 hrs. Fall, Winter
The sociological study of work organizations. The impact of industrialization on society, the factory as a social system, the structure and function of work organizations, status systems in work groups, the individual in work organizations, and analysis of worker dissatisfaction in terms of group relations. A consideration of the power relationships between labor and management. Prerequisite: Soc. 200 or equivalent.

576 Sociology of Education 3 hrs. Fall, Winter
The classroom as a social situation analyzed in terms of the interaction between teacher-student and student-student. The educative process as a function of the interpersonal relations among teachers and between teachers and administrators. The school as a social system as it affects and is affected by the community in which it is located and society at large. Prerequisite: Soc. 200 or 600 or equivalent.

577 Comparative Institutional Studies 3 hrs.
A comparative study of the structure and the functioning of selected aspects of culture in America and other selected countries. The legal structure, family and educational systems, the welfare structure, class stratification, economic institutions, political organization, the role of science and the basic character of social change. Prerequisite: Soc. 200 or 600 or equivalent.

RESEARCH

580 Sociological Statistics I 3 hrs. Fall, Winter
An introduction to statistical reasoning with particular reference to social science research. The course will view statistics as an aspect of
scientific inquiry and consider problems of analysis and interpretation of typical social science data. While no mathematics prerequisite is required, a course in college algebra will be helpful.

582 Introduction to Social Research 3 hrs. Fall, Winter

An introduction to the basic methods of empirical research in sociology. Techniques and theory of research design, formulating and testing hypotheses, sampling, collection, analysis and interpretation of data are studied. Prerequisite: 9 hours of Sociology.

MARRIAGE AND FAMILY

290 Modern Marriage 2 hrs. Fall, Winter

A general education course designed to increase the student's competence for coping with interpersonal problems arising in dating, courtship, engagement, marriage and parenthood. Factors involved in courtship, mate selection, marital adjustment, and preparing for parenthood are considered. Not counted in a Sociology major or minor. Not recommended for students who have had 390.

390 Marriage and Family Relations 3 hrs. Fall, Winter

A sociological analysis of marriage and family behavior within the contemporary American Society. A study of the interactional aspects of marriage and the family with major emphasis upon the American middle-class. Included are discussions of contemporary trends and problems, factors involved in family unity and disorganization, and predicting success or failure in marriage. Prerequisite: Soc. 200 or equivalent.

590 Family as a Social Institution 3 hrs. Winter

The family viewed in historical and cross-cultural perspectives. A structural-functional analysis of the family institution and the relationship between the social structure of society and the family system. Emphasis is placed on change and comparative analysis. Prerequisite: Soc. 200 or equivalent.

592 Family Life Education and Counseling 2 hrs. Winter

Provides the student with a working knowledge of the methods and materials appropriate in the school, the church and other social situations, for working with individuals and small groups who desire preparation for marriage and parenthood. Some attention will be given to the techniques for handling counseling opportunities arising out of these teaching situations. Prerequisite: Soc. 200 or 600 or consent of instructor.

INDEPENDENT STUDIES

498 Honors Study 2 hrs. Fall, Winter

A program of independent study (reading or research) to provide the honors student with the opportunity to explore a topic or problem of
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interest, under the guidance of one of the faculty of the department. May be repeated once. Permission to register must be obtained from the Department Honors Committee.

499 Honors Seminar 2-6 hrs. Fall, Winter
Investigation of selected topics in seminar sessions by advanced undergraduates. Registration by special invitation from the department honors committee.

598 Readings in Sociology 1-4 hrs. Fall, Winter
Offers advanced students in sociology with good scholastic records an independent program of study, arranged in consultation with the instructor, 1 to 2 hours credit per semester, cumulative to 4 hours. Prerequisite: Honors Program, or consent of Department Head.

Speech

Charles Brown, Chairman

Albert Becker  Charles Helgesen  George Robeck
Roy Beck  Deldee Herman  Jules Rossman
William Buys  James Jaksa  Thomas Sill
Loren Crane  David Karsten  R. Franklin Smith
Don Davis  Radford Kuykendall  Robert L. Smith
Richard Dieker  William Livingston  Laverne Stillwell
Daniel Fleischhacker  James McIntyre  Eleanor Walton
Russell Grandstaff  Leon Nobes  Ethel West
Lyda Hausenfluck  Beatrice Prussion  Zack York
Ruth Heinig  Sharon Ratliffe

Oral communication is the principal mode for establishing and maintaining human relationships. Effective oral communication is an educational imperative for all human beings.

The Department of Speech offers the student not only the opportunity to educate himself in professional competencies, but also an opportunity to educate himself broadly in the liberal arts tradition.

Because the Department of Speech places a large share of responsibility on the student for designing his own speech curriculum, students planning to major or minor in speech should secure a copy of Departmental Bulletin No. 1 and discuss their curriculum needs and interests with the departmental adviser at the earliest possible date. The schedule of courses to be taught is available from the departmental adviser.
I. MAJORS

Two majors are available.

(1) Speech Major
A Speech major requires 30 semester hours of speech, including Speech 100 and 27 hours to be arranged in consultation with the student and the adviser of the Department.

(2) Speech Education Major
Speech Education major requires 30 semester hours of speech, including the following courses: 100**, 562 for the secondary speech major, or 561 for the elementary school major and minor.

II. MINORS

Two minors are available.

(1) Speech Minor
A Speech minor requires 20 semester hours, including General Speech**, and 17 additional elective hours to be chosen in consultation with the adviser of the Speech Department.

(2) Speech Education Minor*
A Speech Education minor requires 20 semester hours of speech for teaching in secondary and elementary schools, including the following courses: Speech 100**, and for the elementary school teacher, Speech 561.

III. DEPARTMENTAL COURSES

100 General Speech** 3 hrs.
A beginning course in speech dealing with the study and application of basic principles underlying effective oral communication. Required of all students planning to secure a Speech major or minor or a Speech Education major or minor.

102 Speech for Teachers** 3 hrs.
A beginning course in speech for those who intend to teach in elementary or high schools. Deals with the basic elements of speech, with listening, and with the personality of the speaker as these are involved in the activities of a teacher. The focus is on the prospective teacher's speech rather than on the speech of his pupils.

104 Business and Professional Speech* 3 hrs.
A beginning course in speech dealing with the study and application of basic principles underlying effective oral communication. Particular
attention is given to developing skill in meeting the speech situations encountered in the business and professional world.

106 Voice and Diction 3 hrs.
Individual improvement program emphasizing voice production and diction.

111 Readers' Theatre 1 hr.
Performances in group reading of prose and poetry. May be taken for maximum of 4 semester hours credit.

131 Parliamentary Procedure 1 hr.
Study and practice of the principles and rules which govern business meetings in voluntary organizations.

210 Oral Interpretation 4 hrs.
Emphasis is placed on developing the student's appreciation of literature and his skill in analysis and oral reading of representative works in prose, poetry and drama.

220 Introduction to Theatre** 3 hrs.
Considers theatre as a part of the individual's cultural heritage and liberal arts background. Includes attending theatre performances and participation in University Theatre.

222 Acting 3 hrs.
Study and practice of the basic principles and techniques of acting designed to help the student develop a basis for appreciation and criticism. Prerequisite: Speech 210 or instructor's consent.

224 Stagecraft 4 hrs.
A beginning course in technical production, including basic stage lighting, the planning and construction of stage scenery. Includes laboratory work on University Theatre productions.

228 Stage Make-up 1 hr.
Study and practice of the principles and techniques of stage make-up.

231 Public Speaking 3 hrs.
Study of public speech and audience psychology principles. Frequent practice to develop skill in speech composition, clarity of language, logical development and effectiveness as a speaker.

232 Discussion 3 hrs.
Study and practice in discussion and conference. Skill in participation, leadership, group thinking, and evaluation are emphasized. Recommended for students whose vocational plans involve work with groups.

**May be used as a partial substitute for Arts and Ideas 222. See page 263.
236 Intercollegiate Debate

Participation in intercollegiate debates, discussions, and student congresses. The national college debate and discussion topics are used. Debaters meet regularly as a group. Students interested in qualifying for this activity should contact the debate coach. Students may accumulate a maximum of six hours credit.

240 Broadcasting Foundations

Survey of the history, organization, operation, and regulation of American commercial and educational broadcasting. Emphasis on broadcasting's importance as a business, as a social phenomenon, as mass media, and as a public trust.

244 International Broadcasting

Comparative study of several broadcast systems; theories of broadcast control; electronic media in the underdeveloped world; use of media as propaganda instruments such as Voice of America, Radio Free Europe.

302 Communicative Processes of Speech

Study of the way experience is perceived, symbolized, and patterned. Interrelates speech, personality, and society. Special emphasis made on creative independent study.

304 Physiological Processes of Speech

Concerns the physics and the physiology involved in the speech process. Includes the study of: acoustics, recording of sound, hearing, breathing, phonation, articulation, and the sounds of English speech. Designed to help the student to better understand his own speech processes, as well as to help him function more intelligently as a teacher of speech.

320 Stage Direction

Theory and application of basic principles of directing and staging plays with particular emphasis upon production problems of school and community. Prerequisite: Speech 222 or instructor's consent.

321 Play Production for High School Teachers

A "How-to-do-it" course giving an introduction to the basic theory and skills needed to produce the high school play. Includes all aspects of play production, such as play selection, casting, rehearsal, planning scenery, costumes, make-up, etc.

325 Summer Theatre

A Summer Theatre Program providing qualified students with opportunities to concentrate on the various activities of theatre production. Participation is integrated with seminars under faculty direction so that the practical facet of theatre work is constantly related to theory.

328 Stage Costume

Study of historic costume as adapted for the stage. Practical labora-
tory experience in costume construction offered in conjunction with University Theatre productions.

334 Argumentation and Debate
Study of argumentation and debate principles and frequent practice in debating current public questions. Attention is given to problems involved in analyzing and judging debates.

340 Radio Production
Analysis of radio as a creative medium. Production of radio programs, including news, documentary and drama. Limited enrollment. Prerequisite: Speech 240 and/or consent of instructor.

341 Radio and Television Writing
The role of continuity writing in broadcast operation and production. Utilizing broadcast techniques in creating scripts, formats, commercials, and promotional materials.

342 Radio and TV Journalism
Study of radio and television as news media: basic principles of news reports, newscasts, news commentary, on-the-spot coverage and features.

344 Practicum in Broadcasting Arts
Provides the students with practical experience at commercial or educational stations, allowing him to gain some familiarity with operation, equipment, and problems of broadcasting.

346 Introduction to the Cinema
History, aesthetics, form, function, method of film; study of outstanding examples of experimental, documentary, and feature films.

398 Independent Study in Speech
Designed to allow outstanding students to work independently under staff supervision. Includes extensive study, research or special creative projects in any of the several speech areas. 1–6 semester hours credit may be accumulated. Prerequisite: Consent, Chairman of Department.

400 Introduction to Rhetorical Theory
A consideration of philosophies of past rhetoricians and their relationships and relevancies to present speech theory. A consideration of contemporary rhetorical theory and its implications for effective speech behavior. Advanced Sophomores by permission.

401 Public Address Criticism
Analysis of great speakers and speeches. Comparative analysis of past and contemporary speakers and speeches with application to students' own speech behavior and times.

510 Studies in Oral Interpretation
Projects in reading and analysis of literature designed to intensify the student's application of the theory and principles of oral interpretation.
Each of the courses listed below carries separate credit although each is listed under 510.

A. **Oral Interpretation of Shakespeare.** The analysis and interpretation of selected Shakespearean plays and sonnets; individual and group participation in reading aloud.

B. **Oral Interpretation of the Bible.** Interpretation of the various literary forms found in the student's choice of versions or translations, based on individual research; emphasis placed on the oral reading skills.

C. **Oral Interpretation of Selected, Long Literary Forms.** Study in depth of the problems inherent to the analysis, cutting, and presentation of long literary forms, such as the novel, the epic poem, and the biography.

**Speech 520 Studies in Theatre**

Selective study within a broad range of aspects of theatre. Emphasis is upon concepts, theory, and advanced skills. Repeatable for 9 hours.

A. **Studies in Acting.** Possible topics for study include: Mime, Styles in Acting, Acting Theory.

B. **Studies in Directing.** Possible topics for study include: Theories of Directing, Advanced Directing.

C. **Studies in Theatre Production.** Possible topics for study include: History of Costuming, Costume Design, Theatre Management, Stage Lighting, Advanced Make-up Design.

D. **Studies in Dramaturgy.** Possible topics for study include: Playwriting, Theory and Criticism of the Drama, Contemporary Theatre.

E. **Studies in Creative Dramatics.**

F. **Studies in Children's Theatre.**

**526 (326) History of the Theatre**

From the beginning to the English Renaissance.

**527 (327) History of the Theatre**

From the English Renaissance to the present day.

**529 (226) Stage Design**

A beginning course for students in design, including stage lighting and stage settings. Includes laboratory practice in staging University Theatre productions.

**530 Studies in Public Address**

Selected areas of detailed study within the total range of public address.

**531 Public Speaking**

The intensive study of speech organization, audience adaptation, and delivery. Includes practice in speaking. Research project required.
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532 Persuasion 3 hrs.
Study of factors of human behavior and their ethical implications as related to oral communication. Class activities include research, experimentation and discussion.

540 Studies in Broadcasting 3 hrs. Fall
Each of the courses listed below carries separate credit although each is listed under 540.

A. ISSUES IN BROADCASTING. Analysis in depth of current and continuing issues affecting broadcast development and programming, such as pay television, the fairness doctrine, free press versus fair trial conflicts.

B. BROADCASTING REGULATIONS. The role of self-regulation and governmental regulation of the broadcasting industry.

545 Broadcasting Criticism 3 hrs.
Exploration of aesthetic and social factors unique to radio and television media. The role of the media critic. Search for standards of critical evaluation of media messages, through study of selected dramatic documentary, experimental radio and TV programs.

550 Television Production 3 hrs.
Study of television as a creative visual medium. Exploration of all elements involved in producing televised studio programs. Practical experience in production and direction of various program units such as interview or teleplay. One lab per week. Limited enrollment. Prerequisite: Speech 340, or consent of instructor.

560 Studies in Speech Education 3 hrs.
Selected studies in background, methods, materials and procedures in any one of the several speech areas.

561 Teaching Speech in the Elementary School 4 hrs. Winter
Examination of the linguistic development of pre-school and elementary school children, the functions of language, study of the nature of the emotional and physical development of children as related to symbol using behaviors, study of materials and methods for effecting desired behaviors in children's thinking, communicating, and enjoyment.

562 Teaching Speech in the Secondary School 4 hrs.
In this course the student planning to teach speech is assigned to a Master Teacher in the Department of Speech and works with that instructor in teaching a beginning college general speech course.

The student enrolled in this course should try to keep a Monday, Wednesday, and Friday class hour free, especially in the morning. In addition to this learner-teacher assignment, the student meets one day a week with the course instructor for discussions and lectures on materials, methods, and philosophies related to teaching speech in high
school. Opportunity for work in handling extra-curricular speech activity is provided.

564 Creative Dramatics for Children 4 hrs.

Study of the principles, materials and techniques of dramatics with children as a classroom activity in elementary grades. Observation of demonstration groups. Emphasizes creative dramatics and includes the creative approach to formal dramatics.

570 Studies in Communication 3 hrs.

Each of the courses listed below carries separate credit although each is listed under 570. Thus, a student may take any or all of the offerings listed below.

A. INTERPERSONAL THEORIES OF COMMUNICATION. Current interpersonal communication theories and relevant research are studied with emphasis on the social, psychological, and cultural factors influencing interpersonal communication.

