Bulletin - Western Michigan University: The Undergraduate Catalog 1971-1972

Western Michigan University

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WESTERN MICHIGAN UNIVERSITY is located in Kalamazoo, midway between Chicago and Detroit. Three major highways and numerous bus routes connect the city with other midwestern cities. The population of Kalamazoo is 85,555 and of Kalamazoo County is 201,000.

DIRECTIONS FOR CORRESPONDENCE

Director of Admissions
   Admissions, University Literature, Credit Acceptance
Controller
   Business and Financial Arrangements
Dean of the College of Applied Sciences
   Matters Relating to Vocational Education
Dean of the College of Business
Dean of the College of Education
Dean of the College of General Studies
Dean of The Graduate College
Dean of the College of 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 Career Planning and 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
In all of its relationships the University prohibits any discrimination on the basis of race, religion, sex or national origin.
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.
Western Michigan University

Founded: 1903
President: James W. Miller, Ph.D., LL.D.
State Supported, Co-educational

Colleges:
- Applied Sciences
- Arts and Sciences
  - School of Social Work
- Business
- Education
- General Studies
- The Graduate College
  - School of Librarianship

Governing Body:
Under the Michigan Constitution of 1963, Western Michigan University has Constitutional status with its own Board of Trustees, appointed by the Governor.

Educational Goals:
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 the knowledge still to be explored.

Academic Year: 1971-72
- Fall Semester — August 30-December 18
- Winter Semester — January 5-April 22
- Spring Session — May 1-June 21
- Summer Session — June 28-August 18
  (Two sessions equal to one semester)
### 1971

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UNIVERSITY CALENDAR 1971-72

Fall Semester, 1971
August 28, Saturday ........................................ Orientation and Drop-Add
August 30, Monday ........................................... Classes Begin
September 6, Monday ........................................ Labor Day Recess
October 22, Friday ........................................... Classes dismissed 2 p.m. Friday only
                                                                                      (Laboratories excepted)
October 23, Saturday .......................................... Homecoming
November 24, Wednesday ............................... Thanksgiving Recess (12:00 noon)
November 29, Monday ....................................... Classes Resume
December 18, Saturday ......................................... Semester Ends
December 18, Saturday ....................................... Commencement (2 p.m.)

Winter Semester, 1972
January 4, Tuesday ........................................ Final Registration
January 5, Wednesday .................................... Classes Begin
March 2, Thursday ........................................ Semester Recess (8 a.m.)
March 6, Monday ........................................... Classes Resume (8 a.m.)
March 31, Friday ............................................ Good Friday Recess (12:00 noon)
April 22, Saturday ........................................... Commencement (2 p.m.)
April 22, Saturday ........................................... Semester Ends

Spring Session, 1972
April 29, Saturday ........................................ Final Registration
May 1, Monday ................................................ Classes Begin
May 29, Monday ............................................ Memorial Day
June 21, Wednesday ........................................ Session Ends

Summer Session, 1972
June 26, Monday ........................................... Registration, Graduates
June 27, Tuesday ........................................... Registration, Undergraduates
June 28, Wednesday .......................................... Classes Begin
July 4, Tuesday ................................................ Independence Day
August 18, Friday ........................................... Session Ends
August 18, Friday ........................................... Commencement (6 p.m.)
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<td>Dorothy Upjohn Dalton</td>
<td>Kalamazoo</td>
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<td>John R. Dykema</td>
<td>Grosse Pointe Farms</td>
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<tr>
<td>Dr. Julius Franks, Jr.</td>
<td>Grand Rapids</td>
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<td>Philip N. Watterson</td>
<td>Cascade</td>
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<td>Mildred Swanson Johnson</td>
<td>Muskegon</td>
<td>December 31, 1976</td>
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<td>Robert D. Caine</td>
<td>Hickory Corners</td>
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<td>Fred W. Adams</td>
<td>Grosse Pointe</td>
<td>December 31, 1978</td>
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<td>Charles H. Ludlow</td>
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James W. Miller, *Ex-Officio*, Chairman
Fred W. Adams, Vice Chairman
Peter R. Ellis, Secretary
Robert B. Wetnight, Treasurer
Administrative Offices

President ................................. James W. Miller, Ph.D., LL.D.
Vice President for Academic Affairs  ...... Russell H. Seibert, Ph.D.
Vice President for Finance .......... Robert B. Wetnight, M.B.A., C.P.A.
Vice President for Institutional Services ... Myron L. Coulter, Ed.D.
Vice President for Student Services ..... Thomas E. Coyne, M.A.
Dean, College of Applied Sciences ...... George E. Kohrman, Ed.D.
Dean, College of Arts and Sciences .......... Cornelius Loew, Ph.D.
Dean, College of Business .............. Arnold E. Schneider, Ph.D.
Dean, Continuing Education .......... Leo C. Stine, Ph.D.
Dean, College of Education ............. John E. Sandberg, Ed.D.
Dean, College of General Studies ........ Robert M. Limpus, Ph.D.
Dean, The Graduate College ............. George G. Mallinson, Ph.D.
Dean, Admissions and Records .......... Clayton J. Maus, M.S.
Controller ................................ Robert Beecher, J.D.
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 co-ordinate 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 Vice Presidents, the Deans of the Academic Colleges, Controller, Deans of Admissions and Records, of Students, and of Continuing Education; Director for Academic Services, of Black Americana Studies, of Libraries, Career Planning and Placement, of Research Services, of University Information, Administrative Assistant to the President, Assistants to the Vice President for Academic Affairs, Student Services and Institutional Services, President of the Faculty Senate and President of the Associated Student Government.

THE FACULTY 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 1971-72

Samuel I. Clark President
Laurel A. Grotzinger Vice President
Ada E. Berkey Treasurer
John Cooley Recording Secretary
Frank R. Jamison 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
George E. Kohrman, Dean
Robert M. Limpus, Dean
Cornelius Loew, Dean
George G. Mallinson, Dean
John E. Sandberg, Dean
College of Education
Arnold E. Schneider, Dean
Hans Engelke, Acting Director of Libraries

Elected
Clara R. Chiara 1971
Alan H. Leader 1971
Jerome Manis 1971
Dorothy McCuskey 1972
Edward L. Galligan 1972
Frank S. Scott 1972
Ollin J. Drennan 1973
Richard T. Burke 1973
Robert L. Stallman 1973

Students
Christina Bach
Ronald Fabian
Ronald Klein

GRADUATE STUDIES COUNCIL
Ex Officio
George G. Mallinson, Dean, Chairman
George E. Kohrman, Dean
Cornelius Loew, Dean
John E. Sandberg, Dean
Arnold E. Schneider, Dean
Russell H. Seibert, Vice President

Elected
J. Michael Keenan 1971
Cameron Lambe 1971
Jochanan Stenesh 1971
Eugene Bernstein 1972
James J. Bosco 1972
William Ritchie 1972
Frederick Gault 1973
Peter Schmitt 1973
Betty Taylor 1973

Students
Leslie Gould
Irma Johnson
Eva Newbeck
John Vonk

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

Elected
Gene S. Booker 1970
Robert B. Day 1970
Morvin A. Wirtz 1970
Charles T. Brown 1971
Otto Grundler 1971
William Garland 1971
Thomas Houser 1972
Jack Plano 1972
Eugene Bernstein 1972
William D. Coats 1973
John R. Lindbeck 1973
John R. Rizzo 1973

Students
Jan Johnson
Philip Hewett
Richard Reyes
Administrative Groups

STUDENT SERVICES COUNCIL

Staff
Marie Stevens
Robert Ethridge

Faculty
Jerome Long
Minoru Mochizuki
Donald Nantz
Carol Smith

Students
Thomas Cannon
Douglas Dosson
Merry Ellen Eason
Thomas Keenan
Patrick Riley
Steve Williams

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, College of General Studies
Cornelius Loew, Dean, College of Arts and Sciences
Maurice Seay, Professor of Educational Leadership

Elected
John T. Burke 1971
Nicholas Hamner 1971
Richard McGehee 1971
Yousef Alavi 1972
Charles Meyer 1972
Glade Wilcox 1972
Henry J. Beukema 1973
Kenneth E. Dickie 1973
Beth Schultz 1973

Students
Robert Aberasturi
Philip Heath

CONTINUING EDUCATION COUNCIL

Ex Officio
Leo C. Stine, Dean, Chairman

Presidential Appointees
Russell Gabier, Director of Admissions
Theodore Marvin, Administrative Assistant to the Dean of General Studies
John Nangle, Assistant Director, Institutional Research

Elected
Owen Middleton 1971
Frank VanVoorhees 1971
Sterling Breed 1972
William Morrison 1972
G. Stewart Johnson 1973
Darrell G. Jones 1973
THE ATHLETIC BOARD

Leo C. Vanderbeek, Chairman and Faculty Representative, Mid-American Conference

Dale Machacek
Charles Washington
Van Alan Weimer
Clayton J. Maus
William Morrison
Roger Pulliam

Lloyd J. Schmaltz
Dale H. Warren
Robert B. Wetnight

Ex Officio
Joseph T. Hoy
John S. Lore

Student Representative
W Club Representative
Student Representative
Dean, Admissions and Records
Faculty Representative
Assistant to the Vice President for Academic Affairs
Faculty Representative
Faculty Representative
Vice President for Finance

Director of Athletics
Director, Alumni Relations
The program of study 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 programs 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.
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 School 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. The Art Department is a member of the National Association of Schools of Art. The College of Business is accredited by the American Association of Collegiate Schools of Business.

Western Michigan University is a member of 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

Western Michigan University admissions policy prohibits any discrimination on the basis of race, religion or national origin.

Application for admission may be made to any semester or session. 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 admission 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.

Western Michigan University recognizes the need to make provisions and adjustments in admissions standards which will enable potentially successful students from the various minorities who are often characterized as disadvantaged, culturally deprived, or economically impoverished to gain admission to the University, and continue those special programs which now are in existence on Western’s campus.

METHODS OF ADMISSION

Students may be admitted in the following ways:

1. Admission by secondary school diploma: 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
Admission

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 the student was enrolled, 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 College or 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.

6. Readmission of former students: Former students in good standing will be admitted until such time as the University can no longer accommodate additional students. Students who have been dismissed from Western are generally expected to remain out at least one semester. The Committee on Readmissions is concerned with the extent to which the dismissed student has resolved his
past academic difficulties. It is recommended, therefore, that the student, when applying for readmission, include a written statement with the "short form" application.

7. A student who registers and attends classes during the semester for which he makes initial application will, although he may not attend succeeding sessions, be eligible to register for one year following. If he does not register for the initial semester, he must re-apply for admission.

A student who has current admission status and has been attending classes on or off campus will retain that status as long as he has attended classes within the last year.

If a student wishes to continue to enroll after securing a degree, he should seek re-admission.

APPLICATION FOR ADMISSION

Freshmen

1. A prospective freshman should secure an application from his high school counselor, principal, or the Undergraduate Admissions Office and complete those parts for which he is personally responsible.

2. The application should then be returned to the high school counselor or principal for completion. A $10 check or money order payable to Western Michigan University for the non-refundable application fee must accompany the application.

3. The completed application will be forwarded to the University by the high school. It is not acceptable if sent directly by the student.

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

5. Final dates for receiving applications in the Undergraduate Admissions Office for any entry period are subject to change without notice.

6. Satisfactory recommendations from an authorized official must be recorded on the application unless the policy of the high school specifically opposes such recommendations.

7. Students graduating from an accredited high school in the state of Michigan with an above-average record earned in a college preparatory program will be admitted into most programs of study offered in the University until such time as admissions are closed.

8. Admission to the University will be judged on the basis of the high school record earned prior to the date of admission. The final
Transfers

Students transferring to Western from other institutions are expected to present a record which indicates their potential to complete satisfactorily graduation requirements. In nearly all cases, a minimum cumulative 2.0 or "C" average is required for admission.

1. Complete an application for regular degree admission.

2. Forward the application to the high school if less than thirty semester hours of credit have been earned or the overall grade point average is less than a "C" (2.0) average.

3. Forward the Transfer Recommendation form (Parts III, IV, and V) to the appropriate dean of the college last attended as a regular full-time student, for completion.

4. Be prepared to come to the campus for pre-admission counseling if requested. If an interview is desired, it may be arranged Monday through Friday, each week. Appointments are scheduled between 9:00 a.m. and 4:00 p.m.

5. Have a complete official transcript from each of the colleges attended forwarded directly to the Admissions Office, Western Michigan University. Transcripts presented by the student are not considered official.

6. If presently enrolled, request an official transcript forwarded to the Admissions Office, Western Michigan University, immediately upon completion of the semester. Admission is not officially completed until the final transcripts are received.

9. Students whose academic records fall below a C+ average in solid subjects may be required to furnish first semester senior grades and ACT scores before action is completed on their application.

10. 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.

11. Applications which may require special consideration should be brought to the attention of the Admissions Staff by the principal or high school counselor with a complete description of the problems or unusual circumstances involved.
7. An official transcript for students with tentative admission must be received in the Admissions Office within ten days following the first day of the semester. Failure to provide such a record may result in the student being withdrawn from school.

8. Grades and honor or quality points are not transferable to or recorded on the WMU permanent record. Courses completed at another college which are transferable will be accepted for credit only. Courses in which “D’s” or the equivalent thereof have been earned will be accepted for credit when:
   a. the applicant's cumulative grade point average for courses which are transferable, including all institutions, is a 2.0 or better and;
   b. the applicant's cumulative grade point average at the school from which “D” grades are to be transferred is a 2.0 or better.

American College Test Required of Freshmen

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 tests 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).

Notification of Admission from the University

Western Michigan University operates on a “rolling admission” notification system. This means that applications are processed as soon as they are received and action is taken by the Admissions Committee when the application is complete. Notification of the admission status is mailed to the student as soon as possible.

Beginning applicants whose high school record clearly meets all admission requirements will be notified immediately that they have been granted tentative early admission. Tentative early admission is automatically confirmed when the student’s final transcript arrives verifying graduation from high school with an acceptable record.
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 these 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.

COLLEGE LEVEL EXAMINATION PROGRAM

The General Examinations of the College Level Examination Program (CLEP) as accepted at Western Michigan University meet the needs of two major groups:

1. NON-MATRICULATED STUDENTS and adults who wish to study for a degree and who have achieved college level proficiency in the areas of English Composition, Humanities, Natural Sciences, and Social Sciences.

2. BEGINNING FRESHMEN who have been enrolled in Honors Programs in their secondary schools, but who have not taken required Advanced Placement Tests for advanced standing and credit.

NON-MATRICULATED STUDENTS AND ADULTS will find that the General Examinations are particularly important for adults who often become interested in a formal degree program after considerable work experience and informal study. They may also be used by adults considering a degree program on a part-time basis where the time required to reach their goal is an important factor. College Level Examinations can help avoid duplication of effort and also shorten the amount of time required for a degree by evaluating the nontraditional college-level education through correspondence courses, radio, private tutoring, work experience, service connected courses, etc., and lead to a direct assignment of credit toward a specific degree program.

ENTERING FRESHMEN may be considered for college credit at Western Michigan University through testing by the College Level General Examinations only under specific conditions. The applica-
Admission

tion to take a General Examination must be approved by the Admissions Office of Western Michigan University and such approval must be contingent on a valid reason for the testing request such as: The secondary school’s inability to offer an advanced placement program; a special educational experience such as travel abroad wherein the applicant engaged in a formal study program or seminar; a special summer study program; enrollment in Honors courses equivalent to formal Advanced Placement courses without the Advanced Placement opportunity; and/or other evidence of college level proficiency in areas of the General Examination.

The General Examinations are intended to provide a comprehensive measure of undergraduate achievement in the five basic areas of the liberal arts: English Composition, Humanities, Mathematics, Natural Science and Social Sciences. (The Mathematics section of the General Examination is not weighed in determining credit at Western Michigan University.)

With the exception of the test in English Composition, each General Examination is 75 minutes in length. The English Composition test is 60 minutes long.

A Bulletin of Information for candidates, furnished to anyone who requests it, provides detailed information about registration procedures, test fees, and center locations. This booklet is free and available on request from: College Entrance Examination Board, Publications Order Office, Box 992, Princeton, New Jersey, 08540.

Interviews

A personal interview is not a requirement for admission; however, some students are requested to appear for an interview before final action can be taken on their application.

Campus Visits

The University encourages interested students and their parents to visit the campus as early in their high school career as possible. Qualified admissions counselors are available for consultation, and campus facilities are available for visits. The Office of Admissions and Records is located in the Administration Building and is open from 9:00 a.m. to 12:00 noon and 1:00 p.m. to 4:00 p.m., Monday through Friday. If a personal interview is desired, a request with preferred and alternative dates indicated should be addressed to the Office of Admission at least two weeks in advance of the desired date.
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 requirements of this degree 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 years of high school preparation in 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 requirements of this degree 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 student at Western Michigan University who earns a bachelor's degree and who subsequently becomes a candidate for a second bachelor's degree may by earning 30 semester hours of residence credit beyond those required for the first degree, be awarded the second degree. The additional hours need not be taken subsequent to completion of requirements for 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 STATISTICS

MASTER OF SCIENCE

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 and Librarianship by the departments indicated and The Graduate College.

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

SPECIALIST IN EDUCATION

A sixth-year program offered through the College of Education and The Graduate College, with specialization in Educational Administration or School Psychological Examiner.
DOCTOR OF EDUCATION

A degree program offered by the Department of Educational Leadership in the College of Education and The Graduate College 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 of which no less than 120 hours of academic (i.e. not general credit P.E.) are required.

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 at the time of graduation 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; and in addition to the major or two minors, a minor in Elementary Education is required. All students in International and Area Studies, Electrical Engineering Technology and Mechanical Engineering Technology and Metallurgical Engineering Technology, Industrial Engineering and Industrial Supervision, Automotive Engineering Technology and Aviation Engineering Technology, 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. Each student must complete 40 hours of work in the General Studies Program or in approved alternatives. (See “General Studies Program”).

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

f. 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 of the last 30 hours must be taken through Western. Correspondence credit may not be used to satisfy any of the minimum residence requirements.

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

h. 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).

i. A student may graduate under the catalog in effect at the time of his initial registration or any succeeding catalog except that no student may graduate under the requirements of a catalog which is more than ten years old.

j. In cooperation with two-year institutions of higher education in the State of Michigan, a student who transfers directly to Western Michigan University from a two-year Michigan institution may elect to graduate under the catalog in effect at the time of his initial registration at the two-year institution. He must, however, meet the requirements of the ten-year rule above.

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 have earned either 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.
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.
  (or approved alternatives as listed at the College of General
    Studies Office and in the Schedule of Classes)
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.
  Criticism of Mass Media 403 ................................ 4 hrs.
  Business and Society 404 ................................... 4 hrs.
  Molders of Thought 405 ..................................... 4 hrs.
  Social and Cultural Change 408 ............................ 4 hrs.
  Seminar in Contemporary Issues 497 ...................... 4 hrs.

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

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 College 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 College of General Studies, those persons responsible for the administration of curricula, and appropriate department heads.

GENERAL STUDIES EQUIVALENTS
(FOR TRANSFER STUDENTS)

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 re-
Degrees and Certificates

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 (physical)
   - 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
Degrees and Certificates

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 or Music Literature
   - Literature (including drama)
   - Philosophy (exclusive of logic) 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, or courses, approved in consultation with the office of the Dean of the College 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 31 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 College of General Studies about the possibility of waiver.

EXEMPTIONS AND COMPREHENSIVE EXAMINATIONS

1. Comprehensive examination 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 College 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.

**COLLEGES AND CURRICULAR OFFERINGS**

**COLLEGE OF GENERAL STUDIES**

**COLLEGE OF APPLIED 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

**Industrial Education**
- Industrial Arts
- Vocational-Technical Education
- Printing Management

**Occupational Therapy**

**Paper Science and Engineering**

**Transportation Technology**
- Automotive Engineering Technology
- Aviation Engineering Technology

**Two-year Terminal Curricula**
- Food Distribution
- Petroleum Distribution
- Drafting and Design Technology
- Aircraft Technology
Colleges and Curricular Offerings

COLLEGE OF BUSINESS

Business Administration
Accountancy
Business Education (The teaching of business subjects, administrative services, secretarial administration, cooperative work experience program)
General Business (finance and insurance)
Management
Marketing (advertising, general industrial, and retailing)

COLLEGE OF EDUCATION

Teacher Education
Elementary
Rural Life and Education
Junior High School
Secondary
Librarianship
Music
Elementary Music

Educational Leadership

Counseling 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)

COLLEGE OF ARTS AND SCIENCES

Liberal Arts
Anthropology
Art
Biology
Chemistry
Communication
Arts and Sciences (formerly Speech)
Economics
English
Geography
Geology
History
International and Area Studies
Mathematics
Preprofessional Curricula

Language (French, German, Latin, Spanish. Limited courses are available in Greek, Russian.)
- Linguistics
- Music
- Philosophy
- Physics
- Political Science
- Psychology
- Religion
- Sociology
- Speech Pathology and Audiology

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

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.
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 refer to the catalogs from the schools of his choice and plan his work at Western to meet the requirements of those particular schools. Many of the current catalogs and the "Admission Requirements of American Dental Schools' are available in Waldo Library. Students should obtain a Dental School Advisory Kit from the preprofessional advisor in the Biology Department.

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<th>Second Year</th>
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<td>Organic Chem. 360, 361</td>
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<tr>
<td>Mathematics 100, 120 or 120, 121</td>
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**Recommended Third Year**

Major and minor requirements
General Studies
Electives
Students who wish an engineering program, other than that offered in the College of Applied Sciences 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, Oakland 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

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<td>General Chemistry* 103, 109</td>
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<td>TOTAL 29</td>
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*Chemical, Metallurgical, and Materials Engineering and Meteorology, Oceanography, and Physics should take Chemistry 102, 120, 362, 363.

**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.
# Preprofessional Curricula

## OAKLAND UNIVERSITY

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
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<th>S.H.</th>
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<tr>
<td>College Writing 116</td>
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<td>Mathematics 222, 223</td>
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<tr>
<td>Freshman Reading 140 or</td>
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<td>Physics 210, 211</td>
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<td>English 110</td>
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<td>Statics 256</td>
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<td>Mathematics 106, 306</td>
<td>3</td>
<td>Dynamics 355</td>
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<tr>
<td>Mathematics 122, 123</td>
<td>8</td>
<td>General Studies 202, 203</td>
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<td>General Chemistry 103, 109</td>
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<td><strong>TOTAL</strong></td>
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## UNIVERSITY OF MICHIGAN

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<tr>
<td>College Writing 116</td>
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<td>Physics 210, 211</td>
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<td>Math 106, 122, 123</td>
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<td>Engrg. Drawing 230</td>
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<td>Dynamics 355</td>
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<td>Chemistry* 103, 109</td>
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<td>Economics 201, 202</td>
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<td><strong>TOTAL</strong></td>
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## WAYNE STATE UNIVERSITY

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<td>Physics 211, 212</td>
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<td>Mathematics 122, 123</td>
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<td>Mathematics 360, 506</td>
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<td>Thermodynamics 352</td>
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<td><strong>TOTAL</strong></td>
<td><strong>33</strong></td>
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*Chemical, Metallurgical, and Materials Engineering and Meteorology, Oceanography, and Physics should take Chemistry 102, 120.*
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 College of 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 College of Arts and Sciences.

Librarianship

A preprofessional curriculum in librarianship is outlined in this bulletin under The Graduate College.

Medicine

Most medical schools expect students to finish four years of college work 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 refer to the catalogs from the medical
Major and Minor Requirements

Schools of his choice and should plan his college work to meet their requirements. Many of the current catalogs and the “Medical School Admission Requirements, U.S.A. and Canada” are available in Waldo Library. Students should obtain a Medical School Advisory Kit from the preprofessional advisor in the Biology Department.

The following program will in most instances satisfy medical school requirements:

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<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>
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<td>Physics 110, 111</td>
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<td>Phys. Ed. or Military</td>
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</table>

| Third Year                                      |      |                      |      |
| Major and minor requirements                    |      |                      |      |
| General Studies                                 |      |                      |      |
| Electives                                       |      |                      |      |

| Fourth Year                                     |      |                      |      |
| If four-year program is taken then complete major or minor requirements. Take electives in art, music, literature, speech and social sciences. |

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 hours 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 or 24 hours in a group minor in Elementary or 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, transportation technology or engineering.

3. Departmental requirements for a number of majors and minors are listed elsewhere in this catalog. Where requirements are not
specified, students should consult the departmental advisors for approval of a major or minor program as soon as possible but not later than 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, a major of at least 30 semester hours (group major of 36 semester hours) or two minors of 20 semester hours (group minors, 24 semester hours). In addition to the major or two minors, the Elementary Education minor is required.

5. In certain cases "group" majors totaling a minimum of 30 hours and "group" minors totaling a minimum of 20 hours are permitted. (Note: Students in Elementary and Secondary Education must have 36 hour "group" majors and 24 hour "group" minors.) They usually consist of courses selected from related departments, as in case of social science and science.

6. Under certain conditions General Studies courses may be counted 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 with the exception of the Elementary Education curriculum. In the Elementary Education curriculum it is a required minor in addition to a major or two minors. (See Elementary Education 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 professional 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, chemistry, or biology) for any major or minor sequence, but may be required to satisfy requirements of certain curricula.

12. Except upon formal approval, courses elected to satisfy requirements in one major and/or minor may not be counted again to satisfy requirements in another major and/or minor.
Majors and Minors

PROGRAMS REQUIRING MAJOR AND MINOR SLIPS
(In All Cases Check Catalog Requirements)

<table>
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<th>Major/Minor</th>
<th>Major Slip Required</th>
<th>Minor Slip Required</th>
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<tbody>
<tr>
<td>Accountancy</td>
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<td>African Studies</td>
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<tr>
<td>Agriculture</td>
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<tr>
<td>American Studies</td>
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<td>Art</td>
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<td>Asian Studies</td>
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<tr>
<td>Automotive Engineering Technology</td>
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<tr>
<td>Aviation Engineering Technology</td>
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<td>Yes</td>
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<tr>
<td>Biology</td>
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<td>Black Americana Studies</td>
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<tr>
<td>Business Education</td>
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<tr>
<td>Chemistry</td>
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<tr>
<td>Communication Arts and Sciences</td>
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<tr>
<td>Comparative Cross/Cultural Studies</td>
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<td>Distributive Education</td>
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<td>Home Economics in Business</td>
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<tr>
<td>Spanish</td>
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*Check with department head or administrative assistant.

**Major and minor slips are required for all students who wish to transfer in credit to be counted toward a major or minor.
<table>
<thead>
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<th>Major/Major</th>
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<tr>
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</table>
Certificates

TEACHER CERTIFICATION—PROVISIONAL

The following types of teaching certificates are granted:
(for persons earning the Provisional Certificate after July 1, 1970).

1. State Elementary Provisional
   This certificate qualifies the holder to teach all subjects in grades kindergarten through 8, and in major or minor fields of grade 9, as specified on the certificate in any public school in Michigan. It is valid for approximately 6 years and may be renewed once for three years, provided that the applicant presents 10 semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first certificate.

2. State Secondary Provisional
   This 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. It is valid for approximately 6 years and may be renewed once for three years provided that the applicant presents 10 semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first certificate.

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

TEACHER CERTIFICATION—CONTINUING

To be qualified for teaching at the expiration of the elementary provisional or secondary provisional certificate, or its renewal as specified above, the applicant must qualify within the 6-year period for the continuing certificate at the appropriate level. All continuing certificates are valid for continued teaching or administrative service in Michigan schools in the grades, subjects, or levels specified on the certificates.
The following procedures must be followed to qualify for the continuing certificate:

1. Application must be made to the Certification Officer, College of Education, Western Michigan University, prior to the expiration of the provisional certificate or its renewal.

2. The candidate must have taught successfully during the life of the provisional certificate for 3 years according to the validity of the certificate. The success of this teaching is determined by the State Board of Education upon recommendation of the University and of the local school district(s).

3. The candidate must present evidence that he has completed a minimum of 18 semester hours in a planned course of study subsequent to the issuance of the provisional certificate and the degree. This advanced course of study must be approved by the Certification Officer before the candidate begins the Program. Instructions for obtaining approval may be secured from the Certification Officer in the College of Education.

4. The candidate must secure the appropriate blanks from the Certification Officer, complete the blanks and return them to the University, accompanied by his provisional certificate and Teacher's Oath.

5. The University will investigate the qualifications of the candidate, ascertain if he satisfies the requirements for continuing certification, and make appropriate recommendation to the State Board of Education. (Procedures for appealing certification decisions may be obtained from the Certification Officer, College of Education.)

Certificates earned before July 1, 1970, retain their original validity. Persons earning Provisional Certificates before July 1, 1970, must meet requirements for the Permanent Certificate.

THIRTY-HOUR CONTINUING CERTIFICATE
(available after July 1, 1971)

This certificate is not required but is available to the teacher who qualifies and requests such certificate. The same requirements pertain as for the continuing certificate described above, with the exception of the substitution of 30 semester hours of credit in a planned program approved by the University for the 18-semester hour requirement in the regular continuing certificate program.

NOTE—ALL PREVIOUSLY ISSUED CERTIFICATES SHALL RETAIN THEIR ORIGINAL DESIGNATION AND VALIDITY. ALL PERMANENT CERTIFICATES SHALL CONTINUE AS PERMANENT CERTIFICATES.
UNDERGRADUATE AND GRADUATE STUDENT FEES

Student fees are assessed on a credit hour basis, with a minimum assessment for these hours. Fees per credit hour are:

- Resident undergraduate: $18.00
- Non-resident undergraduate: $38.00
- Resident graduate: $24.00
- Non-resident graduate: $58.00

Graduate students, if not otherwise enrolled, are assessed for use of University facilities and staff services while completing a Master’s thesis, Specialist’s project, or a Doctoral dissertation, at the rate of $25 a semester or $12.50 a session.

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 Graduate College.

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. 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—Based on the courses taken, fees range from $300 to $450 per course. For specific course fee, consult Department Head.

ROOM AND BOARD—Cost of room and board is $505 a student for each semester. The rate for room only, in those residence
halls which do not provide board, is $170 a student for each semester. 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.

All prices quoted are on the basis of two students per room. 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 as increase is necessary.

Address requests for housing information to the Director of Housing. 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. Changes in student loads prior to the end of the final day for adding a course are reassessments.

REFUND SCHEDULE:*

100 Per Cent Through the end of the final day for adding a course.

50 Per Cent From the end of the final day for adding a course through the 5th week of classes in a semester or second week in a session.

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.

*Refund due students who made an Admissions Deposit will be reduced by the $50 Deposit.
Residency

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.

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 lacking in quantity to meet course objectives. It may be assigned when illness, necessary absence, or other reasons generally beyond the control of the student prevent completion of the course requirements by the end of the semester. This grade may not be given as a substitute for or as a means of evading a failing grade.

A grade of "I" may be removed only by the instructor who gave it, or, in exceptional circumstances by the department head or his appointed 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.

CREDIT/NO CREDIT SYSTEM

The regulations of a system, supplementing the A, B, C, D, and E grading system but not replacing it except as the student wishes, are as follows:

1. The name of the program shall be Credit/No Credit.
2. “Credit” will be posted for each student who earns the grade of A, B, or C. “No Credit” will be posted for the grade of D or E. Faculty members will not be notified whether a student is taking a course for a grade or for Credit/No Credit.
3. A student may elect for Credit/No Credit any course from General Studies or General Physical Education as well as other courses not counting toward his major or specified in his curriculum as defined in the University Undergraduate Catalog.*

Acceptance of Credit/No Credit in required courses may be permitted on an individual basis by the head of the department or dean of the college requiring the course.

4. A student may change only during the drop/add period from Credit/No Credit to grade or from grade to Credit/No Credit.
5. All undergraduate students, regardless of classification or probationary status, will be allowed to enroll Credit/No Credit.
6. Credit/No Credit courses, while counting toward a degree, will not be used to determine the overall grade point average (GPA) of the individual student.

IMPORTANT: Students should be fully aware of the implications of this system for acceptance in graduate schools. It has been ascertained that most graduate schools will accept students who have elected to take courses on a Credit/No Credit basis, but that if courses taken on this basis are sufficient in number on the transcript, the Graduate Record Examination may be utilized to determine the student’s acceptability. Graduate schools, in general, do tend to favor those applicants who have good letter grades on their transcripts.

A leaflet explaining the program is available in the Registration Office.

*Directed Teaching, a required course, is taken on a credit/no credit basis.
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 and credit earned the final time in the course will count toward curricular or degree requirements. All courses taken, even if they have been repeated, will be counted in grade point averages. Grade point averages will be adjusted for repeated courses, if necessary, only at the time of graduation. A repeated course is not removed from the student's record.

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 $4 \times 3$, 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 for letter grade.
2. Have a grade-point average of at least 3.50 for the semester.

SCHOLARSHIP STANDARDS

A student must earn an over-all grade point average of at least 2.0 to satisfy degree requirements. The 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 Division of Continuing Education or both.

No full time teacher may enroll at any time in more than two courses offered by the Division of Continuing Education.

**CHANGING COURSES (DROP-ADD)**

Students may enroll in (Add) any course through the first six days (of a regular semester) of classes, including Saturday. The final date for adding courses will be published in the Schedule of Classes. (Time for ‘Adds’ proportionately reduced for the short sessions).

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 that 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 Records.
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.

Course Numbers

<table>
<thead>
<tr>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-89</td>
</tr>
<tr>
<td>90-99</td>
</tr>
<tr>
<td>100-199</td>
</tr>
<tr>
<td>200-299</td>
</tr>
<tr>
<td>300-399</td>
</tr>
<tr>
<td>400-499</td>
</tr>
<tr>
<td>500-599</td>
</tr>
<tr>
<td>600-699</td>
</tr>
<tr>
<td>700-799</td>
</tr>
</tbody>
</table>

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 Dean of Admissions and Records as soon as known so that special arrangements can be made.

GRADUATION

Application for graduation must be made no later than seven weeks before the anticipated graduation date. In order to secure a graduation audit statement before registration for the final semester, a student should apply during his junior year.

Application for graduation:
   Summer Session
       Apply by April 1, but not later than July 1.
   Fall Semester
       Apply by January 1, but not later than November 1.
   Winter Semester
       Apply by September 1, but not later than March 1.
   Spring Session
       Apply by January 1, but not later than May 1.

STANDARD FOR GRADUATION

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

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.
Honors in Course

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. For December graduation, by November 15
b. For April graduation, by March 15
c. For June graduation, by May 15 (No commencement Program)
d. For August graduation, by July 15

Students who fail to meet the above standards will be removed from graduation lists automatically. Such students will be placed in the class of the succeeding semester or session only after re-application for graduation, 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 rests with the student to reapply for the next regular graduating class following completion of his requirements.

HONORS

Honors are conferred upon graduating students who have displayed a high level of performance during their university career. 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 will be considered toward honors.
3. No student will be eligible for honors 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 Office of Academic Records 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 which includes photo, name, social security number and validating label.

STUDENT ACADEMIC RIGHTS:

POLICIES AND PROCEDURES

I. Introduction

The University endorses as a guideline for policy the following section from the Joint Statement on Rights and Freedoms of Students.

In the Classroom

The professor in the classroom and in conference should encourage full discussion, inquiry and expression. Student performance should be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards.
Protection Against Improper Academic Evaluation

Students should have protection through orderly procedures against prejudiced or capricious academic evaluation. At the same time they are responsible for maintaining standards of academic performances established for each course in which they are enrolled.

Protection of Freedom of Expression

Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.

II. Policies and Procedures

A. Students should be fully informed by the faculty about course requirements, evaluating procedures and academic criteria to be used in each class. This information should be provided at the beginning of the semester or sufficiently in advance of actual evaluation.

B. Procedures for Reviewing Student Grievances Related to Grading

(1) Students have the right to have all their examinations and other (written) graded material made available to them with an explanation of the grading criteria. Faculty should retain all such material not returned to the student) for at least one full semester after the course was given. Faculty are not required to return such material to the student but must provide reasonable access to it.

(2) Whenever a student believes he has a grievance regarding a grade, he should first arrange a meeting with his instructor who may be able to explain the reasons for the grade or recommend a change if warranted.

(3) If the student believes that he has not received a satisfactory resolution of his grievance from the instructor, he should then go to the department chairman or head, who may effect a satisfactory resolution through his good offices.

(4) If the student is still dissatisfied after seeing the department chairman or head, the student should next see the University ombudsman. The function of the ombudsman in this situation would be to collect information from both the student and the faculty mem-
ber and then to make a decision that (a) the student’s grievance is unwarranted, and should not be considered further, or (b) there is sufficient evidence that the situation be considered by the Undergraduate Committee on Academic Fairness.

(5) The Undergraduate Committee on Academic Fairness consists of three faculty and three undergraduate students.

(6) When a case is presented to the Committee, the Committee shall investigate it, making sure that all interested parties have a full opportunity to present their position. The Committee will be able to recommend (a) no grade change, (b) a change of letter grade, (c) pass or fail or credit or no credit, or (d) any other grade used by the Records Office.

(7) If the Committee decides that there should be no change of grade they will so inform the student, the faculty member, the department chairman or head and the ombudsman. If the Committee decides to recommend a change of grade, the Committee will first inform the faculty member of its intent so that he may initiate the change himself. If the faculty member prefers not to initiate the change, the Committee will do so by notifying the Dean of Records and Admissions.

(8) To protect all parties involved in any case, the strictest privacy consistent with the Committee’s task will maintained.

(9) Occasions do occur when a faculty member or an administrative official may wish to question a grade or a grade change. In such instances, these procedures, beginning with review by the ombudsman, shall be available to them.

C. Policies and Procedures Regarding Requirements

(1) All students who seek advice on academic requirements will be provided written copies of their academic adviser’s recommendations and students will not be held responsible for errors made by their advisers. This section is not to be interpreted to mean that the student is relieved of the responsibility of meeting the total graduation requirements stated in the catalog in force at the time he was admitted, or in a later catalog if he chooses to meet its graduation requirements.
(2) The student shall not be held responsible for meeting curricular requirements that are not listed or not applicable under the catalog governing the work he is taking.

(3) Every department (shall) provide systematic procedures for students to express their views on matters of program and curriculum.

(4) University policy and implementation of such policy should not be determined and enforced according to the needs of computer programming or records. Special care should be taken to insure that no individual is treated unfairly because of computer problems.

(5) The University ombudsman will have the authority to investigate complaints and recommend or negotiate fair solutions on behalf of the student.
MISCELLANEOUS INFORMATION

ALUMNI

The Alumni Office serves the alumni of Western Michigan University, acts as liaison between former students and the University, and encourages continuing interest in learning and higher education.

The Office serves in an advisory capacity to the student group which organizes the annual "Homecoming." The Alumni Relations Director is advisor to the Senior Class Officers, and to the Student Alumni Service Board. The Alumni Board of Directors includes a President, two Vice Presidents, and an Executive Secretary. Alumni Clubs and Constituent Societies throughout the nation participate in scholarship, grant, loan fund programs and social events.

Alpha Beta Epsilon, a sorority with 19 chapters and approximately 700 members, is a group of Western alumnae whose chief project is to provide scholarships.

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, golf, ice hockey and soccer.

Western Michigan University is a member of the Mid-American Conference. Other members of the Conference are Bowling Green, Kent State, 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,
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.

AUDI SERVICES

Audio Services serves the recording needs of the campus with quality location recording, mixing, editing, and full production services. Audio Services maintains large music and effects libraries as well as facilities for corrective recording. Interested students are trained in the use of professional audio equipment.

AUDIOVISUAL CENTER

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CAREER PLANNING AND PLACEMENT

An additional dimension has been given to the former Placement Office which has served Western graduates and alumni for over 60 years. The Career Planning and Placement Office recognizes the growing need for career counseling for Western students at all levels. Students are encouraged to make use of this service as they plan academic curricula.

The centralized placement service which the University offers to seniors, graduates, and employers is the major function of the office. Opportunities for Western students and alumni to meet with employing officials in education, business, industry, and governmental services are provided. Staff members maintain continuous liaison with employers through personal visitations, conferences, and correspondence. An extensive library of occupational information is maintained and updated continuously. Employment opportunities bulletins are published regularly and made available.
to active candidates for employment. Periodic listings of summer and part-time employment needs are printed and distributed.

The Career Planning and Placement Office is located on Knollwood Avenue, one block south of West Michigan Avenue.

SPEECH AND HEARING CLINIC

Among the services provided students are those of the Speech and Hearing Clinic, located in the Department of Speech Pathology and Audiology. 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 the Student Services Council which is composed of faculty and students. 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

Services of the Counseling Center are available to all Western Michigan University students. The services include individual counseling experiences designed to assist students in solving personal problems, improving interpersonal relationships, making curricular selections, planning vocational goals; and group counseling experiences designed to facilitate personal growth and eliminate self-defeating behaviors. Confidentiality is assured in all interviews. The Counseling Center Occupational Library contains information about occupations, other colleges and universities, and graduate schools.

The Counseling Center is staffed by professional counselors and counseling psychologists who have had extensive experience in working with students and their concerns, and is accredited by the American Board on Counseling Services of the American Personnel & Guidance Association.

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 Communication Arts and Sciences 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 Communication Arts and Sciences. 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, 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.

DIVISION OF CONTINUING EDUCATION

The Division offers off-campus educational opportunities to persons who desire to pursue their education on a part-time basis. Serving primarily the sixteen counties of Southwestern Michigan, Western’s offerings provide a variety of services including extension classes and correspondence courses, conferences, short courses and seminars for teachers, business leaders and other interested adults. Course offerings in the sixteen counties are planned in conference with community leaders and departmental representatives from our campus. Credit courses are offered on both the undergraduate and graduate levels.

Correspondence courses may be taken for credit and applied toward an undergraduate degree subject to limitations defined by the University or College in which the student is studying.

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

In the field of adult education the office provides program planning, speakers, discussion leaders, and persons qualified to handle leadership training programs. Such services are available to farm, business and industrial groups, governmental and social agencies, labor unions, schools, churches, and other organizations.

Off-campus services are channeled through three Centers located in Benton Harbor, Grand Rapids and Muskegon, or the Center nearest you.

EDUCATIONAL RESOURCES CENTER

The Educational Resources Center, winner of the NCATE Award for Excellence in Teacher Education, is located in Sangren Hall and serves the students and faculty of the College of Education. For the improvement of teaching and learning, the ERC is concerned with the total range of instructional media and educational technology. In addition to providing library, audiovisual, and curriculum material services, the center provides: instructional units in media to education classes, consultation to students and faculty in the use of media, and facilities and supervision for the production of instructional materials. Further, the ERC serves as a focal point for a variety of audiovisual courses leading to the Master’s degree in Audiovisual Media.
HEALTH SERVICE

The University Health Center provides medical service and limited surgical care and psychiatric evaluation that may be needed by students. Regardless of classification, students enrolled for seven hours or more in a semester or four hours or more in a session are assessed no fee for out-patient clinic visits. Students carrying from one to six hours in a semester or one to three hours in a session are charged a minimum fee for each clinic call. Charges are made by the Health Center for medication, X-rays, laboratory examinations, inpatient care, repairing lacerations, reductions and casting of fractures, minor surgery and other special medical services such as administration of allergy vaccine provided and scheduled by a family physician.

All undergraduate students are required to have on file with the Health Center a record of a physical examination performed by a physician of the student's choice. NO PHYSICAL EXAMINATIONS ARE GIVEN AT THE HEALTH CENTER. 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 Center while at the University must have a physical examination report on file at the Center. If a student has an illness which may require further treatment while attending the University, such information should accompany the physical examination report in a letter from the family physician. A student who is receiving allergy injections may have his vaccine stored at the Health Center and may have the vaccine administered as scheduled by his family physician. The allergy vaccine is then administered by a nurse and can be given only when a doctor is in attendance.

The Health Center is open twenty-four hours a day, seven days a week, during the fall and winter semesters and the spring session, and from 8:00 a.m. to 4:30 p.m., Monday through Friday, during the summer session. Clinics are scheduled daily from 8:00 a.m. to 4:30 p.m., Monday through Friday, and on Saturday from 9:00 a.m. to 12:00 noon during periods when classes are in session. The Saturday clinics are limited to emergent or urgent cases. In cases of sudden illness or serious accident at hours the clinics are not scheduled, a student patient may be taken to the Health Center or to an emergency room of a local hospital. The decision must be made on the basis of the seriousness of the medical problem and an understanding that a physician, although on duty and subject to call, is not at the Health Center during non-clinic hours. The
Bronson Hospital emergency room is staffed by physicians at all times. If an emergency case is taken to the Health Center during non-clinic hours, the nurse on duty must make a professional judgment to confer with the physician on call, refer the patient to a hospital emergency room or arrange for temporary care pending a physician's examination later.

Students who require medical care and laboratory examinations which cannot be performed at the Health Center will be referred to a local hospital. When a student is transferred to a local hospital the parents will be notified as early as possible. No operative procedures will be performed on students without permission of the parents, except in cases of extreme emergency or life-threatening situations. Costs related to hospitalization, including fees of consulting physicians who are not directly employed by the University, are 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 some of the medical expenses which may be incurred, it is strongly recommended that students carry a health and accident insurance policy. Most parents have such coverage; however, it is advisable to review the provisions of the policy regarding dependents' ages and college attendance. A group health and accident policy is offered to students through the University at a modest premium and may be applied for when a student is admitted to the University.

UNIVERSITY LIBRARIES

The University Libraries consist of the Dwight B. Waldo Library, Business Library, Music Library, Physical Sciences Library and the Educational Resources Center. The collection numbers over 900,000 items including books, bound periodicals, music scores, recordings, maps, documents and materials on microform. Over 10,000 periodicals and serials and 100 newspapers are currently received. The Library system is also a depository for Michigan and United States government documents.

The main collection is housed in the Dwight B. Waldo Library which is named for the second President of the University. Built in 1959, it was enlarged in 1967 to almost double its original size. The School of Librarianship is also located there, as well as some of the facilities in the Instructional Communications Division. The University Archives collection is on the ground floor and useful to research scholars.

Special collections include:
1. The Ann Kercher Memorial Collection on Africa is an extensive collection of materials on Africa south of the Sahara. Started almost a decade ago, it has grown rapidly to become a noteworthy addition to the University holdings.

2. The South Asia Collection is another area of unusual strength. Together with the African collection it represents the University's strong commitment toward area studies.

3. The Randall Frazier Memorial Collection, honoring a notable alumnus, has a wealth of material on the history and culture of Black America.

4. The Regional History Collection is a unique group of items on the thirteen southwest counties of Michigan. In addition to books, this collection contains many manuscripts of early residents of this area.

5. Another area of strength is Medieval Studies, involving history, religion, philosophy and culture of the medieval period.

6. The C.C. Adams Ecological Collection consists of the personal and papers of the pioneer American ecologist, Charles C. Adams.

The microfilm collection of over 200,000, contains such items as the Human Relations Area File, American Periodical Series, Early American Newspapers of the 18th and 19th centuries and books printed in Great Britain, 1475-1700.

The Business Library, located in North Hall, has a collection of some 23,000 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 extensive listening facilities.

The Physical Science Library contains some 17,000 volumes in the fields of Mathematics, Astronomy, Physics and Geology. This branch is located on the third floor of Paul Rood Hall.

The Educational Resources Center Library in Sangren Hall comprises some 67,000 volumes and receives 300 periodical titles. The Center is a cooperative venture between the University Libraries and the College of Education, combining the best of library and audiovisual facilities and practices into a single center for the improvement of instruction and learning.
The University Library is also a member of the Center for Research Libraries in Chicago, a special collection of nearly three million items to which there is immediate access via teletype. Teletype facilities also permit us to communicate rapidly with other research libraries throughout the country and for expediting loan requests to and from other libraries. Any student or faculty member may obtain interlibrary loan services. Related to these services are the services available in the extension centers in Benton Harbor, Muskegon and Grand Rapids, each of which has a library to serve off-campus students in these areas. These libraries in the centers are part of the entire University libraries system.