B. MEASUREMENT TECHNIQUES IN COMMUNICATION. Various measurement techniques for studying variables related to the communication process are analyzed. Emphasis is on developing and utilizing reliable and valid instruments in communication research.

C. PERSONALITY AND COMMUNICATION. This course focuses on aspects of personality, cognitive structure and function, attitudes, values, perception and meaning as they relate to communication.

598 Independent Studies in Speech 1–4 hrs.

Offers a program for advanced students with good scholastic records to pursue independently a program of readings, research or projects in areas of special interest. To be arranged in consultation with department chairman.

Speech Pathology and Audiology

Frank B. Robinson, Head

Harold L. Bate Mary Idia Hunt Donna B. Oas
Paul Czuchna Albert Jetty Courtney Stromsta
George O. Egland Karen Knoska Charles Van Riper
Robert L. Erickson Frances Lohr Clyde R. Willis

Communication is the most complex aspect of human behavior. Impairments in the process of communication—speech, language, and hear-
ing—leave myriad problems in their wake. The child with a communica-
tion problem may encounter overwhelming obstacles to learning and
may find it difficult to establish relationships with other children which
are essential to growing up to a healthy, stable adulthood. The adult
who acquires a speech or hearing disorder may experience a variety of
social problems. Speech pathology and audiology is the area of pro-
fessional specialization which has developed out of concern for persons
with disorders of communication.

A professional career in speech pathology and audiology now requires
a master's degree in the field as the minimum academic achievement.
Students who contemplate a career in this field, therefore, should have
the ability to do graduate work and plan accordingly. The curriculum
presented here is designed to provide the basic educational foundation.
It prepares the student for the graduate education and training which
are necessary for membership in the American Speech and Hearing Asso-
ciation and for that organization's professional certification.

Students interested in state certification for Speech and Hearing should
refer to the program on page 220, which combines the Teacher Education
requirements for Elementary Education and the basic preparation in
speech pathology and audiology. The completion of that program enables
the student to become certified in the elementary education field and thus
fulfill that part of the state requirement for certification in Speech and
Hearing. Full approval for certification in Speech and Hearing requires
the successful completion of the master's degree program in Speech
Pathology and Audiology.

The Department of Speech Pathology and Audiology maintains certain
standards for academic and clinical work which students must meet.
Detailed information about these standards and other departmental
policies and additional information about the undergraduate and graduate
programs may be obtained from the department office.

A. Minimum hours required for this curriculum ............... 124 hrs.

B. Course Requirements

1. General studies requirements as described on page 21 of
   this catalog must be met. Physical Science 108 and
   Human Communication 400 are strongly recommended.

   Acoustics 100 ........................................ 2 hrs.
   Psychology I 150 ................................. 3 hrs.
   Psychology II 160 ............................... 3 hrs.
   Behavior Modification I 250 ................. 3 hrs.

3. Teacher Education and Special Education 9 hrs.
   Human Development and Learning 250 ...... 4 hrs.
   Education of Exceptional Children 530 ...... 3 hrs.
   Mental Hygiene of Childhood
   and Adolescence 585 ............................ 2 hrs.

4. Speech Pathology and Audiology .... 30 hrs.
   Introduction to Communication
   Disorders 200 .................................... 3 hrs.
Orientation to Clinical Practice 201 ........... 1 hr.
Anatomy and Physiology of
Speech and Hearing 202 .................. 2 hrs.
Speech and Language Development 203 .... 2 hrs.
Phonemics 204 ........................ 2 hrs.
Speech and Hearing Science 300 ........ 2 hrs.
Phonemic Disorders 351 ................. 2 hrs.
Phonatory Disorders 352 ................ 2 hrs.
Fluency Disorders 353 .................. 2 hrs.
Language Disorders in Children 354 ..... 2 hrs.
Hearing Disorders 355 .................. 2 hrs.
Introduction to Audiometry 357 ........ 2 hrs.
Practicum I 400 ........................ 1 hr.
Practicum II 401 ........................ 1 hr.
Electives .............................. 4 hrs.

5. Physical Education or Military Science .... 4-8 hrs.

C. During the program the student must satisfactorily complete clinical
   requirements as specified by the Department of Speech Pathology
   and Audiology.

D. The candidate must satisfy the requirements for either the A.B.
   or B.S. degree.

200 Introduction to Communication Disorders .... 3 hrs. Fall, Winter
   An introduction to the professions of speech pathology and audiology
   with emphasis on the communication and associated problems of people
   served by the clinical speech pathologist. Prerequisite: Sophomore
   standing.

201 Orientation to Clinical Practice ............ 1 hr. Fall, Winter
   An introduction to the clinical procedures, methodology, and instru-
   mentation employed in the treatment of individuals with communication
   disorders. Demonstration therapy is included. Taken concurrently with
   200.

202 Anatomy and Physiology of Speech and Hearing .... 2 hrs. Fall, Winter
   The structural anatomy and physiology of the processes related to
   normal speech production and reception. Major units include respiration,
   phonation, articulation, the auditory system, and the nervous system.
   Prerequisite: Sophomore standing.

203 Speech and Language Development .................. 2 hrs. Fall, Winter
   A study of the nature and development of the normal acquisition of
   speech and language. Prerequisite: Sophomore standing.

204 Phonemics .................................. 2 hrs. Fall, Winter
   A study of the phonemes of English. Practice in the use of the Inter-
   national Phonetic Alphabet is provided to prepare the student for ac-
   curate transcription of speech behavior. Prerequisite: Sophomore stand-
   ing.
School of Liberal Arts and Sciences

300 Speech and Hearing Science 2 hrs. Fall, Winter
An introduction to the scientific study of speech production, perception, and reception. Speech is studied as an acoustic event, and modern developments in the recording and analysis of vocal utterances are examined. Prerequisites: 202, 204.

351 Phonemic Disorders 2 hrs. Fall, Winter
A detailed study of the nature of phonemic disorders; orientation to clinical management. Prerequisites: 200, 202, 204.

352 Phonatory Disorders 2 hrs. Fall, Winter
A detailed study of the nature of phonatory disorders; orientation to clinical management. Prerequisites: 200, 202, 300.

353 Fluency Disorders 2 hrs. Fall, Winter
A detailed study of the nature of fluency disorders; orientation to clinical management. Prerequisite: 200.

354 Language Disorders in Children 2 hrs. Fall, Winter
A detailed study of the nature of communication problems associated with congenital or acquired impairment of language function in children; orientation to clinical management. Prerequisites: 200, 202, 203, 204.

355 Hearing Disorders 2 hrs. Fall, Winter
A study of aural pathology and the effects on hearings. Prerequisites: 200, 202, 300.

357 Introduction to Audiometry 2 hrs. Fall, Winter
An introduction to the study of the measurement of hearing and to the field of audiology. Prerequisites: 200, 202, 300, 355.

400 Practicum in Speech Pathology and Audiology I 1 hr. Fall, Winter
Clinical experience in the management of speech, language, and/or hearing disorders. Prerequisite: C-card.

401 Practicum in Speech Pathology and Audiology II 1 hr. Fall, Winter
Clinical experience in the management of speech, language, and/or hearing problems. Prerequisites: C-card, 400.

455 Seminar in Speech Pathology and Audiology 2 hrs. Fall, Winter
Designed to provide an opportunity for qualified students to examine and discuss a subject area in a field of common interest. Prerequisites: C-card, senior standing.
Speech Pathology and Audiology

551 Language Disorders in Adults 2 hrs. Fall, Winter
Orientation to the clinical management of communication problems associated with neurological impairment in adults. Prerequisites: 200, 202, 203.

556 Aural Rehabilitation 2 hrs. Fall, Winter
Orientation to the clinical management of communication problems associated with auditory impairment. Prerequisites: 355, 357.

554 Speech and Hearing Therapy in the Schools 2 hrs. Fall, Winter
Study of clinical work with speech-or hearing-disordered children in the school setting. Prerequisites: 351, 352, 353, 354, 355.

School of Social Work
Merl C. Hokenstad, Jr., Director

The School of Social Work offers both an undergraduate curriculum and a graduate-professional program. The undergraduate curriculum is designed to prepare students for lower level social work positions, and for the civil service examinations required for employment in many public agencies. It also provides basic preprofessional education for graduate training in social work. The graduate-professional program is designed to educate students for direct service and leadership positions in the field of social welfare.

Undergraduate courses focus on (1) human behavior and social interaction, (2) the historical and philosophical base of social welfare and social work, (3) social welfare institutions, (4) the social work profession, and (5) field experiences in community social agencies. Their objective is to help students gain beginning knowledge and abilities which can be further developed in social work practice and graduate education.

Certain students in this curriculum may receive credit for one semester at the Merrill-Palmer Institute of Human Development and Family Life, in Detroit. Students interested in this experience should consult with the social work advisor early in their college career.

The graduate-professional program focus is on contemporary social problems and problem solving processes. It provides a two year curriculum leading to a Master's degree in social work. Further information about this program can be found in the Graduate Catalog.

Undergraduate Social Work Curriculum

A. Minimum hours required for graduation 124 hours
B. Course Requirements
   1. General Studies requirements as described in catalog 34 hours
2. MAJOR: The Social Work curriculum may be combined only with: 1. a major in Sociology. 2. a combined major in Sociology-Anthropology. 3. a major in Social Science.

   a. Sociology major requirements. 24 hours
      200 Principles of Sociology 3
      210 Modern Social Problems 3
      320 Social Psychology 3
      580 Sociological Statistics I or 3
      582 Introduction to Social Research 3
      Twelve (12) additional hours in Sociology needed to complete major.

   b. Sociology-Anthropology major requirements. 30 hours
      200 Principles of Sociology 3
      210 Modern Social Problems 3
      320 Social Psychology 3
      580 Sociological Statistics I or 3
      582 Introduction to Social Research 3
      200 Physical Anthropology 3
      220 Cultural Anthropology 3
      Six (6) additional hours in Anthropology and six (6) additional hours in either Sociology or Anthropology needed to complete major.

   c. Social Science major requirements. 36 hours
      200 Physical Anthropology or 3
      220 Cultural Anthropology 3
      201 Principles of Economics 3
      210 (History) U.S. to 1877 3
      211 (History) U.S. since 1877 3
      200 (Pol. Science) National Government and 3
      202 (Pol. Science) State and Local Government 4
      200 Sociology 3
      580 Sociological Statistics or 3
      582 Introduction to Social Research 3
      Eleven (11) additional hours needed, nine of which should be in 300 or 500 level courses.

NOTE: No more than 16 hours credit in any one department of the division may be used to apply to the required total of 36 hours.

3. MINOR:
   a. Social Work minor 16–22 hours
      Required:
      300 Social Welfare as a Social Institution I 3
      *301 Social Welfare as a Social Institution II 3
      *310 Values and Methods of Social Work 3
      *402 Interventive Means in Social Services 3

   **“C” card required.**
250 Human Development and Learning 4

Optional but strongly recommended:

**410 Field Experience and Field Seminar I and 3
**411 Field Experience and Field Seminar II or 3
**412 Special Projects in Social Service 4

4. **Other Required Courses** 13–14 hours

The following courses are required unless completed in major:

150 Psychology I 3
200 American National Government or 3
202 State and Local Government 4
201 Principles of Economics or 3
203 Economic Issues 3
200 Introduction to Philosophy or 4
311 Social Philosophy 4

5. Physical Education or Military Science 4–8 hours

6. Electives 10–33 hours

C. The candidate must satisfy the requirements for the A.B. or B.S. degree.

**410, 411 and 412 taken on an elective basis. Students should elect either 410 and 411 or 412. May be taken only by students with 2.5 or better in major and minor (combined). Consent of instructor required. Application to be made not later than 6 weeks prior to assignment.
School of
Graduate Studies

GEORGE G. MALLINSON,
Dean

LEO C. STINE,
Associate Dean

SID DYKSTRA,
Assistant Dean

Department:
Librarianship
School of Graduate Studies

An independent graduate program leading to the degree of Master of Arts in various curricula in the field of education was first offered at Western Michigan University in the fall semester of 1952-53. Today, twenty-nine education programs are offered at the Master of Arts level. Other programs leading to the Master of Arts degree are offered in Anthropology, Art, Biology, Chemistry, Earth Science, Economics, English, Geography, History, Home Economics, International and Area Studies, Modern and Classical Languages, Mathematics, Medieval Studies, Occupational Therapy, Physics, Political Science, Psychology, Sociology, Speech and Speech Pathology and Audiology. The University offers the Master of Science degree in Accountancy, Librarianship, Paper Technology, and in Technology. The Master of Business Administration, Master of Music, and the Master of Occupational Therapy degrees are also offered.

A Specialist in Education degree is offered upon completion of a sixth-year program in Curriculum, Elementary School Administration, General School Administration, Guidance and Personnel Services, Secondary School Administration, Special Education and School Psychological Examiner. In addition, the University offers Specialist in Arts degrees in Business Education, English, History, International and Area Studies, Librarianship, Mathematics and Science Education.

Programs leading to the Doctor of Philosophy are offered in Chemistry, Mathematics, Sociology, and Science Education. A program leading to the Doctor of Education is offered in Educational Leadership.

ADMISSION

Dates

Admission to the School of Graduate Studies is required for permission to register for graduate classes on campus. Students planning to register for courses must apply for admission no later than:

- June 15 ................................. Fall Semester
- November 1 ............................ Winter Semester
- March 15 ............................... Spring Session
- May 15 ................................. Summer Session

Foreign students must apply for admission by April 15 for the fall semester and September 15 for the winter semester.

Application Fee

All students applying for admission to the School of Graduate Studies except those whose fees are covered by special grants must send ten dollars with their applications.
Admission

Types—Master’s Level Programs

1. Admission Without Reservation. This type of admission is awarded to the student who has an acceptable academic record, who has passed the required entrance examinations, and who has met the requirements of the program he plans to pursue. Acceptance to a definite program of study leading to a degree is dependent upon the approval of the unit in which the student plans to study. For further information see admission requirements for the type of program desired.

2. Tentative Admission Pending Receipt of the Bachelor’s Degree. A student may receive tentative admission during the final semester or session of his undergraduate work if his academic record is satisfactory. Final admission will be determined when a transcript is submitted giving evidence of the Bachelor’s degree.

3. Dual Enrollment Admission. Senior students at Western Michigan University with acceptable academic records, who need no more than six hours to complete the requirements for the Bachelor’s degree, may seek admission to the School of Graduate Studies for the semester prior to graduation. If admission is granted, the student may elect graduate courses, in addition to those required at the undergraduate level to complete the Bachelor’s degree, to encompass a full academic program. Such dual enrollment is permitted for one semester only. Graduate credit thus earned may not be used to meet undergraduate requirements.

4. Admission to Non-Degree Status. Students who are eligible for admission to a degree program but who do not wish to pursue one or students whose point-hour ratio ranges from 2.30 to 2.59 in the final two years of undergraduate study may seek admission to non-degree status. Students admitted to non-degree status because of their low academic record may establish eligibility for admission to a degree program by securing no grades below “B” in any credits earned, by securing satisfactory scores on the Graduate Record Examination, and by passing the English entrance requirement. Students admitted on a non-degree basis are not permitted to include more than nine hours of credit earned as a non-degree student in a degree program. At least six of these nine credits must be taken on the campus of Western Michigan University. No assurance can be given non-degree students that any credits earned will be accepted in a degree program or used to meet the requirements for graduation.

5. Admission to the Professional Improvement Program. Students whose point-hour ratio is below 2.30 in the final two years of their undergraduate program are not eligible for admission to a degree program in the School of Graduate Studies. Such students cannot establish eligibility by studying on a non-degree basis. They may, however, secure admission to an organized Professional Improvement Program. Credits earned by students thus enrolled may be submitted for professional certification but will not lead to a degree.
6. Admission from a Non-Accredited College. A student who has received a Bachelor's degree from a non-accredited college, but who otherwise meets all the requirements for admission may be permitted to elect nine hours of graduate work with the stipulation that his admission will be reviewed after the completion of the nine hours.

7. Admission as Guest Matriculant. A student who is already enrolled in the Graduate School of another college or university may enroll for courses at Western Michigan University as a Guest Matriculant. Application forms for such admission are available at the Graduate Office.

Procedures

Admission to the School of Graduate Studies is secured through the following steps:

1. Request the School of Graduate Studies to send an Application for Permission to Enroll. The request should indicate the degree level for which an application is desired: Masters, Specialist, Doctors.

2. Determine from Section I of the Bulletin the type of admission that is desired.

3. Select from Section II or III of the Bulletin the program of study that will be pursued.

4. Return the Application for Permission to Enroll before the published deadlines for admission.

5. Request the Registrar of all colleges previously attended, except Western Michigan University, to send transcripts of credits to the School of Graduate Studies, Western Michigan University. Transcripts are also due before the dates established as deadlines for admission.

6. Take the English entrance exam at the time specified by the School of Graduate Studies after applying for admission.

7. Check the calendar of events listed in the Bulletin for the registration days of each semester or session.

Grading System

Grades are indicated by letters, to each of which is assigned a certain value in honor points per hour of credit, as shown in the table below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Significance</th>
<th>Honor Points Per Hour Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Above Average</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>Average</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Below Average</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>Failure</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td></td>
</tr>
</tbody>
</table>
Admission

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>CR</td>
<td>Credit</td>
</tr>
<tr>
<td>NC</td>
<td>No Credit</td>
</tr>
</tbody>
</table>

"E"—Failure—Students admitted to a degree program must secure three hours of "A" to offset each hour of "E" in their graduate record.

"I"—Incomplete—This is a temporary grade given for work which is passing in quality but lacking in quantity to meet course objectives. It is assigned when illness or necessary absence for other reasons satisfactory to the instructor prevent completion of the course requirements. A grade of "I" must be removed within one calendar year of the date it was assigned or a grade of "E" will be recorded for the courses. The one-year limitation does not apply to the thesis, project, or dissertation.

"W"—Withdrawn—A grade of "W" is given in a course when a student officially withdraws from that course or from the University before the mid-point of the semester or session.

"CR" or "NC"—Credit or No Credit—The pass-fail system will be used in Graduate Studies 712, Professional Field Experience. Accordingly, the permanent record will indicate "CR" when the course is passed and "NC" when the course is failed.

Honor Points

The number of honor points earned in a course is the number of semester hours credit given by the course multiplied by the number of honor points per hour of credit corresponding to the letter grade received, as shown in the preceding table. For example, a grade of "B" in a four-hour course gives 4 x 3, or 12 honor points. Honor points are not involved in courses in which the pass-fail grading system is used.

Re-entry

Ordinarily students who have once been admitted to the School of Graduate Studies need not file for re-entry except for the following reasons:
1. They have taken only extension classes.
2. They have not taken a class on campus within the past two calendar years.
3. They have completed a degree and received a diploma.

If re-entry is necessary, a student must notify the Graduate Office no later than two weeks before the beginning of the registration period in which the student intends to register.

GENERAL REQUIREMENTS FOR A MASTER'S DEGREE

1. Admission—(See Calendar of Events for application deadline)
   a. Bachelor's degree.
School of Graduate Studies

2. Candidacy

a. A permanent program which will constitute an application for admission to candidacy must be submitted during the first semester or session of enrollment.

b. Deficiencies indicated at the time of admission must be removed within the first ten hours of graduate study.

c. An average grade of at least 3.0 (A=4) must be secured in all courses taken on campus. A 3.0 overall average is also required. Honor point deficiencies acquired in on-campus credits cannot be made up by credits earned at another university or by extension.

3. Graduation—(See Calendar of Events for application deadline.)

a. Diploma Application

A diploma application must be submitted no later than three months prior to Commencement.

b. Minimum Credit Hours

Completion of a program of study outlined by an advisor including a minimum of 30 hours of graduate credit. Normally, only courses numbered 500 and above are acceptable for graduate credit. One-half of the credits earned must be in courses numbered 600 or above.

c. Residence Credit

Completion of a minimum of one full session (5 semester hours minimum) or one semester (9 semester hours minimum) or its equivalent of residence on campus is required. Students who are employed on a twelve-month basis may register for four consecutive semesters of work on campus in lieu of the 5 or 9 hour requirement. Of the total of 30 semester hours, a minimum of 18 hours must be taken on the campus of Western Michigan University except for those students who study in an approved residence center of Western Michigan University (Muskegon and Grand Rapids). Such students may offer a maximum of 20 hours of off-campus work. Work transferred from other institutions must be included within the 12 hours maximum off-campus work permitted, or in the case of the student studying in a residence center within the 20 hours of off-campus work permitted.

d. Grade Point Average

A 3.0 average (A=4) is required for courses taken on campus as well
as an overall 3.0 average. To maintain a B average each hour of C must be offset by an hour of A and each hour of E must be offset by three hours of A. Grades of Incomplete will become E unless completed within one calendar year. Students who seek an extension of time must notify the Graduate Office within the year indicating the circumstances that warrant such consideration. This ruling does not apply to the course, Thesis 700.

e. Hours After Candidacy

The election and completion of at least six hours is required after being approved for Candidacy.

f. Transfer Credit

Six hours of graduate credit may be transferred from other schools provided:

1) The credits were earned in institutions accredited for graduate study and are of B grade or better. The student’s average for all graduate work taken at another institution must also be “B” or better.
2) The School of Graduate Studies approves the credits for transfer.
3) The student’s adviser verifies that the credits contribute to the student’s program of study.

g. Time Limit

All work accepted for the degree program must be elected within six years preceding the date on which the graduate degree is conferred.

h. Thesis

Students writing a thesis should consult the most recent edition of Specifications for Master’s Theses, Specialist in Education Projects, and Doctor’s Dissertations, available in the campus bookstore.

GENERAL REQUIREMENTS FOR A SPECIALIST DEGREE

1. Admission

a. See specific program description to determine the minimal entrance requirements. The requirements range from a Bachelor’s degree to a Master’s degree.

b. Transcripts of all courses beyond high school.

c. An average grade of at least 2.6 (A=4) in the last two years of undergraduate work for all programs permitting entrance with Bachelor’s degree. An average grade of at least 3.25 for all work undertaken beyond the Bachelor’s degree.

d. Personal interviews with representatives of the School of Graduate Studies and the unit in which the student desires to study.

e. Approval of both the School of Graduate Studies and the unit.
f. Attainment of satisfactory scores on the English entrance examination and the verbal and quantitative sections of the Graduate Record Examination or a prescribed substitute. Students admitted with an advanced degree are not required to take the English entrance examination.

2. Candidacy
   a. A permanent program which will constitute an application for admission to candidacy must be submitted during the first semester or session of enrollment.
   b. A grade point average of at least 3.25 must be secured in all graduate work taken.

3. Residence Requirement
   a. One semester on the campus of Western Michigan University—or
   b. Students studying for Specialist in Education may substitute two consecutive summer sessions and participation in a prescribed seminar or project during the intervening period. (Approved for students in educational administration programs only)

4. Grade Point Average
   a. A grade point average of 3.25 is required for all work taken on the campus at Western Michigan University as well as all work taken for the degree.

5. Transfer Credit
   Students who have taken all of the credits for their M.A. degree at Western Michigan University may be permitted to transfer a maximum of twelve credits from another institution in a Specialist degree program.
   Students who have already transferred six credits in their M.A. degree program at Western may transfer a maximum of six additional credits in a Specialist degree program.
   Students who have secured their M.A. degree at an institution other than Western may include a maximum of thirty credits in a Specialist degree program. Units offering Specialist degrees are expected to give credit to transfer work only when the work is applicable and when it meets the same standards required for work completed at Western.

6. Extension Credit
   Credit for work done in approved residence centers (Muskegon and Grand Rapids) may be offered up to a maximum of 26 hours. This maximum must be reduced by the amount of transfer credit accepted. Students entering with a Master's degree may include a maximum of 6 credit hours of extension or residence center credit in addition to work completed as a part of their Master's degree. No more than 18 hours of extension credit earned may be included if any of these credits are earned in other than residence centers.
7. Time Limit
All work accepted for the degree program must be elected within six years prior to the date of receipt of the Specialist degree. An exception may be made for work completed as part of a Master's degree earned prior to admission. Students entering with a Master's degree will be permitted a maximum of five years instead of six.

8. Thesis or Graduate Paper
All students completing the Specialist degree must present a thesis or major project paper in a form acceptable to the unit and the School of Graduate Studies. In writing their paper, students should consult Specifications for Masters' Theses, Specialist in Education Projects, and Doctors' Dissertations, available in the Campus Bookstore.

9. Minimum Credit Hours
The Specialist degree requires the completion of 60 hours of acceptable work beyond the Bachelor's degree.

10. Diploma Application
A diploma application must be submitted no later than three months prior to Commencement.

GENERAL REQUIREMENTS FOR A DOCTORAL DEGREE

Admission Requirements

A. Admission to the School of Graduate Studies.

1. For students with a Bachelor's degree and not exceeding 20 hours of graduate study.
   a. An overall 3.0 point-hour ratio in undergraduate work and 3.25 for graduate work completed.
   b. Satisfactory completion of the English test administered by the School of Graduate Studies. This requirement is waived for students with advanced degrees.
   c. A satisfactory score on the Aptitude and Advanced Tests of the Graduate Record Examination or an examination of similar nature approved by the Graduate Studies Council.

2. For students seeking admission to take graduate work toward the doctoral degree with at least 20 hours of graduate work completed.
   a. All of the above except a.
   b. A 3.25 point-hour ratio for all graduate work completed.

B. Admission to a Doctoral Degree Program.
Having attained admission to the School of Graduate Studies, the student will be expected to meet the admission requirements established by the unit for the doctoral program itself.
School of Graduate Studies

Status as an Applicant

1. Students admitted with less than 20 hours of graduate study must request status as applicants after completing two full semesters of graduate work on campus or 20 semester hours of graduate work beyond those accumulated at the time of admission, whichever come first. Students should present this request to their adviser who will submit a recommendation to the Graduate Office.

2. Students admitted with more than 20 hours of graduate study must request status as an applicant after completing one full semester of graduate work on campus or 40 semester hours of graduate work completed, whichever comes first.

3. Criteria for being awarded status as an applicant include:
   a. An overall point-hour ratio of 3.25 in all graduate work completed.
   b. Commitment to a specific degree program.
   c. Appointment of a doctoral committee.
   d. A decision by the unit that the student should be permitted to continue his study toward a doctoral degree.

Status as a Candidate

All students who are official applicants for a doctoral degree must seek candidacy no later than the end of the second calendar year or its equivalent and meet the following requirements:

1. An overall point-hour ratio of 3.25 in all graduate work completed.
2. Successful completion of the comprehensive examinations established for the program.
3. Completion of the research tool and/or language requirements.
4. Endorsement by the Doctoral Advisory Committee of the plan for the student’s dissertation.
5. Completion of all basic course requirements.

Approval for Graduation

1. Completion of a minimum of 90 hours of courses, seminars, research, and other requirements with an overall point-hour ratio of 3.25. (The dissertation will not be graded.)
2. Three years of study of which at least one complete year must be spent in full-time study on the campus.
3. Students will be allowed a period of seven years from the date of admission to complete all the requirements for the degree. Under extenuating circumstances, additional time may be allowed by the School of Graduate Studies.
4. Approval of the dissertation by three members of the Doctoral Advisory Committee selected to review the dissertation.
5. Satisfactory performance on the doctoral examination.
REGISTRATION

Registration will be held on the dates listed in the Schedule of Classes, which is published prior to each semester and session. This Schedule will be sent upon request and should be consulted for details regarding the time and place of graduate classes. Students who are permitted because of extraordinary circumstances to enroll after the final day scheduled for registration are required to pay a late enrollment fee of $5.00.

Changes in Enrollment: Any changes in a student's schedule must be made in accordance with the procedures approved in the Schedule of Classes. A student may not drop a graduate class beyond the midpoint of each semester or session unless given special permission by a Graduate Dean upon submission of a written application.

STUDENT LOAD

The load for graduate students is governed by the following regulations:

1. The normal load for a graduate student devoting full time to graduate study is three or four courses (9–13 hours).
2. The normal load for graduate students is two courses (5–8 hours) during the spring and summer sessions.
3. Students who are employed should reduce their loads accordingly. The normal load for students employed full time is one course per semester or session. The normal load for students with graduate Assistantships, Program Fellowships and Associateships is two or three courses (6–9 hours).

FELLOWSHIPS, AWARDS AND LOANS

Graduate Fellowships: Fellowships valued at $2,600 will be made available to selected students holding bachelor's degrees from accredited colleges and universities. These fellowships are granted on the basis of merit to persons planning to pursue full-time work on the campus leading to advanced degrees. Such persons must possess a combination of qualities indicating potential leadership in their respective fields with specific emphasis on high scholarship and desirable personal attributes. Fellows are required to pay all fees normally required of other graduate students. Application forms may be secured from the Graduate Office. All applications, transcripts, and letters of recommendation must be submitted by February 15.

Graduate Associateships: Associateships carrying a somewhat greater stipend than the Fellowships will be offered to a limited number of graduate students who have completed a Master's degree and are registering for work on an advanced degree. Students interested in such assistance should request application forms from the Graduate Office.
Graduate Assistantships: Many of the departments provide graduate assistantships with stipends of approximately $2,600 to promising students. Students receiving an assistantship are expected to participate in approximately fifteen hours per week in professional service in the department and to adjust their academic load accordingly.

Loans: Graduate students who enroll for a minimum of nine hours of on campus credit in a semester may qualify for some type of student loan. Students desiring information regarding a student loan should contact the office of Student Financial Aid.

Graduate Awards: Each calendar year an outstanding graduate student pursuing a Master's degree is selected for a graduate award from each of the five schools of the University. In making the selection, the schools will seek to identify the top scholar in their Master's degree program. Ordinarily, the students who qualify will have a record of all "A's", have a high degree of professional integrity as revealed in their relationships with faculty and colleagues, and have the ability to communicate their ideas in an effective manner. The students will be selected from among those who were graduated in the past three commencements.

The awards will be designated as follows:

1. Elmer H. Wild's Scholar in the School of Education
2. Alice Louise LeFevre Award in the School of Graduate Studies
3. School of Business Graduate Faculty Award
4. School of Applied Arts Graduate Faculty Award
5. James O. Knauss Award in the School of Liberal Arts
The undergraduate curriculum in librarianship offers preparation for the teacher-librarian or for the student who expects to enter the graduate program in library science either at Western Michigan University or at some other library school. Starred courses are open to prospective teachers or others who desire a wider acquaintance with books and library materials and methods.

Students in the elementary or secondary curricula may meet certification requirements for teacher-librarianship by taking the undergraduate minor in library science and a subject-matter major. The Librarianship minor consists of the following courses: 100, 230, 510, 512, 530 and 542 or 546 and 516 if the candidate is in the elementary curriculum. The Field Assignment Seminar (520) is also required. A portion of the Directed Teaching period is spent in one of the cooperating school libraries.