**MOTION PICTURE SERVICES**

The Motion Picture Services produces a variety of films for educational purposes at Western. Its facilities are also used in the training of students interested in motion picture production.

**MOTOR VEHICLES**

Detailed regulations covering the use of motor vehicles on campus are available from the Office of Safety and Security. In general, only upperclass 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.

**MULTIPLE AUDIO DISTRIBUTION**

The Multiple Audio Distribution System (MAD) is an automated tape recorder system which provides supplementary lesson material day and night, seven days a week, for WMU students in their residence hall and at other selected locations on the campus. The MAD System presents material for language, general studies, and music courses on eleven separate channels. The MAD programs are carried by wire to the various listening rooms where the students use headphones to listen to the programs of their choice.
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 two 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, and Women’s Chorus, 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.

PUBLICATIONS

The Western Herald, student newspaper, is published Mondays, Wednesdays and Fridays during the Fall and Winter semesters, twice weekly during the Spring session and weekly during the Summer session. It is distributed free.

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 new Student Services Building. The paper is printed in the University’s print shop.

The Brown and Gold yearbook is written and edited by university students.

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 the Student Services Building.

Reading Horizons, a quarterly devoted to the study of reading problems, is sponsored and published by the staff of the Reading Center and 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 Graduate College and editorial respon-
sibility 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 broadcasting at 102.1 on the dial with 39,000 watts of stereo power.

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. The station is a member of the National Association of Educational Broadcasters, the Broadcasting Foundation of America, and The National Association of Broadcasters.

WIDR RADIO serves all on-campus residents, carrying student oriented, contemporary programming to each residence hall and complex. The station, associated with the American Information Radio Network, is a full time, semi-commercial operation. Founded in 1953 WIDR is one of the oldest and most highly rated installations of its type in the nation.

WIDR is operated by the students from studios and offices located in the Student Services Building. 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 Military Science Department sponsors the Scabbard and Blade Society, the Pershing Rifles, a Ranger Unit and the Cadet Rifle Team. The Scabbard and Blade Society not only plans and conducts the annual, formal Military Ball for members of the Cadet Battalion 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 smallbore matches. To be a member of any of these organizations, a student must be enrolled in the R.O.T.C. program.

TELEVISION

In its role as one of the mass media services provided by the WMU Broadcasting Department, the facilities support over three dozen courses with televised instructional materials over a closed-circuit network of seven channels, reaching 150 classrooms as well as various non-academic areas. These television lessons 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 six studio or eleven "portable" recording systems. Supporting the facility is a staff of media producers, engineers, graphic artists, cinematographer/photographer, and various other special-skills personnel.

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 Service produces educational programs on film and videotape for use by local commercial stations and occasionally for the networks.

WMU-TV is also made available to the students on a regular basis for the production of entertainment, "talk" shows, and news specials about matters of campus interest.

In 1964 the University won two national awards for television production.

Planning is underway for a complete, new television facility including a color production center to be in operation by the Fall of 1971.

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. 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 Mortar Board
Publications and Communication
Religious
Residence Halls
Service Organizations
Social Fraternities
Social Sororities
Special Activity & Interests
Associated Student Government (all students)
Associated Women Students (all women students)
Men’s Union Board (all men students)
STUDENT HOUSING

An integral part of a student's total education comes from interaction with the people where he lives.

As a member of a community of 21,000 the student may choose from many varieties of housing, depending upon personal preferences and University Housing Regulations.

RESIDENCE HALLS—Western Michigan University has 21 residence halls serving approximately 7,300 students.

MARRIED HOUSING—The University maintains and operates 488 married student apartments on campus consisting of 341 one-bedroom and 147 two-bedroom units.

OFF-CAMPUS HOUSING—A rental listing service is provided to assist in locating suitable quarters for students. Approximately 14,000 students live in off campus housing units.

SORORITY/FRATERNITY HOUSES—These houses are privately owned and operated by various fraternal organizations for their members.

HOUSING POLICIES

In all of its housing policies Western Michigan University prohibits discrimination on the basis of race, creed, or national origin.

Any student who is married or who will reach the age of 21 by the last day of Winter semester (for the fall and winter semesters) or by the first day of fall semester (for spring and summer sessions) may live in housing of his own choosing.

Any student carrying eight (8) hours or less during the fall and winter semester or four (4) hours or less during the spring and summer sessions may live in housing of his own choosing.

FRESHMEN must live in a residence hall unless living at home with their parents except as indicated above.

SOPHOMORES must live in a residence hall or in a fraternity or sorority house approved by the University.

Requests for a waiver of regulations to occupy housing other than that for which a student is eligible may be submitted to the Off-Campus Housing Office.
Buildings and Grounds

All students must file their actual local address while attending the University (not preferred mailing address) at the time of identification card validation. All changes of address or corrections must be filed within three days at the Off-Campus Housing Office. Violations of University regulations regarding housing policies will be referred to the Office of University Standards and Procedures. For further information regarding these regulations, please consult the Code of Student Life.

BUILDINGS AND GROUNDS

EAST CAMPUS

EAST HALL—Gymnasium, natatorium, and classrooms for the departments of Accountancy, Management, Music, Art, P.E.W.

PRINTING SERVICES—University print shop and mimeographing service.

NORTH HALL—College of Business and the Business Library.

PHYSICAL PLANT—Trades maintenance shops; grounds crew and University garage; Campus Planning Department and Plant Extension Department.

OAKLAND RECITAL HALL—Office, classroom and practice space are provided for the Music Department and a 300-seat auditorium.

SPEECH AND HEARING CENTER—The Department of Speech Pathology and Audiology, and Reading Center and Clinic.

WALWOOD UNION—Snack bar, cafeteria, meeting rooms, ballroom, and the Division of Continuing Education.

WEST HALL—Occupational Therapy Department, Agriculture Department, and the College of Business.

WEST CAMPUS

ADMINISTRATION—Administrative offices.

ARCADIA—Division of Plant Services consisting of Safety and Security and Custodial Services.

BEHAVIORAL RESEARCH LABORATORY—Psychology Department.
Buildings and Grounds

WILLIAM R. BROWN HALL—Classrooms for the Communication Arts and Sciences, English, Language, and Linguistics Departments.

DISTRIBUTIVE EDUCATION—Distributive Education Department.

WILLIS F. DUNBAR HALL—Classrooms for the departments of History, Economics, Philosophy, Religion, College of General Studies and television studios.

JOHN EVERETT HALL—Faculty offices for Departments of Physics, Geology and Mathematics.

ROBERT FRIEDMANN HALL—Offices for Dean of College of Arts and Sciences, Dean of College of General Studies, faculty offices, WMUK-FM studios.

INDUSTRIAL ENGINEERING AND TECHNOLOGY—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.

JAMES O. KNAUSS HALL—Instructional facility consisting of 4 lecture halls and exhibit space.

KNOLLWOOD—Career Planning and Placement Office and News and Publications division.

HARPER C. MAYBEE HALL—Music Department.

WILLIAM McCracken HALL—Chemistry Department and Department of Paper Science and Engineering.

JAMES W. MILLER AUDITORIUM—Cultural center for the performing arts of music, opera, drama, and the dance, the Auditorium has a capacity of 3,550 with seating arranged on three levels in continental style.

PAUL ROOD HALL—Classrooms for the Departments of Physics, Geology and Mathematics; the Computer Center; and a 12-million electron volt linear accelerator.

PAUL V. SANGREN HALL—College of Education; the Departments of Art, Political Science, and Sociology; the Educational Resources Center.
LAURA V. SHAW THEATRE—The University Players present productions in this 600-seat theatre.

GEORGE SPRAU TOWER—Offices of the Communication Arts and Sciences, English, Language and Linguistics Departments.

STUDENT SERVICES BUILDING—Counseling, Financial Aid, Scholarships, Housing, Student Activities, Orientation; offices for major student organizations; WIDR, campus radio stations, Western Herald.

UNIVERSITY HEALTH CENTER—75-bed student health service building opened in 1969.

UNIVERSITY STUDENT CENTER—Social and recreational facilities are provided for students and are available for other educational ventures as schedules permit. The building includes a snack bar, cafeteria, bowling alleys, game room, lounges, ballroom, music room, faculty lounge and dining room and the Board of Trustees meeting room.

DWIGHT B. WALDO LIBRARY—Resources include more than half a million volumes, microfilmed newspapers, map collection, the C. C. Adams Center for Ecological Studies; housed are the School of Librarianship and the University Archives.

LESLIE H. WOOD HALL—Biology, Psychology and Geography Departments.

OFF CAMPUS

AVIATION BUILDING—Shops, laboratories and classrooms for aircraft technology and pilot training.

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. 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.

**OAKLAND GYMNASIUM**

Located on the East Campus, this building houses the Women’s Physical Education Department and R.O.T.C.
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 100.

Information concerning fellowships may be obtained from the Graduate College.

SCHOLARSHIPS

Distinguished University Scholarships

WALDO-SANGREN SCHOLAR AWARDS—These distinguished scholarships honor the first two presidents of Western Michigan University. Awards will be made to students of high academic achievement who have demonstrated leadership ability and pursue meritorious projects of academic value. Because this program assumes that highest scholarship recognition involves a dimension of commitment, the student may be involved in the following areas: Assistantships, Research, Special Projects, Foreign Study or Community Service. A 3.5 grade point average is desirable.
Available to undergraduate students, sophomore, junior or senior level. The scholarship stipend is up to $1,000 per academic year.

NATIONAL MERIT SCHOLARSHIP CORPORATION—Western Michigan University is an institutional member of this organization and effective with the fall semester 1971 will offer five sponsored merit scholarships to semi-finalists. College sponsored Merit Scholarships are awards available to seniors in all secondary schools; public, private and parochial—in fifty states, District of Columbia and certain territories and possessions. They are awarded on a competitive basis. Recipients are selected on the basis of ability to benefit from a college education; an important index is their relative scores on scholastic tests.

PAUL V. SANGRENF 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.

HONORS COLLEGE SCHOLARSHIP—A limited number awarded each year to Honors College students. Apply directly to Director of Honors College.

General University Scholarships

BOARD OF TRUSTEES SCHOLARSHIPS—The Western Michigan University Board of Trustees provides funds to continue and enlarge the scholarship program. Annually a number of cash awards are given to academically outstanding freshmen and upper-class students. The scholarships range in value from $100 to $400 per year and are renewable.

COMMUNITY COLLEGE SCHOLARSHIPS—Western Michigan University offers a program to community college transfers from Michigan community colleges who have successfully completed two years of academic work. For detailed information write the Scholarship Office, Western Michigan University.

FRESHMAN RECOGNITION SCHOLARSHIP—A freshman scholarship designed to award high school seniors for excellent academic achievement during their four years of high school, demonstration of leadership ability, testing results, character and
Scholarships

citizenship. A student may receive up to $100 regardless of financial need. A recognition in honor of these recipients will be a part of the scholarship award program. The number of scholars and the amount of the stipend will be determined by the Scholarship Committee.

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

Distinguished Sponsored Scholarships

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. BENTLY FOUNDATION SCHOLARSHIP AWARD FOR EXCELLENCE—The Alvin M. Bently Foundation grants three $750.00 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.

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.

FACULTY RECOGNITION SCHOLARSHIP—The Student Association sponsors a scholarship each semester on the basis of academic excellence and service to the student body. It is given in the name of a faculty member who has been an inspiration to his students and has contributed to the growth of the University and its ideals. Designed for upperclass students. Apply directly to the Scholarship Office.

FACULTY SENATE—A memorial scholarship is awarded each year in the name of those members of the faculty and those emeriti
who have died during the past year. Students demonstrating leadership qualities and academic excellence will be considered. Apply at the Scholarship Office. Funds are supplied by the University Faculty Senate.

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—One four-year scholarship is awarded annually to a prospective freshman 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.

1968 SENIOR CLASS SCHOLARSHIP—This scholarship fund was created by contributing members from the class of 1968. Two annual scholarships of $100.00 each are presented to brothers or sisters of contributing members. In the event there are no family applicants, other students meeting the other criteria are eligible.

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.

College of Applied Sciences

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.
Scholarships

SOCIETY OF MANUFACTURING ENGINEERS (Phillip J. Beatty Memorial)—The Society of Manufacturing Engineers offers three scholarships per year of $250 each to Engineering or Technology students, sophomore standing or above. Apply directly to Engineering and Technology Department.

CLARAGE FAN SCHOLARSHIP—The Clarage Fan Corporation offers one $300 scholarship per year to Industrial Engineering and Industrial Supervision students. Apply directly to the Engineering and Technology Department.

CONTINENTAL CAN COMPANY—Has offered scholarship funds in the past—up to $600 for one scholarship. Given to any Engineering and Technology major with approval of Continental Can Management.

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

FOUNDARY EDUCATIONAL FOUNDATION SCHOLARSHIP—The Foundry Educational Foundation offers eight $250 scholarships per year plus a special Jim Morrow Award in the name of S.D.C.E. Chapter #39 for $250 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 any Engineering Technology student who has a direct interest in Die Casting or Die Making. Apply directly to the Engineering and Technology Department.

CARL WALKER AND ASSOCIATES, INC. SCHOLARSHIP—This scholarship is funded by the Carl Walker and Associates, Inc. of Kalamazoo. Designed to recognize a junior student
enrolled in the Engineering and Technology program for an award in his senior year. A minimum g.p.a. of 2.8 is required and demonstrated leadership. The amount of the award is $500 for the year. Selection is made by Engineering and Technology, the Scholarship Office, and a member of the Board of Directors of the Carl Walker and Assoc., Inc. Applications filed with Engineering and Technology Scholarship Committee and the Scholarship Office.

**FOOD DISTRIBUTION**

**NFBA FOUNDATION, INC. SCHOLARSHIP**—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 $750; it is offered for one year only. Apply to the Distributive Education Department.

**INDUSTRIAL EDUCATION**

**A.S.T.M.E. SCHOLARSHIPS (Phillip J. Beatty Memorial)**—The American Society of Tool and Manufacturing Engineers offers two scholarships per year to Industrial Education students, sophomore standing or above. 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.

**CLAUSING SCHOLARSHIP**—The Clausing Corporation 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.

**SPE SCHOLARSHIP**—The Society of Plastics Engineers offers a one-year, full-tuition scholarship. Provisions of the scholarship include free one-year membership to SPE, summer employment in one or more plastics industries, and commitments from the stu-
student to (1) pursue plastics education, and (2) attend a minimum of four SPE meetings during the calendar year.

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, 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 SCIENCE & ENGINEERING

Up to 70 scholarships ranging in size from $150 to $600 per semester are available to students majoring in the Paper Science & Engineering 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 Science & Engineering Curriculum.

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

- Albany Felt Company
- Alton Box Board Company
- Allied Paper Company
- American Can Company
- American Cyanamid Company
- Appleton Coated Paper Company
- Appleton Wire Works Corporation
- The Bauer Bros. Company
- Beloit Corporation
- Bergstrom Foundation
- The Black-Clawson Company
- Blandin Paper Company
- Boise Cascade Scholarship
- Brown Company
- Buckman Laboratories, Inc.
- Burgess Cellulose Company
- Louis Calder Foundation
- Olin W. Callighan Scholarship
- Cameron Machine Company
- Central Soya Company
- Chemurgy Division
- Clark and Vicario Corporation
- Consolidated Civic Foundation, Inc.
- Container Corporation of America
- Bert Cooper

- CPC International
- Crown Zellerbach Foundation
- Domtar Pulp & Paper Inc.
- Dow Chemical Company
- Draper Brothers Company
- Theodore W. Dunn (in memoriam)
- Eastman Kodak Company
- Engelhard Minerals & Chemicals
- Freeport Kaolin Company
- French Paper Company
- Georgia-Kaolin Company
- Georgia-Pacific Corporation
- P.H. Glattfelter Company
- D.S. & R.H. Gottesman Foundation
- Grain Processing Corporation
- Hammermill Paper Company
- Albert S. Harman Scholarship (in memoriam)
- Hercules, Inc.
- Hoerner-Waldorf Corporation
- Hooker Chemical Corporation
- J.M. Huber Corporation
- Huyck Corporation
- ITT Rayonier, Incorporated
- Improved Machinery, Inc.
- Industrial Nucleonics Corp.
- International Paper Company Foundation
- The Johnson Corporation
Scholarship

Kimberly-Clark Foundation, Inc.
The Lindsay Wire Weaving Company
Lockwood Trade Journal Co., Inc.
Chas. T. Main, Inc.
Mae Munter Callighan
   Named Foundation Scholarship
The Mead Corporation
Foundation
Menasha Corporation
Michigan Carton Company
Montmorency Paper Company, Inc.
Moore & Munger
Morden Machines Company
Mosinee Paper Mills Company
The Nalco Foundation
National Gypsum Company
National Lead Company,
Titanium Pigment Division
The NSC Foundation, Inc.
Nekoosa-Edwards Paper Company
The New Jersey Zinc Company
Nicolet Paper Company
The Orr Felt and Blanket Company
Owens-Illinois
Oxford Charitable Trust
Packaging Corporation of America
Penick & Ford, Ltd.
Pfizer, Inc.
PIMA-Michigan Division
PIMA-Northwestern Division
Port Huron Paper Company
Potlatch Forests, Inc.
Rice Barton Corporation
Rohm & Haas Company
Russell H. Savage Scholarship
St. Regis Paper Company
Scott Paper Company
J.E. Srrirne Company
Slavin Foundation (Hawthorne Paper Company)
Stein, Hall & Company, Inc.
Frederick W. Sutherland Scholarship
Stowe-Woodward Company
TAPPI-Kalamazoo Valley Section
Thiele Kaolin Company
Union Camp Corporation
Union Carbide Corporation
Vicksburg Foundation (Norman Bardeen Scholarship)
S.D. Warren Company Foundation
Weyerhaeuser Company Foundation
BASF Wyandotte Corporation
James A. Wise

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.

DETOUR OILMEN'S CLUB—A grant up to a maximum of $300 per year is available on a one year basis. Open to high 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 up to a maximum of $300 per year is 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 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 $215 for each of the full semesters 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.

TRANSPORTATION TECHNOLOGY

AIRWAY UNDERWRITERS SCHOLARSHIP—This award of $250 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.

DUKE HARRAH MEMORIAL SCHOLARSHIP—Two awards of $250 will be available each semester to students in Aircraft Technology or Aviation Engineering Technology. All undergraduates who have completed at least one semester of full-time work are eligible. Selection will be based on need and demonstrated scholarship. Apply directly to the Transportation Technology Department.
Scholarship

College of Arts and Sciences

COMMUNICATION—Communication Scholarships are offered to men and women assisting in the extracurricular activities program in the Department of Communication Arts and Sciences. These scholarships are in the amount of approximately $300 per year. The recipients of these scholarships must be recommended by the Department of Communication Arts and Sciences and are renewable only by further recommendation of this department. Contact the Department of Communication Arts and Sciences.

MEDICAL TECHNOLOGY

KALAMAZOO UNIT OF THE AMERICAN CANCER SOCIETY—Open to residents of Kalamazoo enrolled in a Michigan college or university or to students enrolled in a Kalamazoo college or university at the sophomore level. The amount is approximately $200 and continues through the junior year if the academic average remains adequate; senior year awards are made in reduced and variable amounts. The recipient must matriculate at Borgess or Bronson Methodist Hospital Schools of Medical Technology. If the recipient drops out of the medical technology curriculum at any level for any reason, the scholarship reverts to a loan and becomes payable within one year after the student completes his or her education. After this period interest accumulates at 4 per cent. Apply to the Chairman, Committee on Medical Technology, Biology Department.

SAGINAW COUNTY UNIT OF THE AMERICAN CANCER SOCIETY—Open to residents of Michigan (preference given to residents of Saginaw County) planning to enroll or currently enrolled in any academic year of a medical technology curriculum in a Michigan college or university. The award is $250 for the academic year with renewal based upon need and academic achievement. If the recipient drops out of the medical technology curriculum at any level for any reason, the scholarship reverts to a loan and becomes payable within one year. Apply to the Chairman, Committee on Medical Technology, Biology Department.

HACKLEY HOSPITAL AUXILIARY—The Auxiliary of Hackley Hospital (Muskegon) offers a scholarship in medical technology to cover tuition at Western Michigan University for the junior college year and the senior intern year. The award is based upon need and academic merit with preference given to students intending
to intern at Hackley Hospital. Apply to the Chairman, Committee on Medical Technology, Biology Department.

THE RUPP AND BOWMAN SCHOLARSHIP—Open to Michigan residents enrolled in their junior or senior year in a medical technology curriculum in a Michigan college or university or in an A.M.A. approved Michigan Hospital School of Medical Technology which does not provide economic assistance for the intern year, but which year is necessary for a baccalaureate degree. The award is $400 for one academic year; if the recipient drops out of the medical technology curriculum at any level or for any reason, the scholarship reverts to a loan and becomes payable within one year. Apply to the Chairman, Committee on Medical Technology, Biology Department.

MUSIC

HONORS STRING QUARTET SCHOLARSHIP—Made possible by a grant from the Kalamazoo Symphony Society, this award pays tuition, applied music fees, and an honorarium (total value approximately $600 per year). It is granted to two violinists, one violist, and one cellist of outstanding ability (preferably freshmen) each year and is renewable providing the student maintains a minimum grade-point-average of 2.75. Recipients perform in the quartet, the University Symphony, and the Kalamazoo Symphony. Apply to the Music 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.

POLITICAL SCIENCE

ARDEN J. ELSASSER MEMORIAL SCHOLARSHIP—This award of $75 per semester by the Kalamazoo League of Women Voters is open to women at least thirty years of age who are majoring in Political Science. For details contact the Department of Political Science.
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 $300. These stipends may be continued for students maintaining a high scholastic record in physics, mathematics and related sciences. Application forms may be obtained from the Department of Physics, Western Michigan University.

SPEECH PATHOLOGY AND AUDIOLOGY

Senior traineeships, awarded on the basis of scholarship and financial need, are available annually from grant funds provided by the office of Education, Department of Health, Education and Welfare.

Scholarships for juniors, seniors and graduate students are offered by the Michigan State Department of Education for majors in speech pathology and audiology who are preparing for professional careers as speech and hearing clinicians in public schools.

College of Business

GENERAL SCHOLARSHIPS OPEN TO ALL STUDENTS IN COLLEGE 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.

BUSINESS—Gamma Tau Chapter of Alpha Kappa Psi, awards annually a scholarship key to the senior male student in business who has the highest scholastic average for two years of work completed at Western Michigan University.

ARNOLD E. SCHNEIDER SCHOLARSHIP AWARD—The Gamma Tau chapter of Alpha Kappa Psi awards twice annually a Sixty Dollar ($60) Pledge Scholarship to the individual who during the semester in which he is a pledge attains the highest grade point average of any pledge.

The chapter also awards twice annually a $100 Active Member Scholarship. This scholarship is awarded to the individual member
who has accumulated the highest grade point average for his last two years of work at Western Michigan University.

**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 the College of Business.

**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 College of Business.

**REAL ESTATE SCHOLARSHIP**—This scholarship is open to any student enrolled in the College 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. A. C. Edwards, College of Business, Western Michigan University.

**SOUTHWESTERN MICHIGAN ASSOCIATION OF PURCHASING MANAGEMENT SCHOLARSHIP**—The Southwestern Michigan Association of Purchasing Management grants a $100 scholarship each full semester (Fall and Winter) for scholastic achievement. It is available to sophomores and juniors taking Purchasing Management (Mkt. 372) in the College of Business. Applications are available in room 230, Marketing Department, North Hall.

**ACCOUNTANCY**

**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 Accountancy, College of Business.

**CROWE, CHIZEK AND COMPANY SCHOLARSHIPS**—Four annual awards to accounting majors for their junior year at Western Michigan University. Two of the recipients are selected
from sophomores at Western Michigan University, one is selected by the faculty at Lake Michigan College and one is selected by the faculty at Southwestern Michigan College. Contact the Department of Accountancy, College of Business.

DOERN, MAYHEW, GROB AND McNAMARA SCHOLARSHIP—An annual award to a senior majoring in accounting that transferred from Kellogg Community College. Contact the Department of Accountancy, College of Business.

ERNST AND ERNST AWARD—An annual award to the outstanding graduating senior with a major in accounting.

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 Accountancy.

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. Inquires should be directed to Mr. T.W. Null, Department of Business Education and Administrative Services, College of Business.

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, Department of Business Education and Administrative Services, College of Business, Western Michigan University.

ROSEANNE SCHNEIDER MEMORIAL SCHOLARSHIP—The Roseanne Schneider Memorial fund offers one annual award to a senior student majoring in the teaching of business subjects. The award will be made by the Scholarship Committee on the basis of scholarship and commitment to teaching as a career. Contact the Department of Business Education and Administrative Services, College of Business, Western Michigan University.
GENERAL BUSINESS

DONALD E. CHARNLEY MEMORIAL INSURANCE AWARD—This award in the amount of $100 is granted annually to the senior insurance student whose achievements during his undergraduate years merit special recognition. Consideration is given to extra curricular activities, character, and adherence to professional ideals, as well as scholastic achievement.

MICHIGAN ASSOCIATION OF MUTUAL INSURANCE AGENTS SCHOLARSHIP—An annual scholarship of $430 is available to insurance majors with senior status. Apply to Dr. W. L. Burdick, Department of General Business.

JAMES M. WILSON, SR. MEMORIAL INSURANCE SCHOLARSHIP—An academic year scholarship of $500 is awarded to an undergraduate with an interest in pursuing a career in the insurance industry. The award is made on the basis of scholastic ability only and may be renewed at the option of the donor. Apply to Dr. W. L. Burdick, Department of General Business.

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 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.

College of Education

PHYSICAL EDUCATION

M. J. GARY SCHOLARSHIP FUND—The M.J. Gary Scholarship Fund was begun in 1967 to assist academically qualified students-athletes attending Western Michigan University. The M. J. Gary Scholarship program is administered in accordance with the rules and regulations of the National Collegiate Athletic Association and the Mid-American Conference.
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 and Physically 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 student's 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 to the Head, Department of Special Education, Western Michigan University.

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.

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. Application forms may be obtained from the Athletic 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 Chairman 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.

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 105 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 and Transfer students starting the Fall Semester should arrange for this interview during their summer orientation and/or preregistration period.

STUDENT LOANS

LONG TERM LOANS

NATIONAL DEFENSE STUDENT LOAN FUND—Loans under the National Defense Education Act are available to West-
ern 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 (bank, savings and loans, credit union) up to $1,500 per academic year as an undergraduate, or graduate student. 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 $1,500 per academic year for an undergraduate or 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 and graduates may obtain loans up to $1500 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.
A.A.U. W. GRADUATE SOCIAL WORK FUND
A.A.U.W. NURSERY EDUCATION LOAN FUND
ALUMNI SHORT-TERM LOAN FUND
AMERICAN BUSINESS CLUB LOAN FUND
ROBERT ANDERSON MEMORIAL LOAN FUND
ASSOCIATED WOMEN STUDENTS LOAN FUND
AUSCO LOAN FUND
FANNIE BALLOU MEMORIAL FUND
AMELIA BISCOMB MEMORIAL LOAN FUND
EMMA WALES BROWN STUDENT LOAN FUND
ERNEST BURNHAM RURAL LOAN
CHAPMAN LOAN FUND
STATE D.A.R. SCHOLARSHIP LOAN FUND
STONE D.A.R. STUDENT LOAN FUND
DISTRIBUTIVE EDUCATION LOAN FUND
MICHAEL FINLEY MEMORIAL LOAN FUND
FOREIGN STUDENT LOAN FUND
JAMES GARDNER MEMORIAL LOAN FUND
GERBER BABY FOOD FUND LOAN PROGRAM
LEROY H. HARVEY MEMORIAL LOAN FUND
DELDEE M. HERMAN LOAN FUND
JOHN C. HOEKJE LOAN FUND
INTER-FRATERNITY COUNCIL LOAN FUND
FREBURN W. JAMES LOAN FUND
KALAMAZOO AREA CHAPTER MAEDC LOAN FUND
KALAMAZOO LADIES' LIBRARY ASS'N. LOAN FUND
KALAMAZOO MOTOR FREIGHT LOAN FUND
KIWANIS EDUCATIONAL AID FUND
LANGUAGE DEPARTMENT LOAN FUND
ALICE LOUISE LEFEVRE MEMORIAL FUND
ELIZABETH E. LICHTEY LOAN FUND
MARVEL F. LIDDY STUDENT LOAN FUND
RAYTH W. LOWER MEMORIAL LOAN FUND
THE R.C. MAHON FOUNDATION LOAN FUND
MILDRED MALONEY MEMORIAL LOAN FUND
MATHEMATICS FACULTY MEMORIAL LOAN FUND
WILLIAM McCRAKEN LOAN FUND IN CHEMISTRY
MEXICAN-AMERICAN LOAN FUND
MICHIGAN BROADCASTING LOAN FUND
FREDERICK W. MIHOLICH MEMORIAL LOAN FUND
FREDERICK W. MIHOLICH MEMORIAL FUND FOR SPECIAL EDUCATION
OCCUPATIONAL THERAPY FUND
OMNIBUS LOAN FUND
PANHELLENIC (DETROIT, GRAND RAPIDS) LOAN FUNDS
PANHELLENIC WMU COUNCIL LOAN FUND
TRUMAN A. PASCOE MEMORIAL FUND
RAY C. PELLETT MEMORIAL LOAN FUND
MICHIGAN DIVISION, PIMA, ROTATING LOAN FUND
SOPHIA REED, MARY MOORE HOME ECONOMICS LOAN FUND
ROTARY STUDENT LOAN
KATHERINE SHUVER LOAN FUND
SIGMA PHI OMEGA BOB HAYES MEMORIAL FUND
SIGMA TAU GAMMA MEMORIAL LOAN FUND
J. TOWNER SMITH LOAN FUND
SOUTHERN CALIFORNIA ALUMNI LOAN FUND
SOUTHWESTERN STATE EMPLOYEES CREDIT UNION LOAN FUND
WMU PAPER TECHNOLOGY ALUMNI ASSOCIATION LOAN FUND
WMU SPEECH LOAN FUND
GEORGE SPRAU LOAN FUND
KENNETH H. SQUIRES MEMORIAL LOAN FUND
MR. AND MRS. J. FRED STALEY FUND
HELEN STATLER FUND
RON STRAWSER MEMORIAL LOAN FUND
STUDENT LOAN FUND
MARION TAMIN MEMORIAL FRENCH LOAN FUND
KALAMAZOO VALLEY SECTION, TAPPI, ROTATING LOAN FUND
DWIGHT B. WALDO MEMORIAL FUND
WALTER WEGERLY SCHOLARSHIP LOAN FUND
JAMES A. WELCH FOUNDATION LOAN FUND
W. DEAN WORDEN LOAN FUND
CRYSTAL WORNER MEMORIAL FUND
EDUCATIONAL OPPORTUNITY GRANT PROGRAM

Under this program federal funds are made available to Western Michigan University to award grants to students of exceptional financial need. 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 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 employment in institutions of higher education and non-profit agencies of those students who need 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 The College Work-Study Program brochure 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.

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 a monthly payment program which provides parents with the opportunity to borrow from $500 up to a maximum of the entire educational expense of their son or daughter. Inquiries concerning this program should be directed to the following address:

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

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.

OFF-CAMPUS EMPLOYMENT

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 baby-
Awards

Students interested in part-time off-campus work opportunities should apply at the Office of Student Financial Aid. They should not do so, however, prior to their arrival for classes.

ON-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.

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 over-all grades are the factors considered in making the selection.

ATHLETICS—The Athletic Board of Control Award is 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 Scholarship Committee, in cooperation with the president of the Faculty Science Club.

BIOLOGY—The Merrill Wiseman Award was named in honor of a distinguished teacher who was on the biology faculty for forty years. It is made annually to a student outstanding in the field of microbiology.

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 College 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.

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.
Awards

PAPER SCIENCE AND ENGINEERING—Awards from $100 to $500 given to students above freshman level who demonstrate 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.

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

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

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, and to undertake a field of specialty. They are expected to equip themselves with the basic intellectual skills of 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 must 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 their 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 pre-requisite obligations. Priority is given honors students in course enrollment, 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 it students in a cooperative science program with Argonne Laboratories which enables science students 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; Accountancy, Anthropology, Biology, Chemistry, Economics, English, Geography, Geology, History, Languages, Management, Mathematics, 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 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
Honors College

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; they are expected to pursue one area of study with some concentration, and they are expected to do "B" work.

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

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 title 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 Physical Properties of Nature).
5. Minimal competency in History (routinely satisfied by 8 hours of course work selected from Civilization of the West I and II).

6. Minimal competency in a foreign language (routinely satisfied through proficiency tests or completion of an intermediate language course. The study of seldom used languages is encouraged 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).

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 Civilization of the West I 4 hrs.
A survey of the human experience from the ancient civilizations of the Near East, Greece, and Rome, through Medieval Europe to the era of the Renaissance and Reformation, with emphasis on the unique achievements of each culture.

Honors College 101 Civilization of the West II 4 hrs.
A continuation of Civilization of the West I (though this course may be taken independently), surveying the rise of modern Europe from the sixteenth and seventeenth centuries, through the eras of Enlightenment and revolution, to the present day.

Honors College 106 Life Sciences I 4 hrs.
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 hrs.
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 hrs.
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 hrs.
Continuation of Honors College 120, Humanities I. Prerequisite: Humanities I.

Honors College 202 Social Science I 4 hrs.
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 203 Social Science II 4 hrs.
Continuation of Social Science I. Prerequisite: Social Science I.

Honors College 208 Physical Properties of Nature I 4 hrs.
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 hrs.
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  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.
College of Applied Sciences

GEORGE E. KOHRMAN,
Dean

GORDON O. JOHNSON
Administrative Assistant

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

The College 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 college.

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 College 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 College 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.
1. DEGREE CURRICULA

THE GENERAL CURRICULUM

Bachelor of Science 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 31 of this Catalog) .......... 40 hrs.
B. Physical Education or Military Science .................. 4-8
C. Major in one of the departments .......................... 24
D. Minor .................................................. 15
E. Electives .............................................. 41-37

Approval of Dean of College of Applied Sciences necessary for admission to above curriculum.

Agriculture

Bachelor of Science 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 requires 30 semester hours of Agriculture for a major, or 18 semester hours for a non-teaching minor. This curriculum requires a minimum of 124 semester hours.

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.
# College of Applied Sciences

## First Year

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<th>Course</th>
<th>S.H.</th>
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<td>College Writing 116</td>
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<td>Arts and Ideas 222 (or)</td>
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<td>Freshman Reading 140</td>
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<td>Non-Western Arts &amp; Ideas 224</td>
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<td>Animal Industry 110</td>
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<td>Introduction to Non-Western World 304</td>
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<td>Accounting Concepts and</td>
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<tr>
<td>Mathematics 100 or 122</td>
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<td>Applic. 201 (or)</td>
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<td>Biological Science 107</td>
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<td>Principles of Accounting 210</td>
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<td>Physical Science 108</td>
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<td>Statistics 200 (or)</td>
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<tr>
<td>General Speech 100 (or)</td>
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<td>Business Law 340</td>
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<td>Business &amp; Prof. Sp. 104</td>
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<td>Electives*</td>
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<td>Agriculture, Marketing and</td>
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<td></td>
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<td>Finance 322</td>
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<tr>
<td>Western Civilization 100 or 101</td>
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<td>Human Communications 400</td>
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<td>Prin. of Economics 201</td>
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<td>Farm Organization &amp; Management 330</td>
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<td>Principles of Sociology 200</td>
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<td>Agronomy 220</td>
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<td>Introduction to Soils 320</td>
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<td>Accounting Concepts and Applic. 201 (or)</td>
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<td>Agriculture, Marketing and Finance 322</td>
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<td>Farm Organization &amp;</td>
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<td>Management 330</td>
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<td>Electives*</td>
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## RECOMMENDED ELECTIVES

- Chemistry 101 or 102
- Biology 101-102-103
- Plant Pathology 323
- Geological Science 112
- Entomology 542
- Outdoor Science 234
- Economic Geography 244
- Agricultural Geography 544
- Principles of Cartography 560

*Minor requirements must be met*
Distributive Education

Bachelor of Science Degree

The Distributive Education Department offers three programs in Distributive Education. 1. The Distributive Teacher Education program is concerned with preparation of secondary school teacher-coordinators of distributive education programs. This program qualifies one to receive both the Vocational and the Secondary Provisional Certificates. 2. The Food Distribution program is designed to develop occupational competencies for management in the food industry. 3. The Petroleum Distribution program is designed to prepare young men for middle management positions in the petroleum field.

The students will elect options 1, 2, or 3.

Minimum hours required for this curriculum: 124 hours.

A. General Studies
requirements as described on page 31 of the catalog must be met.

B. Curriculum Requirements ........................................ 24-36hrs.
   Accounting .................................................. 6
   Business and Professional Speech .......................... 3
   Psychology .................................................. 3
   Sociology .................................................. 3
   Economics .................................................. 6
   Coordinated Distribution Practices ......................... 0-12
   Seminar in Distributive Education ......................... 3

C. Major Areas of Specialization .................................. 24-30hrs.
   Option 1.—Distributive Teacher Education
   Teaching Techniques in Cooperative Education .......... 2
   Coordination Techniques in Cooperative Education .... 2
   Organization and Operation of Distributive Education .... 2
   Food Distribution Industry .................................. 3
   Introduction to Petroleum Industry ......................... 3
   Principles of Retailing ..................................... 3
   Salesmanship ................................................ 3
   Advertising ................................................. 3
   Electives .................................................... 9
Option 2.—Food Distribution
  Food Distribution Industry ........................................... 3
  Food Distribution Merchandising .................................. 3
  Food Distribution Supervision ..................................... 3
  Food Distribution Operations ...................................... 3
  Industry Survey ..................................................... 2
  Electives—Departmental ............................................. 10

Option 3.—Petroleum Distribution
  Industry Survey ....................................................... 2
  Introduction to Petroleum Industry .............................. 3
  Properties & Application of Petroleum Products ............ 3
  Service Station Supervision ........................................ 3
  Handling of Petroleum Products .................................. 3
  Petroleum Distribution Finance .................................... 3
  Electives—Departmental ............................................. 7

D. Minor Sequence in General Business
  recommended ............................................................ 15-20hrs.

E. Physical Education .................................................. 4hrs.

F. Curriculum Electives ............................................... 1-14hrs.

G. Education Block—Option 1. only .................................. 21hrs.
  Human Development & Learning ................................... 4
  Teaching and Learning ............................................. 3
  Seminar in Education .............................................. 2
  Directed Teaching ................................................... 9
  Principles of Practical Arts & Vocational Education ........ 3
# Engineering and Technology

## INDUSTRIAL ENGINEERING

Bachelor of Science 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.

A bachelor of science degree requires 135 semester credit hours.

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### Notes

Engineering and Technology Academic Counselors (located in room 2032, Industrial and Engineering Technology Building) are available to assist you by recommending electives appropriate to your educational program.
INDUSTRIAL SUPERVISION

Bachelor of Science 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.

A bachelor of science degree requires 136 semester credit hours.

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*Substitutes for GS 202, 203, 204, or 205
College of Applied Sciences

Semester 7

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Spring or Summer

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Engineering and Technology Academic Counselors (located in room 2032, Industrial and Engineering Technology Building) are available to assist by recommending electives appropriate to your educational program.

ELECTRICAL ENGINEERING TECHNOLOGY
Bachelor of Science 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.

A bachelor of science degree requires 136 semester credit hours.

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### Degree Curricula

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*Or Economics 201 and 202, Principles of Economics
The Mechanical Engineering Technology curriculum is intended for those who are interested in a program of applied engineering in such industrial areas as product design and development, production, supervision, and technical sales.

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*Economics 201 and 202 may be substituted.
Degree Curricula

Semester 7

Intro. to the Non-Western World 304
Heat Transfer 451
Product Engineering 453
Electives (upperclass) 6
Total 16

Semester 8

Gen. Studies II Elective 4
Pressworking of Metals 350 (or)
Numerical Control of Prod. 359
Air Conditioning 450
Mech. Engr. Lab 452
Electives (upperclass) 2
Total 15

RECOMMENDED ELECTIVES

Mathematics III, IV (222,223)
General Chemistry 109
Programming for Computers 506
Production Drafting 331
Industrial Design 430
Electronic Circuits 241
Industrial Labor Relations 403
Casting Design 574
Principles of Industrial Supervision 402
Industrial Safety 401
Die Casting 575

Metal Casting II 370
Welding Design Analysis 551
Production Control 306
Business and Professional Speech 104
El. Statistics 260
Marketing 240
Advertising 374
Accounting 201
Independent Research and Development 490

METALLURGICAL ENGINEERING TECHNOLOGY

Bachelor of Science Degree

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

A bachelor of science degree requires 136 semester credit hours.

Semester 1

| Course                          | S.H. | Semester 2
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### College of Applied Sciences

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**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
- El. Statistics 260
- Quality Control 308
- Industrial Labor Relations 403
- 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

*Economics 201 and 202 may be substituted.*
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

Bachelor of Science Degree

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

The dietitian after the 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. A minimum of 30 S.H. in Home Economics is required.

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
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<tbody>
<tr>
<td>Food Preparation and Meal Planning 114</td>
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<td>Nutrition 210</td>
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<td>Individual and Family Relationships 150</td>
<td>4</td>
<td>Organic Chemistry 365</td>
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<td>Textiles and Clothing 101, 201</td>
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<td>Economics 201 or 150</td>
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College of Applied Sciences

Third Year  S.H.  Fourth Year  S.H.
Quantity Foods 312  3  Biochemistry 450  3
Human Physiology 219  4  Human Development and
Microbiology 412  4  Learning 250  4
Manpower Management 352 (or)  3  General Studies 4  4
Fundamentals of Management 300  3  Accounting 201  3
Non-Western World 304  4  Advanced and Experimental
Diet and Disease 410  2  Foods 518  4
Advanced Nutrition 510  3  Electives 10
Elective  9

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HOME ECONOMICS IN BUSINESS

Bachelor of Science Degree

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, 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. A minimum of 30 S.H. in Home Economics is required.

First Year  S.H.  Second Year  S.H.
Individual and Family Relationships 150  4  Consumer Problems of
Food Preparation and Meal Planning 114  5  Clothing 304  3
College Writing 116  4  Nutrition 210  3
Freshman Reading 140  4  Science (2 areas)  8
Design 100  2  General Studies (Social Science)  4
Textiles and Clothing 101, 201  2  Human Growth 254 (or Ed. 250)  4
Western Civilization 100 or 101  6  Arts and Ideas 222  4
Physical Education  2  Physical Education  2
Electives  2

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### Degree Curricula

#### HOME ECONOMICS EDUCATION

Bachelor of Science Degree

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 or Family Life Education minor in the department. 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.

#### First Year

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<td>Human Growth 254 (or)</td>
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<td>Man and Society 202</td>
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<td>Freshman Reading 140</td>
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#### Third Year

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HOME ECONOMICS—GENERAL CURRICULUM

Bachelor of Science 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 may be used as a base for advanced course work in a specialized area. A minimum of 30 hrs. in Home Economics is required.

Recommended minors: Art, Sociology, Science.

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<td>Human Growth 254 (or)</td>
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<td>Arts and Ideas 222</td>
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FAMILY LIFE EDUCATION MINOR

This minor is offered in the Home Economics Department and it is open to all students; especially those specializing in Elementary, Secondary, and Special Education with majors in such areas as Home Economics, Biology, Sociology, Physical and Health Education, and Psychology. The minor consists of a minimum of twenty-four hours. Twelve of the hours are required, and the other twelve are elective. Because Family Life is a multidisciplinary program, students should not elect more than two courses in any one department exclusive of required courses.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>HE C.</th>
<th>Minimum 12 hrs.</th>
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<tbody>
<tr>
<td>150</td>
<td>Individual and Family Relations .............................. 4 hrs.</td>
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<tr>
<td>220</td>
<td>Sex Education—An Introduction to Human Sexuality 3</td>
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<thead>
<tr>
<th>SOC.</th>
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<tr>
<td>200</td>
<td>Principles of Sociology ........................................... 3</td>
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<thead>
<tr>
<th>HE C.</th>
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<tbody>
<tr>
<td>450</td>
<td>Teaching Sex Education in the Schools* .......................... 2</td>
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</table>

*Prerequisite 220, or approval of the instructor; 450 is a special sequence course designed for the teacher.
**College of Applied Sciences**

### ELECTIVE COURSES

<table>
<thead>
<tr>
<th>SOC.</th>
<th>Minimum 12 hrs.</th>
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</thead>
<tbody>
<tr>
<td>210 Modern Social Problems</td>
<td>3 hrs.</td>
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<tr>
<td>390 Marriage and Family Relations</td>
<td>3</td>
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<tr>
<td>572 Community Agency Resources</td>
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</tbody>
</table>

**SPECIAL ED.**

| 585 Mental Hygiene of Childhood & Adolescence | 2                        |

**BIOL.**

| 101 Animal Biology                          | 3                        |
| 219 Human Physiology                        | 4                        |

**ANTHRO.**

| 231 Introduction to Cultural Anthropology    | 3                        |

**PSY.**

| 150 Introduction to the Science of Behavior  | 3                        |

(For course descriptions, see the listings in the various departments)

**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.

**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.)
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

Bachelor of Science 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. Fifty percent of the technical work for a major and minor must be taken in the Industrial Education Department.

Minimum hours required for this curriculum .................. 124 hrs.
General Studies ................................................................. 40
Technical major in one of the following areas:* ............... 30
  General Industrial Arts
  Drawing
  Electricity-Electronics
  Graphic Arts
  Metalworking
  Power-Automechanics
  Woodworking

Technical minor in any one of the above areas
  other than the major* .................................................... 20

*Design 276, and Mech. and Cond. of Equip. 573 are required of all Metalworking, and Woodworking majors.
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 two years of industrial experience in the shop area to be taught, or (b) if less than two 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: ........ 124 hrs.
B. Course Requirements
   1. General Studies Requirements (see page 31)
   2. Mathematics (6 hrs. of which may be counted for General Studies requirements) ............... 8 hrs.
   3. Technical Major .................................................. 30 hrs.
   4. Technical Minor .................................................. 20 hrs.

†Must be taken during first year on campus.
5. Option I (Vocational Industrial Education) leading to Secondary Teaching Certificate .......... 28 hrs.
   a. Education requirements (See College of Ed.) .......... 21
   b. Course Construction 342 ................................ 2
   c. Teaching of Ind. Education 344 ....................... 3
   d. Plan and Organ. of School Shop 345 ................. 2

6. Option II (Industrial Cooperative Education) leading to Secondary Teaching Certificate .......... 30 hrs.
   a. Education requirements (See College of Ed.) .......... 21
   b. Teaching Tech. in Coop. Education 572 ................. 2
   c. Coord. Techs. in Coop. Education 573 ................ 2
   d. Teaching of Ind. Education 344 ....................... 3
   e. Course Construction 342 ................................ 2

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

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

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

PRINTING MANAGEMENT CURRICULUM
Bachelor of Science Degree

A. Minimum hours required for this curriculum .................. 124 hrs.

B. Course Requirements
   1. General Studies Requirements as described in the in the catalog must be met (Math 100 and Econ. 201 will fulfill 6 hr. elective requirement.) .......... 40 hrs.
   2. Graphic Arts ................................................. 36 hrs.
      Graphic Arts 150 ........................................ 3
      Letterpress Presswork 152 .............................. 3
      Typographic Design 250 ................................ 3
      Machine Composition 254 ............................. 4
      Photolithographic Techniques 350 ..................... 3
      Lithographic Presswork 351 ........................... 3
### College of Applied Sciences

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<th>Course</th>
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<tr>
<td>Advanced Presswork 450</td>
<td>3</td>
</tr>
<tr>
<td>Estimating 452</td>
<td>3</td>
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<tr>
<td>Paper Industry Processes 550</td>
<td>3</td>
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<td>Halftone Photo Processes 551</td>
<td>3</td>
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<td>Estimating 552</td>
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<td>Printing Production Management 553</td>
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3. Industrial Supervision .................................................................................................................. 12hrs.