The program for the Pre-professional Minor consists of 230, 510, 512, 520, 530, and 542. Each candidate will be assigned to one of the cooperating libraries for experience in the area of library science of special interest to him, and for which he is qualified. The Field Assignment course is to be taken during the last year of work. A course in audiovisual media is highly recommended.

School libraries in the Kalamazoo area serve as centers for field work for those preparing for school library service, and selected cooperating libraries throughout the state serve for field assignments in other areas of librarianship. A departmental laboratory containing books and other materials in library science and related fields is provided in the Department of Librarianship in the Dwight B. Waldo Library.

PRE-PROFESSIONAL CURRICULUM
B.A. or B.S. Degree

Candidates in the School of Liberal Arts who enroll in the Librarianship Curriculum must fulfill the requirements for the B.A. or the B.S.
degree including: (1) general studies; (2) a major in one of the subject fields in the humanities, sciences or the arts; and (3) a minor in librarianship.

A typical pre-professional library science program of studies follows:

**COURSE REQUIREMENTS:**

1. **General Studies requirements**
   - Total hours required for this curriculum: 124 hours

2. **Language and Literature, Speech, Philosophy and Religion**
   - Modern Language: 8
   - English electives: 8
   - Speech 100: 3

3. **Science, Mathematics and Psychology**
   - Psychology 150: 3

4. **Social Sciences**
   - Government Elective: 3
   - History electives: 6
   - Sociology 200: 3

5. **Librarianship**
   - Introduction to Librarianship 100: 2
   - Fundamentals of Library Organization 230: 3
   - Building Library Collections 510: 3
   - Reference Service 512: 3
   - Cataloging Principles 530: 3
   - Field Assignment Seminar 520: 2
   - Reading Interests of Young Adults 542: 3

6. **Physical Education or Military Science**

7. **Electives and Departmental Requirements for Subject Major**
DESCRIPTION OF COURSES

Undergraduate

*100 Introduction to Librarianship 2 hrs. Fall, Winter
An introductory survey to acquaint students with the various types of services offered in the modern library as a social, cultural and educational institution. Students will have opportunity to observe, and in some cases, to participate in the work performed in school, public, county or regional, college and special libraries. Open to freshmen and sophomores who may wish to explore the profession of librarianship as a career.

230 Fundamentals of Library Organization 3 hrs. Fall, Winter
A study of the practical methods for acquisition, processing and circulation of books and other materials and the maintenance of essential business records. Emphasis on simple organization of library materials for effective use in schools and small public libraries.

Upperclassmen and Graduate Students

506 Introduction to Computers I 1 hr. Fall, Winter
Historical Background. Flow charts and concepts of programming, including use of an Automatic Programming System with application to selected problems to be run on the IBM 1620. Prerequisite: 1½ years of high school algebra or Math 100.

510 Building Library Collections 3 hrs. Fall, Winter

512 Reference Service 3 hrs. Fall, Winter
Study and evaluation of basic reference and bibliographic sources. Critical examination of the publications of governmental agencies, societies and institutions especially as reference sources. Attention given to organization and methods of reference services in the library.

*Courses open to students in other departments.
470

School of Graduate Studies

*516 Elementary School Library Materials 3 hrs. Winter

Problems in the evaluation, selection and utilization of print and non-print materials with special emphasis on the content areas in the elementary school curriculum. Prerequisite: Children’s Literature. Open to students outside the department.

520 Field Assignment and Seminar 2 hrs. Fall, Winter

A work assignment in selected cooperating libraries for the purpose of giving the student experience in the organizational and administrative activities of specific types of libraries. Seminars for the discussion of problems are held throughout the term. Additional term project required of graduate students. (This must precede the undergraduate Directed Teaching program.)

530 Cataloging Principles 3 hrs. Fall

Introduction to basic cataloging principles and procedures. Includes theoretical study and practical applications of descriptive cataloging, rules for determining main and secondary entries, subject cataloging, and objectives of library catalogs and their formation.

*542 Reading Interests of Young Adults 3 hrs. Winter

Study of the fields of literature suited to the interests of young people. Students are given opportunity through wide reading to develop principles and standards for the selection of the book collection. Includes an introduction to methods of stimulating broader reading interests and conducting group book discussions with young people. Open to students outside the department.

*546 Storytelling 3 hrs. Fall

Underlying principles of the art of storytelling; techniques; content and sources of materials. Practice in telling stories before groups of children is provided. Planning the story hour program for various ages as a means of developing appreciation of literature and stimulating an interest in reading.

598 Readings in Librarianship 1-3 hrs. Fall, Winter

Offers a program for the advanced student for independent study in a special area of interest; arranged in consultation with the graduate adviser.

*Courses open to students in other departments.
Faculty

DISTINGUISHED UNIVERSITY PROFESSORS

Robert M. W. Travers, Ph.D., School of Education
Charles VanRiper, Ph.D., Department of Speech Pathology and Audiology

1968-1969

Ackley, Donald G., 1968, Instructor in English
B.A., Kalamazoo; M.A., Northwestern

Adams, David W., 1956-63; 1964, Professor of Teacher Education
B.A., Ohio Wesleyan; M.A., Ed.D., New York

Adams, Ethel G., 1946, Professor of Music
B.A., Ball State; M.A., Columbia

Adams, Richard T., 1965, Professor of General Business
B.S., Ph.D., Purdue

Adams, Sam B., 1946, Associate Professor of Music
B.A., Kentucky; M.A., Columbia

Ajango, Helle, 1966, Instructor in German
B.A., Indiana; M.A., Middlebury

Alavi, Yousef, 1958, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Albert, Elaine A., 1965, Assistant Professor of English
B.A., Western College for Women; M.A., Middlebury

Allen, Francis W., 1953, Associate Professor, Library
B.S., Colby; B.A.L.S., M.A.L.S., Michigan

Alvarez, Elsa, 1964, Assistant Professor of Spanish
M.A., Iowa; Ph.D., Havana

Anderson, Mardell B., 1968, Instructor in Physical Education, Women
B.S., Western Michigan

Anderson, M. Joy, 1968, Assistant Professor of Occupational Therapy
B.A., David Lipscomb; Certificate in O.T., Texas Women's; M.A. in
O.T., Western Michigan

Anderson, Robert H., 1957, Associate Professor of Chemistry
B.A., Baker; M.A., Ph.D., Columbia

Anger, Douglas, 1967, Associate Professor of Psychology
B.A., Colgate; Ph.D., Harvard

Ansel, James O., 1949, Director of Rural Education and Professor of
Teacher Education
B.A., Western Michigan; M.A., Northwestern; Ed.D., Columbia
Appel, William C., 1965, Associate Professor of Music
  B.S., State Teachers of Indiana (Pa.); M.Mus., Indiana
Apple, Loyal E., 1966, Lecturer in Blind Rehabilitation
  B.A., William Jewell
Archer, Hugh G., 1939, Associate Professor of Teacher Education
  B.A., Central Michigan; M.A., Michigan
Argyropoulos, Triantafilos, 1964, Associate Professor of Art
  B.S., M.F.A., Michigan
Asher, Eston J., Jr., 1954, Director of Institutional Research and Professor of Psychology
  B.S., Kentucky; M.S., Ph.D., Purdue
Auer, Nancy E., 1966, Assistant Professor of Religion
  B.A., Cedar Crest; M.A., Chicago
Ault, Richard, 1967, Instructor in Teacher Education
  B.S., M.A., Central Michigan
Austin, Douglas V., 1967, Associate Professor of General Business
  B.A., Ohio Wesleyan; M.A., Ph.D., Indiana
Bach, Shirley, 1964, Research Associate in Chemistry
  B.S., Queens College; Ph.D., Wisconsin
Baechtold, Marguerite, 1967, Assistant Professor of Librarianship
  B.A., Montclair; B.S.L.S., Columbia; Ed.S., Western Michigan
Bahlke, Harold O., 1962, Area Chairman, General Studies, Humanities and Professor of Humanities
  B.Ed., Wisconsin State; M.A., Ph.D., Minnesota
Bailey, Keith D., 1955, Assistant Professor, Campus School
  B.S., M.A., Western Michigan
Baker, Lee O., 1954, Head and Professor, Department of Agriculture
  B.S., Wisconsin State, Platteville; M.S., Wisconsin; Ed.D., Michigan State
Baldwin, Elizabeth E., 1964, Associate Professor of Anthropology
  B.A., Wellesley; M.A., Radcliffe; Ph.D., Harvard
Bank, Theodore P. II, 1967, Assistant Professor of Social Science
  B.S., M.S., Michigan
Barbiers, Arthur R., Jr., 1968, Adjunct Assistant Professor of Biology
  B.S., M.A., Bowling Green State
Barstow, Robert H., 1965, Associate Professor of Social Work
  B.A., Western Michigan; M.S.W., Michigan
Bartley, Lynwood, 1963, Assistant Professor of Broadcasting
  B.S., Eastern Michigan; M.A., Western Michigan
Bartoo, Harriette V., 1948, Professor of Biology
  B.A., Hiram; Ph.D., Chicago
Bate, Harold L., 1964, Associate Professor of Speech Pathology and Audiology
  B.A., Butler; M.A., Florida; Ph.D., Wisconsin
Bearden, Larry, 1968, Instructor in English  
B.A., Michigan; M.A., Western Michigan

Beck, Roy A., 1967, Assistant Professor of Speech  
B.S., Southeast Missouri State; M.S., Southern Illinois

Becker, Albert B., 1937, Professor of Speech  
B.A., Western Michigan; M.A., Michigan; Ph.D., Northwestern

Beech, Beatrice H., 1967, Assistant Professor, Catalog Librarian, Library  
B.A., Michigan State; M.S.L.S., Western Michigan

Beech, George T., 1960-64; 1965; Professor of History  
B.A., Michigan State; Ph.D., Johns Hopkins

Behm, Harley D., 1967, Chairman and Associate Professor, Department of Transportation Technology  
B.S., Northern Montana; M.Ed., Ed.D., Missouri

Behzad, Mehdi, 1968, Visiting Associate Professor of Mathematics  
B.S., Tehran; M.S., Ph.D., Michigan State

Beinhauer, Myrtle T., 1957, Associate Professor of Economics  
B.A., M.A., Drake; Ph.D., Minnesota

Beloof, Elmer R., 1946, Professor of Music  
B.Mus., B.S., Illinois; M.A., Ed.D., Columbia

Beloof, Margaret Felts, 1946, Professor of Music  
B.M., Oberlin; M.A., Minnesota

Bendix, John L., 1955, Professor of Industrial Education  
B.S., Stout State; M.A., Minnesota; Ed.D., Indiana

Bennett, Roger A., 1965, Assistant Professor of Engineering and Technology  
B.S.E. (EE), Michigan; M.S., Western Michigan; P.E.

Bennett, William Jr., 1968, Associate Professor of Sociology  
B.A., Denison; M.A., Ph.D., Missouri

Bergeson, John B., 1966, Associate Professor of Teacher Education  
B.A., Knox; M.S., Ed.D., Northern Illinois

Berkey, Ada E., 1947, Associate Professor, Music Librarian, Library  
B.A., Mount Holyoke; B.A.L.S., Michigan; M.A., Iowa

Berndt, Donald C., 1962, Associate Professor of Chemistry  
B.S., Ph.D., Ohio State

Berneis, Regina, 1965, Assistant Professor of Librarianship  
B.A., Wayne State; M.A., Western Michigan

Bernstein, Eugene M., 1968, Professor of Physics  
B.A., M.A., Ph.D., Duke

Betz, Robert L., 1961-62; 1963; Associate Professor of School Services  
B.A., Albion; M.S., Illinois; Ph.D., Michigan State

Beukema, Henry J., 1943, Professor of Engineering and Technology  
B.S., Western Michigan; M.A., Michigan

Bibza, Irene S., 1965, Assistant Professor of Home Economics  
B.S., Carnegie Institute of Technology; M.S., Auburn
Faculty

Bischoff, Guntram G., 1965, Assistant Professor of Religion
University of Bonn, University of Gottingen; B.D., Th.D., Princeton
Theological Seminary

Bjerregaard, Carl, 1968, Assistant Professor of Music
B.Mus., Western Michigan; M.M., Michigan State

Black, Donald J., 1952, Assistant Professor of Engineering and Technology
B.A., Kalamazoo; B.S., Valparaiso Technical Institute; M.A., Western Michigan

Bladt, Dorothy L., 1968, Assistant Professor of Teacher Education
B.S., University of Chicago; M.S., Ed.D., Northern Illinois

Blagdon, Charles A., 1957, Assistant Professor of General Business
B.A., Kalamazoo; M.A., Michigan State

Blake, Susan L., 1968, Instructor in English
B.A., M.A., Pembroke College; Brown University

Blasch, Donald, 1961, Director, Institute of Blind Rehabilitation and Associate Professor of Special Education
B.E., Northern Illinois; M.A., Chicago

Blefko, Robert L., 1968, Assistant Professor of Mathematics
B.A., Kutztown State College of Pennsylvania; M.A., Ph.D., Pennsylvania State

Bliss, James R., 1968, Assistant Professor of General Business
B.A., Nebraska Wesleyan; J.D., Michigan

Bodine, Gerald L., 1957, Assistant Professor of Teacher Education
B.S., Wisconsin State, Milwaukee; M.A., Northwestern

Body, Alexander, 1966, Assistant Professor, Library
Doctor of Laws, Hungaricae Elisabethiane University; M.S.L.S., Western Michigan

Boles, Harold W., 1961, Head and Professor, Department of School Services
B.S., Indiana State; M.A., Ph.D., Ohio State

Booker, Gene S., 1960, Professor of Management
B.S., Ball State; M.A., Ph.D., Indiana

Borr, Earl, 1957, Assistant Professor of Teacher Education
B.S., M.A., Western Michigan

Bosco, James J., 1965, Associate Professor of Teacher Education
B.Ed., Duquesne; M.Ed., Pittsburgh; Ed.D., Columbia

Boucher, Joan Ann, 1966, Assistant Professor of Music
B.M., M.M., Chicago Musical College; Ph.D., Boston

Boughner, Robert, 1967, Instructor in Engineering and Technology
B.S.I.E., Wayne State

Bouma, Donald H., 1960, Professor of Sociology
B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Bournazos, Kimon, 1965, Associate Professor of Business Education
B.S., M.S., Ph.D., Michigan State
Bourziel, Esther M., 1966, Intern Coordinator, Teacher Education
B.A., Wayne State; M.A., Michigan State

Boven, Donald E., 1953, Associate Professor of Physical Education, Men
B.S., M.A., Western Michigan

Bowers, Robert S., 1937, Head and Professor, Department of Economics
B.A., Kansas Wesleyan; M.A., American; Ph.D., Wisconsin

Bowman, Lloyd E., 1966, Instructor in General Business
B.A., Eastern Michigan; M.B.A., Western Michigan

Bradley, George E., 1951, Head and Professor, Department of Physics
B.A., Miami; M.S., Ph.D., Michigan

Bradley, Hugh, 1967, Adjunct Associate Professor of Management and Economics
B.S., M.S., M.I.T., Ph.D., Johns Hopkins

Braile, Frederick R., 1958, Assistant Professor of Teacher Education
B.S., Central Michigan; M.A., Ohio State

Braithwaite, Lloyd, 1968, Associate Professor of Sociology
B.A., M.Crim., D.Crim., California

Brawer, Milton J., 1960, Associate Professor of Sociology
B.A., Harvard; Ph.D., Columbia

Breed, Sterling L., 1956, Associate Professor, Counseling Center
B.S., M.A., Western Michigan

Breisach, Ernst A., 1957, Chairman and Professor, Department of History
Matura, Reagymnasium Knittelfeld and Vienna VII; Ph.D., Vienna;
Dr. rer. oec., Hochschule fuer Welthandel

Breisach, Herma E., 1967, Instructor, Serials Librarian, Library
Matura, Oberschule fuer Maedchen, Vienna IV; M.L.S., Western
Michigan; Ph.D., Vienna

Brennan, Margaret Jane, 1965, Professor of Home Economics
B.S., Western Michigan; M.A., Columbia; Ed.D., Pennsylvania State

Brewer, Richard D., 1959, Associate Professor of Biology
B.A., Southern Illinois; M.S., Ph.D., Illinois

Brink, Lawrence J., 1940, Associate Professor of Industrial Education
B.A., Western Michigan; M.A., Michigan

Brown, Alan S., 1955, Professor of History
B.A., M.A., Ph.D., Michigan

Brown, Charles T., 1948, Chairman and Professor, Department of Speech
and Director, Center for Communication Research
B.A., Westminster; M.A., Ph.D., Wisconsin

Brown, Donald J., 1960, Assistant Professor of Chemistry
B.S., Ph.D., Syracuse

Brown, Helen, 1947, Associate Professor of Physical Education, Women
B.S., M.A., Northwestern

Brown, Mary C., 1968, Instructor, Physical Education, Women
B.A., Albion; M.S., Syracuse
Faculty

Brown, Russell W., 1951, Associate Professor of Music
  B.P.S.M., Oklahoma State; M.Mus.Ed., Notre Dame

Bruce, Phillip Lee, 1963, Associate Professor of Industrial Education
  B.S., M.S., Kansas State College of Pittsburg; Ed.D., Missouri

Brune, Elmer J., 1956, Associate Professor of Engineering and Technology
  B.S., M.A., Western Michigan

Brunhumer, Sondra K., 1967, Instructor, Catalog Librarian, Library
  B.A., Western Michigan; M.A., Michigan; M.A.L.S., Western Michigan

Brunhumer, Walter J., 1957, Professor of History
  B.A., M.A., Marquette; Ph.D., Northwestern

Bruno, James C., 1968, Instructor in General Business
  B.S.B.A., Georgetown; M.B.A., J.D., Michigan

Buchtel, Foster S., 1965, Director, Office of Research Services
  B.A., Akron

Buckner, Michael J., 1968, Instructor, Science Librarian, Library
  B.S., M.S., Michigan State; M.L.S., Western Michigan

Buelke, John A., 1949, Professor of Teacher Education
  B.S., Wisconsin State (Oshkosh); M.A., Northwestern; Ed.D., Cincinnati

Buletza, George F. R., 1966, Assistant Professor of Teacher Education
  B.A., Bonaventure; M.A., Columbia

Bullock, Donald P., 1963, Associate Professor of Music
  B.M.E., M.M., Colorado

Burdick, William L., 1949, Professor of General Business
  B.A., Milton; M.B.A., Ph.D., Wisconsin

Burke, John T., 1962, Head and Professor, Department of Accounting
  B.S., Carroll; M.A., Ph.D., Michigan State; C.P.A., State of Wisconsin

Burke, Richard T., 1964, Instructor in History
  B.A., M.A., Boston

Burleson, Ruth V., 1966, Assistant Professor of Special Education
  B.S., Knoxville College; M.A., Western Michigan

Burns, James W., 1968, Assistant Professor of Teacher Education
  B.S., Central Connecticut; M.Ed., Ed.D., Pennsylvania State

Buthala, Darwin A., 1968, Adjunct Professor of Biology
  B.S., South Dakota State; M.S., Oklahoma State; Ph.D., Iowa State

Butler, Herbert, 1960, Associate Professor of Music
  American Conservatory of Music; Eastman School of Music;
  B.M., M.M., Indiana

Buys, William E., 1964, Professor of Speech
  B.A., Albion; Ph.M., Ph.D., Wisconsin

Byle, Arvon D., 1963, Assistant Professor of Industrial Education
  B.S., M.A., Western Michigan
Bytwork, Alvin J., 1968, Associate Professor of Marketing
B.A., Calvin; M.A., Ph.D., Michigan State

Cacciola, Roseann, 1963, Assistant Professor of English
B.A., Tennessee Wesleyan; M.A., Vanderbilt

Cain, Mary Alexander, 1962, Associate Professor of Teacher Education
B.A., Michigan; M.A., Western Michigan

Callan, Edward T., O.D., 1957, Professor of English
B.A., Witwatersrand; M.A., Fordham; D. Litt. et. Phil., University of South Africa

Cannon, Zane, 1965, Assistant Professor of Marketing
B.S., M.A., Western Michigan

Cardenas, Mercedes R., 1966, Assistant Professor of Spanish
B.A., M.A., Michigan State; Ed.D., Havana

Carley, David D., 1964, Associate Professor of Physics
B.A., Western Michigan; M.S., Michigan; Ph.D., Florida

Carlson, Bernardine P., 1953, Assistant Professor of English
B.A., M.A., Western Michigan

Carlson, Lewis H., 1968, Assistant Professor of History
B.A., M.A., Michigan; Ph.D., Michigan State

Carlson, Norman E., 1963, Associate Professor of English
B.A., Carleton; M.A., Ph.D., Rutgers

Carlson, Theodore L., 1947, Professor of Economics
B.A., Augustana; M.A., Ph.D., Illinois

Carlson, William A., 1966, Associate Professor of School Services

Carney, John M., 1966, Assistant Professor of Art

Caron, Andre, 1966, Lecturer in Paper Technology
B.S., M.S., Maine

Carter, Elwyn F., 1945, Professor of Music
B.A., Alma; M.A., Ed.D., Columbia

Caruso, Phillip P., 1967, Assistant Professor of Economics
B.A., M.A., Michigan State

Casey, James S., 1967, Associate Professor of General Business
B.A., Western Michigan; J.D., Notre Dame

Casson, Harvey, 1967, Adjunct Professor of Physics
B.A., Brooklyn; M.S., Ph.D., Chicago

Castel, Albert E. III., 1960, Professor of History
B.A., M.A., Wichita; Ph.D., Chicago

Cha, Eul Bin, 1966, Instructor, Catalog Librarian, Library
B.A., Korea; M.A., Bucknell; M.A.L.S., Michigan

Chambers, Bill M., 1960, Associate Professor of Physical Education, Men and Head Baseball Coach
B.A., Kentucky; M.A., Marshall
Faculty

Chapel, Joe R., 1965, Assistant Professor, Psycho-Educational Clinic
B.A., Western Michigan; M.A., Michigan State

Chartrand, Gary T., 1964, Associate Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Cheatum, Billye Ann, 1967, Head and Associate Professor, Department
of Physical Education, Women
B.S., Oklahoma College for Women; M.S., Smith; Ph.D., Texas
Women's

Chiara, Clara R., 1949, Professor of Teacher Education
B.S., Miami; M.A., Western Reserve; Ph.D., Ohio State

Chimenti, Frank A., 1968, Instructor in Mathematics
B.A., Gannon College; M.Sc., John Carroll

Christensen, Arthur L., 1959, Assistant Professor of Teacher Education
B.A., Michigan; M.A., Western Michigan

Clark, Phillip A., 1968, Coordinator of Student Teaching
B.S., M.A., Western Michigan

Clark, Richard E., 1965, Assistant Professor of Broadcasting
B.A., Western Michigan; M.A., Pennsylvania

Clark, Samuel I., 1948, Director of Honors and Professor of Political
Science
B.A., Ph.D., Chicago

Clarke, A. Bruce, 1967, Head and Professor, Department of Mathematics
B.A., Saskatchewan; M.S., Ph.D., Brown

Clysdale, J. Patrick, 1958, Associate Professor, Physical Education, Men,
and Administrative Assistant to the Head, Department of Physical
Education, Men
B.S., M.A., Western Michigan

Coats, William D., 1966, Associate Professor of School Services
B.A., Ohio; M.A., Ph.D., Michigan

Cohen, Martin, 1960, Assistant Professor of Librarianship
B.A., Harvard College; B.S., Simmons; M.A., Boston Teachers

Cole, Roger L., 1959, Associate Professor of German
B.A., M.A., Ph.D., Michigan

Coleman, Alwin B., 1966, Assistant Professor of Teacher Education
B.A., Hope; M.S., Ph.D., Michigan

Collins, Carol I., 1967, Instructor in Music
B.A., Michigan State; M.A., Western Michigan

Combs, James D., 1966, Instructor in English
B.A., Hope; M.A., Western Michigan

Combs, Sybil Ann, 1967, Instructor in English
B.A., M.A., Western Michigan

Combs, William W., 1962, Associate Professor of English
B.A., Mississippi; M.A., Ph.D., Harvard

Comer, Charles, 1968, Instructor in Physical Education, Men
B.S., Bowling Green
Condic, Joseph M., 1966, Instructor in English
   B.A., Saint Joseph; M.A., Chicago
Conrad, Maynard M., 1967, Adjunct Associate Professor of Occupational Therapy
   B.S., Kalamazoo; M.D., Northwestern
Conway, E. Cecelia, 1967, Instructor in English
   B.A., Duke
Cooke, Dean W., 1966, Associate Professor of Chemistry
   B.S., Ph.D., Ohio State
Cooley, John, 1968, Assistant Professor of English
   B.A., M.A., Syracuse
Copps, John A., 1959, Professor of Economics
   B.S., Ph.D., Wisconsin
Cordier, Mary, 1967, Instructor in Teacher Education
   B.A., Northern Iowa; M.A., Michigan State
Cordier, Sherwood S., 1956, Associate Professor of History
   B.A., Juniata; M.A., Yale; Ph.D., Minnesota
Corwin, Lucille, 1965, Assistant Professor, Campus School
   B.A., M.A., Western Michigan
Couch, Peter D., 1963, Associate Professor of Management
   B.A., M.A., Illinois; Ph.D., Wisconsin
Coulter, Myron L., 1966, Vice President for Institutional Services and Professor of Education
   B.S., Indiana State Teachers; M.S., Ed.D., Indiana
Coutant, Victor, 1966, Professor of German and Classics
   B.A., M.A., Ph.D., Columbia
Coyne, Monique Y., 1968, Instructor in French
   B.A., M.A., Western Michigan
Coyne, Thomas E., 1962, Administrative Assistant to the President
   B.A., Western Michigan; M.A., Michigan
Crane, Loren D., 1965, Assistant Professor of Speech
   B.A., Brigham Young; M.A., Ph.D., Ohio State
Creed, Harriet, 1967, Instructor in Physical Education, Women
   B.S., Chattanooga; M.S., Tennessee
Crisman, Golda L., 1947, Assistant Professor of Teacher Education
   B.A., Western Michigan; M.A., Michigan
Crowell, Ronald A., 1966, Assistant Professor, Psycho-Educational Clinic
   B.A., Michigan State; M.A., Toledo
Crummel, Berta, 1967, Instructor in Special Education, Institute of Blind Rehabilitation
   B.A., M.A., Western Michigan
Cudney, Milton R., 1964, Associate Professor, Counseling Center
   B.S., Western Michigan; M.A., Michigan; Ph.D., Ohio State
Culp, Robert L., 1957, Instructor in Men's Physical Education
   B.A., Kalamazoo; M.A., Western Michigan
Faculty

Cummings, John W., 1962, Associate Professor of Transportation Technology
B.S., Lewis; M.A., Chicago Teachers

Cunningham, Margot, 1968, Instructor in Home Economics
B.S., M.A., Western Michigan

Curl, David H., 1966, Professor of Teacher Education
B.F.A., Ohio; M.S., Ed.D., Indiana

Czuchna, Paul, 1967, Instructor in Speech Pathology and Audiology
B.S., Western Michigan; M.A., Miami

Dadlani, G. G., 1969, Associate Professor of Social Work
B.A., M.S., Baroda College (India); M.S., Western Reserve

Dahlberg, Kenneth A., 1966, Assistant Professor of Political Science
B.A., Northwestern; M.A., Stanford; Ph.D., Colorado

Dales, George G., 1953, Professor of Physical Education, Men
B.S., Miami; M.A., Michigan

Daniels, James E., 1963, Assistant Professor of Accounting
B.S.B.A., Kansas State of Pittsburg; M.B.A., Arkansas

Dannenberg, Raymond A., 1956, Professor of Distributive Education
B.S., Western Michigan; M.A., Ph.D., Michigan

Darling, Dennis E., 1967, Instructor in Industrial Education
B.S., Stout State; M.A., Ball State

Davenport, James A., 1957, Associate Professor of School Services
B.A., M.A., Western Michigan; Ed.D., Columbia

Davidson, Audrey, 1968, Adjunct Assistant Professor of Humanities
B.A., M.A., Wayne State

Davidson, Clifford O., 1965, Assistant Professor of English
B.S., St. Cloud (Minnesota); M.A., Ph.D., Wayne State

Davidson, Robert, 1964, Instructor in Music

Davies, Douglas, 1968, Instructor in English
B.A., M.A., San Francisco State College

Davis, Charles, Jr., 1967, Assistant Professor of Engineering and Technology
B.S.E.E., Michigan State; M.S.E.E., Michigan

Davis, Donald A., 1959, Professor, Counseling Center
B.A., U.C.L.A.; M.S., Southern California; Ph.D., Michigan State

Davis, Jean O., 1965, Assistant Professor of Business Education
B.S., Virginia State College; M.A., New York

Davis, Richard A., 1965, Associate Professor of Geology
B.S. Beloit; M.A., Texas; Ph.D., Illinois

Davis, Robert S., 1965, Associate Professor of English
B.A., Indiana; M.A., Ph.D., Claremont

Davis, Ronald W., 1966, Instructor in History
B.A., Bowling Green State; M.A., Ph.D., Indiana
Davis, Ruth M., 1961, Associate Professor of Physical Education, Women
B.S., M.Ed., Bowling Green
Day, Robert B., 1965, Associate Professor of Engineering and Technology
B.Sc., M.Sc. (Met. E.), Cincinnati; D.Sc. (Met. E.), Colorado School of Mines; P.E.
Decker, Fred, 1968, Instructor in Physical Education, Men
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Jennings, Helen, 1960, Assistant Professor of Teacher Education  
B.S., M.A., Ed.S., Western Michigan
Jensen, Captain Craig L., 1968, Assistant Professor of Military Science  
B.S., South Dakota State
Jetty, Albert J., 1968, Assistant Professor of Speech Pathology and Audiology  
B.S., Northern; M.A., Western Michigan; Ph.D., Michigan State
Jevert, Joseph A., 1962, Associate Professor of Physical Education, Men  
B.S., Wisconsin State; M.A., Western Michigan
Johnson, A. Elizabeth, 1949, Professor of Teacher Education  
B.A., Kalamazoo; M.A., Columbia; Ed.D., Wayne State
Johnson, G. Stewart, 1960, Associate Professor of Engineering and Technology  
B.S.E. (M.E.), Michigan; M.S. (M.E.), Michigan State; P.E.
Johnson, Gordon O., 1960, Administrative Assistant, School of Applied Arts and Sciences and Associate Professor of Industrial Education  
B.S., Northeast Missouri State; M.Edu., Missouri; Ed.D., Indiana
Johnston, Robert P., 1967, Associate Professor of Art  
B.A., M.A., Pennsylvania State; M.A., Wyoming
Johnston, William A., 1966, Assistant Professor of English  
Ph.B., Wayne State; M.A., Delaware
Jones, Darrell G., 1962, Head and Professor, Department of Business Education  
B.S., M.A., Northern Iowa; Ph.D., Michigan State
Jones, Herb B., 1948, Associate Professor of Spanish  
B.A., Nebraska State; M.A., Mexico
Jones, Jack D., 1956, Assistant Professor of Physical Education, Men  
B.S., Texas; M.A., Western Michigan
Faculty