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Industrial Calculations 150</td>
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<tr>
<td>Work Analysis 305</td>
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<tr>
<td>Industrial Safety 401</td>
<td>2</td>
</tr>
<tr>
<td>Principles of Industrial Supervision 402</td>
<td>3</td>
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<td>Industrial Labor Relations 403</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Statistics 200</td>
<td>3</td>
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<tr>
<td>Accounting Concepts and Applications 201</td>
<td>3</td>
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<tr>
<td>Fundamentals of Management 300</td>
<td>3</td>
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<tr>
<td>Business Law 340</td>
<td>3</td>
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<tr>
<td>Introduction to Management Science 554</td>
<td>3</td>
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</table>

5. Data Processing .................................................................................................................................. 6hrs.

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Computer Usage 102 (Management)</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Computers 106 (Math)</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Computer Languages 306 (Math)</td>
<td>2</td>
</tr>
</tbody>
</table>

6. Algebra 100 ........................................................................................................................................ 4hrs.

7. Physical Education ............................................................................................................................ 4hrs.

8. Economics 201 ....................................................................................................................................... 3 hrs.


C. All degree requirements must be met.
Occupational Therapy

Bachelor of Science 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 six 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, he must confer with 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 sequence. 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 departmental offerings.
**OCCUPATIONAL THERAPY**

Bachelor of Science Degree

A. Minimum hours required for this curriculum ..........128 hrs.

B. Course requirements:

1. General Studies requirements as described on page 31 of the catalog must be met

2. Behavioral Sciences ........................................... 9
   - Psychology 150 ................................................. 3
   - Psychology 160 ................................................. 3
   - Growth, Development and Aging 225 ......................... 3

3. Science .................................................................. 19
   - *Biology 101 ....................................................... 3
   - Mammalian Anatomy 210 ........................................ 4
   - Human Physiology 219 ......................................... 4
   - Gross Human Anatomy 221 .................................... 5
   - Kinesiology 520 .................................................. 3

4. Practical Arts and Crafts ........................................ 10
   - General Crafts 110 ............................................. 4
   - Ceramics 103 ..................................................... 3
   - O.T. Woodworking 198 (Industrial Education) .......... 3

5. General Pathology ................................................. 7
   - Psychiatric Conditions 322 .................................. 3
   - Medical and Orthopedic Conditions 524 .................... 4

6. Occupational Therapy ............................................ 39
   - Therapeutic Media I 111 ...................................... 3
   - Therapeutic Media II 210 ..................................... 3
   - Developmental Assessment 235 ............................... 3
   - Clinical Neurology 323 ........................................ 3
   - Application in Psychiatry 332 ............................... 4
   - Clinical Instruction in Psychiatry 333 ....................... 2
   - Therapeutic Techniques 410 ................................... 4
   - Organization for Patient Services 430 ...................... 3
   - Clinical Affiliation 440 ..................................... 3
   - Clinical Affiliation 441 ..................................... 3
   - Application in Physical Disabilities 442 .................... 4
   - Clinical Instruction in Physical Disabilities 443 ......... 2
   - Senior Seminar 450 ............................................ 2

7. P.E. ....................................................................... 4

8. Electives to make 128 hours

*Biology 101 may be used in this curriculum to waive 4 hours of science required under General Studies 1.
Paper Science and Engineering

Bachelor of Science Degrees

The Department of Paper Science and Engineering offers two B.S. and M.S. programs which provide extensive foundational scientific and technical education to prepare graduates for professional employment in the research and development, technical-manufacturing, and technical-marketing 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 to graduate school in the sciences.

The academic program leading to a B.S. degree is intended to challenge students with interest and aptitude in engineering, science, and mathematics as applied to the third fastest growing industry in the U.S. Two program options are offered so that the student may select either option during or following his sophomore year.

The PAPER SCIENCE OPTION meets the needs of students desiring to major in a science (chemistry) and who will likely seek careers in research, development, and eventually research administration. This program should be selected by those who want to study for advanced degrees in chemistry or paper science.

The PAPER ENGINEERING OPTION is oriented toward engineering, mechanics, and electricity, with considerably less emphasis on chemistry than the Paper Science option. This program will better serve those students seeking to enter industry in the operational areas of manufacturing, technical service, process control and, eventually industrial management.

Industrial experience in both options 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. The pilot plant and laboratory facilities are among the best in the world.

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 these scholarships may be found in the scholarship section of this catalog.

A **MAJOR** in Paper Science or in Paper Engineering may be earned only by meeting all the requirements of one of the options.

A **MINOR** in Paper Science may be earned by completing the following 21 semester hours of departmental courses: 100, 101, 202, 305, 333, and 442. A **MINOR** in Paper Engineering may be earned by completing the following 20 semester hours: 100, 101, 202, 305, 442, and 590. Pre-requisites for the above courses must be completely satisfied except minors only may substitute Physics 106 for 210 and Organic Chemistry 365 for 360 and 361.

### PAPER SCIENCE

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Pulp &amp; Paper Mfg. 100</td>
<td>3</td>
<td>Introduction to Pulp &amp; Paper Mfg. 101</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics I 122</td>
<td>4</td>
<td>Mathematics II 123</td>
<td>4</td>
</tr>
<tr>
<td>General Chemistry 102</td>
<td>4</td>
<td>Qualitative Analysis 120</td>
<td>4</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
<td>Freshman Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>General Studies*</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Physical Education</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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**Summer Mill Practice**

<table>
<thead>
<tr>
<th>Semester 3</th>
<th>S.H.</th>
<th>Semester 4</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Paper Manufacture 202</td>
<td>4</td>
<td>Pulp Manufacture 203</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics III 222</td>
<td>4</td>
<td>Mathematics IV 223</td>
<td>4</td>
</tr>
<tr>
<td>Mechanics and Heat 210</td>
<td>4</td>
<td>Electricity, Sound, &amp; Light 211</td>
<td>4</td>
</tr>
<tr>
<td>Quantitative Analysis 222</td>
<td>4</td>
<td>Effluent Control &amp; Microbiology 251</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Organic Chemistry 360</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Physical Education</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</tr>
</tbody>
</table>

**Summer Mill Practice**

---

*Either Western Civilization 100 or 101, or Arts & Ideas 221.

**Two summers of mill practice are suggested. Credit for summer mill experience as a technical elective may be earned after the sixth semester of study by completing a satisfactory report.
### Degree Curricula

<table>
<thead>
<tr>
<th>Semester 5</th>
<th>S.H.</th>
<th>Semester 6</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Chemistry 361</td>
<td>4</td>
<td>Non-Western World 304</td>
<td>4</td>
</tr>
<tr>
<td>Process Engineering I 306</td>
<td>4</td>
<td>Process Engineering II 307</td>
<td>4</td>
</tr>
<tr>
<td>Mechanics &amp; Optics of Fiber Systems 305</td>
<td>4</td>
<td>Chemistry of Wood &amp; Pulp 333</td>
<td>4</td>
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<tr>
<td>Elective, Technical***</td>
<td>4</td>
<td>Printing Processes 451</td>
<td>2</td>
</tr>
<tr>
<td>Elective, General Studies***</td>
<td>3</td>
<td>Statistical Methods 430</td>
<td>4</td>
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<tr>
<td>Current Topics in Pulp &amp; Paper 440</td>
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<td>Current Topics in Pulp &amp; Paper 440</td>
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<tr>
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<td>19</td>
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**Summer Mill Practice** (2 S.H.), (Tech. Elective)

<table>
<thead>
<tr>
<th>Semester 7</th>
<th>S.H.</th>
<th>Semester 8</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>Physical Chemistry 430</td>
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<td>Physical Chemistry 431*****</td>
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<tr>
<td>Polymer Chemistry 530</td>
<td>2</td>
<td>Coating &amp; Converting of Paper 442</td>
<td>3</td>
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<tr>
<td>Senior Thesis 470</td>
<td>2</td>
<td>Senior Thesis 471</td>
<td>2</td>
</tr>
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<td>Current Topics in Pulp &amp; Paper 440</td>
<td>1</td>
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<td>3</td>
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<tr>
<td>Economics 201 or 203</td>
<td>3</td>
<td>Elective, General Studies****</td>
<td>4</td>
</tr>
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### PAPER ENGINEERING

<table>
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<tr>
<th>Semester 1</th>
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<th>Semester 2</th>
<th>S.H.</th>
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<tr>
<td>Introduction to Pulp &amp; Paper 100</td>
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<td>Introduction to Pulp &amp; Paper 101</td>
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<td>Mathematics I 122</td>
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<tr>
<td>General Chemistry 102</td>
<td>4</td>
<td>Qualitative Analysis 120</td>
<td>4</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
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</tbody>
</table>

**Summer Mill Practice**

*Either Western Civilization 100 or 101, or Arts & Ideas 221.

**Two summers of mill practice are suggested. Credit for summer mill experience as a technical elective may be earned after the sixth semester of study by completing a satisfactory report.


****General Studies electives should be Senior level.

*****Students not desiring research positions or not going to graduate school in sciences may elect to substitute electives approved by department chairman. This approach will not qualify the student for a chemistry major.
<table>
<thead>
<tr>
<th>Semester 3</th>
<th>S.H.</th>
<th>Semester 4</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Paper Manufacture 202</td>
<td>4</td>
<td>Pulp Manufacture 203</td>
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<tr>
<td>Introduction to Organic Chemistry 265</td>
<td>4</td>
<td>Quantitative Analysis 222</td>
<td>4</td>
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<tr>
<td>Statics 256</td>
<td>3</td>
<td>Electricity, Sound &amp; Light 211</td>
<td>4</td>
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<tr>
<td>Mechanics &amp; Heat 210</td>
<td>4</td>
<td>Effluent Control &amp; Microbiology 251</td>
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<tr>
<td>Economics 201 or 203</td>
<td>3</td>
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Summer Mill Practice**

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<th>Semester 5</th>
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<th>Semester 6</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>Mechanics &amp; Optics of Fiber Systems 305</td>
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<td>Elec. Meas. &amp; Electronics 342</td>
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<tr>
<td>Process Engineering I 306</td>
<td>4</td>
<td>Process Engineering II 307</td>
<td>4</td>
</tr>
<tr>
<td>Thermodynamics 352</td>
<td>3</td>
<td>Statistical Methods 360 or 260</td>
<td>4</td>
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<tr>
<td>Elective, Technical****</td>
<td>4</td>
<td>Control Systems 360</td>
<td>3</td>
</tr>
<tr>
<td>Elective, General Studies***</td>
<td>4</td>
<td>Printing Processes 451</td>
<td>2</td>
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Summer Mill Practice** (2 S.H.), (Tech. Elective)

<table>
<thead>
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<th>S.H.</th>
<th>Semester 8</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Instrumentation &amp; Process Control 590</td>
<td>3</td>
<td>Instrumentation &amp; Process Control 591</td>
<td>3</td>
</tr>
<tr>
<td>Mechanical Engineering Lab 452</td>
<td>3</td>
<td>Coating &amp; Converting of Paper</td>
<td>3</td>
</tr>
<tr>
<td>Programming for Computers 506</td>
<td>3</td>
<td>Senior Thesis 471</td>
<td>2</td>
</tr>
<tr>
<td>Senior Thesis 470</td>
<td>2</td>
<td>Non-Western World 304</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Elective, Technical****</td>
<td>4</td>
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</table>

**Two summers of mill practice are suggested. Credit for summer mill experience as a technical elective may be earned after the sixth semester of study by completing a satisfactory report. Other electives should be approved by Department Head.

***General Studies electives should be Senior level.

Transportation Technology

AUTOMOTIVE ENGINEERING TECHNOLOGY

Bachelor of Science 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 ...............128 hrs.

Course Requirements
1. General Studies ........................................... 22 hrs.
   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

2. Automotive Courses ......................................... 26 hrs.
   Automotive Chassis 121 ......................................... 3
   Automatic Transmissions 122 .................................... 3
   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 ........ 21-22 hrs.
   General Chemistry 103 ........................................... 4
   Introduction to Computers 106 .................................. 1
College of Applied Sciences

Technical Drafting 132 or Engineering Drafting 230 2-3
Industrial Calculators 150 .............................................. 1
Machining Metals 151 ....................................................... 3
Principles of Economics 201, 202 .................................... 6
Physical Education or R.O.T.C. ....................................... 4

4. Major Option .................................................................. 59hrs.

<table>
<thead>
<tr>
<th>OPTION I Management and Service</th>
<th>OPTION II Production and Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 100, 200</td>
<td>Mathematics I, II</td>
</tr>
<tr>
<td>Elementary Statistics 260</td>
<td>(122, 123)</td>
</tr>
<tr>
<td>Business and Professional Speech 104</td>
<td>College Physics 210, 211 or 110, 111</td>
</tr>
<tr>
<td>Elementary Physics 106</td>
<td>Electrical Circuits 240</td>
</tr>
<tr>
<td>Industrial Processes 152</td>
<td>Electronic Circuits 241</td>
</tr>
<tr>
<td>Accounting Concepts and Applications 201</td>
<td>Electromagnetic Devices 242</td>
</tr>
<tr>
<td>Marketing 370</td>
<td>Statics 256</td>
</tr>
<tr>
<td>Business Communication 242</td>
<td>Machine Design 330</td>
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<tr>
<td>Quality Control 308</td>
<td>Thermodynamics 352</td>
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<tr>
<td>Fundamentals of Management 300</td>
<td>Strength of Materials 353</td>
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<tr>
<td>Advertising 374</td>
<td>Testing of Materials 354</td>
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<td>Conference Leadership 406</td>
<td>Dynamics 355</td>
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<tr>
<td>Industrial Supervision 402</td>
<td>Fluid Mechanics 356</td>
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<td>Electives</td>
<td>Mechanical Engineering</td>
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<td>Lab. 452</td>
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<tr>
<td></td>
<td>Electives</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adviser: Mr. Ellinger

AVIATION ENGINEERING TECHNOLOGY

Bachelor of Science 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 with some additional course work.
Minimum hours required for this curriculum: 128 hrs.

Course Requirements

1. General Studies
   - Western Civilization 100 or 101: 4 hrs.
   - College Writing 116: 4 hrs.
   - Freshman Reading 140: 2 hrs.
   - Arts and Ideas 222 or 224: 4 hrs.
   - Non-Western World 304: 4 hrs.
   - General Studies Jr.-Sr. Elective: 4 hrs.
   Total: 22 hrs.

2. Aviation Courses
   - Introduction to Aviation 110: 3 hrs.
   - Airframe Structures 113: 4 hrs.
   - Reciprocating Powerplants 114: 3 hrs.
   - Aircraft Carburetion & Fuel Systems 115: 3 hrs.
   - Powerplant Evaluation & Systems 212: 4 hrs.
   - Airframe Hydraulic, Pneumatic & Auxiliary Systems 213: 2 hrs.
   - Propellers and Jet Propulsion 215: 4 hrs.
   - Airframe Electrical Systems 217: 3 hrs.
   Total: 26 hrs.

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

4. Major Option
   Total: 56 hrs.
<table>
<thead>
<tr>
<th>OPTION I</th>
<th>OPTION II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management and Transportation</td>
<td>Production and Testing</td>
</tr>
<tr>
<td>Mathematics 100,200</td>
<td>Mathematics I, II (122, 123) 8</td>
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<tr>
<td>Elementary Statistics 260</td>
<td>Physics 210, 211, or</td>
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<tr>
<td>Elementary Physics 106</td>
<td>110, 111</td>
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<tr>
<td>Accounting Concepts and Applications 201</td>
<td>Machining Metals 151 3</td>
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<tr>
<td>Industrial Processes 152</td>
<td>Electronic Circuits 241 3</td>
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<tr>
<td>Machining Metals 151</td>
<td>Electromagnetic Devices 242 3</td>
</tr>
<tr>
<td>Marketing 370</td>
<td>Statics 256</td>
</tr>
<tr>
<td>Fundamentals of Management 300</td>
<td>Strength of Materials 353 3</td>
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<td>Quality Control 308</td>
<td>Testing of Materials 354 3</td>
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<td>Production Control 306</td>
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<td>Industrial Supervision 402</td>
<td>Fluid Mechanics 356 3</td>
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<td>Electives</td>
<td>Machine Design 330 3</td>
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<tr>
<td>Professional Pilot</td>
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<tr>
<td>Mathematics 100, 200</td>
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<tr>
<td>Elementary Physics 106</td>
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<td>Accounting Concepts and Applications 201</td>
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<td>Aircraft Servicing 218</td>
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<td>Fuels and Lubricants 222</td>
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<tr>
<td>Physical Geography 105</td>
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<td>Private Pilot Ground School, 200</td>
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<tr>
<td>Introduction to Flight, 201</td>
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<tr>
<td>Primary Flight, 203</td>
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<tr>
<td>Introduction to Meteorology and Climatology,</td>
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<td>Intermediate Pilot Ground School, 300</td>
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<td>Intermediate Flight, 301</td>
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<td>Commercial Flight, 303</td>
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<td>Advanced Pilot Ground School, 400</td>
<td>2</td>
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<tr>
<td>Instrument Flight, 401</td>
<td>3</td>
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<td>Flight Instructor Fundamentals, 403</td>
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<td>Electives</td>
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Students desiring to qualify for the FAA Airframes and Powerplant license must complete the equivalent of the Aircraft Technology curriculum as outlined on page 156.

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 ..... 62hrs.
B. Course Requirements
   1. General Studies .................................................. 14hrs.
      College Writing 116 ........................................... 4
      Freshman Reading 140 ........................................ 2
      Early Western Civilization 100 or alternatives .......... 4
      Man and Society 202 or alternatives ..................... 4
   2. Communication Arts and Sciences, Language, Litera-
      ture, Philosophy and Religion .............................. 3hrs.
      Business and Professional Speech 104 .................... 3
      Psychology 150 ................................................. 3
   4. Social Science .................................................... 6hrs.
      Principles of Economics 201 and 202 .................... 6
   5. Applied Arts and Sciences—Food Distribution ........... 22hrs.
      Food Distribution Industry 130 ............................ 3
      Food Distribution Merchandising 132 .................... 3
      Food Distribution Supervision 231 ....................... 3
      Food Distribution Operations 232 ....................... 3
      Industry Survey 109 .......................................... 2
      Super Market Foods 116* .................................... 2
      Coordinated Distribution Practices 202 ................. 6

*Home Economics Dept.
    Accounting 210 ........................................ 3
7. Physical Education ....................................... 2hrs.
8. Electives .................................................. 9hrs.

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 ..... 62hrs.
B. Course Requirements
   1. General Studies ........................................ 22hrs.
      College Writing 116 .................................. 4
      Freshman Reading 140 ................................ 2
      Early Western Civilization 100 or alternative .. 4
      Physical Science 108 ................................ 4
      Man and Society 202 or alternatives ............... 4
      Arts and Ideas 222 or alternatives ................. 4
   2 Communication Arts and Sciences, Language, Literature, Philosophy and Religion ................ 3hrs.
      Business and Professional Speech 104 ............ 3
      Psychology 150 ....................................... 3
   4. Social Science ......................................... 6hrs.
      Principles of Economics 201 and 202 ............... 6
      Introduction to Petroleum Industry 120 .......... 3
      Properties and Application of Petroleum Products 220 ........................................ 3
      Service Station Supervision 230 .................... 4
      Industry Survey 109 .................................. 2
      Coordinated Distribution Practices 202 ............ 6
   Accounting 210 ........................................ 3
7. Physical Education ....................................... 2hrs.
8. Electives .................................................. 5hrs.

**Engineering and Technology**

*(Students may secure a two-year vocational certificate in Drafting and Design by completing the curriculum below or in Electronics, by completing a series of courses which have been approved by the counselor in that field.)*

**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.

<table>
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<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
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<tr>
<td>Algebra 100</td>
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<td>College Writing 116</td>
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<td>Industrial Calculations 150</td>
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<td>Descriptive Geometry 231</td>
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<td>Machining Metals 151</td>
<td>3</td>
<td>Metal Casting 254</td>
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<td>Engineering Drafting 230</td>
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<td>Physical Education</td>
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<tr>
<td>Freshman Reading 140</td>
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<td>Office Machines 281</td>
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<td>Electrical Circuits 240</td>
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<td>Metallurgy 252</td>
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<td>Production Tooling 250</td>
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<td>Machine Drafting 330</td>
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<td>Production Drafting 331</td>
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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 ......................76 hrs.

Course Requirements

1. **General Studies** .................................................. 20 hrs.
   - Mathematics 100 ............................................. 4
   - General Chemistry 103 ........................................ 4
   - Elementary Physics 106 ....................................... 4
   - College Writing 116 .......................................... 4
   - Freshman Reading 140 ........................................ 2
   - Physical Education ............................................ 2

2. **Technical Courses** .............................................. 56 hrs.
   - Introduction to Aviation 110 ................................ 3
   - Airframe Structures 113 ..................................... 4
   - Reciprocating Powerplants 114 .............................. 4
   - Aircraft Carburetion & Fuel Systems 115 ................. 4
   - Powerplant Evaluation & Systems 212 ...................... 4
   - Airframe Hydraulic, Pneumatic & Auxiliary Systems 213 2
   - Aircraft Welding 214 ......................................... 3
   - Propellers & Jet Propulsion 215 ............................ 4
   - Airframe Electrical Systems 217 ............................ 3
   - Aircraft Servicing 218 ........................................ 5
   - FAA Maintenance Regulations 219 ......................... 2
   - Fuels & Lubricants 222 ....................................... 2
   - Technical Drafting 132 ........................................ 2
   - Machining Metals 151 .......................................... 3
   - Industrial Processes 152 ..................................... 3
III. DESCRIPTION OF COURSES

George Kohrman, Dean  E. J. Brune  Thomas M. McKee
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 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 upper-classmen and graduate students.

*Recommended Elective: Introduction to Flight 201.
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 swine.

111 Animal Industry 3 hrs.

A continuation of 110 with sheep, 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.

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 overall 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
Raymond A. Dannenberg
William O. Haynes

Richard Neschich
Lawrence A. Williams

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.

DISTRIBUTIVE TEACHER 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 Curriculum—B.S. Degree

- Distributive Education
- Option 1—Distributive Teacher Education
- Option 2—Food Distribution
- Option 3—Petroleum Distribution

Two Year Curricula—Certificate

1. Food Distribution
2. Petroleum Distribution

A major can be earned only by being enrolled in the four year curriculum 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 the 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 $25.00 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.

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 3 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 3 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 3 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 roleplaying procedures. Prerequisite: Super Market Supervision 231.

332 Food Distribution Systems Control 3 hrs.
An analysis of the systems and controls used in the food distribution industry for controlling operations, maximizing profits and minimizing costs. The use of special operating data and ratios to measure performance, budget manpower, and forecast sales and profits. Other strategies and control systems applicable to food distribution. Prerequisite: Food Distribution Operations 232.

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 3 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.

328 Petroleum Jobber Operations 3 hrs.

An overall study of petroleum jobber operations with special emphasis on heating oil, including degree day forecasting, delivery dispatching, credit and collection control, sales and cost analyses, employee productivity and operating expense accounting with the use of electronic data processing.

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.

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.
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. Industrial Engineering
2. Industrial Supervision
3. Electrical Engineering Technology
4. Mechanical Engineering Technology
5. Metallurgical Engineering Technology

Two Year Curriculum—Certificate
Drafting and Design 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
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 College coordinator.
INDUSTRIAL ENGINEERING

101 Introduction to Industry 3 hrs. Fall

The anatomy of manufacturing industries, operational responsibilities and relationships in companies of various sizes and using various processes. Includes a foundation in basic analytical methods.

305 (304) Work Analysis 3 hrs. Fall, Winter, Spring

Methods engineering and measurement of human work systems. Techniques for operation analysis, work measurement and work sampling. Predetermined basic motion-time systems and standard data development are introduced.

Prerequisite: ENGT 101 or ENGT 150 and Math 260 or 360.

306 Production Control 3 hrs. Fall, Winter, Summer

Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching.

Prerequisites: ENGT 101 or ENGT 150 and Mgmt. 300, and Math 260. Not open to Industrial Engineering majors.

307 Engineering Economy 3 hrs. Winter

Application of principles of engineering economy for establishment of equipment and system feasibility. Examination of interest, equivalence, taxes, depreciation, uncertainty and risk, incremental and sunk costs, and replacement models.

Prerequisite: Math 123 or 200.

308 Quality Control 3 hrs. Fall, Winter, Spring

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: ENGT 101 or ENGT 150 and Math 260 or 360.

404 Material Handling and Layout 4 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: ENGT 305, 307; 306 or 407 (May be concurrent).
405 (506) **Work Design** 3 hrs. Fall, Winter, Spring

Human engineering factors, psychological factors, and principles of effective work as related to manual and machine systems. Techniques and supervisory aspects of work systems improvement. Prerequisite: ENGT 305.

407 **Operations Control in Manufacturing** 3 hrs. Fall


409 **Industrial Engineering Experimental Design** 3 hrs. Winter

Projects in industrial engineering disciplines involving student research and experimentation. Instrumentation methods and measurement techniques. Prerequisite: Math 360, ENGT 305, 308.

439 **Report Preparation** 3 hrs. Winter

Techniques and procedures used as a basis for preparing a report. Planning, conducting, analyzing and communicating the results of a useful project. Prerequisites: GS 116, Senior standing.

505 **Methods Synthesis** 3 hrs. Winter

Synthesis of effective work methods using a predetermined basic motion time system. Methods-Time Measurement, standard data system development and administration. Prerequisites: ENGT 305, 405 or permission of instructor.

508 **Advanced Quality Control** 3 hrs. Fall

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: ENGT 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. A fee of $20 for transportation is required from each student. Prerequisite: Senior standing.

401 (504) Industrial Safety 2 hrs. Fall, Winter

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: Upper-class.

402 (502) Principles of Industrial Supervision 3 hrs.
Fall, Winter, Spring

Supervisory duties and responsibilities of foremen, engineers, and technicians in industry. Prerequisite: Senior standing.

403 (500) Industrial Labor Relations 3 hrs.
Fall, Winter, Summer

Relationships between government agencies, labor organizations and management. Emphasis on development of collective bargaining 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: CAS 104, upperclass.

500 Labor Management Relations 3 hrs. Winter

Interplay among government agencies, labor organizations, and management. Particular emphasis is placed on collective bargaining procedures, issues, and applications through case studies. Not open to students with credit in ENGT 403.

502 Industrial Supervision 3 hrs. Fall

The supervisor's duties, obligations and responsibilities in his industrial role. The practical application of behavioral science principles to the industrial environment.
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 or H.S. trig. and logarithms.

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.

Individual research or special project in engineering and technology. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chairman. Students may register more than once, not to exceed 4 hrs.

597 Problems in Engineering and Technology 1-6 hrs.

Designed for qualified graduate students wishing to pursue special problems of individual need or interest under the direction of a member of the graduate faculty. May be elected with approval of department chairman and faculty member. Application must be submitted and approved prior to the election of the course. Students may register more than once for the course, not to exceed 6 hours.

DRAFTING AND DESIGN TECHNOLOGY

132 Technical Drafting 2 hrs. Fall, Winter, Summer

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, Summer

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. Pre-requisite: ENGT 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: ENGT 230.

330 Machine Drafting 3 hrs.
Conceptual elements of machine design. Specific problems are undertaken in the design of gears, cams, linkages, springs, and 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 printmaking equipment. Prerequisite: ENGT 230.

331 Production Drafting 4 hrs. Fall, Spring
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: ENGT 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: ENGT 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: ENGT 230.

553 Industrial Drafting Practices 2 hrs. Summer
Organization, administration, procedures and methods involving personnel, planning, equipping, and systematizing an industrial drafting department. Prerequisite: ENGT 331. (offered alternate years)

554 Product Design and Development 3 hrs. Summer
Conceptual design and development of product. Production of a working model in the laboratories. Product proposal, engineering documentation and engineering analysis of product. Prerequisite: ENGT 430.
ELECTRICAL ENGINEERING TECHNOLOGY

240 Electrical Circuits  
Analysis of direct and alternating current circuits using Ohm’s Law, Kirchoff’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  
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: ENGT 240.

242 Electromagnetic Devices  
Analysis, design and construction of electro-magnetic circuits and devices such as transformers, motors, generators and controls. Alternating and direct current circuit analysis techniques are used. Prerequisite: ENGT 240.

340 Electronic Devices  
Analysis, design, and construction of modern electronics circuits using solid-state devices and integrated circuits. Prerequisites: ENGT 241, 344, Math 123.

341 Industrial Electronics  
Analysis and design of industrial electronic systems, power sources, motor controls, timing and sequencing circuits. Industrial applications of solid-state devices. Laboratory analysis of industrial equipment. Prerequisites: ENGT 242, 340.

344 Electrical Circuit Analysis  
A course in electrical circuits which includes the complete response of electrical circuits using the classical method and Laplace transforms. Digital computer aided, steady state, phasor analysis of single and three-phase circuits which includes power analysis, resonance, network theorems and reductions, and two port networks. Prerequisites: ENGT 240, Math 106, 123.
College of Applied Sciences

440 Measurements and Instrumentation 4 hrs.
Fall, Winter, Spring

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: ENGT 340.

441 Communication Electronics 4 hrs.
Fall, Winter, Summer

Introduction to linear systems. Analysis of amplitude, angle, and pulse modulation systems and noise effects. Analysis and design of common communication circuits. Prerequisite: ENGT 340.

442 Servomechanisms 4 hrs. Fall, Winter, Spring

Analysis and synthesis of linear feedback systems by the use of Laplace transforms, Bode diagrams, Nyquist plots, Nichols charts, Root-Locus plots and computers. Introduction to the analysis of nonlinear servo systems. Prerequisite: ENGT 341.

541 Electrical 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 zeros. Prerequisite: ENGT 344.

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 Manufacturing Processes 3 hrs. Fall, Winter, Spring
Analysis of the processes and controls used in manufacturing products from various materials. Laboratory experience and field trips. Not open to students with credit in ENGT-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: ENGT 132, 151.

251 Industrial Welding 3 hrs. Fall, Winter
The processes, techniques, and materials used to fabricate metal products by welding. Laboratory experience in application, design, mechanical properties. 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.

350 Pressworking of Metals 3 hrs. Fall, Winter, Spring
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: ENGT 250.

352 Thermodynamics 3 hrs.
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.
Compression, tension, shear, torsion, and bending forces in structural members, including distribution of stress, deflections,
buckling, and fatigue on engineering materials. Prerequisites: ENGT 256 and 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: ENGT 353.

355 Dynamics 3 hrs. Fall, Winter, Spring

Kinematics and Kinetics of rectilinear and curvilinear motion. Rigid bodies in plane motion and about a fixed axis. Prerequisites: ENGT 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: ENGT 256 and Math 123.

357 Thermo-Fluid Dynamics 4 hrs. Winter

Introduction to the fundamentals of fluid mechanics, thermodynamics, and heat transfer using a unified approach. Prerequisite: Math 123. (Not open to Mechanical Engineering Technology majors.)

358 (332) Mechanism Analysis 3 hrs. Fall, Winter

Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis. Prerequisites: ENGT 231, 256 and Math 123.

359 (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: ENGT 151, Math 106 or permission of instructor.

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: ENGT 240, 256, and Math 123.

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: ENGT 352.
451 Heat Transfer 3 hrs. Fall, Winter, Summer

Steady state and transient conduction, emissivity, radiation, functions, radiation networks, natural and forced convection, and design of heat exchangers. Prerequisites: ENGT 352 and 360

452 Mechanical Engineering Laboratory 3 hrs. Fall, Winter, Spring

Principles of measurement, testing and evaluation of mechanical engineering systems. Prerequisites: ENGT 352, 353, and 356. Two of these courses may be taken concurrently with the laboratory.

453 (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: ENGT 230, 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: ENGT 251.

556 Engineering Analysis 3 hrs. Fall

Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ENGT 360 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: ENGT 355, 360 or Math 223.
252 Metallurgy 3 hrs.
Fundamental characteristics and properties of metals and alloys. Elementary theories of crystal structure, deformation and phase relationships in binary alloys. Selection and heat treatment of alloys with major emphasis on iron-carbon alloys.

254 Metal Casting I 3 hrs. Fall, Winter, Spring
Introduction to cast metals technology and laboratory experience in industrial casting processes.

351 Metallurgy 3 hrs. Fall, Winter, Spring
Corrosion, physical properties, principles of alloying, and fabrication of metals. Not open to metallurgy majors. Structures and principles of engineering materials. Failure analysis of materials. Prerequisite: ENGT 252.

370 Metal Casting II 3 hrs. Summer
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. Prerequisites: ENGT 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 103 and 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: Chem 103, Math 123, Physics 110.

570 Metal Fabrication 3 hrs. Winter
Fundamentals of mechanical forming methods and industrial processes of metal fabrication metals. Rolling, forging, extrusion, drawing, and powder metallurgy. Prerequisites: ENGT 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.

573 Physical Metallurgy III 3 hrs. Spring
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: ENGT 351 or 373.

574 Casting Design 3 hrs. Fall
Engineering design of castings based on stress analysis and capabilities of production casting processes. Prerequisites: ENGT 252, 254, 256.

575 Die Casting 3 hrs. Winter
Production of die casting, including design, melting, casting and finishing processes emphasizing production of quality casting economically. Prerequisite: ENGT 252, 254.

579 Studies in Cast Metals Technology 1-3 hrs. Winter, Spring
Metallurgy of ferrous castings and melting. Solidification, risering, gating, ferrous castings, control and sand cases. Prerequisites: Consent of instructor.
Home Economics

Eunice E. Herald, Head
Irene Bibza                 Kathleen Grimes
Margaret A. Brennan        Gail Havens
Julian Dugger              David Holland
Ann Fulton                 Alice Kavanaugh
Beverly Gillette           Phyllis Seabolt

Isabelle Smith
Betty Taylor
Darrell Thomas
Florence Tooke
Donna vanWestrienen
Diane Williamson

Home Economics strives to maintain a central focus on human beings involved in normal developmental processes. The development of a positive orientation to human growth requires explicit attention to conceptualize and to implement just as the development of a stance oriented to the problematic and the pathological requires special training. The scope of Home Economics at WMU has expanded with increased attention to the realization of personal, interpersonal, familial, and social potential.

The fundamental premises of our instructional philosophy are that people continue to grow throughout life and that the direction of this growth is positive unless it is interfered with in destructive ways. Learning experiences are designed to relate to current living and to provide a basis for future careers. Thus, Home Economics at the undergraduate level prepares for professional functioning in social, economic, aesthetic, managerial, biological and ethical areas of family relations, child development, foods, clothing and housing.

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

The following courses are open to students from other curricula for a minor of 20-24 semester hours in Home Economics providing they meet the prerequisites for the courses: 101, 150, 152, 201, 212, 304, 306, 340, 350, 352, 520.
TEXTILES AND CLOTHING

101 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
Three areas are included in this course: basic construction techniques, pattern alteration and fitting, and the study of line and design as related to clothing.

304 Consumer Problems 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 Tailoring 2 hrs. Winter
Principles and practices involved in the custom method of constructing tailored suits or coats; fitting, handling, pressing and custom finishing of wool fabrics. Prerequisites: Design 100, HE 101, 201 and 304.

502 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 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.

508 Flat Pattern Design 2 hrs.

A study of the drafting techniques employed in the flat pattern method for designing clothing. Prerequisites: Design 100, H.E. 101, 201, and 304.

**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.

A study and exploration of how the personality develops with the objective of acquiring a better understanding of self; others and social and personal change.

252 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 the economics, psychological, and social aspects of housing. Basic principles in the areas of art, textiles, and consumer buying are applied to the home. Prerequisite: Art 114.

352 Consumer Education 3 hrs.

A study of the functions of consumers in our economy with emphasis on money management and decision making.

354 Home Management 4 hrs.

A study through lecture and practice of the principles of management in the home.
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 departments, 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: H.E. 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, Winter
A study of the essential nutrients and their function in the human body. Prerequisite: Science 8 or 9 hours.

212 Foods and Nutrition 3 hrs.
A study of the nutritional needs of all age groups. The effect of man's environment on the problems of world-wide feeding and consumerism. Elective.

312 Quantity Foods 3 hrs. Winter
Quantity food preparation in a college residence hall kitchen and the school lunchroom. Prerequisite: H.E. 114, 210.

410 Diet and Disease 2 hrs. Fall

510 Advanced Nutrition 3 hrs. Fall
Study of recent developments in nutrition through readings and experiences. Prerequisite: H.E. 210.

512 Institutional Management 3 hrs. Winter
Study of institutional administration, job analysis, labor policies, personnel problems and cost control in different types of food-service institutions. Prerequisite: H.E. 210.

518 Advanced and Experimental Foods 4 hrs. Fall
Industrial Education

John L. Feirer, Head
Michael B. Atkins
John L. Bendix  Wallace F. Fillingham  John R. Lindbeck
Phillip L. Bruce  W. Lloyd Gheen  Erwin Rayford
Arvon D. Bye  Rex E. Hall  Charles G. Risher
Dennis Darling  Gilbert R. Hutchings  Walter Schwersinske
Lindsay G. Farnan  Waldemar E. Klammer  James L. Ulmer

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 139. 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 fifty hour combined major and minor sequence leading to

Option III—Vocational Education—Teaching Certificate
Option III—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 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—Student 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**

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**

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**

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: I.E. 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: I.E. 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. Drawings will be reproduced on white print equipment. Prerequisite: I.E. 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: 12 hrs. in Drafting and Junior classification.

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: I.E. 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 drawings. Prerequisite: I.E. 520 or equivalent.
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.

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.

*Note:
Additional courses in Electricity-Electronics can be obtained from the Engineering and Technology Department or by transfer from community colleges.
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.

174 General Plastics 3 hrs.
A study of plastics to develop an understanding of plastic materials, their properties, applications, and processes. Technical information and laboratory experiences based on the cutting, shaping, forming, molding, and casting of thermoplastic and thermosetting materials. Emphasis will be placed on the application of plastics in the junior-senior high school programs.

274 Plastics Production Processing 3 hrs.
Experiences in forming processes such as injection, compression, vacuum and rotational molding. Effects of mold design on flow and stress characteristics, heat and pressure on dimensional accuracy, and process on product function and economy. Prerequisite I.E. 174.

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, supplied, 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 in-
cluded. 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 experience in drawing and planning, woodworking, metalworking, electricity, and craftwork will be required. Course will include selection, development and preparation of materials and instructional media for multiple activities instruction at the junior and senior high school levels. Prerequisite: 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, 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 undertaken 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 cylinder and automatic platen presswork. Emphasis is placed on forms requiring special preparation such as numbering, perforating, and envelope cut-outs. The various types of makeready techniques and impositions receive special consideration. Related information on letterpress inks and paper is included. Prerequisite: I.E. 150.

250 Typographic Design 3 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: I.E. 150.
253 Science for the Graphic Arts  
A study of the principles of science involved in such things as printability tests, inks, photographic chemicals, paper, etc.

254 Machine Composition  
A combined lecture-lab course designed to explore and study the total field of machine composition. Advantages, uses, limitations, and operation of hot and cold type methods and equipment will be stressed. Economic, operational, and social implications of each area will also be explored. Prerequisite: I.E. 150.

350 Photolithographic Techniques  
A laboratory course designed to acquaint the student with the fundamentals of reproduction photography. Darkroom techniques, photo processes, stripping techniques, and platemaking will be stressed. Information relating to line and still photography, film, lenses, copy preparation, chemistry, and related equipment will also be presented. Prerequisite: I.E. 150.

351 Lithographic Presswork  
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: I.E. 150.

356 Printing Machine Maintenance  
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  
This course is designed to provide the student with practical problems in makeready and reproduction of various types of forms for both letterpress and lithographic presses, and to provide an introduction to the gravure and flexographic printing processes. Prerequisite: I.E. 152 and 351.

451 Printing Processes  
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 Science and Engineering.
College of Applied Sciences

452 Estimating 3 hrs.
Study of methods used in estimating the price of printed matter before manufacture, and in the final pricing of that printed matter after manufacture.

455 Bindery Operations 2 hrs.
Bindery and finishing operations are studied. Work in book-binding, folding machines, stitching, plastic binding, punching, perforating, etc., is taken up.

551 Halftone Photo Processes 3 hrs.
A laboratory course stressing halftone reproduction and related photo techniques. Posterization, duotones, basic color, and mechanical dropouts will be included. Prerequisite: I.E. 350.

552 Estimating 2 hrs.
Continuation of Estimating 452 with special emphasis on the use of Printing Industry Production Standards in the pricing of printed materials. Prerequisite: I.E. 452.

553 Printing Production Management 3 hrs.
A study of the managerial procedures used in the printing industries to forecast, plan, schedule and record production and to control production costs. Hourly costs for various types of printing machines will be developed by students in this course.

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: I.E. 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: I.E. 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: I.E. 235.

334 Metal Forming and Finishing 3 hrs.

Basic principles and practices in forming and fabricating of sheet metal products. Included are standard sheet metal practices, press brake and punch press operation and set-ups; metal finishing with standard spray equipment and materials testing. Prerequisite I.E. 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: I.E. 130.

338 Advanced Metalworking 3 hrs.

An advanced course in metalworking dealing with nonconventional metal removal processes, metal surface finishing techniques, cold forming, and shaping of metals. Prerequisite: I.E. 130.

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: I.E. 234.
194

*Note:
Courses in Auto Mechanics can be obtained from the Transportation Technology Department or by transfer from community colleges.
586 Laboratory Practices in Auto Mechanics  
3 hrs.

Auto laboratory teacher preparation for teachers who have gained technical preparation in a technical school or junior college program. Emphasis on course development, teaching methods, evaluation processes, text instructional materials and equipment selection. Laboratory practice to apply teaching techniques and automotive field developments. Prerequisites: I.E. 584 and 585, or equivalent.

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: I.E. 180 or consent of instructor.

WOODWORKING

100 General Woodworking  
3 hrs.

A survey course of the woodworking field with 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  
3 hrs.

An introduction to furniture making including design, construction, and finishing. Laboratory experiences in the development of skills and knowledge will be provided on advanced joinery using industrial machines and methods with discussion on the function of the various machines and the planning and purchasing of this type of equipment. Prerequisite: General Woodworking 100.

201 Wood Finishing  
2 hrs.

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 and Woodturning 3 hrs.
Mass production of chair frames and upholstering which will include springing, padding, and the application of the final cover. The development of skills and knowledge in advanced techniques of woodturning will also be covered including chucking, plug turning, mandril turning, and other special applications. Prerequisites: General Woodworking 100 and/or Machine Woodwork 200.

306 Residential Building Construction 4 hrs.
A course designed to cover the erection of residential structures, with experiences in 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, exterior doors, windows, roofing, and siding. Prerequisites: General Woodworking 100 and/or Machine Woodwork 200.

500 Furniture Production 2 hrs.
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. Prerequisite: Machine Woodwork 200.

501 Finish Carpentry and Cabinetmaking 3 hrs.
This course is designed to include finished carpentry such as built-in cabinets, and the installation of prefabricated cabinets. It will also include wall coverings, finished flooring, floor coverings, fitting and hanging doors, interior trim and interior painting and finishing. Prerequisites: General Woodworking 100 and/or Machine Woodwork 200.

502 Wood Technology 2 hrs.
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, man-made wood products, the materials related to the fabrication of wood products, applied research done by the Forest Products Laboratory, and testing of materials. Prerequisites: General Woodworking 100.
PROFESSIONAL COURSES IN INDUSTRIAL EDUCATION

140 American Industry 2 hrs.
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.

342 Course Planning and Construction 2 hrs.
Principles and techniques of selecting and analyzing suitable teaching activities and arranging such material into a functional instructional order. Instructional units 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 3 hrs.
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 principle methods of instruction used in industrial subjects will be emphasized. Prerequisite: I.E. 342.

345 Plan and Organization of a School Shop 2 hrs.
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 I.E. 342.

444 Independent Study in Industrial Education 1-4 hrs.
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.

540 Technical Education Methods 3 hrs.
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.
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.

598 Readings in Industrial Education 2-4 hrs.
Directed individual or small group study of topics or areas not otherwise treated in departmental courses. Graduate standing and head of department consent required.

599 Technical Problems in Industrial Education 1-3 hrs.
Designed for qualified graduate students wishing to pursue technical problems of individual need or interest under the direction of a member of the graduate faculty. May be elected in the Industrial Education Department or in an associated department with the approval of Head, Industrial Education Dept., and the faculty member under whom the student desires to work. Applicants must have permanent graduate program filed, and applications must be approved prior to registration for course. Course is repeatable to maximum of 3 semester hours credit. Prerequisite: 598.
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.

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 Schools 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.
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.

Arts and Crafts for Special Education Teachers 2 hrs.
This course will cover craft techniques in areas of sketching, leather, wood, and other related experiences. Emphasis will be placed on teaching procedures, methods, and materials.

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. Prerequisite: Blind Rehabilitation Program students only.
Military Science

Colonel Charles L. Phillips, Head
Lt. Col. Richard C. Collins
Major Michael J. Hagman
Captain Eugene E. Makowski
SSG Woodrow Sams
SSG Kenneth W. Impola

This Department is a General Military Science Reserve Officer 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. Transfer students of less than Junior standing who started Army or Air Force R.O.T.C. training in another institution may 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 the 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. Upon completion of the prescribed courses, distinguished Military Students are eligible to apply for appointments 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.

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, 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 Leadership Laboratory weekly. Four semesters of *either* ROTC or Physical Education may be taken to meet University requirements.

**MS 100 Military Aspects of National Power** 2 hrs.

A basic course in the history, organization and mission of the Department of Defense to include study of factors of national power, the U.S. Army Reserve and National Guard, history and mission of ROTC, and civilian/military obligations in relation to national security. Also includes study of the U.S. Navy, Air Force, branches of the Army, and other applicable military subjects.
MS 101 Military Aspects of National Power 2 hrs.
This course is a continuation of MS 100 with emphasis remaining at the mission and organizational level of the U.S. Army and the Department of Defense.

MS 200 Principles of Land Navigation 2 hrs.
Emphasis on military map and photograph reading and techniques of day and night land navigation.

MS 201 Basic Military Tactics 2 hrs.
Introduction to small unit tactics and operations, including combat formations, battle drill, offensive and defensive tactics, and the principles of war as they apply to the effective employment of forces.

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 $115.20 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, 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 lab 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 $182.00 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 Aviation 200, 201. 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 Leadership and Principles of Instruction** 3 hrs.

Orientation to the branches of the Army; instruction in the qualities, objectives, and functions of the leader and special problems of military leadership, and fundamental principles, methods and techniques of preparing, presenting and evaluating military instruction. Prerequisite: MS100-201 or permission of PMS.

Note: In addition, the student will elect a 3 credit hour course approved by the PMS during Fall or Winter Semester.

**MS 301 Tactics, Operations and Communications** 2 hrs.

Further instruction in small unit tactics including communications methods and equipment and introduction to insurgency and internal defense development operations. Prerequisite: MS 100-201 or permission of PMS.

**Advanced 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 practical application of leadership techniques related to the subjects studied during MS 100 through 301 courses. In addition, the student will be familiarized with active Army units and equipment of various types.