Jordan, Laurence C., 1968, Instructor in English  
B.A., M.A., Michigan State

Joseph, Bernard, 1968, Instructor in Modern and Classical Languages  
Baccalaureate; Lycee de Garcons, Carcassonne; Licence es Lettres;  
Faculte des Lettres, Toulouse

Josten, John J., 1968, Associate Professor of Biology  
B.S., Cincinnati; M.S., Miami; Ph.D., Indiana

Junker, Louis J., 1961, Professor of Economics  
B.A., Denver; M.A., Connecticut; Ph.D., Wisconsin

Juul, Kristen D., 1960, Professor of Special Education  
B.S., Western Michigan; M.A., Ed.D., Wayne State

Kaarlela, Ruth, 1963, Assistant Professor of Special Education, Institute  
of Blind Rehabilitation  
B.A., M.S.W., Wayne State

Kana'an, Adli S., 1965, Assistant Professor of Chemistry  
B.S., Arts and Sciences College (Baghdad); M.S., Colorado State;  
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KanamueUer, Joseph M., 1966, Assistant Professor of Chemistry  
B.S., St. Joseph; Ph.D., Minnesota

Kanzler, Janet, 1968, Instructor in Physical Education, Women  
B.S., George Washington; M.A., Columbia

Kanzler, William H., 1961, Professor of Teacher Education  
B.S., U.S. Naval Academy; M.A., Columbia; Ed.D., Wayne State

Kapoor, S.F., 1967, Assistant Professor of Mathematics  
B.S., M.S., B.L., Bombay; Ph.D., Michigan State

Karger, Adolf, 1968, Visiting Associate Professor of Geography  
M.A., Halle (Germany); Ph.D., Cologne (Germany)

Karsten, David, 1967, Assistant Professor of Speech  
B.A., Hope; M.A., Northwestern

Kaufman, Maynard, 1963, Associate Professor of Religion  
B.A., Bethel; M.A., Chicago

Kaufman, Robert W., 1959, Associate Professor of Political Science  
B.S., Wisconsin; M.A., Ph.D., American

Kaul, Ronald D., 1967, Associate Professor of Physics  
B.S., Ph.D., Case Institute

Kavanaugh, Alice M., 1966, Associate Professor of Home Economics  
B.S., M.A., Western Michigan

Keary, John P., 1967, Instructor in Humanities  
B.F.A., M.F.A., Michigan State

Keaveny, Richard J., 1968, Assistant Professor of Art  
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Keenan, J. Michael, 1962-64; 1968; Chairman and Associate Professor of  
Management  
B.A., M.S., Colorado; Ph.D., Ohio State
Kelemen, Joseph A., 1968, Associate Professor of Engineering and Technology  
B.S. (E.E.), M.S. (E.E.), St. Louis

Keller, Fred S., 1968, Visiting Professor of Psychology  
B.S., Tufts; M.A., Ph.D., Harvard

Kemper, John G., 1942, Professor of Art  
B.F.A., Ohio State; M.A., Columbia

Kent, Louise M., 1967, Adjunct Assistant Professor of Psychology  
B.A., M.A., Indiana; Ph.D., Iowa

Kent, Neil D., 1965, Professor of Psychology  
B.A., M.A., Baylor; Ph.D., Iowa

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B.A., M.A., Western Michigan

Kercher, Leonard C., 1928, Head and Professor, Department of Sociology  
B.A., M.A., Ph.D., Michigan

Kilty, Klare K., 1968, Assistant Professor of Teacher Education  
B.A., M.A., Andrews

Kim, C. I. Eugene, 1961, Associate Professor of Political Science  
B.A., King College; M.A., Vanderbilt; Ph.D., Stanford

King, Dale D., 1957, Associate Professor of Engineering and Technology  
B.S., M.A., Western Michigan

King, Donald E., 1966, Instructor in Art  
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King, Ruby, 1967, Coordinator of Student Teaching  
B.A., Michigan State; M.A., Western Michigan

Kiraldi, Louis, 1960, Associate Professor, Documents Librarian, Library  
M.A., Western Michigan; Dr. of Laws, Royal Pazmany University of Budapest

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B.Ed., Chicago State College; M.S., Ph.D., Northwestern

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B.S., Wayne State; B.S., O.T. Certificate, Eastern Michigan; M.A., Western Michigan; Ph.D., Michigan

Kissell, Johannes A., 1968, Assistant Professor of German  
B.A., Mercer; M.A., Ph.D., Michigan State

Klammer, Opal, 1962, Instructor in Physical Education, Women  
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Klammer, Waldemar E., 1956, Associate Professor of Industrial Education  
B.A., Mankato State; M.S., Stout State

Klatt, Lawrence A., 1965, Associate Professor of Management  
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B.A., M.A., Ph.D., Illinois
Faculty

Klein, Patricia, 1967, Instructor in Social Science, General Studies
B.A., M.A., Illinois

Klein, Roy S., 1967, Assistant Professor of Engineering and Technology
B.S.M.E., Drexel Institute of Technology; M.S.M.E., Newark College
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Kline, James E., 1963, Assistant Professor of Paper Technology
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Knoska, Karen S., 1967, Instructor in Speech Pathology and Audiology
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Kokales, Evan P., 1967, Health Service
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Kopke, Kenneth W., 1967, Instructor in Physical Education, Men
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Koronaskos, Chris, 1960, Professor of Psychology
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Krawutschke, Peter W., 1967, Instructor in German
B.A., M.A., Western Michigan

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Kripalani, Gangaram K., 1968, Assistant Professor of Economics
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Kuenzi, W. David, 1964, Associate Professor of Geology
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Kuffel, Stanley, 1952, Professor of Psychology
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Kukolich, Stephen I., 1965, Professor of Paper Technology
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Kusmiss, John H., 1965, Assistant Professor of Physics
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Kuykendall, Radford B., 1957, Associate Professor of Speech
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Kyser, Daniel A., 1947, Professor of Music
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B.S., M.A., Western Michigan

Lambe, Cameron W., 1962, Associate Professor of Teacher Education
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Library
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Landsburg, David L., 1968, Instructor in Humanities
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Large, Margaret S., 1949, Professor of Physical Education, Women
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Large, Wilda, 1964, Associate Professor of Social Science
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LaRue, Robert, 1964-65; 1966; Assistant Professor of English
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Lawrence, Jean McVay, 1959, Associate Professor of Biology
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Lawson, E. Thomas, 1961, Head and Professor, Department of Religion
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Leader, Alan H., 1963, Associate Professor of Management
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Women
B.S., Illinois State Normal; M.A., Colorado State

Lemmerman, Kathe L., 1968, Instructor in Humanities
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Lennon, Elizabeth M., 1968, Instructor in Special Education, Institute of Blind Rehabilitation
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Leonardelli, D. B., 1951, Assistant Director, Division of Continuing Education and Assistant Professor of Education
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Lewis, Alice E., 1956, Associate Professor of Occupational Therapy
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Lewis, David, 1962, Associate Professor of Sociology
B.A., M.A., Maryland; Ph.D., Michigan State

Lewis, Fletcher, 1968, Assistant Professor of Physical Education, Men B.S., M.A., Western Michigan

Lewis, Helenan S., 1963, Assistant Professor of Political Science
B.A., M.A., Ph.D., Michigan State

Lick, Don R., 1965, Associate Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Limpus, Robert M., 1947, Dean, School of General Studies and Professor of English
B.A., Northwestern; M.A., Ph.D., Chicago

Lindbeck, John R., 1957, Professor of Industrial Education
B.S., M.A., Ph.D., Minnesota

Lindstrom, Carl A., 1959, Assistant Professor of Teacher Education
B.A., Western Michigan; M.A., Michigan

Littna, Francis M., 1965, Associate Professor of Humanities
Doctor's Degree in Law and Economics (Prague)

Livingston, William, 1964, Assistant Professor of Speech
B.A., Humboldt State; M.A., Illinois

Lloyd, Bruce A., 1967, Associate Professor of Teacher Education
B.S., M.Ed., Ph.D., Ohio

Lloyd, Gerald J., 1966, Associate Professor of Music
B.M., M.M., College-Conservatory of Music; Ph.D., Rochester

Loew, Cornelius, 1956, Dean, School of Liberal Arts and Sciences and Professor of Religion
B.A., Elmhurst; B.D., S.T.M., Union Seminary; Ph.D., Columbia

Löffler, Reinhold, 1967, Assistant Professor of Anthropology
B.A., Innsbruck Teacher Training College; Ph.D., University of Mainz (West Germany)

Lohr, Frances E., 1968, Assistant Professor of Speech Pathology and Audiology
B.A., Michigan State; M.A., Northwestern; Ph.D., Michigan

Long, Jerome H., 1964, Associate Professor of Religion
B.A., Knox; B.D., M.A., University of Chicago Divinity School

Lowder, Dwayne M., 1966, Assistant Professor of Art
B.A., M.A., North Carolina
Lowe, James J., 1965, Associate Professor, Counseling Center
B.A., Indiana; M.A., Western Michigan

Lowrie, Jean E., 1951, Head and Professor, Department of Librarianship
B.A., Keuka; B.S.L.S., Western Reserve; M.A., Western Michigan;
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Lowry, George G., 1968, Associate Professor of Chemistry
B.A., Chico State; M.S., Stanford; Ph.D., Michigan State

Luther, Frank R., 1968, Instructor in Geology
B.A., M.A., State University of New York at Buffalo

Lyon, David O., 1963, Associate Professor of Psychology
B.A., Hamilton; Ph.D., Indiana

Mabie, Vern E., 1930-32; 1948; Director of Placement
B.A., Western Michigan; M.A., Michigan

MacDonald, Richard R., 1967, Assistant Professor of Sociology
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Macleod, Garrard D., 1959, Assistant Professor of Broadcasting
B.A., M.A., Western Michigan

MacQueen, Charles B., 1966, Instructor, Counseling Center
B.S., M.A., Western Michigan

Macrorie, Ken, 1961, Professor of English
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Maher, Robert F., 1957, Chairman and Professor, Department of Anthropology
B.S., M.S., Ph.D., Wisconsin

Maier, Paul L., 1959, Professor of History
B.A., B.D., Concordia Seminary; M.A., Harvard; Ph.D., Basel

Malamazian, John D., 1966, Lecturer in Blind Rehabilitation
B.S., Illinois

Mallinson, George G., 1948, Dean, School of Graduate Studies and Professor of Science Education
B.S., M.A., New York State; Ph.D., Michigan

Mallinson, Jacqueline, 1967, Adjunct Associate Professor of Science Education
B.A., Kalamazoo; M.A., Michigan

Malmstrom, Jean G., 1948, Professor of English
B.A., M.A., Washington; Ph.D., Minnesota

Maloney, Harold J., 1968, Lecturer in Blind Rehabilitation
B.A., Northwestern

Malott, Richard W., 1966, Associate Professor of Psychology
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B.A., Greenville; M.A., Ph.D., Illinois

Manis, Jerome G., 1952, Director, Center for Sociological Research and Professor of Sociology
B.A., Wayne State; M.A., Chicago; Ph.D., Columbia
Mann, Barry H., 1968, Instructor in Spanish
   B.A., William and Mary; M.A., Middlebury
Manske, Arthur J., 1948, Professor of School Services
   B.A., Wayne State; M.A., Ph.D., Columbia
Mariani, James N., 1968, Instructor in English
   B.A., St. Louis; M.A., Kansas
Marietta, E. L., 1962, Professor of Business Education
   B.Ed., Southern Illinois; M.A., Ph.D., Iowa
Martin, Gerald C., 1959, Associate Professor of Teacher Education
   B.A., Ed.S., Western Michigan; M.A., Michigan; Ed.D., Michigan State
Martin, Kenneth E., 1966, Assistant Professor of Business Education
   M.S., Kansas State
Marty, Roger, 1968, Instructor in Mathematics
   B.S., Kent State; M.A., Pennsylvania State
Marvin, F. Theodore, 1962, Instructor and Administrative Assistant to
   the Dean, School of General Studies
   B.A., Western Michigan; M.A., Michigan
Matthews, Holon, 1948, Professor of Music
   B.M., M.M., College Conservatory-Cincinnati; Ph.D., Rochester
Maus, Clayton J., 1942, Dean of Records and Admissions
   B.S., Ashland; M.S., Wisconsin
Mazer, Gilbert E., 1965, Associate Professor of School Services
   B.A., Michigan; M.A., Western Reserve; Ph.D., Arizona State
Mazur, Major Mitchell E., 1965, Assistant Professor of Military Science
   B.S., Wisconsin
McAnaw, Richard L., 1964, Associate Professor of Political Science
   B.S., State Teachers College, Missouri; M.A., Missouri; Ph.D., University of Iowa
McBeth, John H., 1955, Assistant Professor of Business Education
   B.S., Indiana; M.A., Alabama
McCarrville, Michael E., 1968, Assistant Professor of Chemistry
   B.S., Loras College; Ph.D., Iowa State
McCully, Joseph C., 1956, Professor of Mathematics
   B.A., Western Michigan; M.A., Ph.D., Michigan
McCuskey, Dorothy, 1957, Professor of School Services
   B.A., Wooster; M.A., Radcliffe; Ph.D., Yale
McDonald, Merle B., 1968, Coordinator of Student Teaching
   B.A., Nebraska Wesleyan; M.A., Nebraska
McFarland, Major James W., 1968, Assistant Professor of Military Science
   B.B.A., Texas
McGehee, Richard V., 1963-66; 1967; Associate Professor of Geology
   B.S., Texas; M.S., Yale; Ph.D., Texas
Faculty

McGinnis, Dorothy J., 1941, Director, Psycho-Educational Clinic and Professor of Teacher Education
B.S., Western Michigan; M.A., Ohio State; Ph.D., Michigan State

McIntyre, James W., 1959, Associate Professor of Speech
B.A., Denison; M.A., Michigan

McKeag, Dorinne, 1962, Associate Professor, Counseling Center
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McKinney, Eleanor, 1967, Assistant Professor of Librarianship
B.S., Trenton State; B.S.L.S., Columbia; Ed.S., Western Michigan

McKitrick, Max O., 1964, Associate Professor of Business Education
B.Sc., Wittenberg; M.A., Ohio State; Ed.D., Colorado State

Meagher, Jack R., 1949, Director of Computer Center and Associate Professor of Mathematics
B.A., Western Michigan; M.A., Michigan

Means, Chalmers E., 1968, Associate Professor of Teacher Education
B.S., Shippensburg State; M.S., Bucknell

Means, Clarence T., 1966, Associate Professor of Physical Education, Men B.S., M.A., Michigan State

Mehoke, Barbara Ann, 1966, Coordinator of Student Teaching (Detroit) and Instructor in Teacher Education
B.A., Michigan State; M.A., Michigan

Mellander, David S., 1966, Instructor in Geography
B.A., Augustana; M.A., Western Michigan

Meretta, Leonard V., 1945, Professor of Music
B.M., M.M., Michigan

Mergen, Paul S., 1965, Assistant Professor of Art
B.S., M.S., Wisconsin

Metheany, John M., III, 1964, Associate Professor of Art

Metzler, Carl M., 1968, Adjunct Assistant Professor of General Business
B.S., Goshen; Ph.D., North Carolina State

Meyer, Charles E., 1966, Chairman and Professor, Department of Art
B.F.A., M.A., Wayne State; Ph.D., Michigan

Meyer, Ruth Ann, 1965, Assistant Professor of Physical Education, Women B.A., Iowa State Teachers College; M.A., Colorado State