**MS 400 Military Administration, Law and International Relations** 2 hrs.

Instruction in command and staff relations, combat intelligence, logistics and stability operations. Prerequisite: MS 100 or permission of PMS.

Note: Student will take either History 519 or History 594 during the Fall or Winter semester.
MS 401 Military Staff and Unconventional Warfare 3 hrs.

A comprehensive study of leadership and management to include military administration, law, international relations, U. S. Army readiness programs, and personal and official relationships of an officer. Prerequisite: MS 100-301 or permission of PMS.

LEADERSHIP LABORATORY

Leadership laboratory is elected by ROTC students at all levels. It is taken each semester as an adjunct to the courses above and does not offer separate or additional credit hours. This laboratory is designed to provide the student with command experience, development of essential characteristics of leadership, teamwork, discipline, military courtesies, and drill. In addition, instructors in the primary subjects utilize portions of this time for practical work and demonstration periods.

R.O.T.C. SCHOLARSHIPS

Four, three, two and one year scholarships are available to qualified students. Each scholarship provides for all tuition, textbooks and laboratory fees in addition to an allowance of $50 per month for the period that the scholarship is in effect. Four year scholarships are open, on a competitive basis, to high school graduates who enter Army ROTC as freshman. The other scholarships are open only to students enrolled in ROTC. Applications for scholarships, which will begin the academic year following application, must be submitted between 1 September and 15 January of the current academic year. Students desiring application or other information should contact the Head of the Military Science Department.
Occupational Therapy

Dean Tyndall, Chairman
Joy Anderson
Lois Hamlin
Rosalia Kiss
Alice Lewis
Geraldine Richardson
Harriet Schmid
Mabel ValDez

The Department offers courses leading to the B.S. degree. The curriculum is approved by the American Medical Association in cooperation with the American Occupational Therapy Association. 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 the curriculum described on pages 143, 144.

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 4 hrs.
A laboratory to develop understanding of processes and basic techniques in various media used in occupational therapy, and in care and use of tools and equipment. Media include leather work, metal craft, simple jewelry, and weaving. Departmental consent.

111 Therapeutic Media I 3 hrs.
A laboratory course to develop understanding of basic techniques of prevocational evaluation and to develop skill in activity analysis. Prerequisite: Occupational Therapy major.

210 Therapeutic Media II 3 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 4 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 related behavioral changes. Field experiences will be arranged.

226 Field Experience  
2 hrs.

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.

235 Developmental Assessment (new)  
3 hrs.

A course in theory and methodology of developmental assessment through children’s activities, developmental schedules, test batteries for evaluating perceptual and motor development. Experience in assessment of young children will be a part of the laboratory experience. Prerequisite: OT 225 or consent.

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.

332 Application in Psychiatry  
4 hrs.

A study of the philosophy and application of occupational therapy in the psychiatric field. Specific emphasis on the conscious use of one’s own personality as a therapeutic tool and acquainting the student with group processes used in occupational therapy situations. Prerequisite: OT 322 or concurrently.

333 Clinical Instruction in Psychiatry  
2 hrs.

Clinical experiences designed to develop skill in application of evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Concurrent or subsequent to OT 332.

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.
College of Applied Sciences

430 Organization for Patient Service  3 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 442.

436 Independent Study in Occupational Therapy  2-4 hrs.

Designed to allow outstanding students to work independently under faculty supervision. Consent of departmental head. Credit variable.

440 Clinical Affiliation  3 hrs.

A three month affiliation in hospitals or agencies providing the student experience in designated areas of Occupational Therapy. Departmental consent only. Prerequisite: Occupational Therapy 322, 342.

441 Clinical Affiliation  3 hrs.

A three month affiliation in hospitals or agencies providing the student experience in designated areas of Occupational Therapy. Departmental consent only. Prerequisite: Completion of all academic work.

442 Application in Physical Disabilities  4 hrs.

A study of the philosophy and application of treatment techniques used by the occupational therapist with persons with medical, neurological, and orthopedic conditions. Prerequisite: OT 323, 520, 524, and 410 (410 may be taken concurrently)

443 Clinical Instruction in Physical Disabilities  2 hrs.

Clinical experiences designed to develop skill in evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Concurrent or subsequent to OT 442.

450 Senior Seminar  2 hrs.

Senior students present cases and problems for consideration of classmates, faculty, and resource persons. The course is required of all seniors but audience is open.

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.
The department offers two options for a B.S. degree: paper Science and Paper Engineering. These options may be summarized as follows:

**COMPARISON OF OPTIONS**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Paper Science Option</th>
<th>Paper Engineering Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Science</td>
<td>30 semester hours</td>
<td>30 semester hours</td>
</tr>
<tr>
<td>Chemistry</td>
<td>34 semester hours</td>
<td>16 semester hours</td>
</tr>
<tr>
<td>Engineering and Related</td>
<td>8 semester hours</td>
<td>26 semester hours</td>
</tr>
<tr>
<td>Mathematics</td>
<td>20 semester hours</td>
<td>15 semester hours</td>
</tr>
<tr>
<td>Physics</td>
<td>8 semester hours</td>
<td>13 semester hours</td>
</tr>
<tr>
<td>Technical or Science electives</td>
<td>10 semester hours</td>
<td>10 semester hours</td>
</tr>
<tr>
<td>General Studies</td>
<td>25 semester hours</td>
<td>25 semester hours</td>
</tr>
<tr>
<td>Physical Education</td>
<td>4 semester hours</td>
<td>4 semester hours</td>
</tr>
<tr>
<td>TOTAL</td>
<td>139 semester hours</td>
<td>139 semester hours</td>
</tr>
</tbody>
</table>

**100 Introduction to Pulp and Paper Manufacture**  3 hrs.

A lecture-laboratory 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 101 or 102 concurrent.

**101 Introduction to Pulp and Paper Manufacture**  3 hrs.

Continuation of Course 100 with additional emphasis on coating, converting, and printing of paper. Includes laboratory study. Prerequisites: Paper 100 or consent.

**202 Paper Manufacture**  4 hrs.

Study of the theories and practices of stock preparation, sheet formation, wet pressing, and drying of paper is made by emphasizing the latest equipment available to the industry. Surface treat-
The influence of furnish additives such as size, fillers, colors, and wet and dry strength additives are studied to show their effects on the paper produced. The lectures are augmented by laboratory work and pilot machine exercises. Prerequisites: Paper 100 and 101.

203 Pulp Manufacture
   3 hrs.
   An advanced study of various pulping processes, pulp bleaching, heat, and chemical recovery, and by-product utilization is made from the chemical and engineering standpoint. Lecture studies are augmented by laboratory exercises. Prerequisites: Organic Chemistry 360, Paper 100, 101 and Organic Chemistry 360 concurrent or 265.

251 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.

305 Mechanics and Optics of Fiber Systems
   4 hrs.
   Lecture and laboratory study of the fundamental properties of fibers and fiber systems. Theories and techniques for evaluating and predicting behavior are discussed. Subjects include mechanical strength, rheology, fiber microscopy, optical properties, and the Kubelka-Munk theory. Prerequisites: Paper 202 and Mechanics 210.

306 Process Engineering I
   4 hrs.
   An introduction to engineering principles as applied in the physical and chemical processes of pulp and paper manufacturing. Emphasis will be on material and energy balance problem solving. Prerequisites: Paper 203, Mathematics 123, Chemistry 102, Mechanics and Heat 210.

307 Process Engineering II
   4 hrs.
   A continuation of 330 with concentration on concepts and calculations of fluid mechanics, heat transfer, evaporation, drying, humidification, and other unit operations. Prerequisite: Paper 306.

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. Only open to departmental majors. Prerequisite: One summer of summer employment.
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), or 265.

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.

442 Coating and Converting of Paper 3 hrs.
A lecture-laboratory course dealing with the fundamentals of pigmented and functional coating of paper, coating rheology, folded and corrugated carton manufacture and packaging. Laboratory study involves preparation, application, and evaluation of various coatings, and printing evaluation. Prerequisite: Paper 202 and 305.

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 on 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, paper-making, 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
Herman W. Linder

Ronald L. Sackett
Pat D. Schiffer
Curtis N. Swanson
Clarence N. VanDeventer
James VanDePolder
Edward Walker, Jr.

The Transportation Technology Department offers four-year curricula in Automotive and Aviation Engineering Technology, and a two year curriculum in Aircraft Technology.

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 with an acceptable scholastic record 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**

121 Automotive Chassis 3 hrs.

Study of the design, operation, and service of automotive suspension, wheel alignment, steering, brakes, clutches, standard transmissions, drivelines, differentials, and air conditioning units. Laboratory work will involve disassembly, inspection, calculating loads, and operations needed to restore to service.

122 Automatic Transmissions 3 hrs.

A study of torque converters, pumps, controls, gear trains, and holding devices used in automatic transmissions. Emphasis will be placed on principles of design operation, application, and service of major components as well as limitations and requirements relating to lubrication, sealing and bearings. Laboratory work will involve disassembly, inspection, service operations, calculation of torque capacities, and plotting of test results on an operating unit.

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 thermodynamics, 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: TRAN 121, 122, 126, 222 and 226.

**422 Automotive Design Analysis** 4 hrs.

Individual and group design projects will be selected on subjects relating to automotive testing, 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: TRAN 325 and ENGT 452 or approval of instructor.

**AVIATION**

**110 Introduction to Aviation** 3 hrs.

A first course in aviation including a review of aviation history, theory of flight and elementary aerodynamics, weight and balance, powerplants, structures, and helicopter theory.

**113 Airframe Structures** 4 hrs.

Theory and laboratory experience relating to fabric and metal covered structures, honey-comb construction, and plastics. Prerequisite: TRAN 100.

**114 Reciprocating Powerplants** 3-4 hrs.

Study of aircraft reciprocating powerplants. Classroom and laboratory experiences involving principles of operation, nomenclature, inspection, and overhaul procedures. Students working toward the A & P license must register for additional work in the laboratory in consultation with their advisor. Prerequisite: TRAN 110.
115 Aircraft Carburetion and Fuel Systems 3-4 hrs.

Basic principles of carburetion and induction systems including operation, installation, inspection, adjustment, and service of float-type and pressure-operated carburetors, direct fuel injection units, superchargers, and turbochargers. Students working toward the A & P license must register for additional laboratory work in consultation with their advisor. Prerequisite: TRAN. 100.

200 Private Pilot Ground School 4 hrs.

A beginning course for students engaged in primary flight training, or interested in such training. Topics covered include flight theory, Federal Air Regulations, aviation weather, navigation, performance factors, and weight and balance. Upon completion, the student will take the Federal Aviation Administration written examination for private pilots.

201 Introduction to Flight 2 hrs.

A course for any full-time University student. Familiarization with the airplane and its control in all flight situations and maneuvers necessary for solo flight, basic instrument and cross-country flying experience. Approximately 20 hours of flight time. Prerequisite: Third-class medical certificate prior to enrollment and completed TRAN 200 or taking concurrently.

203 Primary Flight 3 hrs.

A continuation of 201 with emphasis on developing skill in executing flight maneuvers and cross-country flying. Successful students will qualify for the FAA private pilot license. Approximately 40 hours of flight time. Prerequisite: Staff approval, TRAN 200 and 201.

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: TRAN 114, 115.

213 Airframe Hydraulic, Pneumatic & Auxiliary Systems 2 hrs.

A study of and laboratory practice covering aircraft hydraulic and pneumatic components and systems, air conditioning and pressurization, fire detection and extinguishing systems and other auxiliary systems. Prerequisite: TRAN 110.

214 Aircraft Welding 3 hrs.

Welding theory and practice involving steel and aluminum structural parts. Practice in completing repairs in a manner approved by
the FAA, using oxy-acetylene, electric arc, and shielded arc welding processes.

215 Propellers and Jet Propulsion 4 hrs.
A study of aircraft propellers, jet propulsion powerplants, jet aircraft systems, and their operation. Prerequisite: TRAN 110.

217 Airframe Electrical Systems 3 hrs.
A review of basic electricity and study and laboratory practice in aircraft electrical components and systems, electrical instrumentation, and auto pilot systems. Prerequisites: Tran 110, ENGT 240.

218 Aircraft Servicing 5 hrs.
The primary objective of this course is to provide the student with an opportunity to conduct 100 hour and annual inspections, 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 qualify for the FAA Airframe and Powerplant Mechanics Certificate. Prerequisite: Instructor consent.

219 FAA Maintenance Regulations 2 hrs.
A course designed to prepare the students for the A & P written and practical examination administered by the Federal Aviation Administration. This is the final course for students applying for the FAA Airframes and Powerplants Certificate. Students electing this course must have completed or be taking concurrently all courses required in the two-year Aircraft Technology curriculum.

300 Intermediate Pilot Ground School 2 hrs.
A continuation of TRAV 200 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: TRAN 201 or TRAN 200, or Private Pilot License.

301 Intermediate Flight 3 hrs.
Intensive practice in advanced flight maneuvers, student will master control of airplane under a variety of conditions. Approximately 50 hours of flight time. Prerequisite: TRAN 203.

303 Commercial Flight 3 hrs.
Additional dual and solo instruction with appropriate refresher work to develop a student’s skills to commercial pilot standards. Transition to transportational aircraft is included. Upon comple-
tion, a student may become eligible for certification as a commercial pilot. Approximately 50 hours flying time. Prerequisite: TRAN 301 and completed or taking TRAN 300 concurrently.

400 Advanced Pilot Ground School 2 hrs.
A study of concepts, systems and techniques related to instrument flying and instrument flight planning. Methods and techniques for both flight and ground instruction are studied, along with a review of information and materials currently in use. Some opportunity for practical application is provided. Prerequisite: TRAN 300 or consent of instructor.

401 Instrument Flight 3 hrs.
Basic instrument flying, cross-country navigation and communication, and instrument approach procedures. Successful completion will qualify the student for an instrument rating. Approximately 40 hours flight time. Prerequisite: TRAN 303.

403 Flight Instructor Fundamentals 2 hrs.
A study of performance skills, critical situations, airplane type differences, and flight instruction skills. Practice in actual flight instruction is included. Approximately 25 hours flight time. Prerequisite: TRAN 401.

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.
College of Arts and Sciences

CORNELIUS LOEW, Dean

PHILIP DENENFELD, Associate Dean

JAMES P. ZIETLOW, Associate Dean

Departments:
Anthropology
Art
Biology
Chemistry
Communication Arts and Sciences
Economics
English
Geography
Geology
History
Languages, Modern and Classical
Linguistics
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Religion
Sociology
Speech Pathology and Audiology

Institute of International and Area Studies
School of Social Work

The Medieval Institute
Black Americana Studies
COLLEGE OF ARTS AND SCIENCES

The College of 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 Colleges of the University and for those in the pre-professional courses.

DEGREE CURRICULA

I. LIBERAL ARTS CURRICULUM

Bachelor of Arts Degree

A. Sixty hours work in the College of 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. Twelve hours of college work in a foreign language (or 3 years of high school preparation in a foreign language.)

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 College of Arts and Sciences and electives to make a total of 124 hours.
II. THE GENERAL CURRICULUM

Bachelor of Arts or Bachelor of Science 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 31 of this catalog.) .... 40 hours.
B. Physical Education or Military Science .......................4-8 hours.
C. A major in one of the Departments of the College of Arts and Sciences.
D. University courses to complete a minor.
E. University electives to make a total of 124 hours.
F. Eight hours of college work in a foreign language or 2 years of high school preparation in a foreign language (for B.A. degree only).
Inter-Disciplinary Programs

1. Institute of International and Area Studies
2. The Medieval Institute
3. Black Americana Studies
4. Foreign Studies Seminars and Institutes
5. American Studies
6. Group Majors and Minors
7. Medical Technology
Institute of International and Area Studies

Fredric J. Mortimore, Director

The Institute of International and Area Studies (IIAS) was established by the Trustees and Administration of Western Michigan University to design, coordinate, and administer interdisciplinary programs devoted to the study of cultures located geographically outside the continental United States. Pursuant to this mandate, the Institute—in subsequent years—has (1) facilitated the formation of African, Asian, Comparative/Cross Cultural, Latin American and Slavic Studies programs at the University, (2) encouraged by various means curricular and staff development in the fields of both comparative/cross-cultural and area studies, (3) coordinated—with the active support of participating departments—undergraduate and graduate-level programs leading to minor and major concentrations in various area and comparative/cross-cultural fields, (4) cooperated with governmental agencies in visiting leader and student exchange programs, and (5) conducted conferences, seminars, symposia and lecture series which had as their focus comparative and area concerns. In general, the Institute coordinates activities of an international character sponsored by Western Michigan University.

The Institute administers numerous programs which should be of great interest to undergraduate students; a detailed description of each will be found on the following pages of this Catalog. In broad outline, these programs of study fall within two categories: (1) undergraduate minors (20 semester hours) permitting concentrations in (a) African Studies, (b) Asian Studies, (c) Latin American Studies, (d) Slavic Studies, (e) Comparative/Cross-Cultural Studies; and (2) undergraduate curricula permitting more intensive study (60 semester hours during the junior and senior years) with major emphasis possible in (a) African Studies, (b) Asian Studies, (c) Comparative/Cross-Cultural Studies and (d) Latin American Studies.
INTERNATIONAL AND AREA STUDIES

Four area-related programs and one comparative/cross-cultural program have been established within the Institute of International and Area Studies to design and coordinate curricular offerings; these are:

African Studies Program
Asian Studies Program
Comparative/Cross-Cultural Studies Program
Latin American Studies Program
Slavic Studies Program

AFRICAN STUDIES PROGRAM

Head: Ronald Davis

African Studies Curriculum
Adviser: Ronald Davis

The African Studies Curriculum is designed for those undergraduate students who anticipate careers which require a comprehensive understanding of Africa, and for those who plan to enter graduate programs which provide an African concentration. Students successfully completing this curriculum and the other requirements listed below will be awarded a Bachelor of Arts degree:

1. Completion of University requirements of a B.A. degree—124 semester hours of course work.

2. Completion of all General Studies requirements.

3. Completion of departmental requirements for a major in one of the following disciplines:
   - Anthropology
   - Geography
   - Sociology
   - History
   - Political Science

4. Completion of the African Studies concentration, consisting of no less than 24 semester hours selected from the list of African Studies Core Courses, among which must be included:
   - History 386 Introduction to African History and Civilization 3 hrs.
   - Social Science 506 Studies in the Non-Western World 2-3 hrs.

Advisement

Students in this curriculum will be aided in the selection of African Studies Core Courses by the Adviser; those who wish to enroll in the African Studies Curriculum are required to make this intention known to the Adviser no later than the first semester of their junior year.

African Studies Minor

Adviser: Ronald Davis

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of African Studies Core Courses are required for completion of a minor concentration in African Studies.

Students wishing to enroll in the African Studies minor are required to make this desire known to the Adviser; records of the minor are maintained and verified by the African Studies Program.

All students enrolled in the African Studies minor must complete the following course:

History

386 Introduction to African History and Civilization .... 3hrs.

In addition, students enrolled in this minor must also elect at least three of the following five courses:

Anthropology
335 Cultures of Africa ......................................................... 3hrs.

Geography
386 Middle and South Africa ........................................... 3

Political Science
341 African Political Systems ........................................... 4

Religion
304 Religions of Africa .................................................... 4

Sociology
557 Changing Social Systems: Sub-Saharan Africa ...... 3

African Studies Core Courses

Anthropology
335 Cultures of Africa ......................................................... 3
525 Modern African Cultures ........................................... 3
545 Topics in Ethnology: Africa ........................................... 3

Economics
585 Economics of Sub-Saharan Africa ............................ 3
ASIAN STUDIES PROGRAM

Head: Andrew Nahm

Asian Studies Curriculum
Adviser: Andrew Nahm

The Asian Studies Curriculum is designed for those undergraduate students seeking a liberal education who anticipate careers which require an understanding of Asia, and for those who plan to enter graduate programs which offer opportunities for Asian concentration. Students successfully completing this Curriculum and the other requirements listed below will be awarded the B.A. degree:

1. Completion of University requirements for a B.A. degree—124 semester hours of course work.
2. Completion of all General Studies requirements.

3. Completion of departmental requirements for a major in any one of the departments comprising the College of Arts and Sciences.

4. Foreign language and/or linguistics competence as dictated by major disciplinary concentration, career objectives and Asian interests. (Six to eight semester hours in approved foreign language and/or linguistics course will be accepted toward satisfaction of the 30 semester hour Asian Studies requirement; see Linguistics 500, 505, 506, 507, 508, 509).

5. In consultation with the Asian Studies Adviser, select no less than 30 semester hours of Asian Studies Courses, at least two courses from each of the three categories listed below:
   a. Historical Studies (Department of History)
   b. Humanistic Studies (Departments of English, Philosophy, Religion and Linguistics)
   c. Social Scientific Studies (Departments of Anthropology, Economics, Geography, Political Science and Sociology)

Twenty-one of this 30 semester hour requirement may be devoted to courses dealing more specifically with either South Asia or East Asia.

Advisement

Students enrolled in the Asian Studies Curriculum will be aided in the selection of appropriate Asian Studies Core Courses by the Asian Studies Adviser.

Students who wish to enroll in the Asian Studies Curriculum are required to make this intention known to the Adviser no later than the first semester of their junior year—and preferably earlier.

Asian Studies Minor

Adviser: Andrew Nahm

Twenty semester hours (24 for students enrolled in Education curricula), taken from the list of Asian Studies Core Courses, are required for completion of a minor concentration in Asian Studies.

Students wishing to enroll in the Asian Studies Minor are required to make this desire known to the Adviser before enrolling in courses appropriate to the program; records of the minor are maintained and verified by the Asian Studies Adviser.

Asian Studies Core Courses

a. Historical Studies

   History
   380 The Early Far East .............................................. 3hrs.
b. Humanistic Studies

English
519 Non-Western Literature in Translation* ...........................................
555 Studies in the Art and Thought of Major Writers 4

Linguistics (see p. 230)

Philosophy
306 Asian Thought: China

Religion
306 Asian Thought: China ....................................................... 4
302 Religion in the Indian Tradition .......................................... 4
303 Religion in the Chinese and Japanese Tradition 4
307 The Islamic Tradition ....................................................... 4
500 Historical Studies in Religion* .............................................. 4
e.g. Contemporary Religious Movements in Japan 4
 e.g. Zen Buddhism ............................................................. 4

Social Studies

Anthropology
336 Cultures of Asia .............................................................. 3
500 (546) Topics in Archeology* ............................................... 3
545 Topics in Ethnology* ........................................................ 3

Economics
587 Studies in Asian Economics ................................................ 3

Geography
385 Geography of the Pacific Realm .......................................... 3
388 Geography of East Asia ...................................................... 3
389 Geography of Southeast Asia .............................................. 3
390 Geography of South Asia .................................................... 3
550 Studies in Historical Geography* ........................................... 3

Political Science
342 Asian Political Systems ...................................................... 4
543 Politics and Institutions of South Asia ................................... 3
547 Political Modernization of Japan and Korea 3
548 Asian Communism .............................................................. 3
549 Problems of Foreign Political Systems* ............................... 3

*Courses marked with an asterisk may be included in the student's program when they concentrate on Asia or some subdivision thereof.
Inter-Disciplinary Programs

Sociology

571 Social Change: Designated Areas* .................................. 3hrs.
577 Comparative Institutional Studies* .................................. 3
588 Social Forces in Underdeveloped Areas ............................ 3

COMPARATIVE/CROSS-CULTURAL STUDIES PROGRAM

Head: F. J. Mortimore

Comparative/Cross-Cultural Studies Curriculum

Adviser: F. J. Mortimore

The Comparative/Cross-Cultural Studies Curriculum is designed for those undergraduate students who plan to pursue careers in teaching or other fields, success in which would be enhanced by an understanding of people whose values, traditions, customs and institutions differ markedly from those with which they are familiar. Students successfully completing this Curriculum and the other requirements listed below will be awarded a Bachelor of Arts degree:

1. Completion of University requirements for a B.A. degree—124 semester hours of course work.

2. Completion of all General Studies requirements.

3. Completion of departmental requirements for a major in one of the following disciplines:
   - Anthropology
   - Economics
   - Geography
   - History
   - Languages
   - Political Science
   - Sociology

4. Completion of the Comparative/Cross-Cultural Studies concentration consisting of no less than 30 semester hours selected from the list of Comparative/Cross-Cultural Studies Core Courses—but including in each case:
   - one of the following three courses:
     - Anthropology
       534 Peasant Societies in Cross-Cultural Perspective .......... 3hrs.
     - 536 Cultural Evolution .............................................. 3
     - 540 Cultural Ecology ............................................... 3
   - Economics 588 Economic Development .............................. 4
   - Political Science 250 International Relations .................... 4

*Courses marked with an asterisk may be included in the student's program when they concentrate on Asia or some subdivision thereof.
Advisement

Students enrolled in this Curriculum will be aided in the selection of Comparative/Cross-Cultural Studies Core Courses by the Adviser; those who wish to enroll in the Comparative/Cross-Cultural Curriculum are required to make this intention known to the Adviser no later than the first semester of their junior year—and preferably earlier.

Comparative/Cross-Cultural Studies Minor

Adviser: F. J. Mortimore

Twenty semester hours (24 for students enrolled in Education curricula), taken from the list of Comparative/Cross-Cultural Studies Core Courses, are required for completion of a minor concentration in Comparative/Cross-Cultural Studies.

Students wishing to enroll in this minor are required to make this desire known to the Adviser before courses employed to satisfy this program are taken; records of the minor are maintained and verified by the Comparative/Cross-Cultural Studies Program.

Comparative/Cross-Cultural Studies Core Courses

Anthropology

200  Introduction to Anthropology: Physical Anthropology and Archeology .................................. 3hrs.

220  Introduction to Anthropology: Cultural Anthropology .......................................................... 3

331  Art and Culture .......................................................................................................................... 3

370  Language in Culture .................................................................................................................. 3

532  Culture and Personality ............................................................................................................. 3

534  Peasant Societies in Cross-Cultural Perspective ................................................................. 3

535  The Anthropology of Religion .................................................................................................. 3

536  Cultural Evolution .................................................................................................................... 3

537  Political Anthropology ............................................................................................................. 3

538  Legal Anthropology .................................................................................................................. 3

539  Economic Anthropology ........................................................................................................... 3

540  Cultural Ecology ......................................................................................................................... 3

575  Studies in Languages of the World ............................................................................................ 4

Economics

480  International Economics ............................................................................................................... 4

508  Institutional Economics ................................................................................................................ 4

580  International Trade: Theory and Policy ....................................................................................... 3

583  Studies in Economic Planning ..................................................................................................... 3

484  Comparative Economic Systems ................................................................................................. 4

588  Economic Development ................................................................................................................ 4
Inter-Disciplinary Programs

Geography
105 Physical Geography .................................. 4 hrs.
205 Introduction to Human Geography ......................... 3
244 Economic Geography .................................. 3
540 Political Geography .................................. 3
541 Geographic Foundations of National Power ........ 3
543 Cultural Geography .................................. 3
544 Agricultural Geography ............................................ 3
546 Transportation Geography .................................. 3

History
594 History of Modern Warfare .................................. 3

Political Science
250 International Relations .................................. 4
542 Administration in Developing Countries ..................... 3
552 Studies in International Relations ......................... 3
560 Comparative Political Ideology ........ 4
563 Theories of Revolution .................................. 4

Religion
300 Prehistoric and Primitive Religions ......................... 4
311 Myth and Ritual ......................................................... 4

Social Science
506 Studies in the Non-Western World ......................... 3

Sociology
536 Social Stratification .................................. 3
590 Family as a Social Institution .................................. 3

LATIN AMERICAN STUDIES PROGRAM

Head: David Hanson

Latin American Studies Curriculum
Adviser: David Hanson

The Latin American Studies Curriculum is designed primarily for undergraduate students in the College of Arts and Sciences who anticipate careers which require a comprehensive understanding of Latin America, and for those who plan to enter graduate programs which contain provision for Latin American concentration. This Curriculum, in which language facility is essential, leads to the Bachelor of Arts degree. The semester hour requirements are minimums; completion of the Curriculum necessitates at least 60 semester hours, including the following:
1. Completion of University requirements for a B.A. degree—124 semester hours of course work.

2. Completion of all General Studies requirements.

3. Completion of departmental requirements for a major in one of the following disciplines:

   - Anthropology
   - Economics
   - Geography
   - History
   - Language (Spanish)
   - Political Science
   - Sociology

4. Completion of the Latin American Studies concentration consisting of no less than 30 semester hours selected from the list of Latin American Studies Courses.

5. Demonstration of intermediate-level proficiency in Spanish.

**Advisement**

Students in this Curriculum will be aided in the selection of Latin American Studies Core Courses by the Adviser; students who wish to enroll in the Latin American Studies Curriculum are required to make this wish known to the Adviser no later than the first semester of their junior year.

**Latin American Studies Minor**

Adviser: David Hanson

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of Latin American Studies Courses are required for the completion of a minor concentration in Latin American Studies; a minimum of 12 semester hours must be selected from the list of Core Courses. Students enrolled in this minor are strongly urged to acquire proficiency in Spanish.

Summer programs of a special nature may be offered, providing qualified students an opportunity to undertake study and/or research in Latin America. Credit for participation in such programs may—within certain limitations—be counted toward completion of a Latin American Studies minor.

Students wishing to enroll in the Latin American Studies minor are required to make this intention known to the Adviser; records of the minor are maintained and verified by the Latin American Program.
Latin American Studies Core Courses

Anthropology
337 Indian Cultures of Mexico, Central and South America .............................................. 3hrs.
501 Rise of Civilization: Mesoamerica ................................................................. 3
545 Topics in Ethnology: Latin America ............................................................. 3

Geography
381 Geography of South America ................................................................. 3
382 Geography of Middle America ................................................................. 3
550 Studies in Historical Geography: Latin America .................................................. 3

History
370 Colonial Latin America ................................................................. 3
371 Latin American Republics ................................................................. 3
571 History of Mexico ................................................................. 3
572 History of the Plata Region ................................................................. 3

Language
323 Life and Culture of Latin America ................................................................. 3
329 Introduction to Spanish-American Literature .................................................. 3
560 Studies in Spanish Literatures: Spanish-American Short Story ................................ 3
560 Contemporary Spanish-American Novel ......................................................... 3
575 Spanish American Literature in Eng. Translation .............................................. 3

Political Science
343 Latin American Political Systems ................................................................. 4
549 Problems of Foreign Political Systems: Latin America ................................ 3-4

Sociology
559 Ethnic Relations: Latin America ................................................................. 3
571 Social Change: Latin America ................................................................. 3

Latin American Studies Cognate Courses

Anthropology
534 Peasant Societies in Cross-Cultural Perspective .............................................. 3

Economics
588 Economic Development ............................................................................. 4

Language
316 Spanish Composition ................................................................................. 3
317 Spanish Conversation ................................................................................. 3

Sociology
558 Social Forces in Underdeveloped Areas: Latin America ................................ 3
SLAVIC STUDIES PROGRAM

Head: George Klein

Slavic Studies Minor
Adviser: George Klein

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of Slavic Studies Courses are required for completion of a minor concentration in Slavic Studies; a minimum of 12 semester hours must be selected from the list of core courses.

Students wishing to enroll in the Slavic Studies minor are required to make this desire known to the Adviser; records of the minor are maintained and verified by the Slavic Studies Program.

### Slavic Studies Core Courses

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Sciences</td>
<td>504</td>
<td>Foreign Studies Seminar: Slavic Area</td>
<td>1-6 hrs.</td>
</tr>
<tr>
<td>Economics</td>
<td>583</td>
<td>Studies in Economic Planning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>586</td>
<td>Economics of the Soviet Union and Eastern Europe</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>590</td>
<td>Contemporary Communism—A Survey</td>
<td>3</td>
</tr>
<tr>
<td>Geography</td>
<td>384</td>
<td>Geography of U.S.S.R. and Eastern Europe</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>550</td>
<td>Studies in Historical Geography: Eastern Europe</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>340</td>
<td>Russia to 1917</td>
<td>3</td>
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<tr>
<td></td>
<td>341</td>
<td>The Soviet Union</td>
<td>5</td>
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<td></td>
<td>344</td>
<td>Eastern Europe</td>
<td>3</td>
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<td></td>
<td>345</td>
<td>The Baltic Region</td>
<td>3</td>
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<tr>
<td></td>
<td>470</td>
<td>Independent Research in History: Slavic Area</td>
<td>2-3</td>
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<tr>
<td></td>
<td>540</td>
<td>Social and Cultural History of Tsarist Russia</td>
<td>3</td>
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<td></td>
<td>541</td>
<td>The U.S.S.R. in World Affairs</td>
<td>3</td>
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<tr>
<td></td>
<td>542</td>
<td>Social and Cultural History of the U.S.S.R.</td>
<td>3</td>
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<tr>
<td></td>
<td>598</td>
<td>Independent Readings in History: Slavic Area</td>
<td>2-3</td>
</tr>
<tr>
<td>Language</td>
<td>316</td>
<td>Russian Composition and Conversation</td>
<td>3</td>
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<tr>
<td></td>
<td>326</td>
<td>Russian Readings</td>
<td>3</td>
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<td></td>
<td>327</td>
<td>The Russian Novel</td>
<td>3</td>
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<td></td>
<td>328</td>
<td>Survey of Russian Literature</td>
<td>3</td>
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### Inter-Disciplinary Programs

**Political Science**  
- 546 Government of the Soviet Union and Eastern Europe  
- 549 Problems of Foreign Political Systems: Eastern Europe  
  - 4 hrs.

**Sociology**  
- 571 Social Change: Slavic Area  
  - 3

#### Slavic Studies Cognate Courses

**Economics**  
- 484 Comparative Economic Systems  
  - 4

**Geography**  
- 540 Political Geography  
- 541 Geographic Foundations of National Power  
  - 3

**Language**  
- 100 Basic Russian  
- 101 Basic Russian  
- 200 Intermediate Russian  
- 201 Intermediate Russian  
  - 4

**Linguistics**  
- 505 Basic Critical Languages  
- 506 Intermediate Critical Languages  
- 507 Advanced Critical Languages  
- 508 Reading Critical Languages  
- 509 Writing Critical Languages  
  - 4

**Political Science**  
- 250 Intermediate Relations  
- 340 European Political Systems  
  - 4
The Medieval Institute

John R. Sommerfeldt, 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 an annual 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 529—Medieval English Literature (or)
   (b) English 530—Medieval Continental Literature (or)
   (c) English 531—Chaucer ................................. 4 hrs.
4. (a) Philosophy 300—History of Ancient Philosophy (or)
   (b) Philosophy 308—History of Medieval Philosophy (or)
   (c) Religion 500—Christian Theology to 1500 (or)
   (d) History 506—Intellectual History to 1550 .......... 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

Black Americana Studies

Carleton L. Lee, Director

This interdisciplinary program has a corrective and supportive function to the curricula and services of the University. Its broad design is to penetrate, permeate and pervade the life of the University. Its more specific aims are to provide every student who comes to the University knowledge and understanding of the role that people of African descent (Black Americans) have played and play in making America what it is. It is retelling the American story.

A minor will consist of the three undergraduate courses (Black Americana Studies 200, 300 and 500) and at least eight (8) hours of departmental courses. A teaching minor will require at least twelve (12) hours of departmental courses. The student will select both the general minor and a teaching (or group) minor in consultation with the Director of Black Americana Studies and an adviser in the student's major.

200 Black Presence

A survey of the impact of the physical presence of people of African ancestry and descent in the European colonies of the Western Hemisphere from the earliest days of the age of exploration to the present. Historically oriented, the course is designed to be interpretive rather than chronological; to deal with Black presence as party to the expansion of Western Europe in the New World; as active participation in settling and developing the colonies; as a people apart or of contrast. How did the presence of Africans influence the development of the life and institutions of the country in Colonial, National and later eras.

300 Black Experience

This course will examine the myriad patterns of adaptation and adjustment made by slaves, free people of color, freedmen and their descendants, to the continuing oppressive character of American society. Slave narratives reveal much about the Africans' interpretation of their presence in the New World. Black presence created a commonality of experience, the characteristics of which became and remains a distinctive American subculture. It aims to examine how Black presence altered the idea of race and how this alteration became a function of the institutional forms that Black Americans have shaped to survive in a hostile environment.
500 Black Humanism

An examination of the creative dimension of the Black Experience. Isolated and set apart in an enemy environment, Americans of African descent have been very creative in a wide range of human undertakings. This fact has been acknowledged and accepted, but this creativity has not had free range. One of the outcomes of the Black Revolution has been the emergence of “soul” as a concept to label the artistry and artfulness of Black American life. The creative dimension has also included science and technology. Black humanism is a way of getting at the life-styles of Black Communities and individuals and the viability of the Black Presence and Experience. What universal elements can be identified in “soul?” What are the unique qualities of “soul?” What would American life and culture be like without this elusive quality?

600 Black Americana Studies—Seminar

In-depth study of specific areas of Black American life and culture. Since Negro Americans have been involved in the total life of the nation, special study is called for. There are at least two dimensions which lend themselves to special study—the first and most obvious is that of unusual achievement by persons of known and identifiable African ancestry. A second and more elusive dimension is Black “influence”—positively and negatively—in American life and culture.

DEPARTMENTAL COURSES

(21 Courses—68-69 Hours)

The following courses are related to Black Americana Studies. Students may elect the additional hours necessary to satisfy requirements for a minor or a teaching minor from the following departmental courses:

Anthropology

200 Introduction to Anthropology: Cultural Anthropology ........................................... 3hrs.
331 Art and Culture ........................................... 3
335 Cultures of Africa ........................................... 3
532 Culture and Personality ........................................... 3

Art

425 Art ........................................................................... 2-3
(Afro-American Art)
### Inter-Disciplinary Programs

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
<th>Credits</th>
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<tr>
<td><strong>Economics</strong></td>
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<tr>
<td>201</td>
<td>Principles of Economics</td>
<td>3hrs.</td>
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<tr>
<td>202</td>
<td>Principles of Economics</td>
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<td>410</td>
<td>Labor Problems</td>
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<td>223</td>
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<tr>
<td><strong>History</strong></td>
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<td>314</td>
<td>History of the American Negro</td>
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<td>386</td>
<td>Introduction to African History and Civilization</td>
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<tr>
<td>514</td>
<td>Black History: Impact of Black People on American Thought and Life</td>
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<td>587</td>
<td>Early African History</td>
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<tr>
<td>588</td>
<td>Recent African History</td>
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<td><strong>Political Science</strong></td>
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<td>204</td>
<td>Politics of Race</td>
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<td>304</td>
<td>Political Perspectives of Black America</td>
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<td>341</td>
<td>African Political Systems</td>
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<tr>
<td><strong>Religion</strong></td>
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<tr>
<td>304</td>
<td>African Religion</td>
<td>4</td>
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<td>311</td>
<td>Myth and Ritual</td>
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<tr>
<td>321</td>
<td>The History of the Study of Religion</td>
<td>2-4</td>
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<tr>
<td>500</td>
<td>Historical Studies in Religion (Religion of Black America)</td>
<td>2-4</td>
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<tr>
<td><strong>Sociology</strong></td>
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<tr>
<td>200</td>
<td>Principles of Sociology</td>
<td>3</td>
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<td>314</td>
<td>Race Relations</td>
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<td>355</td>
<td>Social Structure of Black America</td>
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<tr>
<td>371</td>
<td>Dynamics of Contemporary Social Change</td>
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</tbody>
</table>
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 College of Arts and Sciences.

Arts and Sciences 503 Foreign Studies Seminar 1-6 hrs.

Foreign studies seminars in the sciences organized and conducted outside the U.S. by the College of 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. May be repeated for credit.

Arts and Sciences 504 Foreign Studies Seminar 1-6 hrs.

Seminars in the Social Sciences conducted outside the U.S.: 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. May be repeated for credit.

Arts and Sciences 505 Foreign Studies Seminar 1-6 hrs.

Seminars in the Humanities conducted outside the U.S.: Students completing such a seminar may receive credit in the departments of Philosophy, Religion, Modern and Classical Languages, English, Art, Music or Communication Arts and Sciences if the credit is approved by the Head of the Department prior to registering for the seminar. May be repeated for credit.

504 Social Studies Seminar: England 6 hrs.

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 Arts and Sciences 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.

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, 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.

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.
Foreign Institute Seminars

Arts and Sciences 514 Civilization Studies Seminar  1-6 hrs.

Seminar in the Social Sciences dealing with designated civilizations, cultures or areas. 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. May be repeated for credit.

Arts and Sciences 515 Civilization Studies Seminar  1-6 hrs.

Seminar in the Humanities dealing with designated civilizations, cultures or areas. Students completing such a seminar may receive credit in the departments of Philosophy, Religion, Modern and Classical Languages, English, Art, Music, or Communication Arts and Sciences if the credit is approved by the Head of the Department prior to registering for the seminar. May be repeated for credit.
American Studies Program

399 Field Experience (Community Participation) 2-8 hrs.
A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

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.

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.
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 and Junior High 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 (3342 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
   Geog. 105 or Geol. 230 ................................................................. 4
   Geog. 225 or 226 or Geol. 230 or 231 ........................................... 4
   Physical Science 108 ................................................................. 4
   Astronomy 104 ........................................................................... 4
   24

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 .................................................. 9hrs.
One of the following: ...................................................... 3-4hrs.
   Biology 210—Mammalian Anatomy
   Biology 221—The Plant Kingdom
   Biology 234—Outdoor Science
   Biology 301—Ecology
   Biology 306—Genetics
   Biology 541—Invertebrate Zoology

11-12 hours Earth Science

Geography 105 ................................................................... 4hrs.
From the following: .......................................................... 3-4
   Astronomy 104 ............................................................ 4
   Geology 230—Physical Geology ................................. 4
   Geology 231—Earth History and Evolution .................. 4
   Geology 300—Oceanography ...................................... 3
   Geology 301—Minerals and Rocks ............................. 3
   Geography 225—Introduction to Meteorology
       and Climatology ................................................... 4
   Geography 226—Advanced Physical Geography .......... 4
   Geography 350—Principles of Conservation and
       Resource Management ........................................... 3

12 hours Physical Science

Physics 106, 110 or Physical Science 108 ......................... 4 hrs.
Chemistry 101, 102 or 103 .............................................. 4
One of the following: ...................................................... 4
   Chemistry 109—General Chemistry ......................... 4
   Physics 111—General Physics ................................... 4
   Astronomy 104 ......................................................... 4

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 College
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  
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.

501 Higgins Lake Field Course  
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  
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  
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, Robert Barstow. 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 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 100 or 210 or 220
      Economics
      201 & 202 for Sec. Educ. & others
      History 210 and 211
      Political Science 200
      Sociology 200
   c. A total of 9 hours credit in 300 or 500 level courses.
   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, provided such courses are not specified for "science credit."

*Elementary Education majors may satisfy this requirement by completing the specified courses in four of the five departments listed.
College of Arts and Sciences

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. Secondary Ed. curriculum only.

500 Data Processing for Behavioral Scientists  3 hrs.

   An introduction to data processing for students of the behavioral sciences. Emphasis to be placed upon computer programming in one general purpose computer language and individual projects involving a behavioral problem selected by each student. In addition, there will be a survey of a number of computer techniques which show promise for research in the behavioral sciences. Intended solely for persons in the behavioral sciences. No special mathematical background required.
   Prerequisite: Consent of instructor.
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.

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 Hospital, Muskegon, Pontiac General Hospital, Pontiac; Munson Medical Center, Traverse City; 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 ...... 124hrs.

B. Course Requirements
1. General Studies Requirements, as described on page 31 of this catalog must be met.

2. Science and Mathematics ......................................................... 45 or 49hrs.
   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
   Pathogenic Microbiology 513 .................................................. 3
   General Chemistry 101 or 102 ............................................. 4
Qual. Analysis 120 ................................................. 4
Organic Chemistry 365 ........................................... 4
Quant. Analysis 222 ............................................. 4
Introductory Biochemistry 452 ................................. 5
Physics 106 ......................................................... 4

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

C. Degree Requirements must be met.

435 Medical Technology Internship 15 hrs. 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.
Anthropology

Robert Maher, Chairman
Elizabeth Baldwin
John Blacking
William Garland
Ernestene Green
Barbara Lex

Reinhold Loffler
Winston Moore
Robert Jack Smith
Robert Sundick
Stanley West
John Willis

Courses are designed to (1) give students a better understanding of the nature of man; (2) broaden familiarity with the diverse ways of human life, both past and present; (3) meet the needs of students preparing to teach in the social science field; and (4) prepare students to do graduate work in Anthropology.

A major in Anthropology consists of a minimum of 30 hours, 24 of which must be in Anthropology and include Anthropology 210, 220, and 250. The remaining 6 hours may, in consultation with the Department’s Undergraduate Advisor, be drawn from anthropology or appropriately related fields such as the social sciences, biology, geology, geography, linguistics, psychology and religion.

A combined major in Sociology and Anthropology consists of a minimum of 30 hours. Courses Anthropology 210, 220 and 250 and Sociology 200, 382 and 504 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 20 hours. Anthropology 210, 220, and 250 are required. As much as 6 hours from related fields may be counted toward the minor if deemed appropriate by the Department’s Undergraduate Advisor.

All major and minor programs must be approved by the Department’s Undergraduate Advisor.

100 Man in Evolutionary Perspective 3 hrs. Fall, Winter

The nature, causes and prospects of being human as seen through an examination of the events and processes of biocultural evolution. (May not be taken for credit by students who have had Anthropology 200)
210 Introduction to Archeology 3 hrs. Fall, Winter

A survey of archeology as a subdiscipline of anthropology; the how and why of archeology, with emphasis on methods and concepts for the study of prehistoric cultures. Case studies and examples drawn from selected areas of the world.

220 Introduction to 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.

250 Introduction to Physical Anthropology 3 hrs. Fall, Winter

A survey of physical anthropology; the evolution of man and the primates; the living primates, human osteology, human genetics and population variation.

300 (341) The Archeology of North America 3 hrs. Winter

The prehistoric development of man and culture in the New World north of Mexico. Prerequisite: 210 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

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.

339 Native Cultures of North America

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

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: 250 or consent of instructor.

370 (332) Language in Culture

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 epilingualistic 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

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

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: 210 or consent of instructor.

501 (544) The Rise of Civilization

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: 210 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 archeological 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 Ethnological 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: 220 or consent of the instructor.

521 Formal Approaches to Anthropology 3 hrs. Winter
An introduction to several tools of analysis which contribute to anthropological theory. Topics chosen from anthropological research methodology, mathematical anthropology and data processing. Prerequisite: 210, 220, or 250.

522 Ethnographic Field Techniques 3 hrs. Winter
A practical examination of the means of obtaining data for ethnographic purposes. Includes readings, discussion and supervised interviewing of informants. Topics include problem formulation, investigation strategies, research proposals, field living, interviewing techniques, participant observation. Prerequisite: consent of instructor.

523 Ethnographic Field Session 3 hrs. Spring
Supervised field examination of human communities in respect to specific ethnographic questions, analysis of field data, and report writing. (May be repeated for credit) Prerequisite: 522 or equivalent and consent of instructor.

525 Modern African Cultures 3 hrs. Winter
The treatment of African societies and cultures within a contemporary framework. Examination of current developments which
reveal both the continuity and discontinuity of basic African traditions. New dimensions, varieties, themes and patterns in African cultures explored from the anthropological approach. Prerequisite: 220 or consent of 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 fold 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: 210 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 relationship of politics to technological development, habitat, symbolic systems and other aspects of social organization. Prerequisite: 220 or consent of instructor.
538 Legal Anthropology  
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  
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: Anthro. 220, econ. 200 and/or consent of instructor.

540 Cultural Ecology  
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: 210 or 220 or consent of instructor.

542 Complex Cultures  
Emphasis on anthropological approaches to cross-cultural, historical and in-depth studies of complex cultures. Selected topics: communities, including urban; the migration and adaptations or rural migrants to cities; particular sub-cultures of complex cultures; and current urban problems. Prerequisite: 220

545 Topics in Ethnology  
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  
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 Anthro. 220 or consent of instructor.

550 (547) The Primates  
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: 250 or consent of instructor.

551 Human Osteology 3 hrs. Winter

A study of the human skeleton. Emphasis will be on morphological
and metrical variation, odontology, palaeopathology, and
reconstruction of the individual and the population. Prerequisite:
250 or consent of instructor.

555 Topics in Physical Anthropology 3 hrs. Fall

A consideration of the biological relationships of specific popula-
tion groups or general problems in human biology (e.g. human
genetics, human growth and constitution, paleopathology, dental
anthropology). Topic will be announced each semester. May be
repeated for credit with different topics. Prerequisite: 250.

575 (548) Studies in Languages of the World 3 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 geograph-
ically proximate (e.g. African languages). May be repeated for
credit.

580 Linguistic Field Techniques 3 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 diction-
ary. 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. One to
2 hours credit per semester, cumulative to 4 hours. Prerequisite:
consent of instructor.
Art

Charles E. Meyer, Head

T. D. Argyropoulos
William Bechtel
John M. Carney
Joseph V. DeLuca
Elizabeth Dull
Gerald C. Dumlao
Robert H. Engstrom
Joseph A. Frattallone
Gordon J. Grinwis
Marc F. Hansen
Carole Harrison
Harry S. Hefner
Jon M. Henderson
Alfred Hinton

Robert P. Johnston
Richard J. Keaveny
Donald E. King
Dwayne M. Lowder
Paul S. Mergen
John M. Metheany
Mary Joanne Mohr
Helmi Moulton
Mary Eleanore Neu
Barbara Resenhouse
Curtis A. Rhodes
Louis B. M. Rizzolo
Paul A. Robbert
M. Elizabeth Smutz

Programs

The Department of Art offers programs leading to the B.A. or B.S. degree with a major in Art in the College of Arts and Sciences and the College of Education. It also offers a program for a minor in Art and courses for students in other areas.

Admission in Art Courses —

Due to space and faculty limitations the Department of Art cannot offer enough courses to accommodate all students who wish to study art. Priority is given to students who have been admitted by the department as art majors. Admission is based on the quality of previous art work. Application forms for admission as an art major are available at the department's office and at the University Admissions Office. They must be submitted to the department’s Screening Committee, with a portfolio of art work, between September and February for the following year’s Fall or Winter semesters.

Classroom space for all art courses is reserved by securing Control Cards (C-cards) from the department’s office. C-cards for Spring and Fall are available in the preceding March, and for Winter semester in the preceding October. (C-cards can be mailed to freshmen and incoming transfer students after they have been admitted as art majors).
Transfer Credit

Transfer students are required to submit a portfolio for transfer credit evaluation of art courses from other institutions one semester prior to enrollment. The application for admission as an art major includes the transfer evaluation procedure. (Portfolios for admission or transfer credit cannot be evaluated between April and August inclusive.) For portfolio requirements please write to: Screening Committee, Department of Art.

The Department of Art grants transfer credit only for art courses whose quality and content is equivalent to its own courses. A maximum of 30 credit hours in art may be transferred towards the art major requirements.

Advising

Art majors should see the departmental adviser as soon as they are admitted and at least once yearly afterwards. Art minors need only fill an art minor form at the department's office.

Exhibition Requirement

An exhibition of each art major's work may be required in the senior year and the department may retain one work of art from each student for its collection.

1 Art Major 60 credit hours in Art

This program is designed for students with a serious interest in art, to develop creative artists and to prepare them for graduate work. The requirements of the Liberal Arts or General curricula (p. 222) have to be satisfied. Sixty 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 seminar (525).
14 hours in one area of concentration selected from painting, sculpture, graphic design, printmaking, ceramics, textile design, jewelry, art history, or multi-media art (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.

2 Art Major with Certification 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 College of Education (p. 505) must be satisfied. Sixty 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 Art Major program, except art history.
12 hours in elective art courses, determined in consultation with the departmental adviser.

One semester of directed teaching in art, preferably in both elementary and secondary situations.

3 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. The twenty-four credit hours are distributed as follows:

12 hours in the basic program (110, 111, 114, 115, 120, 121).
12 hours in art electives.

4 Art Courses for Non-Art Majors or Minors

Elementary Education majors are required to take Art 150 (or a substitute, such as Art 120) 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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<th>Course</th>
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<tbody>
<tr>
<td>110 Drawing</td>
<td>2</td>
<td>115 Design</td>
<td>2</td>
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<tr>
<td>111 Drawing</td>
<td>2</td>
<td>120 Art Survey</td>
<td>2</td>
</tr>
<tr>
<td>114 Design</td>
<td>2</td>
<td>121 Art Survey</td>
<td>2</td>
</tr>
</tbody>
</table>
ART DEPARTMENT COURSE OFFERINGS

110 Drawing  2 hrs. Fall, Winter

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.

115 Design  2 hrs. Fall, Winter
Continuation of Design 114 with emphasis on color theory and the mechanics of color organization. Prerequisite: Art 114.

120 Art Survey  2 hrs. Fall, Winter
An introduction to the language of art, art theory, aspects of art, and form analysis from a topical point of view.

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, Art major or minor only.

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.

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. May not be elected by majors or minors in art or art education and does not fulfill certification requirements for teaching.
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.

214 Design Theory 2 hrs. Fall, Winter
Development of projects utilizing design theory. Prerequisite: 115.

215 Three Dimensional Design 2 hrs. Fall, Winter
A course stressing the definition of time and three dimensional space by use of line, plane, texture and color. Aesthetic exploration, manipulation and application of materials. Prerequisite: Basic Program.

220 History of Art 3 hrs. Fall, Winter
An historical survey of art from pre-historic ages to the Renaissance.

221 History of Art 3 hrs. Fall, Winter
An historical survey of art from the Renaissance through the contemporary period.

230 Ceramics 2 hrs. Fall, Winter
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 2 hrs. Fall, Winter
Introduction to sculptural concepts and techniques in clay, plaster
and wood. Prerequisite: Basic Program, 210 or 210 concurrently.

232 Craft Design 2 hrs. Fall, Winter
A course stressing creativity in the design of products through
the use of varied materials. Prerequisite: Basic Program.

234 Textile Design 2 hrs. Fall, Winter
An introduction survey in textiles to include weaving, stitchery,
block printing, stencilling, tie and dye, and batik. Prerequisite:
Basic Program.

235 Multi-Media Art 2 hrs. Fall, Winter
Various forms of art that deviate from conventional media, such
as: light, kinetic and performance art. Prerequisite: Permission of
instructor.

237 Studio Equipment 2 hrs. Fall, Winter
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 2 hrs. Fall, Winter
A survey of jewelry processes to include cutting, soldering, cast-
ing, stonecutting, and the use of appropriate equipment. Pre-
requisite: Basic Program.

240 Painting I 2 hrs. Fall, Winter
An introduction to the techniques and expressive possibilities of
painting. Prerequisite: Basic Program, 210 or 210 concurrently.

241 Printmaking 2 hrs. Fall, Winter
An introduction to the basic printing techniques as fine arts med-
ia. Includes intaglio and relief printing. Prerequisites: Basic Pro-
gram, and Art 210 or 210 concurrently.

242 Watercolor Painting 2 hrs. Fall, Winter
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 images. The fundamentals of calligraphy,
typography, and typographic design are investigated in exper-
imental and practical projects. Incorporates research in the com-
municative potential of color and structure. Prerequisite: Basic Program.

310 Intermediate Drawing 3 hrs. Fall, Winter
Drawing as the study of form and as a conclusive aesthetic statement. Model available during approximately 1/2 of the class meetings. Prerequisite: 210.

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, 310 or 310 concurrently.

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.

335 Multi-media Art 3 hrs. Fall, Winter
Continuation of 235. Prerequisite: Permission of instructor.

338 Jewelry and Metalwork 3 hrs. Fall, Winter
Advanced work in the jewelry processes. Prerequisite: Art 238.

339 Metalsmithing 3 hrs. Fall, Winter
Provides an opportunity to build metal objects of larger than jewelry scale. Offers technical instruction in moving, shaping, forming non-ferrous metals by hammering. (Sterling, brass, copper, bronze, aluminum, pewter). Prerequisite: 238.

340 Painting II 3 hrs. Fall, Winter
Continuation of Art 240. Prerequisites: Art 240, 310 or 310 concurrently.

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 or 310 concurrently.

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 Advanced Drawing 3 hrs. Fall, Winter

Continuation of Art 310. 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 recent art movements, 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 investigation 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 3 hrs. Fall, Winter
Continuation of 330 with some experience in stacking and firing procedures. Prerequisite: Art 330.

431 Sculpture 3 hrs. Fall, Winter
Continuation of 331. Emphasis on welding and sheet metal techniques. Prerequisite: Art 331, 310.

434 Textiles 3 hrs. Fall, Winter
Continuation of 334. Prerequisite: Art 334.

435 Multi-media Art 3 hrs. Fall, Winter
Continuation of 335. Prerequisite: Permission of instructor.

438 Jewelry 3 hrs. Fall, Winter
Advanced work in the jewelry processes. Prerequisite: Art 338.

439 Metalworking 3 hrs. Fall, Winter
Continuation of 339. Prerequisite: Art 339.

440 Painting III 3 hrs. Fall, Winter
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 310, 340.

441 Printmaking 3 hrs. Fall, Winter
Continuation of printmaking 341. Prerequisites: Art 310, 341.

442 Watercolor 3 hrs. Fall, Winter
Watercolor problems with the introduction of mixed media. Prerequisite: Art 342.

445 Graphic Design 3 hrs. Fall, Winter
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 1-6 hrs. Fall, Winter
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 3 hrs. Fall, Winter
Continuation of Art 410. Prerequisite: Art 410.
525 Seminar in Art 2 hrs. Fall, Winter
Investigation and discussion of contemporary philosophies of art and their relationship to each student’s work. Prerequisite: Junior Art Major.

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.

535 Multi-media Art 3 hrs. Fall, Winter
Continuation of 435. Prerequisite: Permission of instructor.

538 Jewelry 3 hrs. Fall, Winter
Continuation of 438; advanced work in jewelry processes. Prerequisite: Art 438.

539 Metalsmithing 2 hrs. Fall, Winter
Continuation of 439. Prerequisite: 439.

540 Painting IV 3 hrs. Fall, Winter
Continuation of Painting III. Prerequisites: Art 410, 440.

541 Printmaking 3 hrs. Fall, Winter
A continuation of printmaking, 441. Prerequisites: Art 410, 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 realis-
tically meet such responsibilities as working with elementary class-
room teachers, selecting, organizing, and teaching art activities 
at each stage of development. Must precede student teaching. 
Prerequisite: Art 352.

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 pro-
grams. Must precede student teaching. Prerequisite: Art 353.

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 peri-
od. 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, DaVinci, Michelangelo, Titian, 
Van Eyck, Breughel and Durer. 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, Rem-
brandt, Rubens, Poussin, Velasquez, Bernini, Borromini, and Neu-
mann. 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 wood-
cut and engraving. Renaissance and Baroque master etchers and 
engravers. (Durer, Rembrandt, etc.) Lithography in the 19th cen-
tury. (Delacroix, Daumier, Toulouse-Lautrec) 20th century print-
making. 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 Per-
iod to the present. Topics discussed are: Colonial portraiture and 
Copley; the evolution of 19th and 20th century painting, sculp-
ture and architecture with emphasis on the work of Stuart, Cole,
Biology

Clarence J. Goodnight, Head

Harriette V. Bartoo
Leonard J. Beuving
Richard D. Brewer
Darwin A. Buthala
Raymond C. Deur
Robert C. Eisenberg
Joseph G. Engemann
Gyula Ficsor
Dona J. Fowler
Stephen B. Friedman
Imy V. Holt
Edgar Inselberg
John J. Josten

Jean M. Lawrence
Ronald W. Olsen
Richard W. Pippen
Myrtle M. Powers
Phoebe Rutherford
Beth Schultz
Donna N. Schumann
Marjory A. Spradling
Edwin B. Steen
Gian C. Sud
Leo C. Vander Beek
William C. Van Deventer
Jack S. Wood

A major in biology consists of a minimum of 30 credit hours in biology courses including the basic core curriculum. A minor in biology consists of a minimum of 15 credit hours (in secondary education, 20 hours) including at least two courses from the basic core curriculum. All major and minor programs are taken under the direction of and with the approval of a departmental advisor. You can be assigned to the advisor closest to your interests by the Biology Information Office, Room 100, Wood Hall.

The basic core curriculum for biology majors consists of Biology 100, 101, 102, 301, 306, and 317. Only courses in which a grade of "C" or better is obtained may be counted towards a major or minor.

Students majoring in biology are required to take a minimum of 12 semester hours of college chemistry, including a course in organic, 8 hours of college mathematics, and 8 hours of physics. Students in secondary and elementary education who are majoring in biology may substitute 4 hours of geology for the second 4 hours
of physics. For those planning to undertake graduate work in biology, two semesters of organic chemistry, quantitative chemical analysis, an additional semester of calculus, and statistics are strongly recommended.

All students minoring in biology are required to take 8 semester hours of college chemistry and 4 hours of college mathematics.

Students majoring in biology in a secondary education curriculum may take a group science minor as follows: (1) 12 hours of chemistry (including organic); and (2) either 8 hours of geology and 4 hours of physics or 8 hours of physics and 4 hours of geology. A total of 24 hours are required for a group 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 Harvey and Dr. Leslie A. Kenoyer are housed in the Department.

The Department has a radiation laboratory equipped for teaching and research with radioactive tracers and X-ray techniques.

A suggested sequence of course work for biology majors is given below. It incorporates additional academic requirements, such as general studies courses. For the special requirements that apply to your curriculum, locate them at the end of the sequence of courses.

SUGGESTED SEQUENCE OF COURSE WORK FOR BIOLOGY MAJORS IN THE GENERAL CURRICULUM

*Students contemplating majoring in Biology should contact the Biology Information Office (Room 100, Wood Hall) as early as possible so that he can locate their Departmental Advisor.
**Freshman year:**

<table>
<thead>
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<tbody>
<tr>
<td>Biology 100</td>
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<tr>
<td>Chemistry 101 or 102</td>
<td>Chemistry 120</td>
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<td>Freshman Reading 140</td>
<td>Mathematics 120 or 122</td>
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<td>Western Civilization 100 or 101</td>
<td>College Writing 116</td>
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<tr>
<td>Physical Education</td>
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<td>(or Military Science 2)</td>
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<td>14-15</td>
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**Sophomore year:**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
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<tbody>
<tr>
<td>Biology 102</td>
<td>Biology 317</td>
</tr>
<tr>
<td>Chemistry 360 or 365</td>
<td>Biology elective</td>
</tr>
<tr>
<td>Mathematics 121 or 123</td>
<td>Physics 110 or 210</td>
</tr>
<tr>
<td>General Studies 202 or 203 or 204 or 205</td>
<td>General Studies 222 or 224</td>
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<tr>
<td>Physical Education</td>
<td>Physical Education</td>
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<tr>
<td>(or Military Science 2)</td>
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<td>16-17</td>
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**Junior year:**

<table>
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<tr>
<th>Fall</th>
<th>Winter</th>
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<tbody>
<tr>
<td>Biology 306</td>
<td>Biology elective(s)</td>
</tr>
<tr>
<td>Biology elective</td>
<td>General Studies: One of</td>
</tr>
<tr>
<td>Physics 111 or 211</td>
<td>400, 401, 402, 403, 404, 405, 408, or 497</td>
</tr>
<tr>
<td>General Studies 304 (or approved alternatives)</td>
<td></td>
</tr>
</tbody>
</table>

**Senior year:**

- Biology 301—3 hrs.
- Biology elective(s) to complete 30 hrs.
- General Studies elective(s) to complete 40 hrs (including certain courses in the sciences which are acceptable for General Studies credit)
- Complete minor or second major requirements
- Completion of 124 credit hours
Liberal Arts Curriculum students add the following requirements:

- Social sciences elective(s)—4 hrs
- Elective(s) from one of literature, speech, philosophy, or religion—4 hrs.
- Elective(s) from fine arts—4 hrs.
- Electives in 300, 400, or 500 courses, other than General Studies, to make a total of 30 hrs.
- Intermediate work in a foreign language—4 hrs.

Transfer Students. Consult with your advisor at the Biology Department before registering for classes.

Students in Specialized Curricula. Your faculty advisor is:

- General Studies: One of
  - Elementary Education
  - Medical Technology
  - Premedical or predental
  - Secondary Education

Delays in fulfilling requirements for graduation are almost certain for students who do not plan their curriculum with the assistance of a Biology Department advisor.

DESCRIPTION OF COURSES

100 Principles of Biology

An introduction to the principles that apply to some of the essential processes common to most forms of life. The subunits of the cell are related to the activities of life that take place there. The elements and compounds that make up living systems are presented and followed through some of the main reactions of respiration and photosynthesis. The student is introduced to genetics, as well to the relationships of organisms to their environment. The laboratory encourages the development of scientific thinking, as the student attempts to interpret his observations and experiments. A college course in general chemistry taken previously or concurrently is recommended.

101 Animal Biology

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 Microbiology 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.
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

A study of the mechanisms of heredity in individuals, families, and populations. 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 physiological activities of organisms. Laboratory emphasizes the experimental approach to biological problems. Prerequisites: Organic Chemistry, Biology 101 or 102 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. Winter

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 structure, function, change and transmission of the genetic material. 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 Pathogenic 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).

**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.

518 Endocrinology 3 hrs. Fall
A study of integrative physiology regulated by hormonal and neuro-endocrine products. Prerequisite: Core biology program, biochemistry and an advanced physiology course 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. Fall
The classification and relationships of vascular plants by field and laboratory studies. Attention is given to family characteristics, evolutionary trends and geographical distribution. Prerequisite: 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. Winter

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. Prerequisites: Biology 100 and 101 or 102 or consent of instructor.

539 Animal Behavior 3 hrs.

Animal behavior with emphasis on evolution and ecology to include an introduction to the ethological point of view. Two student projects. Prerequisite: Biology 301 and consent of instructor.

540 Cell and Organ Culture Techniques 3 hrs.

The various techniques of cell and organ culture will be utilized to establish in vitro cultures of animal cells and to study specific cell types, such as macrophages, lymphocytes, and liver parenchyma. Specific problems of special interest to the students will be assigned. Prerequisite: 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.

546 General Cytology 3 hrs. Fall
A study of the nuclear and cytoplasmic structures of the cell involving cytochemistry and histochemistry. Principles of classical and electron microscopy will be considered. Prerequisites: An introductory course in biology. A course in physics and organic chemistry are highly recommended.

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.

551 Parasitology 3 hrs. Winter
A study of parasites and host-parasite relationships 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 of 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.

557 Tropical Marine Ecology

A study of the complex interrelationships of marine life off the coast of British Honduras. Individual and group projects will be conducted on the cays and atolls of the second largest barrier reef in the world. Students must be experienced swimmers and capable of snorkel diving. Prerequisite: Biology 301 and consent of Consortium Screening Committee. (Available only at Tropical Research Center, Belize, British Honduras)

558 Tropical Terrestrial Ecology

A study of the terrestrial ecology in the various regions of British Honduras. Various locations will be selected to investigate the structure and dynamics of a variety of tropical ecosystems. Prerequisite: Biology 301 and consent of Consortium Screening Committee. (Available only at Tropical Research Center, Belize, British Honduras)

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.
Chemistry

Don C. Iffland, Chairman
Robert H. Anderson
Shirley R. Bach
Donald C. Berndt
Donald J. Brown
Dean W. Cooke
J. Lindsley Foote
Robert E. Harmon
Paul E. Holkeboer
Thomas Houser
James A. Howell

Adli S. Kana'an
Joseph M. Kanamueller
George G. Lowry
Michael E. McCarville
Robert C. Nagler
Ralph K. Steinhaus
Jochanan Stenesh
George B. Trimitsis
H. Dale Warren

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. 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.

In order to complete an American Chemical Society Certified Chemistry Major, the following would be the expected minimum schedule of chemistry and prerequisite courses:

Freshman year:
General Chemistry 101 or 102, Qualitative Analysis 120, Mathematics I 122, Mathematics II 123
Sophomore year:
Organic Chemistry 362, Organic Chemistry 363, Mathematics III 222, Physics 210, Physics 211

Junior year:
Quantitative Analysis 222, Physical Chemistry 430, Physical Chemistry 431

Senior year:
Instrumental Methods 520, Inorganic Chemistry 510, Advanced Chemistry Elective 500 Level.

In addition the following are required for A.C.S. Certificates: reading knowledge of German or Russian and one advanced course in Mathematics or Physics or Chemistry.

The General Curriculum Chemistry Major requires 34 hours in chemistry including the basic sequence as in the A.C.S. Certificate program through Physical Chemistry except substituting Organic Chemistry 360 and 361 and electing 6 hours of chemistry at the 500 level.

Secondary Education and other chemistry majors require 30 hours of chemistry courses as in the General Curriculum including a minimum of 4 hours of Physical Chemistry.

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.

All of the above courses are curricular requirements, not to be graded as credit — no credit, if a chemistry major or minor is used for graduation. Students who plan to attend graduate school in chemistry should take a minimum of courses under the credit-no credit option.

Students who fail to earn a “C” or better grade in Chemistry 120, 360 or 362, and 430 will not be permitted to enroll in courses requiring these classes as prerequisites.

101 General Chemistry
4 hrs. Fall, Winter
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 4 hrs. Fall, Winter

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 4 hrs. Fall, Winter

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 3 hrs. Fall

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.

109 General Chemistry 4 hrs. Winter

This terminal course is not acceptable for chemistry major or minor or 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: Chem. 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: Chem. 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: Chem.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: Chem. 120.

361 Organic Chemistry  4 hrs. Fall

A continuation of course 360. Prerequisite: Chem. 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: Chem. 120.

363 Organic Chemistry  5 hrs. Winter

A continuation of course 362. Prerequisite: Chem. 362.

365 Introduction to Organic Chemistry  4 hrs. Fall, Winter

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 365 and 360 or 362. This course will not serve as prerequisite for 361 or 363. Prerequisite: Chem. 120.

430 Physical Chemistry  4 hrs. Fall

Lectures and laboratory work in kinetic theories of gases, liquids, solids, thermodynamics, phase rule, equilibrium, solutions, etc. Prerequisites: Chem. 120, Physics 210 and 211, Math. 222; corequisite: Chem. 222.

431 Physical Chemistry  4 hrs. Winter

Lecture and laboratory studies of kinetics, electrochemistry, quantum theory, spectroscopy, surface chemistry, macromolecules and crystal chemistry, etc. Prerequisite: Chem. 530.
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<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Term</th>
<th>Description</th>
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<tr>
<td>450</td>
<td>Introductory Biochemistry</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>A basic course in the chemistry and metabolism of carbohydrates, lipids, proteins and nucleic acids. Not applicable to chemistry majors. Prerequisites: Chem. 365 or 361 or 363.</td>
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<tr>
<td>452</td>
<td>Introductory Biochemistry</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>This course consists of 450 plus laboratory. Prerequisites: Chem. 365 or 361 or 363.</td>
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<tr>
<td>505</td>
<td>Chemical Literature</td>
<td>2 hrs.</td>
<td>Fall</td>
<td>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.</td>
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<tr>
<td>510</td>
<td>Inorganic Chemistry</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>The course includes descriptive and theoretical inorganic chemistry as well as preparation of different types of inorganic compounds. Prerequisite or co-requisite: Chem. 431.</td>
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<tr>
<td>520</td>
<td>Instrumental Methods in Chemistry</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>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. Prerequisite or co-requisite: Chem. 431.</td>
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<tr>
<td>535</td>
<td>Introduction to Physical Chemistry</td>
<td>4 hrs.</td>
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<td>Theory and applications of chemical structure, energetics, and rates and mechanisms of processes as a basis for understanding the principles of chemistry. Laboratory experiments are designed to emphasize quantitative measurements and the use of instrumentation in chemical systems. This course may not be applied to the requirements for a major in chemistry or for a graduate curriculum in chemistry. Prerequisites: 16 hrs. chemistry, Math 123, Physics 111 or 211.</td>
</tr>
<tr>
<td>550</td>
<td>General Biochemistry</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>A thorough study of the chemistry and properties of carbohydrates, lipids, proteins and nucleic acids. Includes a discussion of enzymes, coenzymes and biochemical energetics. Prerequisites: Chem. 361 or 363 and 430.</td>
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555 Biochemistry Laboratory  
3 hrs.
A course designed to acquaint the student with current methods used in biochemical research. Experiments will include gas chromatography, thin layer chromatography, electrophoresis, enzyme purification and assay, and techniques using radioactive isotopes. Prerequisites: Chem. 550 or 450 and 222.

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: Chem. 361 or 363 and 24 hrs. of chemistry.

562 Advanced Organic Chemistry  
3 hrs.
Covers such topics as organometallic compounds, heterocyclic compounds, dyes, introduction to photochemistry, organo-silicon compounds, etc. Prerequisite: Chem. 361, 363.

580 History of Chemical Theory  
2 hrs. Winter
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
Research work on a problem in chemistry in association with a faculty member. Prerequisites: 24 hours of chemistry, with approval of the Department Chairman and faculty director.

591 Special Problems in Chemistry  
2 hrs. Winter
Research work as in 590 which may be continuation of a problem. Prerequisites: as in 590.
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 Communication Arts and Sciences 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 Communication Arts and Sciences places a large share of responsibility on the student for designing his own curriculum, students planning to major or minor in CAS 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.
Following the declaration of a major in Communication Arts and Sciences, majors are required to complete 18 hours in the department.

1. Communication Arts and Sciences Major
A Communication Arts and Sciences major requires 30 semester hours of CAS, including CAS 170 and 27 hours to be arranged in consultation with the student and the appropriate advisers of the Department.

2. Communication Arts and Sciences: Education Major
An Education Major in Communication Arts and Sciences requires 30 semester hours of CAS, including the following courses: CAS 170, 562 for the secondary education major, or 561 for the elementary education major and minor.

II. MINORS *

Two minors are available.
Following the declaration of a minor in Communication Arts and Sciences, minors are required to complete 11 hours in the department.

1. Communication Arts and Sciences Minor
A Communication Arts and Sciences Minor requires 20 semester hours, including CAS 170 and 17 additional elective hours to be chosen in consultation with the appropriate advisers of the Department.

2. Communication Arts and Sciences: Education Minor
An Education Minor in Communication Arts and Sciences requires 20 semester hours of CAS for teaching in secondary and elementary schools, including the following courses: CAS 170, and for the elementary teacher, CAS 561**

*Petitions for exceptions to these policies should be submitted to the departmental chairman.
**To teach speech in a school accredited by the North Central Association, speech teachers are required to have either 24 semester hours in speech or 20 semester hours in speech and 4 semester hours in English. (Courses in Communication Arts and Sciences are counted as courses in speech.)
III. TRANSFER STUDENTS

Transfer students are permitted to transfer as many as 12 semester credit hours for a major and 9 hours for a minor in Communication Arts and Sciences.

IV. DEPARTMENTAL COURSES

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.

130 Public Speaking I**
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.

131 Parliamentary Procedure
1 hr.
Study and practice of the principles and rules which govern business meetings in voluntary organizations.

170 Interpersonal Communication I
3 hrs.
An introductory course in communication theory and practice in which a student utilizes his powers of speech to increase his effectiveness in interpersonal relationships through understanding of himself and others.

***Of courses CAS 102, 104 and 130, only one may be taken for credit.
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.

211 Readers Theatre I 2 hrs.

Introduction to the basic theory of readers theatre and participation in group reading of 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: CAS 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.

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.

236 Social Issues and Action Laboratory 1 hr.

A laboratory designed to offer experience in analyzing and participating in the communication processes related to current social issue programs. Students may accumulate a maximum of 4 hours credit.

240 Broadcasting Foundations 3 hrs.

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.

****May be used as a partial substitute for Arts and Ideas 222. See page 568.
244 International Broadcasting 3 hrs.
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.

270 Interpersonal Communication II 3 hrs.
A continuation of CAS 170 with a more intensive analysis exploring further dimensions of interpersonal relationships, with particular emphasis on listening. Prerequisite: CAS 170 or instructor's consent.

302 Theoretical Bases of Communication 3 hrs.
An examination of theories of perception, cognition, motivation and social psychology which relate to the process of communication.

307 Psycho-Physical Bases of Communication 3 hrs.
Examination of the physiological patterns of the cognitive, affective and psycho-motor aspects of communication. The course will include classroom and laboratory experience.

311 Readers Theatre II 2 hrs.
Selecting and arranging materials for readers' theatre; directing and participating in performances. Prerequisite: Readers' Theatre I.

320 Stage Direction 3 hrs.
Theory and application of basic principles of directing and staging plays with particular emphasis upon production problems of school and community. Prerequisite: CAS 222 or instructor's consent.

321 Play Production for High School Teachers 4 hrs.
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 5 hrs.
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 3 hrs.

Study of historic costume as adapted for the stage. Practical laboratory experience in costume construction offered in conjunction with University Theatre productions.

331 Persuasive Speaking 3 hrs.

The study and application of logical, emotional and ethical principles of persuasion.

334 Logical Bases of Communication 3 hrs.

Logical methods of inquiry in the analysis and construction of messages related to contemporary problems in society.

335 Leadership 3 hrs.

A study of the characteristics and behaviors of leaders with emphasis on the development of leadership abilities in the individual for different group situations.

340 Radio Production 3 hrs.

Analysis of radio as a creative medium. Production of radio programs including news, documentary and drama. Limited enrollment. Prerequisite: CAS 240 and/or consent of instructor.

341 Radio and Television Writing 3 hrs.

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 3 hrs.

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 2 hrs.

Provides the student 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 3 hrs.

History, aesthetics, form, function, method of film; study of outstanding examples of experimental, documentary, and feature films.

370 Special Topics in Communication 3 hrs.

An investigation of topics of special interest related to the area of communication.
398 Independent Study  
1-6 hrs.

Designed to allow outstanding students to work independently under staff supervision. Includes extensive study, research or special creative projects in any of the several areas of Communication Arts and Sciences. One to six hours credit may be accumulated. Prerequisite: Consent, Chairman of Department.

470 Communication, Social Issues and Change  
3 hrs.

A study and practical application of communication and rhetorical methodology in contemporary social problems.

510 Studies in Oral Interpretation  
3 hrs.

Projects in reading and analysis of literature to intensify the student's application of the theory and principles of oral interpretation, including oral interpretation of Shakespeare, oral interpretation of the Bible, and oral interpretation of selected long literary forms. Topics will vary from semester to semester and students may repeat the course.

520 Studies in Theatre  
3 hrs.

Selective study within a broad range of aspects of theatre. Emphasis is upon concepts, theory and advanced skills. Topics include acting, directing, theatre production, dramaturgy, creative dramatics and children's theatre. Topics will vary from semester to semester. Students may repeat the course.

526 History of the Theatre  
3 hrs.

From the beginning to the English Renaissance.

527 History of the Theatre  
3 hrs.

From the English Renaissance to the present day.

529 Stage Design  
4 hrs.

A course for students in design, including stage lighting and stage settings. Includes laboratory practice in staging University Theatre productions.

530 Studies in Rhetoric  
3 hrs.

Selected areas of detailed study within the total range of rhetoric, including such possible areas as conflict resolution, ethics and freedom of speech, historical bases of rhetoric and others. Topics will vary from semester to semester and students may repeat the course.

540 Studies in Broadcasting  
3 hrs.

Analysis in depth of current and continuing issues in broadcasting including such topics as broadcast development, regulation.
political broadcasting and effects of broadcasting. Topics will vary from semester to semester and students may repeat the course.

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: Communication Arts 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. Possible topics include directing speech activities, communication behaviors of change agents, as well as others. Topics will vary from semester to semester and students may repeat the course.

561 Teaching Speech in the Elementary School 4 hrs.

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 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 extracurricular 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.

Selected areas of study within the total range of communication include such possible topics as interpersonal theories of communication, non-verbal communication, personality and communication, introduction to communication research, semantics and others. Topics will vary from semester to semester and students may repeat the course.

598 Independent Studies 1-4 hrs.

A program for advanced students with an interest in pursuing independently a program of readings, research or projects in areas of special interest. To be arranged in consultation with a member of the staff and the chairman of the department.
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 (306), Price Theory (303), and Statistics (502). 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.
150 (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 or students who have taken 201 or 202.

201 Principles of Economics 3 hrs. Fall, Winter
An introduction to microeconomics, the study of the price system and resource allocation, problems of monopoly, and the role of government in regulating and supplementing the price system. Prerequisite: Sophomore standing.

202 Principles of Economics 3 hrs. Fall, Winter
An introduction to macroeconomics, the study of total output and employment, inflation, economic growth, and introduction to international trade and development. Prerequisite: Econ 201.

303 (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.

306 (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.

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.

405 (505) History of Economic Thought 3 hrs. Winter
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. 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.

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.

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: Econ. 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: Anthro. 231, Econ. 201 and 202 and/or consent of instructor.

545 The Economics of Location 3 hrs. Winter
The application of economic analysis to the study of the location of economic activities as determined by transportation and the spatial distribution of resources and markets. Consideration is given to selected industry studies; problems in urban land usage, congestion, and the environmental affects of various economic activities. Prerequisites: Econ. 201 and 202.

LABOR ECONOMICS

410 (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. 410 or 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

420 (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.

424 (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.

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. 420.

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 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, inter-governmental economic relationships. Prerequisites: Econ. 201 and 202.
306 College of Arts and Sciences

INDUSTRIAL ORGANIZATION AND PUBLIC CONTROL

404 The Structure and Performance of Industry  3 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.

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 need 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

480 (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.

484 (584) Comparative Economic Systems 4 hrs. Fall
The economic institutions and conditions of capitalism, socialism, communism, fascism, and the cooperative movement are critically examined as to ideology and actual operation. Prerequisites: Econ. 201, 202 or consent of instructor.

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 macro-economic 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.

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. Prerequisites: Econ. 201 and 202.

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 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.
REQUIREMENTS FOR ENGLISH MAJORS
AND MINORS

Major and minor slips are not required. However, all majors should, as soon as they decide to become majors, confer with the Associate Chairman for Undergraduate Studies or one of the other departmental undergraduate advisors.
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**

All transfer students majoring or minoring in English should consult with the appropriate Associate Chairman, either undergraduate or graduate, or with one of the Department’s undergraduate advisors, about transferring English course credit from other colleges to Western Michigan University. An early conference will enable the student to avoid duplication of courses and possible loss of transfer credit.

**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. Sixteen 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 314, 316, 317. 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 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. Sixteen 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 314, 316, 317. These courses emphasize literature written before 1900.

Teaching of English (English 380) 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 Communication Arts and Sciences 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 314, 316, 317. 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 Communication Arts and Sciences 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.

**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**

An introduction to the study of literature, aimed at developing sensitivity and skill in the critical interpretation of poetry, drama, and prose fiction.

**210 Film Interpretation**

Studies in the motion picture as art form.
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: Recurrent Themes 4 hrs.
A study of some of the recurrent themes in American life as seen in American literature. Prerequisite: 110.

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.

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 American Literature: Major Writers
4 hrs.
Intensive reading of representative works of major American writers. Prerequisite: 110.

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.

340 (240) Development of English Verse
4 hrs.
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 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 preregistration.

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 Topics in American Literary History* 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 in English Translation* 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* 4 hrs.
English literature from the Restoration through Pope and Swift. Prerequisite: 110.

535 18th Century Literature* 4 hrs.
536 Romantic Literature* 4 hrs.
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* 4 hrs.
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, Browning, and Arnold. Prerequisite: 110.

538 Modern Literature 4 hrs.
Studies in the international literature of the 20th century, with some attention to their precursors. Prerequisite: 110.

543 Elizabethan and Jacobean Drama* 4 hrs.
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* 4 hrs.
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 4 hrs.
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 4 hrs.
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 toward an English major or minor. Prerequisite: A beginning course or considerable experience in creative writing.

574 Linguistics for Teachers 4 hrs.
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.

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
Val L. Eichenlaub
Rainer R. Erhart
Charles F. Heller
Oscar H. Horst
William B. Hunsberger
Eugene C. Kirchherr
Philip P. Micklin
Henry A. Raup
Hans J. Stolle
Joseph P. Stoltman
Eldor C. Quandt
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

225 Introduction to Meteorology and Climatology .......... 4 hrs.
244 Economic Geography ........................................ 3
380 Geography of Anglo-America ............................. 3
560 Principles of Cartography .................................. 4
566 Field Geography .............................................. 4
Electives in geography chosen with consent of Counselor 12 hrs.
Supporting required course: Geology 230

NON-TEACHING MINOR
20 HOURS

225 Introduction to Meteorology and Climatology .......... 4 hrs.
244 Economic Geography ........................................ 3
380 Geography of Anglo-America ............................. 3
Electives in geography chosen with consent of Counselor 10
ELEMENTARY EDUCATION MAJOR
30 HOURS

105 Physical Geography ............................................. 4 hrs.
205 Introduction to Human Geography .............................. 3
380 Geography of Anglo-America .................................... 3
460 Instructional Methods in Geography ............................. 3

(Geography 460 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 323)

Required supporting course: Geology 112.

ELEMENTARY EDUCATION MINORS
20 HOURS

105 Physical Geography .................................................. 4 hrs.

Electives to a total of at least 16 semester hours will be chosen with the approval of the departmental counselor. One of the electives should be Geography 460, Instructional Methods in Geography.

SECONDARY EDUCATION MAJOR
30 HOURS

105 Physical Geography .................................................. 4 hrs.
225 Introduction to Meteorology and Climatology ................. 4
244 Economic Geography .................................................. 3
380 Geography of Anglo-America ....................................... 3

or

350 Principles of Conservation and Resource Management ........ 3

460 Instructional Methods in Geography .............................. 3

(Geography 460 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.

Required supporting course: Geology 112.
SECONDARY EDUCATION MINOR
20 HOURS

105 Physical Geography .............................................. 4
225 Introduction to Meteorology and Climatology .................. 4
244 Economic Geography ............................................. 3
380 Geography of Anglo-America ..................................... 3
or
350 Principles of Conservation and Resource Management ........... 3
460 Instructional Methods in Geography ............................. 3

(Geography 460 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.

(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 investigations. 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

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

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

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

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.

555 Contemporary Issues in Resources Management

Geographic analysis of selected contemporary natural resource and environmental problems, such as questions of natural resource adequacy, environmental pollution, political and economic problems related to resource management, and individual studies of local environmental problems. Prerequisite: Geog. 350 or consent.

556 Land Use Planning

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 back-
ground 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

The following regional courses which are listed in the graduate
catalog may, by special permission, be taken for undergraduate
credit: 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520.

206 World Regional Geography 5 hrs.

A survey of world geography utilizing the tools of regional analy-
sis in the study of major geographic realism.

311 Geography of Michigan 3 hrs.

This course is primarily designed to provide teachers in geo-
graphy with a full understanding of the distribution of population,
resources, forms of economic activity, and recreational land use in
the home state.

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 pre-
sent 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.

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 interrelationships 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

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

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

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

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

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

(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.

(Sci. Credit) 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 department adviser and instructor.

**Geology**

Richard A. Davis, Jr.
John D. Grace
W. David Kuenzi
Richard V. McGehee

Richard Passero
Lloyd J. Schmaltz
W. Thomas Straw

**GEOLOGY MAJOR (MINIMUM 31 HOURS)**

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>Physical Geology 230</td>
<td>4</td>
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<tr>
<td>Earth History and Evolution 231</td>
<td>4</td>
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<tr>
<td>Mineralogy 335</td>
<td>4</td>
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<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>
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<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
</tr>
<tr>
<td>Senior Seminar in Geology 460</td>
<td>2</td>
</tr>
<tr>
<td>Stratigraphy &amp; Sedimentation 535</td>
<td>4</td>
</tr>
</tbody>
</table>

A minimum of a “C” is required in each of the required courses.

Supporting required courses: Chemistry 101 or 102 (for students with a high school chemistry background), and 120 or 103 and 109;
Physics 110 and 111, or 210 and 211; 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 101 or 102, 120, 222 and 430.

**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.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Physical Geology 230</td>
<td>4</td>
</tr>
<tr>
<td>Earth History and Evolution 231</td>
<td>4</td>
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<tr>
<td>One of the following options is recommended:</td>
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<tr>
<td>Mineralogy 335</td>
<td>4</td>
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<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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<td></td>
<td>22</td>
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<td>or</td>
<td></td>
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<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>
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<td></td>
<td>18</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

<table>
<thead>
<tr>
<th>Major (30 hours)</th>
<th>S.H.</th>
<th>Minor (21 hours)</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td></td>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>Astronomy 105</td>
<td>4</td>
<td>Astronomy 105</td>
<td>4</td>
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<tr>
<td>Introduction to</td>
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<tr>
<td>Meteorology and</td>
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<td>Meteorology and</td>
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<tr>
<td>Climatology 225</td>
<td>4</td>
<td>Climatology 225</td>
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<tr>
<td>Physical Geology 230</td>
<td>4</td>
<td>Physical Geology 230</td>
<td>4</td>
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<tr>
<td>Earth History and</td>
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<td>Earth History and</td>
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<tr>
<td>Evolution 231</td>
<td>4</td>
<td>Evolution 231</td>
<td>4</td>
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<tr>
<td>Oceanography 300</td>
<td>3</td>
<td>Oceanography 300</td>
<td>3</td>
</tr>
<tr>
<td>Minerals and Rocks 301</td>
<td>3</td>
<td>Teaching of Earth Science</td>
<td>2</td>
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<tr>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary Field Geology</td>
<td>2</td>
<td></td>
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<tr>
<td>339</td>
<td>3</td>
<td></td>
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<tr>
<td>Electives</td>
<td>3</td>
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</tbody>
</table>

The earth science major and minor are only for students preparing to teach in elementary and secondary schools. Other students interested in this subject area should consider a geology major or minor with additional supporting courses as required. One semester each of chemistry and physics are required for the earth science major.

### GROUP SCIENCE MINOR (Minimum 24 hours)

The group science minor is designed for students preparing to do professional work in geology. All such students must complete this minor or they may elect to substitute a biology, chemistry, or mathematics minor. If such substitution is made all other courses in the group minor must be taken as supporting required courses. Some modification of these requirements may be made in consultation with the student's departmental advisor.
Required Courses

Chemistry
General Chemistry 101 or 102 4
Qualitative Analysis or
General Chemistry 103 4
General Chemistry 109 4

Physics
General Physics 110 4
General Physics 111 or Mechanics and Heat 210 4
Electricity and Light 211 4

Electives
At least 5 credit hours selected from the physical or biological sciences with approval of student’s advisor.

Electives

Biology
Principles of Biology 100 3

S.H.

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. A discussion session may replace one lecture.

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 Earth History and Evolution 4 hrs.

Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: Geology 230 or consent.

300 Oceanography 3 hrs.
Fall, Winter

Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography. Lecture 3 hours a week. Prerequisite: 8 hours of science.
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.

307 Teaching of Earth Science 2 hrs. Fall
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. Prerequisites: 16 hours of Earth Science (including Geology 230 or 112) or consent.

335 Mineralogy 4 hrs.
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.
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 335.

339 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 335 or 301.

430 Structural Geology 3 hrs.
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 440, or consent of instructor.

434 Problems in Geology 2 hrs.
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.

440 Petrology and Petrography 3 hrs.
Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 336.
460 Senior Seminar in Geology  2 hrs. Winter

A seminar designed to provide senior students with the opportunity to examine and discuss important topics in geology. Senior geology majors are required to elect this course for one semester for 2 credit hours. 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 earth sciences. May be repeated for credit. Prerequisite: Consent of instructor.

520 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.

532 Geomorphology  3 hrs. Winter

A systematic study of the development of land forms as created by the processes of vulcanism, gradation, and disatrophism 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.
MAJORS AND MINORS IN HISTORY

Major and minor slips are not required, except for those who wish to transfer History course credit from another college. However, all majors and minors should register at the History Department office, complete a personal data form, and arrange for an interview with the Department’s Administrative Assistant.

There are no required cognate courses. However, since the academic discipline of History is closely allied with the social sciences and humanities, majors and minors are advised to elect courses in the following areas: Anthropology, Art history, Economics, English, Geography, Philosophy, Political Science, Religion, and Sociology. Students planning to do graduate work beyond the M.A. are advised to study two languages. French and German are most frequently required in graduate school. Students planning to teach History in the secondary school should elect Social Science 300, Teaching of Social Studies in Secondary Schools, and those planning to teach in the Elementary school should take Social Science 507, Teaching of Social Studies in Elementary Schools. Credit earned in these courses cannot be counted towards a History major or minor.
Courses taken on a Credit/No Credit basis may not be counted towards the major, except with the approval of the Department Chairman or Administrative Assistant. While many graduate schools will accept students who have elected a significant amount of work on a Credit/No Credit basis, admission may then depend on the results of the Graduate Record Examination or some comparable test. Graduate schools and school employers generally favor those applicants who have good letter-grades on their transcripts.

The following History substitutes for GS-304, Introduction to the Non-Western World, also will count towards the major or minor; History 381, 386, 581, 583, 585.

REQUIREMENTS FOR THE MAJOR

1. Basic courses: The following four courses or their equivalents:
   (a) Western Civilization 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. At least two of the five 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: (310, 312, 314, 316, 342, 343, 375, 508, 509, 514, 515, 516, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 535, 536, 537, 538, 539.)

   (b) Ancient, medieval, or modern European history: (346, 349, 350, 351, 352, 353, 506, 507, 534, 544, 551, 552, 553, 554, 555, 557, 558, 559, 560, 562, 563).


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 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.

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.

Questions about transferring History course credit from other colleges or about the equivalency of History courses elsewhere to those at this University should be addressed to the Administrative Assistant.

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 for all History courses taken at the college level, and declared himself a History major.

Each honors student in History is expected to earn a 3.5 grade point average for all courses counted towards the major. The major will include completion of one of the alternatives in these two categories: a) History 390 or History 593, and b) History 490 or the combination of History 470 and History 598. Finally, the honors student must pass a comprehensive oral examination. The honors program within a History major is arranged in consultation with the Departmental Honors Chairman.
BASIC COURSES

100 Early Western Civilization (to 1648) 4 hrs.
For description, see College of General Studies.

101 Modern Western Civilization (since 1648) 4 hrs.
For description see College of General Studies.

210 The United States to 1877 3 hrs.
A survey of American history from colonial beginnings to the end of the Reconstruction.

211 The United States Since 1877 3 hrs.
A survey of 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 (299) 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.

314 History of the American Negro 3 hrs.
A survey of the black man's experience from African origins to the contemporary American scene. Although the changing cultural and historical framework will not be ignored, attention will center on what the black man did, said, and thought. Individual reading assignments on the lives of outstanding figures from Phillis Wheatley to Eldridge Cleaver will be utilized.

315 (515) Popular Art and Architecture in America 3 hrs.
Introduction to popular themes in American history as shown in paintings, buildings, cartoons and commercial art. While issues will vary, the topics will include the Middle-Americans, the Environment, the Frontier, the City, and Industrialization. Extensive use will be made of local illustrations which could be adapted to elementary and secondary teaching.
316 Economic History of the United States 3 hrs.
A study of American economic growth and change from colonial beginnings to the present designed to enhance the student's grasp of the dynamics of the economic process through time. Important topics or themes examined include: the changing fortunes and significance of various socio-economic groups, the impact of technology and research, the methods and devices of capital accumulation, the economic role of government, particularly in times of war and depression, the rise of large-scale, heavy 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.
**College of Arts and Sciences**

**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.

**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-Columbian 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.

**375 (575) Canadian History** 3 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.

**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

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. To be eligible for this course, a student must have an over-all minimum grade point average of 3.0 and a 3.2 minimum grade point average for all History courses, and secure the approval of the supervising instructor and the chairman of the Department's individualized courses prior to registration.