Michael, John L., 1967, Professor of Psychology
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Middleton, Owen B., 1964, Associate Professor of Teacher Education
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Miller, George S., 1964, Director, Campus School and Associate Professor of Teacher Education  
B.A., Michigan; M.A., Ed.D., Wayne State

Miller, James W., 1961, President  
B.A., Amherst; M.A., Ph.D., Minnesota; LL.D., Michigan Technological University; LL.D., Olivet

Miller, John T., 1963, Assistant Professor of Physical Education, Men  
B.S., Western Michigan

Miller, Marilyn Lea, 1966, Assistant Professor of Librarianship  
B.S., Kansas; M.A.L.S., Michigan

Miller, Ralph N., 1946, Professor of English  
B.A., Wayne State; M.A., Michigan; Ph.D., Northwestern

Miller, Robert B., 1956, Associate Professor of Physics  
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Milton, Donald, 1965, Assistant Professor of Philosophy  
B.A., Gustavus Adolphus; M.A., Minnesota

Miner, Margie J., 1957, Associate Professor of Physical Education, Women  
B.S., Western Illinois; M.S., Wisconsin; M.A., Western Michigan

Misner, Paul J., 1965, Professor of School Services  
B.A., Eastern Michigan; M.A., Ph.D., Michigan

Mitchell, LTC George W., 1966, Assistant Professor of Military Science  
B.S., Omaha

Mitchell, James L., Jr., 1964, Associate Professor of Accounting  

Mochizuki, June, 1966, Counseling Center  
B.S., Colorado State

Mohr, Mary J., 1966, Instructor in Art  
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Moore, Daniel, 1963, Director of Educational Resources Center and Professor of School Services  
B.A., M.A., Peabody; Ph.D., Michigan

Moore, F. Stanley, 1958, Associate Professor of Geography  
B.A., Kansas City; M.A., Kansas; Ph.D., Washington

Morell, Gilbert W., 1956, Assistant Professor of History  
B.A., Western Michigan; M.A., Michigan

Morgan, Kenyon, 1964, Assistant Professor, Counseling Center  
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Morris, William C., 1961, Assistant Professor of Accounting  

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B.A., M.A., Ph.D., Michigan State
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 B.S., Miami; M.A., New York; Ph.D., Michigan State

Moulton, Helmi K., 1960, Associate Professor of Art
 B.S., Central Michigan; M.E., Wayne State

Mountjoy, Paul T., 1964, Chairman and Professor, Department of Psychology
 B.S., Lawrence; M.A., Ph.D., Indiana

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Moyer, Jack C., 1967, Instructor in English
 B.A., Albright; M.A., Colorado State

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 B.S., Tulsa; M.B.A., Indiana

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 M.S., Warsaw; Ph.D., Mathematics Institute of Polish Academy of Sciences

Murata, Hiroshi, 1966, Assistant Professor of Art
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 B.A., Western Michigan; M.A., Bowling Green State

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 B.A., M.A., M.A.L.S., Ph.D., Michigan

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 B.A., M.A., Pittsburgh

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 B.A., Andrews; M.A., Northwestern; Ph.D., Stanford

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 B.Sc., Northwestern; M.A., Bradley; Ph.D., Michigan State

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 B.S., M.S., Stout State; Ed.D., Bradley

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 B.A., M.A., Michigan State

Nelson, Arnold G., 1954, Professor of English
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Neschich, Richard, 1964, Assistant Professor of Distributive Education
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Neu, Mary E., 1968, Instructor in Art
 B.F.A., M.F.A., Drake

Neubig, Robert D., 1967, Professor of Accounting
 B.S., M.B.A., Ph.D., Ohio State; C.P.A., States of New York and Ohio
Newell, Gale E., 1968, Assistant Professor of Accounting
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Nichols, Nathan L., 1955, Professor of Physics
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B.A., Alma; M.A., Michigan

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Nodel, Emanuel, 1961, Associate Professor of History
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B.A., Ottawa; M.A., Iowa

O'Connor, Arthur J., 1964, Director of University Information
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Olenchak, Frank R., 1966, Assistant Professor, Campus School
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Olson, Wendy Lee, 1967, Instructor, Physical Education, Women
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Olton, Roy, 1957, Chairman and Professor, Dept. of Political Science
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Orofsky, Fred C., 1966, Assistant Professor of Physical Education, Men
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Orr, Genevieve, 1964, Assistant Professor of French
B.A., M.A., Western Michigan; Baccalaureate; Licence de lettres, Paris
Orr, John B., 1955, Associate Professor of English
B.S., M.A., Minnesota

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B.S.E., Michigan; M.B.A., Ph.D., Michigan State

Osborne, Charles E., 1957, Associate Professor of Music
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B.M.A., Drake; M.A., Indiana

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B.M., M.M., Eastman School of Music

Passero, Richard, 1966, Assistant Professor of Geology
B.A., M.S., Miami

Pattison, Dale P., 1963, Assistant Professor of History
B.A., Western Michigan; M.A., Chicago

Patton, Jon R., 1967, Assistant Professor of Engineering and Technology
B.S.E., M.S.E., Michigan

Paulson, Eugene D., 1967, Coordinator of Student Teaching and Assistant
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B.S., M.A., Western Michigan

Pearson, Maisie K., 1965, Assistant Professor of English
B.A., Wilson; M.A., Purdue

Peterson, J. Kimbark, 1947, Associate Professor of Mathematics
B.A., Vanderbilt; M.A., Harvard

Petro, John W., 1961, Associate Professor of Mathematics
B.A., M.S., Ph.D., University of Iowa

Pharr, Edward, 1968, Instructor in English
B.A., M.A., Miami University (Ohio)

Phillips, Claude S., Jr., 1957, Director, Institute of International and
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B.A., M.A., Tennessee; Ph.D., Duke

Phillips, John R., 1961, Associate Professor of English
B.A., Pomona College; M.A., Ph.D., California (Berkeley)
 faculty

Phillips, Linda N., 1966, Instructor in Music  
B.M., M.M., Western Michigan

Pichot, Marcel E., 1968, Instructor in French  
B.A., Andrews

Pilcher, William W., 1968, Assistant Professor of Anthropology  
B.A., Portland State

Pippen, Richard W., 1963, Associate Professor of Biology  
B.S., Eastern Illinois; M.A., Ph.D., Michigan

Plano, Jack C., 1952, Professor of Political Science  
B.A., Ripon; M.A., Ph.D., Wisconsin

Platt, Clarice C., 1967, Associate Professor of Social Work  
B.A., M.S.W., Michigan

Powell, James H., 1955, Professor of Mathematics  
B.A., M.A., Ph.D., Michigan State

Powers, Myrtle M., 1941, Assistant Professor of Biology  
B.S., Western Michigan; M.S., Michigan State

Price, Berthold, 1968, Instructor, Campus School  
B.S., Central Michigan

Pridgeon, Arden D., 1965, Assistant Professor of Engineering and Technology  
B.S., M.A., Michigan State; P.E.

Pritchard, Harold M., 1966, Health Service  
M.D., Marquette

Pritchard, Michael S., 1968, Assistant Professor of Philosophy  
B.A., Alma; Ph.D., Wisconsin

Prodromidis, Kyprianos, 1968, Instructor in Economics  
M.A., Athens School of Economics and Business Administration (Greece)

Prohammer, Frederick G., 1967, Adjunct Associate Professor of Physics  
Ph.D., Pennsylvania

Proos, Richard A., 1964, Director, Health Service  
M.D., Michigan

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B.A., M.A., Western Michigan

Prussion, Beatrice H., 1957, Assistant Professor of Speech  
B.A., Denison; M.A., Michigan

Pugh, David G., 1955, Associate Professor of English  
B.A., Drury; M.A., Chicago

Pulaski, Richard G., 1966, Assistant Professor of Philosophy  
B.A., Hofstra College

Puze, Lilija, 1956, Assistant Professor, Acquisitions Assistant, Library  
B.A., M.Ph., University of Latvia; M.A.L.S., Michigan

Quandt, Eldor C., 1967; Assistant Professor of Geography  
B.A., Valparaiso; M.S., Kansas State
Ragsdale, Tex R., 1968, Instructor in English  
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Raklovits, Richard F., 1957, Assistant Professor of Physical Education, Men  
B.S., Illinois; M.A., Western Michigan  
Ranson, Brian H. A., 1968, Visiting Instructor in Sociology  
M.A., M.Sc., Edinburgh  
Rappeport, Phyllis, 1966, Associate Professor of Music  
B.A., Queens; M.M., Illinois  
Ratliffe, Sharon, 1965-67; 1968, Instructor in Speech  
B.A., Western Michigan; M.A., Wayne State  
Raup, Henry A., 1960, Associate Professor of Geography  
B.A., Kent State; M.A., Ph.D., Illinois  
Ray, Harold L., 1960, Associate Director of Physical Education and Professor of Physical Education, Men  
B.A., M.S., Syracuse; Ph.D., Ohio State  
Rayford, Erwin W., 1967, Assistant Professor of Industrial Education  
B.S., Wisconsin State; M.E., Ph.D., Missouri  
Rayl, Leo S., Jr., 1965, Associate Professor of Engineering and Technology  
B.S.M.E., M.S.I.M., Purdue  
Raymer, Ralph W., 1957, Instructor in Teacher Education  
B.S., Michigan State; M.A., Western Michigan  
Redenius, Charles M., 1967, Instructor in Political Science  
B.A., Western Michigan; M.A., Ph.D., Michigan  
Redente, Anthony, 1967, Instructor in Geography  
B.S., Southern Connecticut State; M.S., Illinois  
Reid, Kenneth E., 1968, Assistant Professor of Social Work  
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Reid, Nellie N., 1945, Associate Professor of Social Work  
B.A., Iowa; M.A., Chicago  
Rensenhouse, Barbara, 1958, Associate Professor of Art  
B.S., M.A., Western Michigan  
Rhines, Mark D., 1966, Instructor in History  
B.A., M.A., Michigan State  
Rhodes, Curtis A., 1966, Instructor in Art  
B.F.A., Kansas; M.F.A., Ohio  
Ricci, Robert J., 1968, Assistant Professor of Music  
B.A., Antioch; M.M., Yale; D.M.A. University of Cincinnati College, Conservatory of Music  
Richards, Charles E., 1968, Assistant Professor, Campus School  
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Faculty

Richards, Evan L., 1966, Assistant Professor of Social Science and Sociology
   B.A., M.A., Oxford (England)

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   B.S., Wisconsin; M.A., Western Michigan

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   B.A., M.A., Western Michigan

Risher, Charles G., 1958, Professor of Industrial Education
   B.S., Bowling Green; M.Ed., Ed.D., Missouri

Ritchie, William A., 1964, Associate Professor of Political Science
   B.A., Marshall; M.A., Ph.D., Michigan

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   B.S., Western Michigan; M.A., State University of Iowa

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   B.A., M.A., Michigan State

Robeck, George, 1968, Assistant Professor of Speech
   B.A., M.A., Pennsylvania State

Roberts, Thorold E., 1968, Instructor in English
   B.A., M.A., Kansas

Robertson, Anna M., 1966, Assistant Professor of Physical Education, Women
   B.S., Cortland State; M.S., Ithaca

Robertson, Malcolm H., 1961, Professor of Psychology
   B.A., Minnesota; M.A., George Washington; Ph.D., Purdue

Robin, Stanley S., 1965, Professor of Sociology
   B.A., M.A., Ohio State; Ph.D., Purdue

Robinson, Frank B., 1966, Professor and Head, Department of Speech Pathology and Audiology
   B.A., Western Michigan; M.S., Minnesota; Ph.D., Ohio State

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   B.S., Eastern Michigan; M.A., Ph.D., Michigan

Rogers, Chester B., 1966, Director of Institute of Public Affairs and Assistant Professor of Political Science
   B.A., M.A., Cincinnati; Ph.D., Northwestern

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   B.A., Western Michigan; M.A., Columbia; Ph.D., Michigan

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   B.A., Central Methodist College; M.A., Chicago
Ross, Martin H., 1966, Assistant Professor of Sociology
          B.S., M.S., Wisconsin
Ross, Myron H., 1961, Professor of Economics
          B.S., M.A., Temple; Ph.D., Pennsylvania
Rossi, Ernest E., 1966, Assistant Professor of Political Science
          B.A., Duquesne; M.Litt., Ph.D., Pittsburgh
Rossman, Jules, 1966, Assistant Professor of Speech
          B.A., New York; M.A., Ph.D., Michigan State
Rothe, Erich, 1965, Visiting Professor of Mathematics
          Ph.D., University of Berlin
Rothfuss, Hermann E., 1944, Professor of German
          B.S., M.A., Ph.D., Minnesota
Rowekamp, William H., 1957, Assistant Professor of Physical Education, Men
          B.A., Missouri; M.A., Western Michigan
Rucker, Clinton A., 1968, Instructor in Humanities
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Russell, Norman K., 1946, Assistant to the Vice President for Student Services and Professor, Counseling Center
          B.S., Western Michigan; M.A., Michigan
Russell, Vera J., 1954, Instructor, Campus School
          B.S., M.A., Western Michigan
Rutherford, Phoebe, 1964, Assistant Professor of Biology
          B.A., Queens; M.A., Western Michigan
Ryan, Alexander Boggs, 1962, Assistant Professor of Music
          B.Mus., M.Mus., North Texas State; D.M.A., Michigan
Ryan, L. D., 1967, Assistant Professor of Engineering and Technology
          B.S.M.E., Tri-State; M.S.M.E., Toledo; P.E.
Sackett, Ronald L., 1966, Instructor in Transportation Technology
          B.S., Western Michigan
Sadler, David F., 1955, Chairman and Professor, Department of English
          B.A., Antioch; M.A., Ph.D., Minnesota
Salsich, Hamilton, 1968, Instructor in English
          B.A., St. Louis; M.A., Kansas
Saunders, Mary M., 1967, Instructor in English
          B.A., Duke; M.A., Illinois
Savage, Marjorie L., 1958, Professor of Home Economics
          B.S., Mississippi State College for Women; M.S., Iowa State; Ed.D., Illinois
Saylor, R. Gerald, 1967, Assistant Professor of Economics
          B.A., Kalamazoo; Ph.D., Duke
Schaeberle, Frederick W., 1965, Assistant Professor of Accounting
          B.S., Eastern Michigan; M.B.A., Michigan; C.P.A., State of Michigan
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Schlosser, Merle J., 1957, Associate Professor of Physical Education, Men
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Schmaltz, Lloyd J., 1959, Head and Professor, Department of Geology
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Schmidt, Richard H., 1955, Director of Professional Experiences, Graduate
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Schmitt, Peter, 1965, Associate Professor of History
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Schneider, Arnold E., 1947, Dean, School of Business, Head, Department
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B.S., Northern Iowa; M.A., Iowa; Ph.D., Michigan

Schnoor, Max C., 1967, Assistant Professor of Management
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Schoenhals, Neil L., 1946, Associate Professor of Teacher Education
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Schreiber, William A., 1953, Assistant Professor of Engineering and
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Schreiber, William P., 1968, Assistant Professor of Teacher Education
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Schreiner, Erik A., 1963, Associate Professor of Mathematics
B.A., M.A., Ph.D., Wayne State

Schten, Arnold A., 1965, Assistant Professor of Teacher Education and
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B.A., M.A., Western Michigan

Schultz, Beth, 1958, Associate Professor of Biology
B.A., Temple; M.S., Cornell; Ed.D., Florida