490 Honors Seminar  
3 hrs.

Presentation of an Honors Essay by students working for Honors in History. Apply to the Department Honors Chairman for admission.

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. To be eligible for this course, a student must have an over-all minimum grade point average of 2.7 and a 3.0 minimum grade point average for all History courses, and secure the approval of the supervising instructor and the chairman of the Department's individualized courses prior to registration.

SPECIAL COURSES

These courses are designed to show the usefulness of the historical approach for the understanding of the great and relevant issues confronting modern man. These courses will offer multiple sections, each of which may deal with a different topic as listed in the Schedule of Classes. The course may be repeated for separate credit as long as the topic varies. Representative topics which may be treated include the Palestinian problem, contemporary British thought, the military in modern German society and European social revolutions.

300 Issues in History  
2—3 hrs.

500 Problems in History  
2—3 hrs.
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 emergency 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. Not offered on a regular basis.

514 Black History: The Impact of Black People on American Thought and Life   3 hrs.

The juxtaposition of traditional interpretations of American History, such as slavery, abolition, Reconstruction and civil rights, against the perspectives of such men as Delany, Garnet, DuBois, Garvey and Malcolm X, as well as the study of responses in literature, the arts, religion and politics to race philosophy.
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.

518 History of United States Foreign Relations 3 hrs.
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 3 hrs.
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 3 hrs.
The American colonies: imperial foundations, political, economic, and cultural developments to 1763.

521 Era of the American Revolution, 1763-1789 3 hrs.
The causes, character, and consequences of the American Revolution.

522 The Early National Period, 1789-1848 3 hrs.
The establishment of the national government; political, social, and cultural development; Jacksonian democracy; westward expansion.

523 (629) The American West 3 hrs.
A survey of the West in American history from colonial times to the closing of the frontier in 1890, with emphasis on the development of Indian policy, land policy, and territorial and state governments.

524 The Civil War and Reconstruction 3 hrs.
Causes and course of the Civil War, its significance and aftermath.

525 (532) Recent United States History, 1877-1914 3 hrs.
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 (532/533) Recent United States History, 1914-1940 3 hrs.
American History from the beginning of the First World War to the end of the New Deal, with emphasis on the war, 1920’s, the depression and the New Deal.
527 (533) Recent United States History Since 1940 3 hrs.
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 3 hrs.
History of Medieval France from the Germanic invasions and settlement through the 15th century, including the study of such topics as the monarch, rural and urban economic development, social classes, the church and French culture.

535 Medieval England 3 hrs.
English history from the 5th to the 15th centuries, with emphasis on governmental, religious, economic, and social institutions.

536 Tudor-Stuart England 3 hrs.
The history of England during the reigns of the Tudors and the Stuarts, 1485-1714.

537 Hanoverian England 3 hrs.
Britain during the reigns of the Hanoverian kings, 1714-1837.

538 Victorian England 3 hrs.
The character of Victorian England and its impact on the world.

539 Twentieth-Century Britain 3 hrs.
British development since 1900 and the changing character of the Empire and Commonwealth.

540 Social and Cultural History of Tsarist Russia 3 hrs.
Significant intellectual currents in 18th- and 19th-century Russia with emphasis on the relationship between ideas and society.

541 The U.S.S.R. in World Affairs 3 hrs.
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. 3 hrs.
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.
544 (664) Modern France  

An examination of the major political, social and economic developments in France in the nineteenth and twentieth centuries.

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 on 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.

554 The Renaissance  

A survey of man’s endeavors in politics, thought, art and literature in Renaissance Europe.

555 The Reformation  

The break-up of the medieval church and its significance.

557 Seventeenth Century Europe  

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  

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  

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  

The reaction following the Napoleonic wars; revolutions in be-
half 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 Europe.

V. Latin America

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.

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.
History

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 emergency 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 the 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. The course may be repeated for separate credit as long as the topic varies.

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.
Modern and Classical Languages

Roger L. Cole, Chairman

Elsa Alvarez  Donald Gardner  William McGranahan
Mercedes Cardenas  Elizabeth Giedeman  Frances E. Noble
Victor Coutant  Paule M. Hammack  Genevieve Orr
Monique Y. Coyne  Arturo Jasso  George F. Osmum
Philippe de Gain  Herb B. Jones  Alta Richmond
Robert Felkel  Johannes Kissel  James D. Semelroth
Robert Griffin  Peter W. Krawutschke  Irene V. Storoshenko
Benjamin Ebling  Erika Mai  James R. Underwood
Jeffrey Gardiner  Manuel Mantero  Lindsey Wilhite
Charlotte Wright

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.

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 no more than four hours of 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 Adviser for his language.

Native speakers of a given language must consult with a departmental advisor before registering for courses up through the 300 level. A student planning a language major should consult with a departmental adviser 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 (minimum of 20 credit hours for an undergraduate minor) beyond the 100-level (basic) courses. At least two 500-level courses must be included. All majors and minors are to follow the course patterns listed below.

**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 Instructions 558 may not be counted toward a minor.

**German Major**
Thirty hours beyond the 100-level to include 316, 317, 326, 327 and two 500-level courses.

**German Minor**
Twenty hours beyond the 100-level to include 316 and 317. Modern Language Instruction 558 may not be counted toward a minor.

**Latin Major**
Thirty hours beyond the 100-level with courses selected from the 200-500-series. Teaching majors must include 552 and 557.

**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 Major**
Thirty hours beyond the 100-level to include section 316.

**Russian Minor**
Twenty hours beyond the 100-level to include section 316.
Spanish Major

Thirty hours beyond the 100-level to include 328 or 329, and two 500-level courses other than 558. Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558.

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 Graduate College.

For courses in Independent Study, consult listings under the individual language concerned.

Spanish Minor

Twenty hours beyond 100-level to include 328 or 329. Modern Language Instructions 558 may not be counted toward a minor.

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 hrs. 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—SEE LINGUISTICS
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 and Winter Semesters and for German in the Winter Semester.

The comparable methods course for Latin, 557 Teaching of Latin, is described under Latin offerings.

FRENCH

100 Basic French 4 hrs.
Fundamentals of French with audiolingual emphasis. French cultural readings.

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 4 hrs.
Emphasis upon increasing the student's command of written French. Prerequisite: French 201 or equivalent.

317 French Conversation 4 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.

*Though it may not be counted in the minor.
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<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>320</td>
<td>French Phonetics</td>
<td>3 hrs.</td>
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<td>Study and practice to correct typical</td>
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<td>difficulties encountered by students of</td>
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<td>French with Anglo-American patterns of</td>
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<td>pronunciation; also to study the teaching</td>
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<td>of French patterns. Prerequisite: French</td>
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<td></td>
<td>201 or equivalent.</td>
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<tr>
<td>322</td>
<td>French Civilization</td>
<td>3 hrs.</td>
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<td></td>
<td>A study of selected aspects of French life</td>
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<td>and culture and their historical settings.</td>
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<td></td>
<td>Prerequisite: French 201 or equivalent.</td>
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<tr>
<td>328</td>
<td>Survey of French Literature</td>
<td>3 hrs.</td>
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<td>Readings in French Literature from its</td>
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<td>beginnings to the French Revolution.</td>
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<td></td>
<td>Prerequisite: French 201 or equivalent.</td>
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<tr>
<td>329</td>
<td>Survey of French Literature</td>
<td>3 hrs.</td>
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<td>Continuation of French 328. Readings in</td>
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<td>nineteenth and twentieth century</td>
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<td></td>
<td>literature. Prerequisite: French 201 or</td>
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<td>equivalent.</td>
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**OPEN TO UPPERCLASSMEN AND GRADUATE STUDENTS**

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<th>Course</th>
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<th>Credits</th>
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<tr>
<td>400</td>
<td>Elementary Reading for Graduate Proficiency</td>
<td>4 hrs.</td>
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<td>Basic grammar and elementary reading for</td>
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<td>translation and research purposes. The</td>
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<td>course is for the graduate who has had</td>
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<td>little or no study in the language. Course</td>
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<td>open to advanced undergraduates upon</td>
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<td>recommendation of major adviser and by</td>
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<td>&quot;C&quot; card. No oral work.</td>
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<td>401</td>
<td>Intermediate Reading for Graduate Proficiency</td>
<td>4 hrs.</td>
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<td>Prerequisite: 400 or equivalent. Readings</td>
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<td>in the language at intermediate and advanced</td>
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<td>purposes. Special attention will be given</td>
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<td>to student's major field. Completion of</td>
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<td>401 with a minimum grade of B constitutes</td>
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<td>graduate proficiency in the language. Open</td>
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<td>&quot;C&quot; card.</td>
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<td>544</td>
<td>Seminar in France</td>
<td>4 hrs.</td>
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<td>A summer study of French language,</td>
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<td></td>
<td>literature, and culture concentrated at</td>
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<td>Grenoble and Paris. Designed especially for</td>
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<td>teachers and advanced college students of</td>
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<td>French, the course consists of three weeks</td>
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<td>of formal classes at the University of</td>
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<td>Grenoble with regularly scheduled lectures</td>
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<td>and discussions in the French language on</td>
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<td>questions relating to French history,</td>
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<td>institutions, social problems, linguistics,</td>
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<td>and teaching methods. The session at</td>
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<td>Grenoble is supplemented by twelve days</td>
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<td>of organized inspection of cultural</td>
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<td>monuments in Paris with full explanations</td>
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<td>by an instructor for all points visited.</td>
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<td>Each student submits a term paper</td>
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<td>investigating one</td>
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phase of his studies of particular interest to him. Graduate or undergraduate credit.

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: one 500 level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

551 **Advanced French Grammar and Composition** 3 hrs.

Intensive review of French structure and practice in composition. 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 Literature—Outstanding works from various genres from the medieval period.
- Renaissance Literature—Outstanding works from the period, to include Montaigne, Rabelais and the Pleiades.
- Seventeenth Century Literature—Preclassic period: Reforms of Malherbe, Preciosite, 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—Studies in romanticism.
- Nineteenth Century Literature—Studies in realism and naturalism.
- Twentieth Century Literature—Studies in the contemporary novel.
- Twentieth Century Literatures—Studies in the modern French theatre.

575 **The French Novel in Translation** 3 hrs.

Selected French novels analyzed structurally and thematically from *La Princesse de Cleves* to *Combray*. Not to be counted toward a major or minor sequence in French.
GERMAN

100 Basic German 4hrs.
Fundamentals of German with audiolingual emphasis. German cultural readings. Does not count toward a major or a minor.

101 Basic German 4 hrs.
Continuation of 100. Prerequisite: German 100 or equivalent. Does not count toward a major or a minor.

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 equivalent.

327 Readings in German Literature 4 hrs.
Selected dramas and prose from the 19th and 20th centuries, including such writers as Brecht, Durrenmatt, Boll, Bergengruen. Prerequisite: 201 or 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 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.

510 German Life and Culture 3 hrs.

Investigates cultural aspects necessary for an understanding of Germany. Historic, geographic, social and religious factors are treated. Prerequisites: 316, 317, 326, and 327 or equivalent.

528 Survey of German Literature 3 hrs.

A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: 316, or 317, and 326 or 327.

529 Survey of German Literature 3 hrs.

A comprehensive study of German literature from German Realism to the present. Prerequisites: 316, 317, 326, and 327 or equivalent.

550 Independent Study in German 1-3 hrs.

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 3 hrs.

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 3 hrs.

Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: German 316 and 317.

559 History of the German Language 3 hrs.

Survey of the development. Prerequisite: 6 hours of 300-level German or above.

560 Studies in German 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. Prerequisites: German 316, 317, 326, and 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 a minor in German.

**GREEK**

101 **Basic Greek**   4 hrs.
Introduction to the fundamentals of classical Greek emphasizing essential grammar, syntax, and vocabulary required for the reading of simple texts.

200 **Intermediate Greek**   3 hrs.
Review of basic grammar and syntax. Selections for Xenophon and Plato. Prerequisite: Greek 101 or equivalent.

201 **Intermediate Greek**   3 hrs.
Continuation of 200. Prerequisite: Greek 200 or equivalent.

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.

**ITALIAN**

100 **Basic Italian**   4 hrs.
Fundamentals of Italian with audiolingual emphasis. Italian cultural readings.

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.

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).

200 Cicero 4 hrs.

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 4 hrs.

Reading from the Metamorphoses with special attention to grammar, prosody, and myth. Prerequisite: Latin 101 or two years of high school Latin.

204 Vergil 4 hrs.

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 4 hrs.

Continuation of 204. Prerequisite: Latin 204 or equivalent.

324 Latin Literature 4 hrs.

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 4 hrs.

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  3 hrs.

Selected *Odes* and *Epodes* of Horace as poetry. Special study of structure, meter, symbolism and aesthetic and philosophic meanings.

327 Latin Comedy  3 hrs.

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.

557 Teaching of Latin  3 hrs.


560 Studies in Latin 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: 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.

568 Mythology 3 hrs.
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.

575 Classical Drama in Translation 3 hrs.
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.

RUSSIAN

100 Basic Russian 4 hrs.
Fundamentals of Russian with audiolingual emphasis. Russian cultural readings.

101 Basic Russian 4 hrs.
Continuation of Russian 100. Prerequisite: Russian 100 or equivalent.

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  
Introduction to the Russian novel with consideration of the historical, social, and cultural settings. Prerequisite: Russian 201 or equivalent.

328 Survey of Russian Literature  
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  
Directed, individual study of a specific topic in a Russian literary or linguistic area. Departmental approval required for admission.

510 Russian Civilization  
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  
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 pre-romantic periods.
- Nineteenth Century Literature—Representative selections from the period.
- Twentieth Century Literature—Primarily Gorky, Blok, Mayakovsky, Lenov, and Sholokhov.
SPANISH

100 Basic Spanish  
Fundamentals of Spanish with audiolingual emphasis.  
4 hrs.

101 Basic Spanish  
Continuation of 100. Prerequisite: Spanish 100 or equivalent.  
4 hrs.

200 Intermediate Spanish  
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.  
4 hrs.

201 Intermediate Spanish  
Continuation of 200. Prerequisite: Spanish 200 or equivalent.  
4 hrs.

316 Spanish Composition  
Emphasis upon increasing the student's command of written Spanish. Prerequisite: Spanish 201 or equivalent.  
3 hrs.

317 Spanish Conversation  
Emphasis upon increasing the student's command of spoken Spanish. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).  
3 hrs.

322 Life and Culture of Spain  
A study of the ethnic, sociological development, music, art, and folklore of Spain as a basis for comprehension of the Spanish people with emphasis on individualism. A background for study of Hispanic literature, history, or culture. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).  
3 hrs.

323 Life and Culture of Latin America  
A study of Latin-American life and culture based on ethnic, historical, social, religious, and literary considerations. Prerequisites: Spanish 316 or equivalent (316 may be taken concurrently).  
3 hrs.

328 Introduction to Spanish Literature  
Synoptic literary selections with cultural and historical background. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).  
3 hrs.

329 Introduction to Spanish-American Literature  
Synoptic literary selections with cultural and historical background. Prerequisite: Spanish 316 or equivalent. (316 may be taken concurrently).  
3 hrs.
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.

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. 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 Fernan Caballero through Blasco Ibanez.
- 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.

575 Spanish-American Literature in English Translation 3 hrs.
Selected prose and poetry from late 19th century (Ruben Dario and Modernismo) to the contemporary writers of Hispanoamerica. (Credit not applicable to majors or minors in Spanish)

*Prerequisite: a minimum grade point average of 3.0 in the major; not open to minors.*
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 Department of Linguistics, 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 six different departments in the College of Arts and Sciences, 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 Linguistics minors requires a minimum of twenty hours of credit, of which twelve hours must be taken in the Department of Linguistics and eight hours may be taken in approved courses in other specified departments. Both majors and minors are required to consult with the Department Chairman and to receive a signed recommendation for their program.

Linguistics is suggested as a supporting major or minor for majors in Anthropology, Communication Arts and Sciences, English, French, German, Latin, Philosophy, Psychology, Russian, Sociology,
Spanish, 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.

Linguistics has been approved by the State Board of Education as a minor or second major in the Secondary Education Curriculum, as a second major in the Junior High School Curriculum, and as a minor in the Elementary Curriculum.

The Critical Language Minor is a non-teaching program for those undergraduates who wish to specialize in one of a limited number of uncommon languages. Interested students must consult with the Critical Languages Supervisor in the Department of Linguistics to determine which languages are eligible for this minor and to receive a signed recommendation for their program.

**PROGRAMS**

**LINGUISTICS MAJOR AND MINOR**

**I. INTRODUCTORY COURSES**
(all majors and minors—4 hrs.)

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<td>Linguistics</td>
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<td>200 Linguistic Analysis</td>
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<tr>
<td>500 Introduction to Linguistics</td>
<td>4 hrs.</td>
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**II. PHONOLOGY COURSES**
(majors—4 hrs.; minors—2-4 hrs.)

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<tr>
<td>Linguistics</td>
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<td>320 (520) Phonological Analysis</td>
<td>4 hrs.</td>
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<th>Speech Pathology</th>
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<td>202 Anatomy and Physiology of Speech</td>
<td>3 hrs.</td>
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<td>204 Phonemics</td>
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<th>French</th>
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<td>320 French Phonetics</td>
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**III. STRUCTURE COURSES**
(all majors and minors—4 hrs.)

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<tr>
<td>330 (530) Grammatical Analysis</td>
<td>4 hrs.</td>
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Linguistics

English
270 English Language .................................................. 4 hrs.

Graduates/Undergraduates
Linguistics
570 Studies in Linguistic Structures .................................. 4 hrs.

IV. HISTORY COURSES
(all majors and minors—3—4 hrs.)
Undergraduates Only
English
372 Development of Modern English .................................. 4 hrs.
Linguistics
420 (300) Historical Linguistics ...................................... 4 hrs.

Graduates/Undergraduates
Linguistics
560 Comparative Linguistics .......................................... 4 hrs.
German
559 History of the German Language ................................ 3 hrs.

V. VARIATION COURSES
(all majors and minors—3—4 hrs.)
Undergraduates Only
Linguistics
430 (310) Dialectology ................................................. 4 hrs.

Graduates/Undergraduates
Linguistics
575 (548) Studies in Languages of the World ..................... 3 hrs.

VI. INTERDISCIPLINARY COURSES
(majors—2—4 hrs; minors—0—4* hrs.)
Undergraduates Only
Speech Pathology
203 Speech and Language Development ......................... 2 hrs.
Philosophy
330 Philosophy and Language ....................................... 4 hrs.
Anthropology
370 Language in Culture ............................................ 3 hrs.

Graduates/Undergraduates
Linguistics

*Minors are not required to take credits in the starred areas but may elect up to 4 hours.
VII. METHODS COURSES
(majors—3–4 hrs.; minors—0–4* hrs.)

Graduates/Undergraduates

Linguistics
510 (400) Teaching English as a Foreign Language .......... 4 hrs.
Linguistics
580 Linguistic Field Techniques ..................................... 3 hrs.
Language
558 Modern Language Instruction ...................................... 3 hrs.
English
574 Linguistics for Teachers ............................................ 4 hrs.

VIII. ELECTIVE COURSES
(majors—2—7 hrs; minors—0—4* hrs.)

Graduates/Undergraduates

Linguistics
505 Basic Critical Languages (500) .................................... 4 hrs.
Or one or more courses in areas II–VII

CRITICAL LANGUAGE MINOR

20 semester hours, as described below

16 hrs. in the language of interest
12 hrs. in
Ling. 505 Basic Critical Languages: Basic X and
Ling. 506 Intermed. Critical Languages: Intermed. X (pre-
req. 505) and
Ling. 507 Advanced Critical Languages: Advanced X (pre-
req. 506)
4 hrs. in either
Ling. 508 Reading Critical Languages: Reading X (prereq.
505) or
Ling. 509 Writing Critical Languages: Writing X (prereq.
505)
4 additional hours in an introductory course in linguistics, to be
taken during the first year of work on the minor
Ling. 200 Linguistic Analysis or
Ling. 500 Introduction to Linguistics
[Linguistics majors may substitute Ling. 508/509 Reading/
Writing X; Ling. 505 Basic Y; or Ling. or Anthro. 575 (3
sem hrs.) plus Ling. 598 (1 sem. hr.)]

Total 20 hrs.

*Minors are not required to take credits in the starred areas but may elect up to 4 hours.
COURSES

GENERAL 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.

320 (520) Phonological Analysis 4 hrs.
An introduction to phonological theory and to the principles and methods of phonetic and phonemic analysis and description.

330 (530) Grammatical Analysis 4 hrs.
An introduction to grammatical theory and to the principles and methods of morphological and syntactic analysis and description.

420 (300) Historical Linguistics 4 hrs.
An examination of the processes of language change and the principles which govern the historical and comparative study of languages.

430 (310) Dialectology 4 hrs.
An examination of 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 linguistic study.

505, 506, 507, 508, 509 (See Critical Languages Courses below.)

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.
550 Studies in Linguistics and Related Disciplines  
3 hrs.

An examination of the interrelationships between linguistics and psychology ("Psycholinguistics") or between linguistics and sociology ("sociolinguistics"). May be repeated for credit.

560 Comparative Linguistics  
4 hrs.

An introduction to the branch of linguistics which deals with the similarities and differences between related languages and the methodology through which the linguist is able to make statements about their correspondences and divergences.

570 Studies in Linguistic Structures  
4 hrs.

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. May be repeated for credit.

575 (548) Studies in Languages of the World  
3 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  
3 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.

598 Readings in Linguistics  
1—4 hrs.

An opportunity for advanced students with good scholastic records to pursue the independent study of a linguistic subject not specifically covered by any of the courses in the Linguistics Department. Prerequisite: Permission of instructor and chairman.

CRITICAL LANGUAGES COURSES

(A "critical" language is one which is not described in the Undergraduate Catalog as a regular offering of the Department of Modern and Classical Languages. Critical language credit can be used to satisfy certain undergraduate foreign language requirements.)

505 (500) 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. Prerequisite: Permission of instructor.
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: Ling. 505 and permission of instructor.

507 Advanced Critical Languages 4 hrs.

Independent learning, at the advanced state, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist. Prerequisite: Ling. 506 and permission of instructor.

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: Ling. 505 and permission of instructor.

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: Ling. 505 and permission of instructor.
Major and Minor requirements in Mathematics are summarized in the following tables. Students considering a Mathematics Major or Minor should contact a Mathematics adviser during the first semester of the sophomore year. Major programs must be approved by a departmental adviser.

Non-Teaching: Major S.H.  
Calculus through Math 223  
Math 332 3  
Math 333 3  
Math 570 or 572 3  
Two approved electives at 300-level or above 6  
One approved elective at 500-level 3  

Teaching Major S.H.  
Calculus through Math 222 3  
Math 332 3  
Math 333 3  
One of: Math 340, 342, 540, 542 3  
Math 550 3  
Math 223 or approved elective 4 or 3  
One approved elective at 300-level or above 3  
One approved elective at 500-level 3  

A. Bruce Clarke, Chairman

Yousef Alavi  
Robert Blefko  
William Boyd, Jr.  
Joseph T. Buckley  
Gary Chartrand  
Paul Eenigenburg  
Daniel Giesy  
Anthony Gioia  
Donald Goldsmith  
Clarence Hackney  
Herbert Hannon  
Philip Hsieh  
S.F. Kapoor  
Robert Laing  
Stanislaw Leja  
Don R. Lick  
Joseph McCully  
Jack Meagher  
Donald Nelson  
Jack Northam  
J. K. Peterson  
John W. Petro  
James Powell  
James Riley  
Erik A. Schreiner  
Robert Seber  
Robert Sechler  
Gerald Sievers  
Arthur Stoddard  
Michael Stoline  
Walter Turner  
Arthur White  
Gertrude Wolinski  
Alden Wright  
Kung-Wei Yang
### Non-teaching Minor

<table>
<thead>
<tr>
<th>Requirement</th>
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<tbody>
<tr>
<td>Calculus through Math 222</td>
<td>12</td>
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<tr>
<td>Math 223 or 332</td>
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### Teaching Minor

<table>
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<th>Requirement</th>
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<tr>
<td>Calculus through Math 222</td>
<td>12</td>
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<tr>
<td>Math 332</td>
<td>3</td>
</tr>
<tr>
<td>Math 223 or 333</td>
<td>4 or 3</td>
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<tr>
<td>Mathematics elective</td>
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Minor electives can be any mathematics courses, including Math 100 or 106, if approved by mathematics adviser.

**Minor in Mathematics: Elementary**

*(for students in elementary education curricula only)*

<table>
<thead>
<tr>
<th>Requirement</th>
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<tbody>
<tr>
<td>Math 150</td>
<td>(4 hrs)</td>
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<tr>
<td>Math 151</td>
<td>(4 hrs)</td>
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<tr>
<td>Math 122 (or 120, 121)</td>
<td>(4 or 8 hrs)</td>
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<tr>
<td>Math 260</td>
<td>(4 hrs)</td>
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<tr>
<td>Math 552</td>
<td>(2 hrs)</td>
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<tr>
<td>Math 595</td>
<td>(2 hrs)</td>
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</tbody>
</table>

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 that his superior performance and interest in mathematics warrants. 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.

**90 Mathematical Skills**

*No Credit*

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**

*4 hrs.*

A course dealing with high school intermediate and advanced algebra. Review and practice with basic algebraic skills. Definitions, graphical properties, and manipulation with polynomial, expo-
nential 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 1 hr.

Flow charts and computer programs will be prepared in the BASIC LANGUAGE to be run on a digital computer. Prerequisite: 1-1/2 yrs. h.s. algebra or Math 100.

116 Finite Mathematics with Applications 3 hrs.

This course is designed to give the business student a background in the elements of finite mathematics. Included will be a discussion of: sets, relations and functions; systems of linear equations and inequalities; vectors and matrices; concepts of probability; random variables and distribution functions; applications of linear algebra and probability. Prerequisite: 3 years of college preparatory mathematics or Math 100.

120 Mathematics IA 4 hrs.

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 4 hrs.

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.

122 Mathematics I 4 hrs.

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 3-1/2 years of college preparatory mathematics including trigonometry.

123 Mathematics II 4 hrs.

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.
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.

151 Elementary Mathematical Structures 4 hrs.
This course is a continuation of 150. Topics will include a further discussion of the real numbers, the complex numbers, finite mathematical structures, and intuitive geometry. Geometric construction using compass and straight edge will be emphasized. Prerequisite: Math 150.

190 Survey of Mathematical Ideas 4 hrs.
A survey of significant, active areas of mathematics with the emphasis on concepts rather than calculations. The historical origin and development of certain mathematical ideas will be included. The areas of mathematics investigated will include topics from set theory, probability theory, number theory, and graph theory. This course will not satisfy any program requirements in mathematics.

200 Analysis and Applications 4 hrs.
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 1-1/2 years h.s. algebra and 1 year h.s. geometry.

222 Mathematics III 4 hrs.
A continuation of Mathematics I and II. An introduction to vectors, concentrating primarily in two and three dimensional space, and elementary linear algebra, including matrices, linear transformations, determinants and solutions of systems of equations. This is followed by differential calculus of vector functions and functions of several variables. Prerequisite: Math 123.

223 Mathematics IV 4 hrs.
A continuation of Mathematics I, II, and III. Topics include: Multiple integration, 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 122.

306 Introduction to Computer Languages 2 hrs.
Different class sections of this course will discuss languages such as FORTRAN, COBOL, and Assembler. Flow charts and computer programs will be prepared in these languages to be run on a digital computer. Students wishing to study more than one language may repeat this course for no more than 6 hours of credit (2 in each language). This course will not be counted toward a major in mathematics. Prerequisite: Math 106 or equivalent workshop.

332 Algebraic Structures 3 hrs.
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 Modern Algebra 3 hrs.
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 re-examination 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 4 hrs.
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 223.

366 Introduction to Statistics 4 hrs.
An introductory course in Statistics for upper level or graduate
students possessing a limited mathematics background. The emphasis is on the use of statistical tools rather than on their theoretical development. Topics will include probability distributions, means and variances, interval estimates, test of hypotheses, correlation and regression. This course will not count toward a mathematics major or minor. Students can receive credit for only one of 260, 360, 366.

390 Undergraduate Seminar 1 hr.
This seminar features student participation covering mathematical topics not normally included in regular major programs. May be repeated for credit. Prerequisite: Permission of Department.

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. Two computer languages will be discussed and used to prepare programs. Problems such as exponential, multiplication and inversion of matrices, numerical integration, and solution of differential equations will be prepared for the computer. Prerequisite: Math 222 (223 recommended).

507 Numerical Analysis 3 hrs.
Numerical methods involving polynomial evaluation, Legendre polynomials, Cebyshev 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 General Topology I 3 hrs.
Topics include: separation axioms, continuity, compactness, connectedness, product and quotient spaces, metric spaces. Prerequisite: Math 570 or permission of instructor.

530 Linear Algebra 3 hrs.
Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: Math 333.

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, repre-
sentation of projective geometry as the geometry of subspaces of a vector space, and the algebraic approach to affine geometry. Prerequisite: Math 332. (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.

**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.

**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 Mathematics 662. Prerequisite: Mathematics 222 (Mathematics 223 recommended).

**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.

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 convergency. Prerequisite: 570 and 520, or consent of adviser.

574 Introduction to Ordinary Differential Equations
3 hrs.
Methods of solution, linear differential equations, ordinary and singular 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. Prerequisite: Math 223.

580 Number Theory
3 hrs.
Diphantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: Math 332.

595 Seminar in Elementary Mathematics Education
1-3 hrs.
Current curriculum problems in the area of elementary mathematics education will be identified and discussed. Students will be required to identify a problem and give both an oral and written report on research in that area. Prerequisite: Math 552.

599 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.
Music

Robert Holmes, Chairman

Ethel G. Adams
Sam B. Adams
William Allgood
William Appel
Ada Berkey
Carl Bjerregaard
Joan Boucher
Russell W. Brown
Donald Bullock
Herbert Butler
Elwyn F. Carter
Carol 1. Collins
Robert M. Davidson
Carl Doubleday
Marcella Faustman
Robert R. Fink
Jack J. Frey
Tom R. Fulton
Willard Hahnenberg
Louise Hall
Thomas C. Hardie
James Hause
Marilynn Heim
Robert Humiston
Daniel A. Kyser
Holon Matthews
Leonard V. Meretta
Charles E. Osborne
Olive G. Parkes
Phyllis Rappeport
Robert J. Ricci
A. Boggs Ryan
Neill Sanders
David Sheldon
Curtis Smith
Julius Stulberg
Robert Whaley
Joseph T. Work
Joyce Zastrow
Ramon Zupko

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 Music Fundamentals for Music Minors 164, 165, 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. No credit hours exceeding the number granted for parallel work at Western 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.

123 Voice Class

A continuation of 122. Repertoire will include early English songs and seventeenth and eighteenth century Italian songs as well as other standard literature, with a minimum of five songs to be memorized during the semester.

128 Violin Class

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

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

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 instruments, including methods and materials, care and maintenance, and the function of the percussion section in a band or orchestra. For music majors only.

131 Flute Class*

Fundamentals of flute pedagogy and performance.

132 Oboe Class*

Fundamentals of oboe pedagogy, performance and reed-making.

133 Clarinet Class*

Fundamentals of clarinet pedagogy and performance.

134 Bassoon Class*

Fundamentals of bassoon pedagogy, performance, reed-making, and instrument maintenance.

135 Saxophone Class*

Fundamentals of saxophone pedagogy and performance.

*For music majors only.
136 Trumpet Class* 1 hr. Fall, Winter
Fundamentals of trumpet pedagogy and performance.

137 French Horn Class* 1 hr. Fall, Winter

138 Trombone Class* 1 hr. Fall, Winter
Fundamentals of trombone pedagogy and performance.

139 Tuba Class* 1 hr. Fall, Winter
Fundamentals of tuba pedagogy and performance.

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 through analysis and written harmony. Students with no piano facility or a limited piano background also must be enrolled in piano class (120, 121, 220, 221). Students also must be enrolled in 162. Prerequisite: Departmental acceptance as a Music Major.

161 Basic Music 3 hrs. Fall Winter
A continuation of 160. Students with a limited background in piano also must be enrolled in piano class (121, 220, 221). Students also must be enrolled in 163. Prerequisite: 160 with a grade of C or better.

*For music majors only.
162 Aural Comprehension 1 hr. Fall, Winter
Training in the basic skills of music reading and ear training. Students must also be enrolled in 160.

163 Aural Comprehension 1 hr. Fall, Winter
A continuation of 162. Prerequisite: 162.

164 Music Fundamentals for Music Minors 3 hrs. Fall
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 piano background also must be enrolled in piano class (120).

165 Music Fundamentals for Music Minors 3 hrs. Winter
A continuation of 164. Students with a limited piano background also must be enrolled in piano class (121). Prerequisite: 164.

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.

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
Fundamentals of attack, breath control, formation of the embouchure, Elementary Clarinet Method, Wain. Selected solos. For keyboard, and string majors in Public School Music.

228 String Class 1 hr. Fall
A specialized course for the string major presenting the tech-
niques 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. May be repeated for credit.

229 String Class

A continuation of 228. Prerequisite: String majors in Public School Music. May be repeated for credit.

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 performances.

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 3 hrs. Winter

A continuation of 244. Prerequisite: 244.

260 Basic Music 3 hrs. Fall, Winter

A study of traditional tonal music through composition and analysis. Students with a limited piano background also must be enrolled in an appropriate piano class. Prerequisite: 161 with a grade of C or better.

261 Basic Music 3 hrs. Fall, Winter

A study of contemporary (20th century) music through analysis and composition. Students with a limited background in piano also must be enrolled in an appropriate piano class. Prerequisite: 260 with a grade of C or better.

262 Composition 2 hrs. Fall

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 2 hrs. Winter

A continuation of 262.

266 Musical Acoustics 2 hrs. Winter

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 2 hrs. Fall


290 Recreational Music 2 hrs. Winter

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 1 hr. Winter

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  1 hr. Winter

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.

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.

332 Choral Conducting  2 hrs. Winter

A continuation of M330 with added emphasis on rehearsal and choral conducting techniques, choral literature (selection, conducting), voice classification and selection. Prerequisite: M330.

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; no prerequisite for others.
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; no prerequisite for others.

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; no prerequisite for others.

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; no prerequisite for others.

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; no prerequisite for others.

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; no prerequisite for others.

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; no prerequisite for others.

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 participate in setting the goals, content, and techniques for the humanities program. Prerequisite: 240 for music majors; no prerequisite for others.

348 Public School Music Production  
2 hrs. Winter

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; no prerequisite for others.

360 Analysis of Basic Forms  
2 hrs. Fall, Winter

An analytical study of music in the smaller forms. Prerequisite: 261 with a grade of “C” or better.

361 Analysis of Instrumental Forms  
2 hrs.

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 “C” or better.

362 Composition  
2 hrs. Fall

A study of the techniques of twentieth century composition with original work in vocal and instrumental forms. Prerequisite: 263.

363 Composition  
2 hrs. Winter

A continuation of 362.

364 Analysis of Vocal Forms  
2 hrs.

An extension of Music 360 placing special emphasis on vocal literature: lieder, opera, oratorio, etc. Prerequisite: 360.

365 Contemporary Music Literature  
2 hrs. Winter

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.
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366 Instrumental Arranging 2 hrs. Fall, Winter

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 “C” or better.

367 Contemporary Techniques 2 hrs. Winter

Recent compositional techniques including total serialization, aleatoric procedures, musique concrete, electronic and computer music. Written assignments. Prerequisite: 261.

368 Survey—Review of Basic Music 2 hrs.

A course required of transfer students who have satisfactorily completed 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 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 Graderoom 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 person-
ality 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.

**384 Music in Special Education** 4 hrs.

Fall, Winter

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.

**460 Counterpoint (Vocal)** 2 hrs. Fall

Modal counterpoint as exemplified by the composers of the sixteenth century. Practical application through the writing of two-, three-, and four-part motets and madrigals. Prerequisite: 261 with a grade of C or better.

**461 Counterpoint (Instrumental)** 2 hrs. Winter

Harmonic counterpoint as exemplified by the composers of the seventeenth and eighteenth centuries. Practical application through the writing of inventions, fugues, choral preludes, etc. Prerequisite: 261 with a grade of C or better.

**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.

468 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.

469 Orchestration 2 hrs. Winter
   A continuation of 468.

470 Classroom Procedures in Theory 2 hrs. Fall
   Literature and methodology for the teaching of theory with analy-
   sis of several representative texts. Observation and participation
   in the basic music courses are an intergral part of the course.

471 Classroom Procedures in Theory 2 hrs. Winter
   A continuation of Classroom Procedures in Theory 470.

478 Introduction to Research in Theory 2 hrs.
   Individual research in music theory. Research methods and ana-
   lytic discipline are stressed. Study will be focused in an area of the
   student’s need or interest.

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 mu-
   sic 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 ap-
   proved 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 com-
   plete preparation of choral music will be stressed. The student may
   be called upon to prepare an ensemble for public performance. Pre-
   requisite: 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 per-
   formance. 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.

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.

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.

577 Symphonic Literature 2 hrs.
A survey of music written for symphony orchestra during the Classic and Romantic periods.

578 Chamber Music Literature 2 hrs.
A survey of chamber music literature of the Classic and Romantic periods.

579 Operatic Literature 2 hrs.
A survey of opera from 1600 to the present.

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.

590 Studies in Pedagogy 1-3 hrs.
Topics to be announced. Selection will be made from the following: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. This course may be repeated for credit.
598 Readings in Music  2 hrs. Fall, Winter

Graduate students may enroll in this course after consultation with the graduate adviser.

**APPLIED MUSIC**

**100 Applied Music**  1-4 hrs.

Lower division (freshman-sophomore level) private lessons on an instrument of the student’s choice. A lower division hearing must be passed by the student before registering for upper division applied music. May be repeated for credit.

**300 Applied Music**  1-4 hrs.

Upper division (junior-senior level) private lessons on an instrument on which the student has passed the lower division hearing. Verification that the student has passed his upper division hearing must be in the student’s file before graduation. May be repeated for credit.

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
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. 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 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 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.)

110 Symphonic Band 1 hr. 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 1 hr. 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 1 hr. 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 1 hr. Mr. Frey

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. Pass/fail only.

114 The Wind Ensemble 1 hr. 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 1 hr. 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 1 hr. 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 1 hr. 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 1 hr. 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 1 hr. 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 1 hr. 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. Staff

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 1 hr. 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 1 hr. 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 1 hr. 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.
While a student majoring in philosophy may go into law, journalism, education, government, computer-programming and even business, philosophy is not intended for those whose approach to college is primarily career-oriented. Philosophy is attractive to those who are prepared to search for understanding for its own sake, who do not expect ready-made answers or easy solutions, who are willing to subject their assumptions to critical scrutiny, and who are able to put aside judgments based on inspiration or intuition and adopt methods of close logical analysis. As preparation for a career, philosophy is chosen by those who are attracted to its subject-matter; prospective philosophy teachers, whether at the university, junior-college, or even high school level, anticipate continuing for an advanced degree.

Since 1962, the Philosophy Department offices have been temporarily located in the basement of Ellsworth hall. Students are invited to visit professors during posted office hours.

Before pre-registration each term, the faculty prepares brief written descriptions of the courses to be offered. These course descriptions may be obtained in the department office. The department also announces its tentative course-offerings a year in advance. Hence before preregistration for the Fall semester, the student can know which courses will probably be offered in the following Fall, Winter, Spring, and Summer.

ROBERT FRIEDMANN PHILOSOPHY PRIZE

A prize, normally $50, named in honor of Dr. Friedmann, the first person to teach philosophy at Western, awarded annually to an outstanding senior philosophy student.
Applications to the departmental Honors Program are invited from qualified students. A student wishing to enter the program must submit a proposal for independent research to a faculty committee. Normally, the honors candidate works in close association with a professor of his choice, and submits a paper (or other project of philosophic merit) to the department. To achieve honors in philosophy the candidate’s academic record must be of high quality and his project must be outstanding.

Inter-disciplinary work, involving faculty from other departments is encouraged.

Normally, but not necessarily, the honors student is a senior major; in exceptional cases non-seniors or non-majors may be considered.

MAJOR AND MINOR REQUIREMENTS

A major in philosophy consists of not 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 each chosen from three of the four categories: History of Philosophy, Value Theory, Logic and Philosophy of Science, Theory of Knowledge and Reality. Phil. 300-301 do not count toward the history distribution option.

Students planning to do graduate work in philosophy must elect Phil. 220 (Elementary Logic) as soon as possible.

A minor in philosophy consists of 16 hours. There are no required courses, but prospective minors are advised to take Phil. 200 in their Freshman or Sophomore year.

INTRODUCTORY COURSES

200 Introduction to Philosophy

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

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

A study of Greek philosophical thought from Thales to Plotinus with an emphasis on Plato and Aristotle.

301 History of Modern Philosophy

A survey of modern philosophy from the Renaissance through Kant, with emphasis upon Descartes, Liebniz, Locke, Berkeley, Hume, and Kant.

302 American Philosophy

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

A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

304 Analytic Philosophy

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

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

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.
308 History of Medieval Philosophy  4 hrs.

Medieval philosophical thought from Augustine through the Renaissance.

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 Political Philosophy  4 hrs.

An examination of fundamental problems arising from political and social relationships. The main emphasis is on such political value concepts as liberty, equality, human rights and justice. The course also deals with topics such as the nature and basis of political authority and obligation; civil disobedience; tolerance and dissent; the aims of political institutions; law and morality.

312 Philosophy of Art  4 hrs.

An analysis of the nature of art and esthetic experience, and its significance in human life. The course may cover all forms of art, or concentrate on a few, for instance, literature, drama and music.

313 Philosophy of Law  4 hrs.

This course considers the nature of law and the goals, policies and limitations of a legal system. The connections between law and justice, law and freedom, and law and morality will be examined.

314 Philosophical Themes in Contemporary Social Movements  4 hrs.

Social movements commit themselves to certain views about man and nature which are broadly philosophical, though only one contemporary movement, Marxism, purports to present an entire philosophy. This course attempts to uncover and evaluate some of these philosophical themes, for example, freedom, repression and liber-
Philosophy

Attention; human nature and culture; the uses of violence; goals and methods of social change. Emphasis will be placed on recent social movements, but exploration of earlier movements (such as 19th and early 20th century Marxism) is not precluded.

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 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 4 hrs.

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 4 hrs.

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.

323 Philosophy of Science 4 hrs.

An examination of the nature of scientific explanation, inductive reasoning, and probability. Particular problems arising in the physical and natural 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
College of Arts and Sciences

requirement of simplicity. Prerequisite: One course in logic or its equivalent or permission of the instructor.

520 Seminar in Logic 4 hrs.
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.

THEORY OF KNOWLEDGE AND REALITY

330 Philosophy and Language 4 hrs.
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 4 hrs.
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 4 hrs.
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

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

Allen Dotson, Chairman
Eugene Bernstein
George Bradley
David Carley
Stanley Derby
Jacob Dewitt
Gerald Hardie
John Herman
Dean Kaul
Haym Kruglak
John Kusmiss
Robert Miller
Nathan Nichols
Larry Oppliger
Robert Shamu
Michitoshi Soga
Priya Vashishta
James Zietlow

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:

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<td>210 Mechanics and Heat</td>
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<td>211 Electricity and Light</td>
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<td>211 Electricity and Light</td>
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<td>212 Atomic and Nuclear Physics</td>
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<td>342 Electrical Measurements and Electronics</td>
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<td>520 Analytical Mech.</td>
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<td>360 Introduction to Theoretical Physics</td>
</tr>
<tr>
<td>540 Electricity and Magnetism I</td>
<td>3</td>
<td>470 Historical Development of Concepts of Physical Science</td>
</tr>
<tr>
<td>560 Modern Physics I</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

The requirements for the secondary education program are:

<table>
<thead>
<tr>
<th>Secondary Education</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>211 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>212 Atomic and Nuclear Physics</td>
<td>4</td>
</tr>
<tr>
<td>342 Electrical Measurements and Electronics</td>
<td>5</td>
</tr>
<tr>
<td>360 Introduction to Theoretical Physics</td>
<td>4</td>
</tr>
<tr>
<td>470 Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
</tbody>
</table>

The prerequisites for the physics major include:

- 210 Mechanics and Heat
- 211 Electricity and Light
- 212 Atomic and Nuclear Physics
- 342 Electrical Measurements and Electronics
- 520 Analytical Mech.
- 540 Electricity and Magnetism I
- 560 Modern Physics I
The remaining credit hours necessary to complete the major must be elected from the following list for each program.

### Physics Major

<table>
<thead>
<tr>
<th>Course Description</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>330 Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>352 Optics</td>
<td>4</td>
</tr>
<tr>
<td>470 Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>498 Special Problems</td>
<td>1-3</td>
</tr>
<tr>
<td>541 Electricity and Magnetism II</td>
<td>3</td>
</tr>
<tr>
<td>552 Applied Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>561 Modern Physics II</td>
<td>4</td>
</tr>
<tr>
<td>563 Introduction to Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>566 Advanced Lab</td>
<td>2</td>
</tr>
<tr>
<td>598 Selected Topics</td>
<td>1-4</td>
</tr>
</tbody>
</table>

### Secondary Education S.H. (Physics Major)

<table>
<thead>
<tr>
<th>Course Description</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 Astronomy</td>
<td>4</td>
</tr>
<tr>
<td>(3 hours credit toward major or minor)</td>
<td></td>
</tr>
<tr>
<td>202 Photography</td>
<td>3</td>
</tr>
<tr>
<td>(2 hours credit toward major)</td>
<td></td>
</tr>
<tr>
<td>Any physics course numbered above 300 except 308.</td>
<td></td>
</tr>
</tbody>
</table>

Suggested courses of study for a student majoring in physics under either program are:

#### First Semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 122</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 102</td>
<td>4</td>
</tr>
<tr>
<td>Freshmen Reading 140</td>
<td>2</td>
</tr>
<tr>
<td>General Astronomy</td>
<td></td>
</tr>
<tr>
<td>Physics 105</td>
<td>4</td>
</tr>
<tr>
<td>(3 hours toward secondary education major or minor)</td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 123</td>
<td>4</td>
</tr>
<tr>
<td>Physics 210</td>
<td>4</td>
</tr>
<tr>
<td>College Writing 116</td>
<td>4</td>
</tr>
<tr>
<td>Western Civilization 100</td>
<td></td>
</tr>
<tr>
<td>or 101</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
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<td></td>
<td>17</td>
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#### Third Semester

<table>
<thead>
<tr>
<th>Course Description</th>
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</tr>
</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>
</tr>
<tr>
<td>General Studies</td>
<td></td>
</tr>
<tr>
<td>(Soc. Science)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
### Fourth Semester

<table>
<thead>
<tr>
<th>Physics Major</th>
<th>S.H.</th>
<th>Secondary Education</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 223</td>
<td>4</td>
<td>Math 223</td>
<td>4</td>
</tr>
<tr>
<td>Physics 212</td>
<td>4</td>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td>General Studies (Arts &amp; Ideas)</td>
<td>4</td>
<td>General Studies (Elective)</td>
<td>4</td>
</tr>
<tr>
<td>Physics 330</td>
<td>3</td>
<td>Education 250</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td></td>
<td>16</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>16</td>
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</table>

### Fifth Semester

<table>
<thead>
<tr>
<th>S.H.</th>
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<th>S.H.</th>
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<tbody>
<tr>
<td>5</td>
<td>Physics 342</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Math 306</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>General Studies</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>(Arts and Ideas)</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>16</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
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</table>

### Sixth Semester

<table>
<thead>
<tr>
<th>S.H.</th>
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<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>Physics 342</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>General Studies 304</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Education 300</td>
<td>3</td>
</tr>
<tr>
<td>3,4</td>
<td>Physics 308</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>(Teaching of Phy. Sci.)</td>
<td></td>
</tr>
<tr>
<td>16,17</td>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td>15</td>
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</table>

### Seventh Semester

<table>
<thead>
<tr>
<th>S.H.</th>
<th></th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>Education 410</td>
<td></td>
</tr>
<tr>
<td>3,4</td>
<td>Education 450</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Education 470</td>
<td></td>
</tr>
<tr>
<td>5,6</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>15,16,17</td>
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<td></td>
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</tbody>
</table>

### Eighth Semester

<table>
<thead>
<tr>
<th>S.H.</th>
<th></th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,4</td>
<td>Physics 352</td>
<td>4</td>
</tr>
<tr>
<td>1-3</td>
<td>Physics 202</td>
<td>3</td>
</tr>
<tr>
<td>9-12</td>
<td>(2 hours toward major)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Physical 470</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>General Studies 400’s</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Any student contemplating majoring in physics should contact the Physics Department as early as possible. This is especially true for the transfer students from community colleges in regard to transfer credit and course of study. Students will want to take advantage of the adviser 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. Carrying out this project may qualify a student for aid as outlined on page 82.

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

In this course are studied the nature and transmission of sound, how sounds are produced with special emphasis on pipes and strings, interference 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 Descriptive Astronomy*  
4 hrs. Fall, Winter, Summer

The aim of the course is to present the development of man's knowledge about the solar system, the stars, and the galaxies. Emphasis will be placed on the methods and tools of the astronomer, on the major principles and their applications, and on the challenging problems of the space age. Mathematics will be used sparingly and will be restricted to the simplest aspects of arithmetic and high school algebra. Three lecture-recitations and two hours of evening observation and laboratory per week are required. Not recommended for science majors.

105 General Astronomy*  
4 hrs. Fall

A more intensive study of the topics covered in Physics 104. The course will emphasize applications of physics principles to planetary and satellite motions; space research; stellar motions, properties, and evolution; galaxies; cosmogonies. Three lecture-recitations and two hours of evening observation and laboratory per week are required. Recommended for science majors. Prerequisite: Knowledge of physics and trigonometry at the high school level.

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 four lectures and a two-hour laboratory per week. Many schools of engineering will not accept Physics 110-111 for transfer credit.

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 student cannot get credit for both 104 and 105.
a major or minor in physics only for those in the Secondary Education Curriculum. This 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 strongly 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 123 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

Thermodynamics is the study of equilibrium bulk properties of large scale systems in which temperature is an important variable. Classical equilibrium thermodynamics is developed from the macroscopic view-point. Postulates, empirically founded, are put forth and the consequences are developed and applied to systems of interest in physics and chemistry. Introductory kinetic theory with selected topics is also included. Prerequisite: Physics 211.

342 Electronics 5 hrs. Fall, Winter

This course deals with analysis of the more important transistor
and vacuum tube circuits and includes practical experience in the laboratory. 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 (aberrations and optical instruments), wave motion, interference, diffraction, polarization, double refraction, lasers. Three lectures and one 3-hour laboratory per week. Prerequisite: Physics 211.

360 Introduction to Theoretical Physics 4 hrs. Winter

The basic theories of classical mechanics, electromagnetism, special relativity, and non-relativistic quantum mechanics will be developed. Applications will be selected to illustrate the theory. The topics are condensations of the basic principles covered more extensively in Physics 520, 540, and 560. Therefore, this course is not recommended for physics majors planning to take the 500 level courses. Prerequisites: Physics 212, Math 222.

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, one year of College Chemistry 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 studied include the dynamics of a single particle and the motion of a system of interacting particles. Techniques of vector analysis are used frequently, and conservation laws are developed and applied. The Lagrangian formulation of mechanics is introduced. Prerequisite: Physics 211, Math 223. (The latter may be taken concurrently.)
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 223.

541 Electricity and Magnetism II
3 hrs. Spring or Summer

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 emission 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 111 or 211 or consent of instructor.

560 Modern Physics I
4 hrs. Fall

This course includes an introduction to quantum mechanics with selected applications, including one-dimensional potentials, the harmonic oscillator, one-electron atoms, and the helium atom. A knowledge of elementary differential equations is assumed. Recommended for seniors. Prerequisites: Physics 212 and 520 or consent of instructor.

561 Modern Physics II
4 hrs. Winter

Here the quantum theory covered in Physics 560 is applied to several areas of atomic and nuclear physics. The topics covered include atomic shell structure, atomic spectroscopy, X-rays, collision theory, general properties of nuclei, the nuclear two-body problem, nuclear reactions and nuclear models. Prerequisite: Physics 560.

563 Introduction to Solid State Physics
3 hrs. Winter

This course is designed to acquaint the student with the basic techniques for describing the structure and properties of solids. After an initial study of symmetry and crystal structure the following topics are treated: the cohesion of solids; X-ray and neutron diffraction; the elasticity of solids; lattice vibrations; the thermal and electrical properties of solids, with particular emphasis on metals. Prerequisite: Physics 560, or consent of instructor.
566 Advanced Laboratory 2 hrs. Fall, Winter

The objectives of this course are to provide the student with experience in the use of modern laboratory equipment and with a better understanding of several important physical phenomena. The student will select experiments from a list covering three areas: atomic, solid-state, and nuclear physics. A portion of the semester may be devoted to studying a problem in depth. The course consists of two three-hour laboratory periods each week. The course may be repeated for credit. Prerequisites: Physics 342 and either Physics 560 or Physics 360 (560 or 360 may be elected concurrently with 566).

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 in Physics to pursue independently the study of some subject of interest to them. Prerequisite: Consent of the instructor.
Political Science

Roy Olton, Chairman

Samuel I. Clark
Kenneth A. Dahlberg
Marvin Druker
John Gorgone
David P. Hanson
Alan C. Isaak
Robert W. Kaufman
C. I. Eugene Kim
George Klein
Helenan S. Lewis
Richard L. McAnaw

James E. Nadonly
Claude S. Phillips, Jr.
Jack C. Plano
Peter G. Renstrom
William A. Ritchie
Chester B. Rogers
Ernest E. Rossi
Leo C. Stine
Frank L. Van Voorhees
Howard A. Wolpe
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) Foreign and Comparative Political Systems
One course in Theory and methodology (except 590 and 591)

Students who may become majors are encouraged to take 100, Introduction to Political Science, as their first course in the Department.
The 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 College 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 or Science 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 470 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 and develop interest in public affairs. 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 Robert W. Kaufman, Director, Institute of Public Affairs.
412
College of Arts and Sciences

AMERICAN POLITICAL SYSTEM

100 Introduction to Political Science 3 hrs.
An introduction to those concepts useful for an understanding of politics. These concepts and their interrelationships will be examined in the context of contemporary political systems.

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. (Note: Not to be taken by students who have had the discontinued course Local Government 304).

304 Political Perspectives of Black America 3 hrs.
Analyzes 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.
311 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.

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.

320 The American Judicial Process 4 hrs.
An introduction to the politics of the American judicial process. The course will examine the judicial function generally with particular attention on the decisional processes, process participants, state and federal court structures, recruitment and selection of judges, bases of judicial behavior, policy making, and impact of judicial decisions.

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 3-4 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.
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.
An examination of Supreme Court responses to First Amendment, criminal procedure, and equal protection questions with particular emphasis on political, social and policy-making aspects.

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 2-4 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.
FOREIGN AND COMPARATIVE
POLITICAL SYSTEMS

340 European Political Systems 4 hrs.
Considers 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 that 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.

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.

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.

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.

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 or performance of the various political functions.

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.

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.

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.

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.

552 Studies in International Relations

3—4 hrs.

Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. Course may be repeated.

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 weakness and the future of world organization.

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 practices 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.
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.

557 Studies in American Foreign Policy 3-4 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.

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.

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.

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 tradi-
tional 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.
Examine 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.

**591 Statistics for Political Scientists** 3 hrs.
An introduction to statistical reasoning with particular reference to research on political institutions and behavior. This course will emphasize bivariate statistics, but will include a brief introduction to multivariate analysis. No mathematical prerequisite is required.

**SPECIAL STUDIES**

**490 Political Science Honors Seminar** 3 hrs.
An undergraduate seminar for honor students and others admitted by consent of the Department 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.

**492 Political Science Honors Research** 2-3 hrs.
Honor students, with the guidance of a faculty adviser, conduct research and write the Honors Paper on a topic of individual inter-
est. Prerequisite: Membership in the Political Science Department Honors Program.

598 Studies in Political Science 1-4 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

Fred Gault, Chairman

Eston J. Asher  Howard Farris  Frank A. Fatzinger  Robert Hawkins  Wade Hitzing  Bradley Huitema  Ronald Hutchinson  Fred Keller


All majors are required to complete the departmental core curriculum which consists of (a) a minimum of 28 hours in psychology including 150, 160, 250, 350, 360, 450, 460, and (b) a minimum of 8 hours of mathematics of 4 hours of mathematics and Philosophy 220 and Philosophy 320.

We recommend that psychology majors elect one of the following minors: Philosophy (including four of the following courses—Philosophy 220, 320, 322, 323, and 330), Biology (including four of the following courses—Biology 100, 210, 219, 306, 317, 342, 343, 502, 505, and 511), Mathematics, Physics, or Chemistry.

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 or Psychology 517 and (b) a secondary school teaching minor in biology, chemistry, mathematics, or physics.

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 and 461 must be included in the eight hours.

A minor in psychology (for other than business or education students) consists of Psychology 150, 160, 250, 260, and 350. A minor for business students consists of fifteen hours including Psychology 150, 160, 250, and 260.

A secondary school teaching minor in Psychology consists of Psychology 150, 160, 250, 260, 350, and 505 or 517. Note: Psychology 380 may be substituted for either 250 or 260. Students with a teaching minor in Psychology are recommended to complete a secondary school teaching major in biology, chemistry, mathematics or physics.

ALL PSYCHOLOGY CREDIT TRANSFERRED FROM OTHER SCHOOLS WILL COUNT TOWARD FULFILLING THE REQUIREMENTS FOR A PSYCHOLOGY MAJOR OR MINOR: HOWEVER, TRANSFER STUDENTS SHOULD CONSULT WITH A DEPARTMENTAL ADVISOR BEFORE TAKING ANY PSYCHOLOGY COURSES AT WESTERN MICHIGAN UNIVERSITY. Psychology students unable to sequence properly the required courses into their schedule should obtain permission from the departmental advisor to take some courses concurrently. The departmental advisors are Neil D. Kent and Richard W. Malott.

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 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

An analysis of complex human behavior with an emphasis on language and verbal behavior. Prerequisite: Psychology 250 or permission of 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, limitation, 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.
ADVANCED COURSES

505 Teaching Psychology in the Secondary School  
Class discussions, laboratory experiences and field work concerned with the teaching of psychology in high school. Prerequisite: Permission of the instructor.

512 Physiological Psychology  
A survey of the relationships of physiological and behavioral processes. Lecture and laboratory. Prerequisite: Permission of the instructor.

513 Animal Behavior I  
Examination of the research on animal behavior and analysis of the various processes involved with an emphasis on non-learning processes. Prerequisite: Permission of the instructor.

514 Animal Behavior II  
Examination of the research on animal behavior and analysis of the various processes involved with an emphasis on learning processes. Prerequisite: Permission of instructor.

516 Conditioning and Learning  
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  
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  
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 Introduction to the Science of Behavior: Honors Section  5 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 and two lecture-discussion hours. Enrollment by permission of the Honors College only.
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. 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 applications to business and industry. (A student may not receive credit for both 380 and 381).

510 Advanced General Psychology 3 hrs. Fall, Winter

Lecture and discussion of topics in the behavioral sciences. 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 to classroom teaching. (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: Any course in Statistics.
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 mankind. 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 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.

**COURSE DESCRIPTIONS**

**200 Introduction to Religion**

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**

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 dis-
continuity 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, 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 4 hrs.

This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focusing 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** 4 hrs.

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** 4 hrs.

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** 4 hrs.

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, and Koran and “tradition”, prayer, pilgrimages, Muslim law, theology, mysticism, sect developments, and geographical expansion.

**500 Historical 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: 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, the Occult Tradition.

**MORPHOLOGICAL AND PHENOMENOLOGICAL STUDIES IN RELIGION**

**310 The Morphology and Phenomenology of Religion** 4 hrs.

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.

**311 Myth and Ritual** 4 hrs.

Eric Dardel, an anthropologist has written: “Myth says with ut-
most seriousness something that is of essential importance.” In
this course an attempt will be made to discover just what this im-
portant something is and how it is actualized in certain rituals.
Myths and rituals will be taken from a variety of historical tradi-
tions 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 struc-
tural function of religious forms in modern literature. Specific
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 ex-
emplified in particular works of literature.

510 Morphological and Phenomenological Studies in
Religion 2—4 hrs.
The topic to be announced in the Schedule of Classes. The con-
tent 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, the-
ology 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 er-
ror founded on dreams, a projection of society, and Oedipus com-
plex, etc. a number of great thinkers helped to found a discipline—
and to endow it with some massive problems. This course will in-
troduce 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 rela-
tion to the “parental” human sciences.
520 Methodological Studies in Religion 2—4 hrs.

Topic to be announced in the Schedule of Classes. 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.

521 The Teaching of Religion in the Public School 2 hrs.

This course focuses on methods and issues involved in the teaching of religion in the public school. Particular attention is given to the problems of its constitutionality, the distinction between the academic study of religion and religious instruction, and the question of meaning. Various approaches to the teaching of religion are critically evaluated. Teaching methods appropriate to the level of instruction, availability, organization, selection and use of materials will be discussed.

Required of all students following an Elementary or Secondary Education Curriculum which includes the academic study of religions as a minor.

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 concilatory 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 as-
pects 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 Schedule of Classes. 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.

Sociology

Leonard C. Kercher, Head

William S. Bennett  Donald H. Bouma  Leila A. Bradfield  Lloyd Braithwaite  Milton J. Brawer  Edsel L. Erickson  J. Ross Eshleman  Paul F. Green  Paul B. Horton  Chester L. Hunt


Courses are designed to: give students a better understanding of the significant factors and processes of modern life, meet the needs of students preparing to teach in the social science field, prepare students to do graduate work in sociology, and stimulate interest in and provide prerequisite study for the profession of social work. All courses may be taken separately and taken in any order by students who have had the prerequisite course.

For sociology majors or minors, any transfer credit in sociology without a stated equivalent must be evaluated by the Sociology
Department. Students planning to major or minor in sociology should contact Helen Nelson, administrative assistant (2407 Sangren Hall), for further information and academic advising.

A major in sociology consists of a minimum of 30 hours. Sociology 200, 382, and 504 are required. Students entering before Fall 1971 have the option of taking either Soc. 382 or 582 to meet the methodology requirement for majors. Six hours of social work or anthropology courses may be counted toward the major.

Students enrolling in the undergraduate social work curriculum may elect a 24-hour sociology major. Required courses in this major are Soc. 200, 210, 320, and one of the following methodology courses: 382, 580, or 582. For academic advising in this curriculum see Robert Barstow in the School of Social Work, 1229 Knollwood Avenue.

A combined major in sociology and anthropology consists of a minimum of 30 hours. Soc. 200, 382, and 504, and Anthro. 210, 220, and 250 are required. Students entering before Fall 1971 have the option of taking either Soc. 382 or 582 to meet the methodology requirement for this major. At least 12 hours of course work in each field are required.

A minor in sociology consists of a minimum of 20 hours. Soc. 200 and 210 are required. Four hours of social work or anthropology courses may be counted toward the minor.

Soc. 500 and 580 are recommended for those planning to do graduate work in sociology.

The Center for Sociological Research has conducted studies of group dynamics, marital roles, race relations, voting behavior, migrancy, alcoholism, 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 the 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.

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 toward graduation at Western.
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 intergroup conflict, physical and mental ill health, economic insecurity, juvenile delinquency and crime, population changes, and mass communication. Prerequisite: Soc. 200

220 Rural Sociology 3 hrs. Winter
See course description page 526.

312 Criminology 3 hrs. Fall, Winter
A study of crime as a social problem. Course includes an analysis of causative factors in crime; a study of American police and court systems; a survey of problems of penology; and 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 the meaning of
race; the nature and roots of race prejudice, race discrimination, and intergroup conflict; and the character and effectiveness of various means of adjustment to the problem. Prerequisite: Soc. 200.

510 Studies in Social Problems: Variable Topics 3 hrs. Fall

An examination of a selected area of concern in social problems not intensively covered in other courses. The focus of the course will be substantive, as well as theoretical and methodological. Topics may include such areas as poverty, mental illness, narcotic addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: Soc. 200 and 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 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.

*600 Social Dynamics of Human Behavior is a foundational course in sociology at the graduate level.
Fall, Winter

Further analysis of selected topics, as indicated in Schedule of Classes. May be repeated for credit with a different topic. Pre-requisite: 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.

525 Social Psychology of Education 3 hrs. Fall

An intensive examination of student, teacher, and administrative roles. Particular attention will be given to the importance of peers, family, and social structure. Prerequisite: Soc. 320 or equivalent.

532 Introduction to Comparative Sociology 3 hrs. Fall

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 Sociology 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.

355 Social Structure of Black America 3 hrs. Winter

A study of social structure and interpersonal relations in black communities, including historical and anthropological perspectives. The course will selectively focus on family, religious, educational, political, legal and economic institutions. Prerequisite: Soc. 200 or equivalent.

552 Sociology of Aging 3 hrs.

An examination of the process of aging in American society, with
particular emphasis on the periods of late maturity and old age. Consideration will be given to theories of aging and the social implications of age grading, the meaning of work and retirement, and the status and roles of the aged. Prerequisite: 6 hours of sociology including Soc. 200 or 600.

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 hours of 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. Prerequisite: 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 600 or Anthro. 220 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 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. 220 or consent of instructor.

559 Studies in Ethnic Relations: Designated Areas 3 hrs. Fall

An investigation of the structure and dynamics of tribal, ethnic and racial group relations in the context of current theories of ethnic and social pluralism. The course will focus on one or another major culture area (Africa, South-east Asia, etc.) and will include case studies drawn from both newly independent nations and minority-dominated societies. May be repeated for credit with a different topic. Prerequisite: Soc. 200 or 600 or consent of instructor.
371 Dynamics of Contemporary Social Change 3 hrs. Fall

A study of sources, mechanisms, and consequences of social change; forces promoting or impeding change; and planning for change in contemporary societies. Prerequisite: Soc. 200 or equivalent.

375 Sociology of Education 3 hrs. Fall, Winter

A survey of contemporary educational problems from a sociological perspective; including such topics as race relations in the schools, teacher professionalization, classroom behavior, teacher organizations, and studies on modern youth culture. This course is intended as a general introduction to sociology of education for sociology majors and other interested students. Prerequisite: Soc. 200.

571 Studies in Social Change: Designated Areas 3 hrs.

This course deals with institutional change in specific geographic areas designated in the full course title as scheduled. May be repeated for credit with a different topic. Prerequisite: Soc. 200 or 600.

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: 9 hours of sociology and/or political science.

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 Advanced Sociology of Education 3 hrs. Fall
Advanced studies in sociology of education, emphasizing important theoretical and methodological issues in the field. Includes such substantive areas as: socialization, teacher-pupil interaction, teacher role, the school as a social institution, and the structure of the school system as it is affected by the community in which it is located and the society at large. Prerequisite: Sociology major or consent of instructor.

577 Comparative Institutional Studies 3 hrs.
A comparative study of the structure and functioning of selected aspects of culture in America and other selected countries. The legal structure, family and educational systems, the welfare structure, stratification, economic institutions, political organization, the role of science and the basic character of social change. Prerequisite: Soc. 200 or 600 or equivalent.

RESEARCH

382 Methods of Sociological Inquiry 5 hrs. Fall, Winter
An introduction to quantitative and qualitative methods of empirical research in sociology and the description of findings. Theory and techniques of research design are considered, including topics of formulating hypotheses, sampling, collection, analysis, and interpretation of data. Prerequisite: Soc. 200.

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 Research Methodology 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 Soc. 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 600 or equivalent.

592 Family Life Education and Counseling 2 hrs. Winter
Provides the student with 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 interest, under the guidance of one of the faculty of the department. May be repeated once. Permission to register must be obtained from the departmental 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 departmental Honors Committee.

598 Readings in Sociology  
1-4 hrs. Fall, Winter  
Offers sociology majors with good scholastic records an independent program of specialized study in an area arranged in consultation with the instructor. One to two hours credit per semester, cumulative to 4 hours. Prerequisite: Consent of instructor and the Department Head.

Speech Pathology and Audiology

Frank B. Robinson, Head
Harold L. Bate
Ralph Blocksma
Paul Czuchna
George O. Egland
Robert L. Erickson
Christian Helmus
Mary Ida Hunt
Albert Jetty
Frances Lohr
Donna B. Oas
Karen Seelig
Courtney Stromsta
Charles Van Riper
Clyde R. Willis

Communication is the most complex aspect of human behavior. Impairments in the process of communication—speech, language, and hearing—leave myriad problems in their wake. The child with a communication 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 professional 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 pre-professional foundation. It prepares the student for the professional graduate education and training which are necessary for membership in the American Speech and Hearing Association and for that organization's certification.

Students with particular interest in ultimate employment as clinicians in the public schools should refer to the Elementary Education curriculum. The completion of that curricula, which may include a major in Speech Pathology and Audiology, 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. Approval for certification in speech and hearing requires the additional 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 as well as additional information about the undergraduate and graduate programs may be obtained from the department office.

A. Minimum hours required for this curriculum ...... 124hrs.

B. Course Requirements

1. General studies requirements as described on page 31 of this catalog must be met.

2. Psychology ................................................................. 6hrs.

3. Teacher Education and Special Education ........................
   Human Development and Learning 250 ......................... 4
   Education of Exceptional Children 530 ....................... 3
   Behavior Problems in School-Age Children 588 ........... 2

4. Speech Pathology and Audiology .................................... 30hrs.
   Introduction to Communication Disorders ........................ 3
   Orientation to Clinical Practice 201 ............................ 1
   Anatomy and Physiology of Speech 202 .......................... 3
   Speech and Language Development 203 ........................... 2
   Phonemics 204 ......................................................... 2
   Bases of Speech and Hearing Science 300 ..................... 3
   Phonemic Disorders 351 ............................................. 2
   Phonatory Disorders 352 .......................................... 2
Speech Pathology and Audiology

Fluency Disorders 353 ................. 2
Language Disorders in Children 354 ........ 2
Hearing Disorders 355 .................. 2
Introduction to Audimetry 357 .......... 2
Practicum I 400 ......................... 1
Practicum II 401 ......................... 1
Electives in major area .................. 2

5. Physical Education or Military Science .......... 4-8hrs.

C. One academic minor.

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 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 instrumentation employed in the treatment of individuals with communication disorders. Demonstration therapy is included. Taken concurrently with 200.

202 Anatomy and Physiology of Speech 3 hrs. Fall, Winter

The structural anatomy and physiology of the processes related to normal speech production. Major units include respiration, phonation, articulation, 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 International Phonetic Alphabet is provided to prepare the student for accurate transcription of speech behavior. Prerequisite: Sophomore standing.
300 Bases of Speech and Hearing 3 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, 351.

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.

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.
550 Advanced Speech and Hearing Science 2 hrs.

Theories of speech production, reception and perception are considered in this course from the point of view of experimental phonetics and experimental audiology. Prerequisite: 300, 357.

551 Neuropathologies of Speech 2 hrs. Fall, Winter

This course is concerned primarily with surveying selected communication disorders associated with neuropathologies. Prerequisites: 200, 202, 203.

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.

555 Speech and Language Development of Hearing Impaired 3 hrs.

A detailed study of the problems of speech and language acquisition to the deaf and hard of hearing child; orientation to clinical management. Prerequisite: 357.

556 Aural Rehabilitation 2 hrs. Fall, Winter

Orientation to the clinical management of communication problems associated with auditory impairment. Prerequisites: 355, 357.

557 Psychosociological Aspects of Hearing Impairment 3 hrs.

This course is designed to acquaint the student with the educational, psychological, sociological and vocational problems and needs of the deaf and hard of hearing. Prerequisite: 357.

595 Oral Language Development and Dysfunction 2 hrs.

This course is designed to provide the student preparing to be a classroom or special teacher with information about the nature of oral language, its development, conditions associated with dysfunction, and the principles and methods of treatment for children with specific speech or language disorders. Not open to students who have had Speech Pathology and Audiology 200 or its equivalent.
School of Social Work

Merl C. Hokenstad, Jr., Director
Robert Barstow, Associate Director

Richard G. Adams
Richard E. Boettcher
William A. Burian
Mary E. Burns
G. G. Dadlani
John Flynn
Kenneth Kazmerski

Philip Kramer
Samuel O. Miller
Clarice C. Platt
Kenneth E. Reid
Reger Smith
Gene E. Webb

The School of Social Work offers both an undergraduate curriculum and a graduate-professional program. The undergraduate curriculum is designed to offer social welfare content as part of the student’s Liberal Arts Education; to provide preparation for graduate training in social work and to prepare students for beginning level social work practice. 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.

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 hrs.

B. Course Requirements

1. General Studies requirements as described on page 31.

2. The major may be completed in one of the following:

a. Sociology major requirements ................................. 24 hrs.

   200 Principles of Sociology 3
   210 Modern Social Problems 3
   320 Social Psychology 3
   382 Methods of Sociological Inquiry 5

   or

   580 Sociological Statistics I 3

   or

   582 Research Methodology 3

   Ten to twelve additional hours in Sociology needed to complete major.

* b. Sociology-Anthropology major requirements ......... 30 hrs

   200 Principles of Sociology 3
   210 Modern Social Problems 3
   320 Social Psychology 3
   382 Methods of Sociological Inquiry 5

   or

   580 Sociological Statistics I 3

   or

   582 Research Methodology 3

   200 Physical Anthropology and Archaeology 3
   220 Cultural Anthropology 3

   Six additional hours in Anthropology and four to six additional hours in either Sociology or Anthropology needed to complete major.

c. Social Science major requirements .............................. 36 hrs.

   200 Physical Anthropology 3

   or

   220 Cultural Anthropology 3
   201 Principles of Economics 3
   210 (History) U.S. to 1877 3
   211 (History) U.S. since 1877 3

*All students desiring to declare the Sociology-Anthropology major should arrange for counseling by Dr. Robert J. Smith, Department of Anthropology.
200 (Pol. Science) National Government 3
and
202 (Pol. Science) State and Local Government 4
200 Sociology 3
382 Methods of Sociological Inquiry 5
or
580 Sociological Statistics 3
or
582 Research Methodology 3
Nine to eleven additional hours needed.

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.

   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
   250 Human Development and Learning 4
   410 Field Experience and Field Seminar I** 3
   and
   411 Field Experience and Field Seminar II** 3
   or
   412 Special Projects in Social Service** 4

4. Other Required Courses ....................................... 13-14hrs.
The following courses are required unless completed in major:
150 Psychology I 3
200 American National Government 3
or
202 State and Local Government 4
201 Principles of Economics 3
or
203 Economic Issues 3
200 Introduction to Philosophy 4
or
311 Political Philosophy 4

*"C" card required.
**410, 411 and 412 taken on an elective basis. Students should elect either 410 and 411 or 412 Consent of instructor required. Application to be made not later than 6 weeks prior to assignment.
5. Physical Education or Military Science ................. 4-8hrs.


Students are encouraged to elect additional courses in any area of their interest. For example, Communication Arts and Sciences, Philosophy, Political Science, Psychology, etc. The following 500 level courses in Social Work are offered as electives for choice by both undergraduate and graduate students.

- 533 Dynamics of Race and Culture for Social Work Practice 3
- 561 Community Development in Selected Countries 3
- 562 Community Organization in Urban Areas 3
- 563 Social Work Concepts in Rehabilitation 3
- 565 Correctional Process and Techniques 3
- 566 Social Services in the Schools 3
- 572 Community Agency Resources 2
- 598 Readings in Social Work 1-4

C. The candidate must satisfy the requirements for the A.B. or B.S. Degree.

**COURSE DESCRIPTIONS**

**300 Social Welfare as A Social Institution I**

3 hrs. Fall, Winter

Analysis of social work as an agent of social change and the role of the social reformer in producing change. Reflection in our social welfare institutions of the individualistic, egalitarian, democratic and humanistic values of our society. Examination of social work fields.

**301 Social Welfare as A Social Institution II**

3 hrs. Fall, Winter


**310 Values and Methods of Social Work**

3 hrs.

The roles of the social worker with the client, as a member of the operating structure, as a representative of the community and of the profession. Examination of various philosophical and moral
bases for the value system of social work and of the methods employed by the social worker in providing services, commonly designated as casework, group work, and community organization. Prerequisites: S.W. 300 or 301

402 Interventive Means in Social Services 3 hrs.
A generalized approach to interventive means covering the three methods of social work. Examination and discussion of cases illustrative of intervention means. Prerequisites: Social Work minor, S.W. 300, 301, 310.

410 Field Experience and Field Seminar I 3 hrs.
Participation in social service programs to extend student's knowledge of social welfare goals, operations and problems. Requires seminar of 1 hour per week and 75 clock hours in the field. Prerequisites: Social Work minor, S.W. 310. Not open except when taken concurrently or followed by 411.

411 Field Experience and Field Seminar II 3 hrs.
Continuation of Social Work 410. Requires seminar of 1 hour per week and 120 clock hours in the field. Prerequisites: Social Work minor, S.W. 410. Not open except when taken concurrently or following 410.

412 Special Projects in Social Service 4 hrs.
A course designed for social work students who do not elect S.W. 410 and 411 during the fall and winter semester. Individually planned service or study in the field will be worked out according to student interest. Weekly reports, term paper required. Prerequisites: Social Work minor, courses 300, 301, 310 and consent of instructor. Student required to complete 180 clock hours in the field. Application is to be made at least 6 weeks prior to assignment. Not open to students who have taken S.W. 410 and 411.

533 Dynamics of Race and Culture for Social Work Practice 3 hrs. Winter
Racial and group cultural characteristics of social welfare consumer groups and social work clientele are examined. Included in this analysis is an extensive survey of social science and administrative research materials. Implications are drawn for the planning, organizing, administration and provision and programs and services. Particular emphasis is placed on racial and cultural conflict. Prerequisite: C card.

561 Community Development in Selected Countries 3 hrs. Fall
This course is intended to provide basic information needed in understanding community life in developing countries. It places
emphasis on the history and philosophy of community development in the context of differential socio-economic systems. It includes understanding of community development as an instrument of social change. It also covers information on program content and deals with evaluation and analysis of organizational and administrative problems involved in implementing programs more effectively. Prerequisite: C card.

562 Community Organization in Urban Areas  
Social welfare planning, and social action methods are studied as approaches for preventing and resolving aspects of social problems in medium and larger size urban communities. Emphasis is placed on the organizing of neighborhood and consumer groups in order to increase social interaction and improve community conditions. Prerequisite: C card.

563 Social Work Concepts in Rehabilitation  
Application of social work problem solving concepts to social-psychological problems in the broad field of physical and mental rehabilitation. Both individualized services and programmatic implications are given consideration. Open to M.S.W. students and students from related professional departments, with consent of instructor. Prerequisite: C card.

565 Correctional Process and Techniques  
An overview of the correctional process as it can operate in probation, prison and parole to alter the criminal behavior patterns of legally defined offenders. A broad perspective is employed based on existing criminological theory and accumulated knowledge of the phenomenon of crime and delinquency. Selected techniques for correctional behavior modifications are studied in relation to a typology of normative deviancy in terms of both etiology and rehabilitation. Prerequisite: C card.

566 (564) Social Services in the Schools  
The role of the Social Worker in elementary and secondary schools and the necessary adaptations in the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationships with the surrounding community. The specific contributions of a School Social Worker as a helping person to the pupils, the school staff and the homes by various interventive means is explored. Prerequisite: C card.
572 Community Agency Resources     2 hrs. Fall, Winter

A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc. Prerequisites: C card.

598 Readings in Social Work         1—4 hrs. Fall, Winter

Offers advanced students with good scholastic records an independent program of study, arranged in consultation with the instructor. One to two hours credit per semester, cumulative to 4 hours. Prerequisite: Honors Program, or consent of Department Head.
College of Business

ARNOLD E. SCHNEIDER,
Dean

DARRELL G. JONES,
Associate Dean

LEO NIEMI,
Administrative Assistant

Departments:
Accountancy
Business Education and Administrative Services
General Business — Finance, Law
Management
Marketing

Institute:
Business Research and Service
The function of the College 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 business core subjects such as accounting, statistics, law, finance, marketing, management and 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 Career Planning and Placement Office is visited by the major firms that are engaged in recruiting activities.

The five main programs in the College of Business are:

1. Business Administration—Bachelor of Business Administration Degree.
3. Master of Business Administration for graduate students with 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.
5. Business Education—Master of Arts in the teaching of business subjects and Specialist in Arts in Business Education are intended to prepare teachers for superior classroom performance at both the secondary and post-secondary levels.
Business Administration Curriculum

Bachelor of Business Administration Degree

The courses and their proper sequence for the BBA degree are listed below.

The courses with lower numbers are considered general prerequisites to those with higher numbers. In addition, many are specific prerequisites as noted in the course descriptions in this catalog. Students are therefore cautioned against deviating from this pattern.

A further requirement is that of the 120 hours of course work exclusive of physical education, at least 48 hours must be taken from areas outside of business and upper division economics.

The last 30 hours of work for those in the BBA curriculum must be taken on campus. Exceptions may be granted only by approval of the Department Head and the Dean of the College of Business.

A. Minimum Hours Required for this Curriculum 124 hrs.

B. Course Requirements:

Freshman Year

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Studies</td>
<td></td>
</tr>
<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>One from the following: Physical Geography 105, Biological Science 107, Physical Science 108, Aims and Achievements of Science 110, Geological Science 112</td>
<td>4</td>
</tr>
<tr>
<td>2. BBA Core Cognates</td>
<td></td>
</tr>
<tr>
<td>Comm. Arts &amp; Sciences 104, Bus. and Prof. Speech</td>
<td>3*</td>
</tr>
<tr>
<td>Psychology 150, An Intro. to the Science of Behavior</td>
<td>3*</td>
</tr>
<tr>
<td>Math 116, Finite Math with Applications</td>
<td>3*</td>
</tr>
</tbody>
</table>

*The following 15 semester hours of BBA Core Cognates are approved alternatives to complete the 40 hours required in General Studies: Psychology 150 in Science; Economics 201, 202 in Social Science; Comm. Arts & Sciences 104 and Math 116 under General Studies III.
3. Physical Education
   S.H.  2
4. Electives (Bus. Education 140, Ind. & Bus. World; Management 102, Computer Usage; etc.)  6
   ________________  31

**Sophomore Year**

1. General Studies
   Arts and Ideas 222 or Non-Western Arts and Ideas 224  4
2. BBA Core Cognates
   Principles of Economics 201, 202  6*
   National Government 200  3
3. BBA Core
   Principles of Accounting 210, 211  6
   Business Communication 242  3
   Statistics 200  3
4. Physical Education
   2
5. Electives** (Economic Geography 244, Prin. of Sociology 200, etc.)  4
   ________________  31

**Junior Year**

1. General Studies
   Introduction to the Non-Western World 304 or approved substitute  4
2. BBA Core Cognates
   One advanced course in Economics  3
3. BBA Core
   The Legal Environment 340  3
   Business Law 341  3
   Business Finance 320  3
   Fundamentals of Management 300  3
   Marketing 370  3
4. Major and Minor Requirements and Electives**  9
   ________________  31

*The following 15 semester hours of BBA Core Cognates are approved alternatives to complete the 40 hours required in General Studies: Psychology 150 in Science; Economics 201, 202 in Social Science; Comm. Arts & Sciences 104 and Math 116 under General Studies III.

**Four hours of the Electives must be outside of Business and Economics (other than Principles of Economics) to meet the 48-hour requirement.
Business Administration Curriculum

Senior Year

1. General Studies
   Elect one course from: Human Communications 400, Science and Intellectual History 401, American Culture 402, Criticism of Mass Media 403, Molders of Thought 405, Social and Cultural Change 408, Seminar in Contemporary Issues 497 4

2. BBA Core
   Management Problems 499 3

3. Major and Minor Requirements and Electives 24

   31

Note to Transfer Students:

Students at two-year community colleges who plan to continue at WMU are urged to take courses equivalent to the ones listed for the Freshman and Sophomore years. Except for 341 Business Law, they should not take the upper division courses listed for the Junior and Senior years as these cannot be accepted as equivalents to satisfy curriculum, major or minor requirements; nor will the hours transfer for University credit.

Regarding the Mathematics 116 requirement, a three-hour college algebra course based on a prerequisite of three years of college preparatory mathematics is acceptable as a transfer course.

With departmental approval, transfer courses from four-year schools (and appropriate lower-division courses from community colleges) may be included in majors and minors. However, a minimum of 12 semester hours for a major and 9 for a minor must be taken at WMU.
Major Areas of Concentration In Business Administration

DEPARTMENT OF ACCOUNTANCY

Major Requirements:  
Principles of Accounting 210, 211 .................................................. 6  
Financial Accounting 310, 311 .................................................. 6  
Cost Accounting 322 .......................................................... 3  
Income Tax Accounting 324 .................................................. 3  
Financial Accounting 411 .................................................. 3  
Auditing 516 ................................................................. 3  
Elective in Accountancy ................................................... 3

S.H.  

Accountancy Electives Available for Major Requirements:  
Accounting Information Systems 413 ........................................ 3  
Institutional Accounting 414 ............................................... 3  
Honors Seminar in Accounting 418 ....................................... 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 Elementary 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 AND ADMINISTRATIVE SERVICES

1. Teaching of Business Subjects
   Adviser: Contact Departmental Office

   The B.B.A. degree with certification for teaching business subjects at the secondary school level requires, in addition to the Business Administration curriculum, 21 semester hours of professional education courses listed on page 469 and Methods of Teaching Business Subjects, 346. Particular attention is called to footnote three on that page.

   In order to obtain teacher certification, it is necessary to have on record a teachable business major consisting of thirty appropriate hours and a teachable minor of twenty appropriate hours also in business or another suitable discipline.

   For certification with the B.S. or B.A. degree see the curriculum in Business Teacher Education listed on Page 468.

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
      Adviser: Null

      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
      S.H.

      College Writing 116  4
      Freshman Reading 140  2
      General Studies electives**  8
      Production Typewriting 185  3
      Transcription 184  4
      Office Machines 281  3
      Psychology I 150  3
      Industrial and Business World 140  3
      Physical Education  1
      ________________________
      31

      Third and Fourth Semesters
      S.H.

      Business Communication 242  3
      Records Management 288  2
      Coordinated Business Exp. 282  3
      Coordinated Business Exp. 283  1
      Accounting 210  3
      Office Organization 386  3
      Secretarial Practice 287  3
      Electives**  13
      ________________________
      31

   **Electives chosen after consulting with adviser.
B. Administrative Supervision Phase (fifth, sixth, seventh and eighth semesters) Adviser: Null

This phase of the curriculum requires the completion of:

1. The General Studies requirements listed on page 31 of this catalog.
2. The Business Administration Curriculum requirements listed on pages 457-459.

GENERAL BUSINESS

The General Business Department offers majors and minors in Finance, Insurance, General Business; and a minor in Business Law.

1. Finance Majors
   REQUIRED COURSES
   
   American Financial System 310 ........................................... 3
   Business Finance 320 ....................................................... 3
   Investments 326 ............................................................. 3
   Financial Management II 427 .............................................. 3
   PLUS ANY 4 OF THE FOLLOWING:
   Financial Accounting 310 .................................................... 3
   Risk and Insurance 321 ...................................................... 3
   Financial Management I 425 ............................................... 3
   Senior Topics in Finance 499 ............................................. 3
   Cost Accounting 322 ......................................................... 3
   Option 2: Securities and Investment Management—Advisers: Edwards & Wiseman
   REQUIRED COURSES
   American Financial System 310 ........................................... 3
   Business Finance 320 ....................................................... 3
   Investments 326 ............................................................. 3
   Financial Management II 427 .............................................. 3
   PLUS ANY 4 OF THE FOLLOWING:
   Financial Accounting 310 .................................................... 3
   Risk and Insurance 321 ...................................................... 3
   Management of Financial Institutions 428 ......................... 3
463

Business Administration Curriculum

S.H.

Senior Topics in Finance 499 ........................................... 3
Security Analysis 520 ................................................... 3

Option 3: Financial Markets and Institutions—Adviser: Walsh

REQUIRED COURSES
American Financial System 310 ........................................... 3
Business Finance 320 .................................................... 3
Investments 326 ........................................................... 3
Financial Management II 427 .......................................... 3

PLUS ANY 4 OF THE FOLLOWING:
Risk and Insurance 321 .................................................... 3
Real Estate 322 ............................................................. 3
Money and Capital Markets 426 ....................................... 3
Management of Financial Institutions 428 ......................... 3
Senior Topics in Finance 499 .......................................... 3
Security Analysis 520 .................................................... 3

Option 4: Insurance—Adviser: Burdick

REQUIRED COURSES
American Financial System 310 ........................................... 3
Business Finance 320 .................................................... 3
Risk and Insurance 321 .................................................... 3
Investments 326 ........................................................... 3

PLUS ANY 4 OF THE FOLLOWING:
Life and Health Insurance 422 ......................................... 3
Property and Liability Insurance 424 ................................. 3
Financial Management 427 ............................................. 3
Advanced Life and Health Insurance 526 ......................... 3
Problems in Multiple-Line Insurance 528 ......................... 3

2. Finance Minors

Advisors: Burdick, Edwards, Grossnickle, Walsh and Wiseman

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 sequence 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 Administration Core listed on pages 457-59 shall be entitled to declare these as his 15-semester-hour General Business minor.* One advanced business 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 Communication, Statistics, Business Finance, Business 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.

MANAGEMENT

Major in Management (24 hrs.)

A major in Management consists of the five courses listed below 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.

S.H.

Fundamentals of Management 300 ........................................ 3
Fundamentals of System Performance 301 ............................ 3
Concepts of Analysis 302 .................................................. 3
Information for Decision Making 303 ................................. 3
Systems Analysis and Design 304 ...................................... 3
(Management 301-302 and 303-304 are taken concurrently.)

Minor in Management (15 hrs.)

A minor in Management consists of 300, 301, 302, 303 and 304.

*For a 20-semester-hour Business Education Teaching Minor, see Business Education adviser.
MARKETING

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.

1. Advertising
   Adviser: Cannon

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Advertising Copy &amp; Layout 474</td>
<td>3</td>
</tr>
<tr>
<td>Advertising Media/Campaigns &amp; Strategies 572</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Problems 576</td>
<td>3</td>
</tr>
<tr>
<td>Elective From Marketing Department</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

2. Retailing
   Adviser: Embertson

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Retailing 375</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Retail Merchandising &amp; Promotion 476</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Internship 479</td>
<td>1-6</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Problems 576</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

3. Industrial Marketing
   Adviser: Otteson

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Purchasing Management 372</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Marketing 470</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Logistics 574</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Problems 576</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>
4. General Marketing  Advisers: “A” thru “K”—Hardin
    “L” thru “Z”—Orr

    Marketing 370 ................................................................. 3
    Advertising 374 ............................................................. 3
    Sales Administration 376 ................................................. 3
    Industrial Marketing 470 .................................................. 3
    Marketing Research 573 .................................................... 3
    International Marketing 575 .............................................. 3
    Marketing Problems 576 .................................................... 3
    Elective From Marketing Department .................................. 3

    S.H. 24

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 who complete the B.B.A. curriculum core requirements listed on pages 457-59 may major in the following two areas and receive the B.B.A. Degree.

1. Economics  Adviser: Bowers
   Elect 30 semester hours from the Department of Economics.

2. Public Administration  Adviser: Morrison
   The Public Administration curriculum requires the completion of the Business Administration major and the Political Science minor listed on the 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:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Accounting, Accounting 414</td>
<td>3</td>
</tr>
<tr>
<td>Electronic Data Processing, Management 555</td>
<td>3</td>
</tr>
<tr>
<td>Real Estate Fundamentals, Gen. Bus 322</td>
<td>3</td>
</tr>
<tr>
<td>Law of Real Property, Gen Bus. 542</td>
<td>3</td>
</tr>
<tr>
<td>Legal Problems of International Business, Gen. Bus. 543</td>
<td>3</td>
</tr>
<tr>
<td>Office Management, Bus. Edu. 556</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Logistics, Marketing 574</td>
<td>3</td>
</tr>
<tr>
<td>International Marketing, Marketing 575</td>
<td>3</td>
</tr>
<tr>
<td>Income Tax Accounting, Accounting 324</td>
<td>3</td>
</tr>
</tbody>
</table>

**Minor:** (Political Science)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Government 200</td>
<td>3</td>
</tr>
<tr>
<td>State and Local Government 212</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Public Administration 330</td>
<td>3</td>
</tr>
<tr>
<td>Problems of Public Administration 530</td>
<td>3-4</td>
</tr>
<tr>
<td>Administrative Law and Public Regulation 526</td>
<td>3</td>
</tr>
</tbody>
</table>
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.

A. Minimum hours required for this curriculum .......... 124

B. Course Requirements

1. General Studies requirements as described on page 31 of the catalog must be met.

2. Social and Behavioral Sciences .................................. 11
   American National Government 200 ............................. 3
   Principles of Economics 201, 202 ............................... 6*
   Psychology I 150 or equivalent ................................. 8**

*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.
***Completion of 70 semester hours in the College of Arts and Sciences leads to a Bachelor of Arts degree.
### 3. Professional Education courses

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development and Learning 250</td>
<td>4</td>
</tr>
<tr>
<td>Teaching and Learning, Secondary 300</td>
<td>3***</td>
</tr>
<tr>
<td>Seminar in Education 410</td>
<td>2</td>
</tr>
<tr>
<td>School and Society 450 or Principles of</td>
<td></td>
</tr>
<tr>
<td>Practical Arts and Vocational Education 520...</td>
<td>3</td>
</tr>
<tr>
<td>Directed Teaching 470</td>
<td>9</td>
</tr>
</tbody>
</table>

### 4. Business Education Core

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinated Business Experience 282 or</td>
<td>3</td>
</tr>
<tr>
<td>equivalent</td>
<td></td>
</tr>
<tr>
<td>Business Communication 242</td>
<td>3</td>
</tr>
<tr>
<td>Industrial and Business World 140</td>
<td>3</td>
</tr>
<tr>
<td>or elective from Marketing or Management</td>
<td>3</td>
</tr>
<tr>
<td>Consumer Principles and Practices 292</td>
<td>3</td>
</tr>
<tr>
<td>Office Automation 330</td>
<td>3</td>
</tr>
<tr>
<td>Teaching of Business Subjects 346</td>
<td>3-5</td>
</tr>
<tr>
<td>Office Organization 386</td>
<td>3</td>
</tr>
</tbody>
</table>

### 5. Major and minor requirements: electives

<table>
<thead>
<tr>
<th>Electives</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34-36</td>
</tr>
</tbody>
</table>

### 6. Physical Education or Military Science

<table>
<thead>
<tr>
<th>Subject</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

### C. Suggested Areas of Emphasis

**Adviser: Contact Dept. Office**

1. Secretarial and related business subjects
2. Accounting and related business subjects
3. Salesmanship, retailing and related subjects
4. General Business and related subjects
5. Data Processing and related subjects
6. Office Education Coordinator
7. Other areas of emphasis are available: See adviser.