Schumann, Donna N., 1961, Assistant Professor of Biology
B.S., M.S., Michigan

Schut, A. L., 1966, Lecturer in Blind Rehabilitation
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Schwersinske, Walter C., Jr., 1968, Instructor in Industrial Education
B.S., Andrews; M.A., Western Michigan
Scott, Frank S., 1956, Professor of Engineering and Technology
B.S., M.S., Purdue; Ed.D., Michigan State

Scott, Herbert S., 1968, Assistant Professor of English
B.A., Fresno State; M.F.A., Iowa

Seafort, George B., 1964, Assistant Professor, Counseling Center
B.A., Tennessee Temple College; M.A., Michigan State

Seay, Maurice F., 1967, Professor of School Services
B.A., M.A., Transylvania; Ph.D., Chicago; LL.D., Union College and Western Michigan

Sebaly, A.L., 1945, Director of Student Teaching and Professor of Teacher Education
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Seber, Robert C., 1956, Professor of Mathematics
B.A., Coe; M.S., Ph.D., Iowa

Sechler, Robert E., 1959, Associate Professor of Mathematics
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Seibert, Russell H., 1936, Vice President for Academic Affairs and Professor of History
B.A., Wooster; M.A., Chicago; Ph.D., Ohio State

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B.A., M.A., Maharja; B.Ed., Teachers College (India); M.S.L.S., Catholic University of America

Sellers, Helen G., 1947, Associate Professor of English
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Semelroth, James D., 1967, Instructor in Spanish
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Shafer, Robert L., 1959, Associate Professor of English
B.A., Michigan; M.A., Harvard; M.A., Indian Studies, Wisconsin; Ph.D., Michigan

Shamu, Robert E., 1967, Associate Professor of Physics
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Shapiro, David, 1968, Instructor in Art
B.F.A., Pratt Institute; M.F.A., Indiana

Sharma, Visho B. L., 1967, Associate Professor of Social Science and Sociology
B.Sc., (Econ.); Ph.D., London; Barrister-at-Law (England)

Sharp, Ronald, 1968, Instructor in English
B.A., Kalamazoo; M.A., Michigan

Sheldon, David A., 1966, Assistant Professor of Music
B.M., M.M., Northwestern

Sheppard, John D., 1965, Assistant Professor of Accounting
B.S., M.A., Missouri
Sheridan, Gregory, 1965, Assistant Professor of Philosophy  
B.S., College of the Holy Cross; M.Sc., Ohio State;  
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Shull, Charles A., 1964, Instructor, Counseling Center  
B.S., Findley; M.A., Michigan

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Siebert, Rudolf J., 1965, Associate Professor of Religion  
M.A., Mainz; M.A., Munster; Ph.D., Mainz

Siehl, Chris M., 1967, Instructor in History  
B.A., Wittenberg; M.A., Northwestern

Sievers, Gerald L., 1967, Assistant Professor of Mathematics  
B.A., St. Mary's; M.S., Ph.D., Iowa

Sill, Thomas J., 1967, Assistant Professor of Speech  
B.S., M.S., Southern Illinois

Slack, Doris Ann, 1966, Assistant Professor of Occupational Therapy  
B.S., Michigan; O.T. Certificate, Western Michigan; M.P.H., Michigan

Slaughter, Thomas C., 1948, Associate Professor of Physical Education, Men  
B.S., Western Michigan; M.A., Michigan

Small, Thomas, 1966, Assistant Professor of English  
B.A., Pomona College; M.A., Colorado

Smidchens, Uldia, 1968, Assistant Professor of Teacher Education  
B.A., Ball State; M.A., Wisconsin; Ph.D., Michigan

Smith, Carol P., 1965, Associate Professor of Teacher Education  
B.S., Bowling Green State; M.A., Michigan State

Smith, Charles A., 1935, Associate Professor of English  
B.A., Western Michigan; M.A., Michigan

Smith, Curtis O. B., 1968, Assistant Professor of Music  
B.M., M.M., Northwestern

Smith, Dorothy E., 1963, Assistant Professor, Psycho-Educational Clinic  
B.S., Northwestern; M.A., Western Michigan

Smith, Herbert L., 1963, Associate Professor of Sociology  
B.S., M.A., Houston; Ph.D., Wisconsin

Smith, Isabelle L., 1968, Instructor in Home Economics  
B.S., Wayne State; M.A., Western Michigan

Smith, Kathleen M., 1966, Associate Professor of English  
B.A., Mount St. Mary; M.A., Boston; Ph.D., Fordham

Smith, R. Franklin, 1963, Associate Professor of Speech  
B.A., Kent State; M.A., Ohio; Ph.D., Wisconsin

Smith, Robert D., 1964, Assistant Professor of Political Science  
B.A., Virginia
Smith, Robert J., 1963, Associate Professor of Anthropology  
B.A., M.A., Yale; Ph.D., Pennsylvania

Smith, Robert L., 1964, Director of University Theatre and Associate  
Professor of Speech  
B.S., M.A., Bowling Green State; Ph.D., Michigan State

Smith, William K., 1967, Instructor in Librarianship  
B.A., M.A., Western Michigan

Smutz, M. Elizabeth, 1937, Professor of Art  
B.A., Oberlin; M.A., Columbia

Snow, Carl B., 1946, Director, Audiovisual Center and Associate Professor  
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B.S., Western Michigan; M.A., Columbia

Sommerfeldt, John R., 1959, Director, Medieval Institute and Professor  
of History  
B.A., M.A., Ph.D., Michigan

Sorenson, Raymond F., 1950, Associate Professor of Physical Education,  
Men  
B.S., Western Michigan; M.S., Indiana

Sorenson, Virginia M., 1965, Assistant Professor of Teacher Education  
B.S., M.A., Western Michigan

Spink, Ralph M., 1966, Associate Professor of Broadcasting  
B.S., Minnesota; M.A., Denver

Spyers-Duran, Peter, 1967, Professor, Director of Libraries  
Matura, Budapest; M.A.L.S., Chicago

Squire, Dana D., 1967, Adjunct Associate Professor of Management  
B.S., M.S., Michigan State; M.S.I.A., Ph.D., Michigan

Stafford, Norma Mae, 1967, Assistant Professor of Physical Education,  
Women  
B.S., M.A., Michigan State

Stallman, Robert L., 1966, Assistant Professor of English  
B.A., M.A., New Mexico; Ph.D., Oregon

Steen, Edwin B., 1941, Professor of Biology  
B.A., Wabash; M.A., Columbia; Ph.D., Purdue
Faculty

Steger, Ronald L., 1968, Instructor in Engineering and Technology  
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Stegman, George K., 1962, Associate Professor of Industrial Education  
B.S., M.S., Stout State; Ed.D., Wayne State

Steinhaus, Ralph K., 1968, Assistant Professor of Chemistry  
B.S., Wheaton; Ph.D., Purdue

Stenesh, Jochanan, 1963, Associate Professor of Chemistry  
B.S., Oregon; Ph.D., California

Stephenson, Barbara J., 1960, Associate Professor of Physical Education, Women  
B.S., Western Michigan; M.S., Southern California

Stevens, Fred L., 1946, Associate Professor of Physical Education, Men  
B.S., M.A., Western Michigan

Stevens, Marie L., 1957, Dean of Students  
B.A., Mills; M.A., Syracuse

Stewart, Larry, 1965, Instructor in Music  
B.S., Ball State; M.M., Northwestern

Stewart, Mary Lou, 1959, Associate Professor of Physical Education, Women  
B.A., Oberlin; M.A., Western Reserve; Ph.D., Michigan State

Stiefel, William J. III., 1964, Associate Professor of Engineering and Technology  
B.S.C.E., Drexel Institute of Technology; M.S.C.E., Lehigh

Stillwell, Janet E., 1967, Assistant Professor of Physical Education, Women  
B.A., M.A., Michigan

Stillwell, Laverne H., 1965, Associate Professor of Speech  
B.A., Lake Forest; M.A., Michigan

Stillwell, Lidia, 1967, Assistant Professor of Special Education  
B.S., M.S., Western Michigan

Stine, Leo C., 1952, Associate Dean, School of Graduate Studies and Professor of Political Science  
B.Ed., Illinois State; M.A., Ph.D., Illinois

Stoddart, Arthur W.J., 1967, Associate Professor of Mathematics  
B.S., M.S., Otago (New Zealand); Ph.D., Michigan

Stokes, William T., 1967, Instructor in English  
B.A., Hartford; M.F.A., Iowa

Stoline, Michael R., 1967, Assistant Professor of Mathematics  
B.A., M.A., Ph.D., University of Iowa

Storoshenko, Irene, 1964, Instructor in Russian  
Diploma, Kiev State; M.A.T., Indiana

Stott, Jon, 1968, Assistant Professor of English  
B.A., M.A., British Columbia
Straw, W. Thomas, 1968, Assistant Professor of Geology
B.S., M.A., Ph.D., Indiana

Strolle, Roland S., 1957, Professor of Education
B.A., Northern Michigan; M.A., Minnesota; Ed.D., Michigan State

Stromsta, Courtney P., 1968, Professor of Speech Pathology and Audiology
B.S., Western Michigan; M.A., Ph.D., Ohio State

Stroud, Sarah Jane, 1966, Associate Professor of Teacher Education
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Stroupe, John H., 1965, Associate Professor of English
B.A., Grinnell; Ph.D., Rochester

Strouse, Dorane R., 1967, Adjunct Assistant Professor of Economics
B.A., Tufts; M.B.A., Pennsylvania

Stulberg, Julius, 1945, Professor of Music
B.A., M.A., Michigan State

Sud, Gian Chand, 1966, Associate Professor of Biology
B.S., M.S., Panjab; Ph.D., Wisconsin

Suterko, Stanley, 1961, Assistant Professor of Special Education, Institute of Blind Rehabilitation
B.S., Illinois; M.A., Western Michigan

Sutton, Richard, 1968, Lecturer in Social Science
B.A., Western Michigan

Swanson, Curtis N., 1968, Instructor in Transportation Technology
B.S., M.S., Western Michigan

Swickard, Sara R., 1951, Professor of Teacher Education
B.S., M.A., Ph.D., Ohio State

Syndergaard, Larry, 1968, Assistant Professor of English
B.S., Iowa State; M.S., Wisconsin

Szalkowski, Anne, 1955, Associate Professor of English
B.A., Western Michigan; M.A., Michigan State

Tamburro, Frances M., 1968, Instructor in English
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Tao, Jing-Shen, 1966, Assistant Professor of History
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Taylor, Betty, 1947, Professor of Home Economics
B.S., Iowa State; M.A., Columbia; Ph.D., Michigan State

Taylor, David R., 1968, Assistant Professor of Teacher Education
B.S., Wisconsin State; M.S., Ed.D., Northern Illinois

Taylor, Mary L., 1963, Assistant Professor, Circulation and Reserve Librarian, Library
B.A., M.A., Western Michigan

Tessin, Melvin J., 1967, Instructor in Management
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Faculty

Thomas, Darrell B., 1968, Assistant Professor of Home Economics
B.S., M.S., Brigham Young

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O.T. Certificate, Kalamazoo School of Occupational Therapy; B.A., Western Michigan; M.A., Michigan

Thomas, Nancy L., 1954, Assistant Professor, Campus School
B.S., M.A., Western Michigan

Tooke, Florence, 1964, Assistant Professor of Home Economics
B.S., M.S., Illinois State

Torrence, Gaylord D., 1968, Instructor in Art
B.S., Eastern Illinois; M.F.A., Michigan State

Tosi, Donald J., 1968, Assistant Professor of School Services
B.S., College of Steubenville; M.Ed., Toledo; Ph.D., Kent State

Trader, Robert B., 1951, Head and Professor, Department of Marketing
B.S., Indiana; M.S., Pittsburgh; Ed.D., Michigan State

Travers, Robert M. W., 1965, Distinguished University Professor
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Trimpe, Adrian, 1947, Head and Associate Professor, Department of Distributive Education
B.S., Western Michigan; M.A., Michigan

Tsai, Jung H., 1968, Instructor in Mathematics
B.S., Taiwan Chunk Kung; M.A., Pennsylvania State

Turansky, Isadore, 1960, Assistant Professor of Special Education
B.S., Edinboro; M.Ed., Pittsburgh

Turer, Richard, 1968, Instructor in Social Science
B.A., Miami; M.A., New York

Turner, Walter W., 1963, Associate Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Tydeman, James E., 1958, Associate Professor, Business Librarian, Library
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Tyndall, Dean R., 1955, Associate Professor of Occupational Therapy
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Ulmer, James L., 1959, Associate Professor of Industrial Education
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Ulrich, Roger E., 1965, Research Professor, Psychology
B.S., North Central College; M.A., Bradley; Ph.D., Southern Illinois

Ulry, Orval L., 1965, Head and Professor, Department of Teacher Education
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Underwood, James R., 1968, Instructor in French
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Urich, Roger R., 1967, Assistant Professor of Engineering and Technology
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ValDez, Mabel A., 1967, Assistant Professor of Occupational Therapy  
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Van Den Berg, Lois R., 1950, Assistant Professor of Teacher Education  
B.S., Western Michigan; M.A., Michigan  
VanDePolder, James, 1967, Instructor in Transportation Technology  
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VanderBeek, Leo C., 1956, Professor of Biology  
B.A., Western Michigan; M.S., Ph.D., Michigan  
VanDeventer, Clarence N., 1955, Associate Professor of Transportation Technology  
B.S., Winona State; M.A., Purdue  
VanDeventer, William C., 1953, Professor of Biology  
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VanLiere, Carma P., 1968, Instructor in English  
B.A., M.A., Indiana  
VanMeter, Captain Terry, 1968, Assistant Professor of Military Science  
B.S., Norwich  
VanRiper, Charles, 1936, Distinguished University Professor  
B.A., M.A., Michigan; Ph.D., Iowa  
VanVoorhees, Frank L., 1963, Assistant Professor of Political Science  
B.S., M.A., Western Michigan  
VanZee, Gertrude, 1952, Associate Professor, Catalog Librarian, Library  
B.A., Hope; B.A.L.S., M.A.L.S., Michigan  
Viall, William P., 1963, Professor of School Services  
B.S., New York State; M.A., Ed.D., Columbia  
Vivian, Marjorie E., 1966, Assistant Professor, Catalog Librarian, Library  
B.A., Michigan; B.S.L.S., Columbia; M.A.L.S., Michigan  
Vuicich, George, 1968, Professor of Geography  
B.A., M.A., Ph.D., University of Iowa  
Wagenfeld, Morton, 1966, Associate Professor of Sociology  
B.S., City College of New York; M.A., Brooklyn; Ph.D., Syracuse  
Walker, Jess Morgan, 1965, Associate Professor of Teacher Education  
B.S., M.A., Utah  
Walker, Lewis, 1964, Associate Professor of Sociology  
B.A., Wilberforce; M.A., Ph.D., Ohio State  
Wallace, Roger L., 1966, Assistant Professor of Management  
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Walton, Eleanor, 1965, Associate Professor of Speech  
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Wandner, Stephan A., 1968, Instructor in Economics  
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Wangberg, Franklin, 1960-62; 1965; Assistant Professor, Campus School  
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   B.A., Connecticut College for Women; M.A., Northwestern
Warren, H. Dale, 1963, Assistant Professor of Chemistry
   B.A., Rice Institute; M.S., Idaho; Ph.D., Oregon State
Wasileski, John S., 1968, Instructor in Mathematics
   B.A., Wilkes; M.A., Pennsylvania State
Watmough, E.B., 1962, Associate Professor of Engineering and Technology
   B.S.I.E., M.S.I.E., Pennsylvania State
Weaver, Constance, 1965, Instructor in English
   B.A., M.A., Indiana
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