### D. Business Education Minors

**Adviser: Contact Dept. Office**

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.

***A Professional Education Sequence card must be presented when registering for Teaching and Learning, Ed. 300. It is necessary to be enrolled in Human Development and Learning, Ed. 250, and have Health Statement and Speech and Hearing Test forms completed before application for sequence card may be made.
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 469 of this catalog, 5 semester hours of courses from a subject-matter area such as Accounting, General Business, Electronic Data Processing, Retailing, Salesmanship, or other area appropriate for secondary education, will complete the minor.

3. Administrative Services
This is a non-teaching Administrative Services minor designed to provide preparation in the basic business tool courses that serve as complementary adjuncts for appropriate academic majors. With the approval of the advisers the student selects 18 hours with an emphasis on areas such as Clerical, Secretarial, Electronic Data Processing, Business Communications or a combination of these.
399 Field Experience (Community Participation) 2-8 hrs.

A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

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 College of 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 Accountancy, Business Education and Administrative Services, General Business, Management or Marketing, if approved by the Head of the Department prior to registration for the seminar.
College of Business

Accountancy

John T. Burke, Head

James E. Daniels
Frederick Everett
Ronald Larsen
Walter Logan
James L. Mitchell, Jr.
William C. Morris
Robert D. Neubig

Gale E. Newell
Frederick W. Schaeberle
Bernard Sered
John D. Sheppard
William R. Welke
Robert B. Wetnight
Hubert Zelechowski

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.

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.

A continuation of course 210 with emphasis on financial and cost accounting concepts. Prerequisite: 210.

310 Financial Accounting I 3 hrs.

A study of the valuation of current assets, investments, plant and equipment and current liabilities as well as their affect on business net income. Prerequisite: 211.
Accountancy

311 Financial Accounting II

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

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

A study of the federal income tax laws, as they apply to individuals, partnerships, and corporations. Prerequisite: 211.

410 Internship in Accounting

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) Financial Accounting III

Accounting for problems in special sales, consolidations and equities. Prerequisite: 311 and senior standing.

413 (513) Accounting Information Systems

An examination of the accounting system as an element of the management information system in various types of businesses. Prerequisite: 211 or written consent of instructor.

414 (314) Institutional Accounting

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.

418 Honors Seminar in Accounting

Seniors who are eligible may enroll for departmental honors. Requirements and permission to elect must be obtained at Department of Accountancy office.

516 (416) Auditing

The theory and practice of public and internal auditing of business enterprises. Prerequisite: 311 and senior accounting major.
College of Business

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 examination, 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. Winter

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 an introduction to tax planning are included. Prerequisite: 324 or written consent of instructor.

598 Readings in Accounting  1-4 hrs.

Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
The Department of Business Education and Administrative Services includes the areas of preparation for business teaching, office education coordination, administrative supervision and administrative secretarial positions. 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, which may also be within the department, consists of 20 semester hours. The non-teaching Administrative Services minor consists of 18 semester hours.

**140 Industrial and Business World** 3 hrs.

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, phys-
College of Business

ical location and lay-out, production problems are included. Not open to Junior and Senior 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 is 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.

A study of the theory of interpersonal communication. Application of principles of effective interpersonal communication to problems in business communication. Directed practice in utilization of a variety of business communication formats. 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 Integrated Office Skills  
3 hrs. Fall, Winter, Spring

This course is designed primarily for students preparing for administrative services and executive secretarial occupations and/or business teaching. Utilizes exercises integrating typewriting, voice writing, duplicating, listing and calculating and punch-card machines, and office filing. Prerequisite: Business Education 183 or equivalent.

282 Coordinated Business Experience  
3 hrs. Fall, Winter

A work-experience course meeting weekly for students in the Secretarial and Business Teacher Curriculum. Prerequisites: current or previous enrollment in Business Education 184, and/or Business Education 185, and/or Business Education 287, or department permission.

283 Coordinated Business Experience  
1 hr.

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, Spring

This course develops the knowledge 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, Spring

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.

292 Consumer Principles and Practices  
3 hrs. Fall, Winter

A study of national and individual consumer practices and habits. Consideration of purchasing, credit, insurance, financing, advertising, law — warranty, guaranty, landlord and tenant.

330 Office Automation  
3 hrs. Fall, Winter

The historical development of office automation from elementary
manual to fully automatic techniques is studied. Consideration is given to the impact of automation on the various administrative service functions performed in organizations.

342 Organizational Communication 3 hrs. Fall, Winter, Spring

A study of the theory of communication in structured organizations and applications of communication theory to the solution of communication problems in organizations. Directed practice in preparation of written and oral business reports and in utilization of other organizational communication formats. Prerequisite: Business Communication 242.

346 Teaching of Business Subjects 3-5 hrs. Fall, Winter, Spring

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 effect 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.

410 Internship in Business Education 2-6 hrs.

Under the direction of a faculty advisor, selected qualified students may elect to engage in teaching-learning experiences they would not ordinarily have available to them. Some examples of such teaching-learning experiences are: teaching typewriting and other office machines to the handicapped; teaching consumer education and basic business in programs for the disadvantaged; supervising simulated office laboratory experiences; tutoring foreign students; participation on federal, state and local adult education programs. Scheduled meetings with advisor and submission of written experience reports required. Prerequisites: filing of a departmental permission to elect form; permission of the instructor.

552 Management Report Writing 3 hrs.

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.

556 Office Management 3 hrs.

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.

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 Subjects 2 hrs.
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.
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.
A series of directed readings in the area of Business Education. Prerequisite: Written consent of department head.
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 College 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 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: Accounting 210 and 211.

320 Business Finance 3 hrs.

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.
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College of Business

322 Real Estate Finance 3 hrs. Fall, 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.

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.

425 (324) Financial Management I - Short-term Capital 3 hrs. Fall, Winter, Spring

An analysis of the managerial aspects relating to the inflows and outflows of working capital in corporate enterprises. The course examines in lecture and case discussion the different aspects involved in the effective management of the cash, receivables and inventory functions; the use of rating agencies in aiding credit acceptance; and the many considerations which become a part of the short-term financing function of the corporate enterprise. Prerequisite: Business Finance 320.

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 and Business Finance 320.

427 Financial Management II - Long-term Capital 3 hrs. Fall, Winter, Spring

An analysis of the managerial aspects relating to the inflows and outflows of permanent capital in corporate enterprises. The course examines in lecture and case discussion the different aspects involved in the effective management of long-lived assets, intermediate and long-term credit, equity and internal financing. It covers, in addition, the areas of corporate expansion including mergers and acquisitions and covers the financial aspects of cor-
porate reorganizations and bankruptcies. Prerequisite: Business Finance 320.

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, 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, 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, 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.

536 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 Legal Environment 3 hrs.

An introduction to the legal environment in society.

341 Business Law 3 hrs. Fall, Winter, Spring

Continuation of Legal Environment 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 Legal Environment.

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 Legal Environment.

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 Legal Environment.
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.

543 Legal Problems of International Business  
3 hrs.

A study of United States, foreign and international law which affect business corporations.

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        Alan H. Leader        Max C. Schnoor
Thomas Brayton       Leo Niemi           Melvin J. Tessin
Bela Feher           Carol A. Pagel      Roger L. Wallace
Fred V Hartenstein    John R. Rizzo      Harold K. Wilson
James W. Hill         Arnold E. Schneider

102 Computer Usage 3 hrs.
An introductory course in the use of time-shared computers. The student will utilize a remote terminal for the recording, transmission, and analysis of data through generally available program libraries.

200 Statistics 3 hrs.
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 116 or equivalent.

250 Small Business Management 3 hrs.
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 Fundamentals of Management 3 hrs.
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, Co-requisite: Mgmt. 302.

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. 200, Co-requisite: Mgmt. 301.

303 Information for Decision Making 3 hrs. Fall, Winter, Spring

Basic methods for collecting and collating 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.

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. This course is an introductory course in personnel management.

400 Topics in Management 3 hrs.

An examination of advanced topical problems in management. Prerequisite: Mgmt. 303 and 304, and consent of instructor. (Repeatable).

420 Forecasting 3 hrs.

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: Mgmt. 200.
430 Systems Analysis

The course is organized as a project team effort to analyze a specified problem within the topic area listed. The team will develop a proposal, organize work packages and complete an analysis of the selected system. Prerequisite: Mgmt. 301-304 and permission of department.

458 Independent Study

Independent research on specialized management topics. Prerequisite: Mgmt. 303 and 304, and consent of instructor. (Repeatable.)

490 Honors Seminar

A discussion of selected topics in contemporary management. Prerequisite: Consent of departmental honors committee and instructor. May be repeated for credit.

491 Independent Honors Studies in Management

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 Management Problems

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. Prerequisites: Senior standing and all core courses.

500 Management Literature

Studies in specialized areas of the management literature. The students will prepare an original paper on an assigned topic. These papers will be integrated by the class into a single document focused on a selected area of management theory.

540 Advanced Statistics

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: Mgmt. 200.
553 Planning and Analysis for Production 3 hrs.
An examination of modern methods of analysis, their relation to the production process and their utilization in management planning. Cases and problems will be utilized. Prerequisites: Principles of Economics and Mgmt. 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 cost. Allocation of men, money and machines among alternative uses. Other strategies and control methods applicable to management, marketing and finance. Prerequisite: Mgmt. 200.

555 Electronic Data Processing (Topic) 3 hrs. Fall, Winter, Spring
Computer programming in BASIC, FORTRAN IV and COBOL languages. Special topics relating to the planning, organization and direction of management information systems in business, industry and government.
The course may be repeated for different programming languages and topics.

557 Inventory Management 3 hrs.
The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisite: Mgmt. 200 or equivalent.

564 Simulation Models 3 hrs.
Development of a model for the integration of the functional areas of business to create more successful management policies and organizational structures. Prerequisite: Mgt. 200.

598 Readings in Management 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. May be repeated for credit by permission of Department Head.
Marketing

Robert B. Trader, Head
Alvin J. Bytwork
Zane Cannon
Richard E. Embertson
Jim L. Grimm
Frances S. Hardin
Leonard D. Orr
Conner P. Otteson
Emil J. Sokolowski
Dale U. Varble

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, and a classroom demonstration. Not open for Marketing major or minor credit.

370 (240) Marketing 3 hrs.

Functions, institutions, and problems of marketing examined from the viewpoint of their affect 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.

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) 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.

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 adviser. 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.
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College of Business

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, Statistics 200.

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.

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.
College of Education

JOHN E. SANDBERG,
Dean
MAURICE F. SEAY,
Associate Dean
MORVIN A. WIRTZ,
Associate Dean

Departments:
Teacher Education
Special Education
Educational Leadership
Counseling and Personnel
Physical Education for Men
Physical Education for Women

Agencies:
Center for Educational Research
Center for Directed Teaching
Educational Resources Center
Institute of Blind Rehabilitation
Reading Center and Clinic
The College of Education consists of the following departments and agencies: Teacher Education, Special Education, Educational Leadership, Counseling and Personnel, Physical Education for Men, Physical Education for Women, the Educational Resources Center, the Institute of Blind Rehabilitation, the Center for Educational Research, the Center for Directed Teaching, and the Reading Center and Clinic.

In general, the College 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 college;
4. Offers service courses to students in other colleges 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.

**ALL COLLEGE COURSE**

**399 Field Experience (Community Participation) 2-8 hrs.**

A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

**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 3312 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; (3) receive approval of an all-University teacher education selection committee; and (4) have completed Teacher Education 250 and 300 in curricula for which these courses are a requirement.

**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 Center, 2504 Sangren Hall. This program leads to full certification and the bachelor's degree.
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 College of General Studies; (2) advanced specialized study, with major and minor interests in the fields of the student’s choice, offered in the various colleges of the University; and (3) professional education courses offered in the College 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, 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 subject 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**

Bachelor of Arts or Bachelor of Science 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 31 of the catalog must be met.

2. Elementary Education Minor ........................................... 21 hrs
   Mathematics 150 - Structure of Arithmetic .......... 4
   English 282 - Children’s Literature ...................... 4
   Teacher Education 507 - Elementary School ...... 4
Curricula for Teachers

Social Studies .................................................. 2
Music 140 -- Music for the Classroom Teacher .... 4
Art 150 -- Art Education Workshop .................. 3
Practical Arts† .................................................. 3
Physical Education 340 (PEW) -- Physical
for the Classroom Teacher ...................... 1

3. Teacher Education ........................................... 24 hrs.
   Human Development and Learning 250 .............. 4
   Teaching and Learning in the Elementary
   School 300 ............................................. 3
   Teaching of Reading 312 ................................. 3
   Directed Teaching, Seminar in Education, and
   School and Society 470, 410, and 450 .......... 14

4. Physical Education ........................................... 4 hrs.
   (Must include PEW 340 Physical Education for the
   Elementary Teacher)

C. Two minors of 20 hours each or group minors of 24 hours
   each; or one major of 36 hours or group major of 36 hours
   are required. This requirement is in addition to the re-
   quired El. Ed. minor. (Check catalog descriptions for major
   and minor requirements.)

   The following areas are acceptable fields for majors and/or minors
   in Elementary Education:
   African Studies*; American Studies**; Anthropology; Art; Asian
   Studies*; Biology; Black Americana Studies*; Chemistry; Commu-
   nication Arts and Sciences; Earth Science; Economics; English;
   Family Life Education*; French; Geography; Geology; German;
   Health Education*; Health Physical Education & Recreation (Men);
   History; Integrated Creative Arts*; Latin American Studies*; Li-
   brary Science*; Linguistics*; Mathematics; Music; Physical Edu-
   cation (Women); Physics; Political Science; Rural Life & Educa-
   tion**; Russian; Science; Slavic Studies*; Social Science; Sociol-
   ogy; Spanish.

   *Minors only—**Majors only

   NOTE: Students who choose a Special Education major must be
   admitted to the Special Education curriculum. See requirements
   on pages 508-513.

D. The candidate must satisfy the requirements of the A.B.
   or B.S. degree.

E. Nursery School Certification.†

†Students wishing to meet State Certification Requirements for Nursery Teaching inquire at
   Teacher Education Office (2112 Sangren).
‡Students with a minor in Librarianship may substitute 3 S.H. of Library Science courses for
   the practical arts requirement.
RURAL ELEMENTARY CURRICULUM
Bachelor of Arts or Bachelor of Science 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 31 of the catalog must be met. (Students should include Physical Geography and Biological Science.)

2. Elementary Education Minor ........................................ 20-21 hrs.
   Children’s Literature 282 ........................................... 4
   Structure of Arithmetic 150 ......................................... 4
   Music for the Classroom Teacher 140 .......................... 4
   Art Education Workshop 150 ..................................... 3
   Physical Education for the Elem. Teacher 340 ............... 1
   Elementary School Social Studies 507 ......................... 2
   Practical Arts course (One course in Business, Home Econ., Indus. Ed. or Occup. Therapy) 3

3. Professional Education Sequence ................................. 19-24 hrs.
   Human Development and Learning 250 ....................... 4
   Teaching and Learning 300 ....................................... 3
   Teaching of Reading 312 ......................................... 3
   Directed Teaching* ................................................. 9 or 5
   Seminar in Education 410 ** ................................... 2
   School and Society 450 ......................................... 3

*Only for students enrolled in the Special Program described below.
**Not required of students enrolled in the Special Program.
   Rural Sociology 220 ........................................... 3
   Rural Economics 230 .......................................... 3
   Rural Life (Seminar) 525 ....................................... 2
   Curr. Organization in Small Schools 201 ................. 3
   Problems of Comm. Schools in Rural Areas 411 ............ 1-2
   Supervision in Rural Area School (Sem.) 408 .......... 1-2

5. Physical Education (General)
   (Physical Education 340 will count toward one hour of this)

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. In addition to the major or two minors, the Elementary Education minor is required.

D. The candidate must satisfy the requirements for the B.A. 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 Rural Life and Education, may teach full time with pay after successfully completing 90 hours of carefully selected courses, including directed teaching, from the curriculum.

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.
MIDDLE SCHOOL AND
JUNIOR HIGH SCHOOL CURRICULUM

Bachelor of Arts or Bachelor of Science 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 31 of the catalog must be met.
2. Communication Arts and Sciences, Language, Literature, Philosophy and Religion .............................. 3 hrs.
   Speech for Teachers 102 ........................................... 3
   Psychology II 160 .................................................. 3
4. Social Sciences .................................................................. 6 hrs.
   Principles of Sociology 200 .......................................... 3
   Juvenile Delinquency and the Comm. 514 ..................... 3
5. Teacher Education .............................................................. 21 hrs.
   Human Development and Learning 250 ....................... 4
   Teaching and Learning in Jr. H.S. 300 ......................... 3
   Directed Teaching, Seminar in Education and
   School and Society 470, 410, and 450 ..................... 14
   Teaching of Reading (Secondary 322, strongly
   recommended). ......................................................... 3
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 depart-
ments may not be counted toward majors or minors. (See course
descriptions.)
Acceptable academic majors for this curriculum are designed
in the following fields: Communication Arts and Sciences, En-
Curricula for Teachers

glish, 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 Communication Arts and Sciences, 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 academic 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

Bachelor of Arts or Bachelor of Science 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 31 of the catalog must be met.
   2. Teacher Education ........................................ 21 hrs.
      Human Development and Learning 250 ................. 4
      Teaching and Learning in Jr. or Sr. H.S.300 ........ 3
      Directed Teaching, Seminar in Education and
      School and Society 470, 410, and 450 ................. 14
   3. Physical Education or Military Science ............. 4 or 8 hrs.

C. One major of 30 hours or group major of 36 hours, and one minor of 20 hours or group minor of 24 hours or one second major in subjects or subject fields taught in the Junior and Senior high school. Certain courses in some de-
partments 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; Asian Studies*; Biology; Black Americana Studies*; Business Education; Chemistry; Communication Arts and Sciences; Distributive Education; Earth Science; Economics; English; Family Life Education*; French; General Business*; Geography; Geology; German; Health Education*; Health, Physical Education & Recreation (Men); History; Home Economics; Industrial Arts; Latin; Latin American Studies*; Library Science*; Linguistics***; Mathematics; Music*; Music Education**; Physical Education (Women); Physics; Political Science; Psychology; Retailing*; Russian; Science; Slavic Studies*; Social Science; Sociology; Spanish; Vocational-Technical Education.

*Minors only—**Majors only—***Minors or second majors only

NOTE: Students who choose a Special Education major must be admitted to the Special Education in Curriculum. See requirements on pages 508-513.

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

Bachelor of Arts or Bachelor of Science 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 31 of the catalog must be met.

2. Teacher Education ......................................................... 21-26 hrs.
   See elementary, junior high and senior high curricula requirements.
   Librarianship as a Profession: Introduction
   (Strongly recommended for elementary; required for secondary) ........................................ 2
   Fundamentals of Library Organization 230 ............. 3
   Building Library Collections 510 ......................... 3
   Reference Service 512 ............................................. 3
   Cataloging Principles 530 ....................................... 3
   School Library Experience 407 .............................. 3
   Reading Interests of Young Adults 542* .................. 3
   Storytelling 546** ..................................................... 3
   Elementary School Library Materials 516** .............. 3

4. Humanities ................................................................. 22 hrs.
   Modern foreign language ........................................... 8
   Children’s Literature 282 ......................................... 4
   (elementary and junior high)
   English electives .................................................. 4—8
   Communication Arts and Sciences .............................. 3
   Elective ........................................................................ 3
   (junior high and secondary)

5. Social Science ............................................................... 3—9 hrs.
   Political science (government) elective .................... 3
   History electives ........................................................ 3—6
   (junior high and secondary only)

6. Science
   Elective ........................................................................ 3—4 hrs.
   (elementary and junior high—see curricula requirements)

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 provisional certificate must elect an additional minor or group minor of 20 or 24 hours.

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.

*Required only for teacher-librarian candidates in the secondary curriculum.
**Required only for teacher-librarian candidates in the elementary curriculum.
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 31 of the catalog must be met.

2. **Music Theory** ................................................................. 18 hrs.  
   - Basic Music 160, 161, 260, 261, 360 ....................... 16  
   - Theory Elective ......................................................... 2

3. **Musical Performance** .................................................. 36—42 hrs.  
   - Major Performance Medium ........................................... 16  
   - Secondary Performance Media, Conducting and Ensemble ........................................ 20-26  
   (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  
   - Teaching and Learning in Secondary School 300 ....................... 3  
   - Directed Teaching, Seminar in Education and School and Society 470, 410, and 450 ....................... 14  
   - General Music Methods 240 ................................. 3  
   - Music Methods Electives ......................................... 6

5. **Physical Education or Military Science** .................. 4 or 8 hrs.

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

Bachelor of Science 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 31 of this catalog must be met.

   Basic Music 160-161 .................................. 6
   Elem. Music Practicum 244-245 ........................ 6
   Piano and Voice ........................................ 10
   Music Appreciation 170 ................................ 4
   General Methods 240 .................................. 3
   Graderoom Music Literature 374 ....................... 3
   Ensemble ................................................ 5
   Choral Conducting 330 .................................. 2

3. Elementary Education Minor ............................ 21 hrs.
   Children’s Literature 282 .............................. 4
   Structure of Arithmetic 150 ............................ 4
   Elementary School Social Studies 507 ................. 2
   Approved Elective
     (Substitution for Music for the Classroom Teacher 140) ..................... 4
     Art Education Workshop 150 .......................... 3
     Physical Education for Classroom Teacher 340 ........ 1
     Practical Arts ......................................... 3

4. Teacher Education ...................................... 24 hrs.
   Human Development and Learning 250 ................... 4
   Teaching and Learning in Elementary School 300 ...... 3
   Teaching of Reading 312 ................................ 3
   Directed Teaching, Seminar in Education, and School and Society, 470, 410, and 450 .......... 14

5. Physical Education ..................................... 4 hrs.
   (Includes Physical Education for the Elementary Teacher 340)

6. Electives to make 124 hours
SPECIAL EDUCATION CURRICULUM
ORTHOPEDICALLY HANDICAPPED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of crippled and homebound children)

A. Minimum hours for this curriculum .................................. 132 hrs.
   (If B.A. degree is desired, see catalog for these requirements)

B. Course Requirements

1. General Studies requirements must be met ...................... 34 hrs.
2. Communication Arts and Sciences, Language,
   Literature, Philosophy, Religion ................................ 4 hrs.
   Children's Literature 282 ..................................... 4

   Structure of Arithmetic 150 ..................................... 4
   Psychology I 150 .................................................. 3

4. Teacher Education .................................................. 11 hrs.
   Human Development and Learning 250 ......................... 4
   Teaching of Reading 312 ........................................ 3
   Directed Teaching 471 (Regular Class) ....................... 4

5. Fine Arts (Art and Music) .......................................... 7 hrs.
   Music for the Classroom Teacher 140 ......................... 4
   Art Education Workshop 150 .................................... 3

6. Practical Arts ....................................................... 2 hrs.
   Arts and Crafts for Teachers 593 .............................. 2

7. Orthopedically Handicapped - Major ............................ 40 hrs.
   Education of Exceptional Children 530 ....................... 3
   Practicum in Special Education 531 .......................... 2
   Nature and Needs of Crippled and Homebound Children 543 4
   Diagnostic and Prescriptive Techniques in Special Education 533 4
   Curricular and Instructional Provisions for Exceptional Children 534 4
   Behavior Disorders in School-Aged Children 588 3
   Communication Disorders 200 .................................. 3
Orthopedic and Medical Lectures 524 ............... 4
Directed Teaching (Special Educ.) 474 ............... 8
Seminar in Education 410 .................................. 2
School and Society 450 ..................................... 3

8. Physical Education or Military Science ............ 4 or 8hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. One Academic Minor in a subject or subject field
   taught in the elementary school ....................... 20hrs.

D. Electives (Under Advisement) ......................... 3hrs.

E. The candidate must satisfy the requirements for the
   B.S. degree or the B.A. degree.

SPECIAL EDUCATION CURRICULUM
VISUALLY HANDICAPPED

Bachelor of Science Degree

State Elementary Provisional Certificate
(For the preparation of teachers of visually impaired children)

A. Minimum hours for this curriculum .................... 132hrs.
   (If B.A. Degree is desired, see catalog for these requirements)

B. Course Requirements
   1. General Studies requirements must be met ........... 34hrs.
   2. Communication Arts and Sciences, Language,
      Literature, Philosophy or Religion ................... 7hrs.
         Children’s Literature 282 ......................... 4
         General Speech 100 ............................... 3
         Structure of Arithmetic 150 ....................... 4
         Psychology I 150 .................................. 3
   4. Teacher Education .................................... 11hrs.
         Human Development and Learning 250 ............. 4
         Teaching of Reading 312 .......................... 3
         Directed Teaching 471 (Regular Class) .......... 4
College of Education

5. Fine Arts (Art and Music) ........................................... 7hrs.
   Music for the Classroom Teacher 140 .................. 4
   Art Education Workshop 150 .................. 3

6. Practical Arts ......................................................... 2 hrs.
   Arts and Crafts for Teachers 593 .................. 2

7. Visually Handicapped - Major .................................... 38hrs.
   Education of Exceptional Children 530 ............ 3
   Practicum in Special Education 531 ................ 2
   Education of Blind and Partially Sighted 592 .... 2
   Diagnostic and Prescriptive Techniques in
   Special Education 533 .................. 4
   Curricular and Instructional Provisions for
   Exceptional Children 534 .................. 4
   Braille and Other Communication Methods 591 .... 2
   Methods and Techniques of Teaching Braille and
   Other Areas of Communication 593 ............ 3
   Physiology and Function of the Eye 590 ............ 2
   Principles of Orientation and Mobility for the
   Blind 594 ................................................. 3
   Directed Teaching (Special Education) 474 ....... 8
   Seminar in Education 410 .......................... 2
   School and Society 450 ........................... 3

8. Physical Education or Military Science .................. 4 or 8hrs.
   (Must include Physical Education for the
   Elementary Classroom Teacher 340)

C. One Academic Minor in a subject or subject field
taught in the elementary school .................................... 20hrs.

D. Electives (Under Advisement) ................................. 2hrs.

E. The candidate must satisfy the requirements for
the B.S. degree or the B.A. degree.

SPECIAL EDUCATION CURRICULUM
EMOTIONALLY DISTURBED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of emotionally disturbed children)

A. Minimum hours for this curriculum ....................... 132 hrs.
   (If B.A. degree is desired, see catalog for these re-
   quirements)
### B. Course Requirements

1. **General Studies requirements must be met** 
   - 34 hrs.

2. **Communication Arts and Sciences, Language, Literature, Philosophy or Religion** 
   - Children’s Literature 282 .......... 4 hrs.

3. **Science, Mathematics, Psychology** 
   - Structure of Arithmetic 150 .......... 4 hrs.
   - Psychology I 150 .................. 3 hrs.

4. **Teacher Education** 
   - Human Development and Learning 250 .......... 4 hrs.
   - Teaching of Reading 312 ............ 3 hrs.
   - Elementary School Social Studies 507 .......... 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** 
   - Education of Exceptional Children 530 .......... 3 hrs.
   - Practicum in Special Education 531 .......... 2 hrs.
   - Programs and Intervention Strategies with the Socially and Emotionally Maladjusted 589 .......... 4 hrs.
   - Diagnostic and Prescriptive Techniques in Special Education 533 .......... 4 hrs.
   - Communication Disorders 200 .......... 3 hrs.
   - Curricular and Instructional Provisions for Exceptional Children 534 .......... 4 hrs.
   - Behavior Disorders in School-Aged Children 588 .......... 3 hrs.
   - Directed Teaching (Special Education) 474 .......... 8 hrs.
   - Seminar in Education 410 .......... 2 hrs.
   - School and Society 450 .......... 3 hrs.

8. **Physical Education** 
   - (Must include Physical Education for the Elementary Teacher 340) .......... 4 hrs.

### C. One Academic Minor in a subject or subject field taught in the elementary school .......... 20 hrs.

### D. Electives (Under Advisement) .......... 4 hrs.

### E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.
SPECIAL EDUCATION CURRICULUM
MENTALLY HANDICAPPED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of mentally handicapped children)

A. Minimum hours for this curriculum ...................... 132hrs.
   (If B.A. degree is desired, see catalog for these re-
   quirements)

B. Course Requirements
   1. General Studies Requirements must be met .......... 34hrs.
   2. Communication Arts and Sciences, Language, Lit-
      erature, Philosophy, Religion ....................... 7hrs.
         Children's Literature 282 ........................ 4
         General Speech 100 ............................. 3
         Structure of Arithmetic 150 ...................... 4
         Psychology I 150 ................................. 3
   4. Teacher Education ................................ 11hrs.
         Human Development and Learning 250 .............. 4
         Teaching of Reading 312 .......................... 3
         Directed Teaching 471 (Regular Class) .......... 4
   5. Fine Arts (Art and Music) ........................... 7hrs.
         Music for the Classroom Teacher 140 ............ 4
         Art Education Workshop 150 ........................ 3
   6. Practical Arts ...................................... 2hrs.
         Arts and Crafts for Teachers 593 .................. 2
   7. Mentally Handicapped - Major ....................... 36hrs.
         Education of Exceptional Children 530 .......... 3
         Practicum 531 .................................... 3
         Nature and Needs of the Mentally
         Handicapped 532 .................................. 4
         Diagnostic and Prescriptive Techniques in
         Special Education 533 ............................. 4
         Curricular and Instructional Provisions
         for Exceptional Children 534 ...................... 4
         Behavior Disorders in School-Aged
         Children 588 ...................................... 3
         Communication Disorders 200 ....................... 3
         Directed Teaching (Special Education) 474 ....... 8
         Seminar in Education 410 .......................... 2
         School and Society 450 ............................ 3
SPECIAL EDUCATION CURRICULUM
SPEECH PATHOLOGY AND AUDIOLOGY

Bachelor of Science Degree
State Elementary Provisional Certificate

(Pre-professional Speech Pathology and Audiology. The completion of this 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. Approval for certification in speech and hearing requires the successful completion of a master’s degree in speech pathology and audiology.)

A. Minimum hours required for this curriculum ..... 124 hrs.

B. Course Requirements

1. General Studies requirements as described on page 31 of this catalog must be met.

2. Language, Literature, Philosophy, Religion ............ 4 hrs.
   Children’s literature 282 ......................................... 4

   Psychology 150 ..................................................... 3
   Psychology 250 ..................................................... 3
   Structure of Arithmetic 150 ......................................... 4
### College of Education

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
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<tr>
<td><strong>4. Teacher Education and Special Education</strong></td>
<td>34 hrs.</td>
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<tr>
<td>Human Development and Learning 250</td>
<td>4</td>
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<td>Teaching of Reading 312</td>
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<td>Teaching and Learning (Elem.) 300</td>
<td>3</td>
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<td>Elem. School Social Studies 502</td>
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<td>Practical Arts Elective</td>
<td>3</td>
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<td>Education of Exceptional Children 530</td>
<td>3</td>
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<td>Mental Hygiene of Childhood and Adolescence 585</td>
<td>2</td>
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<td>Directed Teaching, Seminar in Education and School and Society 470, 410, and 450</td>
<td>14</td>
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<td><strong>5. Fine Arts</strong></td>
<td>7 hrs.</td>
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<tr>
<td>Music for Classroom Teacher 140</td>
<td>4</td>
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<tr>
<td>Art Education Workshop 150</td>
<td>3</td>
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<td><strong>6. Speech Pathology and Audiology—Major</strong></td>
<td>30 hrs.</td>
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<tr>
<td>Intro. to Communication Disorders 200</td>
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<td>Orientation to Clinical Practice 201</td>
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<td>Anatomy and Physiology of Speech 202</td>
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<td>2</td>
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<td>Phonemics 204</td>
<td>2</td>
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<td>Bases of Speech and Hearing</td>
<td>3</td>
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<td>Phonemic Disorders 351</td>
<td>2</td>
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<td>Phonatory Disorders 352</td>
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<td>Fluency Disorders 353</td>
<td>2</td>
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<td>Hearing Disorders 355</td>
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<td>Introduction to Audiometry 357</td>
<td>2</td>
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<td>Practicum I 400</td>
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<td>Practicum II 401</td>
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<td>Electives in major area</td>
<td>2</td>
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<tr>
<td><strong>7. Physical Education or Military Science including Physical Education for the Elementary Teacher 340</strong></td>
<td>4-8 hrs.</td>
</tr>
</tbody>
</table>

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

READING CENTER AND CLINIC

The primary purpose of the Reading Center and 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 developmental and corrective 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.

University students encountering difficulty in reading or those wishing to improve their reading skills may seek assistance in the Reading Center and Clinic located in Room 300 of the Speech and Hearing Center on the East Campus. Referrals come from the students themselves as well as the Counseling Center and members of the faculty. After causal factors have been identified, treatment is provided.

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

A.L. Sebaly, Director, Directed Teaching Center
James O. Ansel, Director of Rural Life and Education

David W. Adams
Hubert G. Archer
James Armstrong
Keith Bailey
Max Benne
Dorothy Bladt
Gerald Bodine
Earl Borr
James Bosco
Esther Bourziel
Frederick Brail
Robert Brashear
Beatrice Brenton
John A. Buelke
James Burns
Mary A. Cain
Joe R. Chapel
Clara R. Chiara
Arthur Christensen
Phillip Clark
Mary Cordier
David Cowden
Ronald A. Crowell
David H. Curl
Kenneth Dickie
Thomas Dube
Edsel Erickson
Mary Frances Fenton
Franklin Fisk
Louis A. Govatos
Alfred Griffin
James H. Griggs
Betty Hagberg
Richard Harring
Frank Heger
Edward Heinig
David Hessler
Arthur Howsen
Robert Hughes
Norma Hungerford
Rachel Inselberg
Helen Jennings
Elizabeth Johnson
William Kanzler
James Kern
Klare Kilty
Ruby King
Robert Kotecki
Cameron Lambe
Carl Lindstrom
Bruce Lloyd
Dorothy McGinnis
Barbara Mehoke
Owen Middleton
George Miller
Fredric Mortimore
Stephen Nisbet
Frank Olenchak
Robert Oswald
Eugene Paulson
Robert Payne
V. Jean Russell
Marilyn Schlack
Neil Schoenhals
William Schreiber
James Sendo
Uldis Smidchens
Carol P. Smith
Dorothy E. Smith
Virginia Sorenson
Mary Lou Stewart
Sarah Jane Stroud
Sara R. Swickard
David Taylor
Nancy Thomas
Robert Townsend
Lois Van Den Berg
Kenneth Vander Meulen
Jess Walker
Barrett Vorce
Frank Wangberg
Archie Watson

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 pro-
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.

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
Music 140—Music for the Classroom Teacher ....................4
Art 200—The Creative Process through Art .......................4
Comm. Arts and Sci. 564—Creative Dramatics for Children ....4
Teacher Ed. 430—Creativity in the Elem. School ...............4

Students enrolled in this minor must take TEED. 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,

*May be substituted for Arts and Ideas in the General Studies Program.
518

College of Education

students should not elect more than two courses in any one department exclusive of required courses.

Adviser: Dr. Margaret S. Large

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>10-11 hrs.</th>
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<tbody>
<tr>
<td><strong>P.E.W.</strong></td>
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<tr>
<td>342—Elementary School Health and Safety Education OR</td>
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<tr>
<td>343—Secondary School Health and Safety Education (elect one)</td>
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<table>
<thead>
<tr>
<th>Biology</th>
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<tbody>
<tr>
<td>100—Principles of Biology OR</td>
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<tr>
<td>101—Animal Biology OR</td>
<td></td>
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<tr>
<td>107—Biological Science (elect one)</td>
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<tr>
<td>205—Human Body in Health and Disease **</td>
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<tr>
<th>Elective Courses</th>
<th>13-14 hrs.</th>
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<tbody>
<tr>
<td>Biology</td>
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<tr>
<td>111—Healthful Living</td>
<td>2</td>
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<tr>
<td>210—Mammalian Anatomy</td>
<td>4</td>
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<tr>
<td>219—Human Physiology</td>
<td>4</td>
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<tr>
<td>Teacher Education</td>
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<tr>
<td>555—Alcohol Education</td>
<td>2</td>
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<tr>
<td>Home Economics</td>
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<tr>
<td>212—Foods and Nutrition</td>
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<tr>
<th>Psychology</th>
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<tbody>
<tr>
<td>150—Psych. I: Introduction to the Science of Behavior</td>
<td>3</td>
</tr>
<tr>
<td>160—Psych. II: Personality and Developmental Psych</td>
<td>3</td>
</tr>
<tr>
<td>250—Behavior Mod. I: Abnormal Psych</td>
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<tr>
<th>Sociology</th>
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<tbody>
<tr>
<td>200—Principles of Soc.</td>
<td>3</td>
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<tr>
<td>290—Modern Marriage</td>
<td>2</td>
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<tr>
<td>572—Community Agency Resources</td>
<td>2</td>
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<tr>
<td>592—Family Life Education and Counseling</td>
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<tr>
<th>Special Education</th>
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<tbody>
<tr>
<td>530—Education of Exceptional Children</td>
<td>3</td>
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<tr>
<td>585—Mental Hygiene of Childhood and Adolescence</td>
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<tr>
<th>Speech Pathology and Audiology</th>
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<tbody>
<tr>
<td>200—Introduction to Communication Disorders</td>
<td>3</td>
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**Mammalian Anatomy (210) or Human Physiology (219) may be substituted for Human Body in Health and Disease (205).
P.E.W.
150—First Aid ................................................................. 2
275—Community Health .................................................... 3
514—Health Education Materials and Methods .............. 2
516—Issues in Health Education:
   (a) Mental Health, (b) Sex Education, (c) Mood Modifiers,
   (d) Environmental Pollution, (e) etc. Students may re-
   gister for 516 more than once but may not repeat the same
   issue ................................................................. 1-4

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 in-
ventories 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 pro-
fession. 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.
This course deals with the physical, social, emotional, and intel-
lectual development of children and adolescents. Classes meet four
hours a week. All students are required to observe and/or work
with children or adolescents and should reserve one-half day a
week for this purpose. Early in the course students should apply
for the professional sequence card required for registering in 300
or 400 courses of this sequence.

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; instruc-
tional 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. Pre-requisite: TEED. 250, Human Development and Learning, and admission to professional sequence.

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; 2.0 average in all education courses and in overall average.

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 programs of the school in which they teach. All students expecting to do Directed Teaching should enroll at the Directed Teaching Center 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 1-8 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 Directed Teaching Center for 471, 472 or 474 well in advance of the semester in which the directed teach-
Teacher Education

ing is to be done. Prerequisite: 2.0 average in all education courses and in overall average.

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 2 hrs.

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 interest for research and study.
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College of Education

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, Communication Arts and Sciences, Music, Physical Education (Women), 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  
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  
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, Communication Arts and Sciences, Music, Physical Education (Women), and Teacher Education.

442 Fundamentals of Driver Education  
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.

507 Teaching of Social Studies in the Elementary Schools  
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 a 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 2 hrs.

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: TEED 442.

544 Psychology of Driver Education 2 hrs.

Psychological and perceptual aspects of the driver and traffic safety. The role of the teacher in influencing driver behavior. Research in traffic safety. Prerequisite: TEED 442.

560 Practicum: Sociological and Psychological Foundations of Teaching the Disadvantaged 2-6 hrs.

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 factors 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, 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 15 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 Directed Teaching (Teacher Interns) see p. 497  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 to individual problems related to social aspects of community life. Special problems are selected for study by each student. Field work is encouraged.
Special Education

Joseph J. Eisenbach, Head
Lawrence L. Ashbaugh Ruth Kaarlela Stanley Suterko
Donald Blasch Charles Laufer Isadore Turansky
Betty Bradfield Elizabeth Lennon Robert J. Westley
Alonzo Hannaford Abraham Nicolaou Marvin Weessies
Claudia Jacobs Donald F. Sellin Lloyd Widerberg

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 an elementary 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

474 Directed Teaching in Special Education 4-8 hrs.
See p. 521.

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.

531 Practicum in Special Education 2 hrs.
Students enrolled in this course will be assigned to special classes in public or residential schools serving exceptional children and
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College of Education

youth. Observation and participation will be combined with weekly seminars. Undergraduate students majoring in special education are required to enroll in Special Education 530 and 531 concurrently. Admission to this offering will be determined by the number of placement opportunities available.

528-29 Interdisciplinary Education & Rehabilitation Techniques 4 hrs. (2 per semester)

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.

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 disturbed, the socially maladjusted, and the mentally handicapped.


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: Spec. Educ. 530 or equivalent.

533 Diagnostic and Prescriptive Techniques in Special Education 4 hrs.

A thorough study of educational diagnostic instruments and techniques will precede the student’s utilization of these measures in evaluating exceptional children in his curricular area. Diagnostic findings will be translated into individualized educational prescriptions. For majors enrolled in Special Education curricula and to be taken concurrently with Special Education 534. Prerequisites: Special Education 530, 531 and consent of Department.

534 Curricular and Instructional Provisions for Exceptional Children and Youth 4 hrs.

Critical issues in determining curricular expectations for atyp-
ical individuals will be analyzed. Essentials in ascertaining appropriate behavior for these pupils will be combined with identifying and evaluating a variety of educational methods and materials. Students enrolled in this course will be expected to delineate behavioral goals for those evaluated in Special Education 533 and translate diagnostic data into meaningful education programs. Prerequisites: Special Education 530, 531 and concurrent enrollment in 533.

536 Contemporary Issues in Special Education: Honors Seminar 1 hr.
A course especially designed for selected undergraduate majors in Special Education curricula. Emphasis will be placed on theoretical discussion of social, philosophical, economic and educational problems related to the education of exceptional children and youth. Prerequisites: Special Education 530, 531 and faculty approval of the applicant.

543 Nature and Needs of Crippled and Homebound Children 4 hrs.
Study of educational, psychological, and therapeutic needs of crippled children and the role of allied disciplines in meeting these needs. Prerequisite: Special Education 530.

588 Behavior Disorders in School-Aged Children 3 hrs.
Deals with the psychoeducational aspects of disturbed or disturbing behavior as related to the school program. Issues and problems associated with normal development, concepts of diagnosis, and the incidence of maladjustment will be reviewed. The characteristics, causes, diagnosis, and treatment of the effects of such conditions in children as psychoneurosis, mental subnormality, juvenile delinquency, psychosis, learning disability, and social disadvantage will be examined in terms of their educational implications. Therapeutic, environmental, and classroom interventions will be presented and strategies for prevention will be analyzed. Prerequisites: Special Education 530 and 531.

589 Programs and Intervention Strategies for the Socially and Emotionally Maladjusted 4 hrs.
This course, open only to majors in Special Education curricula, will emphasize techniques and procedures applicable to socially-emotionally maladjusted children in various special or public school settings. Current theories, contemporary programs and trends in behavioral change and management will be reviewed and discussed. Prerequisites: Special Education 588 and consent of Department.
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College of Education

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.

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.

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.

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.

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.

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.

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.

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: school, residence, community, and work situations. Permission of instructor.

599 Gerontology 2 hrs.

The course offers an overview of the characteristics, circumstances and needs of the aging population of the United States, and explores the types of services available to meet their needs. The course will focus upon the demography of the aged, the physiological changes and chronic diseases of aging, the social and economic aspects of aging, the psychological changes which come with age, and a review of the community resources which serve the aged.

Educational Leadership

Harold W. Boles, Head
William D. Coats
James A. Davenport
Sidney Dykstra
Gerald Martin
Dorothy McCuskey

Theodore L. Ploughman
Maurice F. Seay
William P. Viall
Donald C. Weaver

This department offers curricula in Line Administration, Staff Administration, and Program Leadership, leading to a degree of
College of Education

Master of Arts, Specialist in Education, or Doctor of Education. While most of the department’s courses, seminars, studies, etc., are intended for graduate students, programs of studies may be outlined and pursued by advanced undergraduate students whose career goals include positions as leaders in the many and varied educational agencies that are operative in society today. Interested students should see the Graduate Bulletin for more detail.

Counseling & Personnel

William D. Martinson, Head
Robert L. Betz
Kenneth Bullmer
William A. Carlson
Kenneth B. Engle
L. Dale Faunce

Paul L. Griffeth
Neil Lamper
Arthur J. Manske
Gilbert E. Mazer
Thelma Urbick

The Department of Counseling & Personnel offers work in the fields of counseling and personnel. Most of these courses are open to graduate students only, but the following courses are open to qualified undergraduates.

580 Principles and Philosophy of Guidance 2 hrs.
An introductory course for elementary and secondary teachers. A thorough investigation of the philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.

581 Interpretation and Use of Tests in Guidance 2 hrs.
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.

582 The Information Service in Guidance 2 hrs.
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. (C-Card required)

583 Guidance Workshop

Designed for teachers and counselors who wish to study particular guidance problems and procedures in relation to their local guidance program.

584 Elementary School Guidance

Designed to give teachers, administrators and elementary counselors an understanding of the principles and techniques of guidance in elementary schools.

**Physical Education for Men**

Joseph T. Hoy, Head
Donald E. Boven
Boice M. Bowman
Bill M. Chambers
J. Patrick Clysdale
Charles Comer
Robert L. Culp
George G. Dales
Fred A. Decker
F. William Doolittle
Edward A. Gabel

George W. Hobbs
J. Arthur Jevert
Jack D. Jones
Steven C. Kaiser
Eldon J. Miller
John T. Miller
Fred C. Orlofsky
Richard Raklovits
Harold L. Ray
Joe C. Roberts

William Rowekamp
Merle J. Schlosser
John F. Shaw
Richard A. Shiltz
Thomas C. Slaughter
Raymond F. Sorensen
Fred L. Stevens
Ronald J. Winter
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. He must request the two hours by presenting his discharge paper (original or certified DD-214) at the Admissions 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 220-230 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

89 Physical Fitness Program (No credit) Winter
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>100</td>
<td>General Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>100</td>
<td>Adapted Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>101</td>
<td>General Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>101</td>
<td>Adapted Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>102</td>
<td>General Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>102</td>
<td>Adapted Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>103</td>
<td>General Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>103</td>
<td>Adapted Physical Education</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>104</td>
<td>General Physical Education</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>104</td>
<td>Adapted Physical Education</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>105</td>
<td>General Physical Education</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>105</td>
<td>Adapted Physical Education</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>106</td>
<td>General Physical Education</td>
<td>1 hr. Winter</td>
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<tr>
<td>106</td>
<td>Adapted Physical Education</td>
<td>1 hr. Winter</td>
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<tr>
<td>107</td>
<td>General Physical Education</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>107</td>
<td>Adapted Physical Education</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>121</td>
<td>International Dance (Co-Educational)</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td></td>
<td>Women's Department</td>
<td></td>
</tr>
<tr>
<td>124</td>
<td>Social Forms of Dance (Co-Educational)</td>
<td>1 hr. Fall</td>
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<tr>
<td></td>
<td>Women's Department</td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>General Physical Education (Co-Educational)</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td></td>
<td>Bowling) Women's Department</td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>General Physical Education (Football)</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>221</td>
<td>General Physical Education (Cross Country)</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>222</td>
<td>General Physical Education (Basketball)</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>223</td>
<td>General Physical Education (Swimming)</td>
<td>1 hr. Winter</td>
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<td>224</td>
<td>General Physical Education (Wrestling)</td>
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<tr>
<td>225</td>
<td>General Physical Education (Baseball)</td>
<td>1 hr. Spring</td>
</tr>
<tr>
<td>226</td>
<td>General Physical Education (Track)</td>
<td>1 hr. Spring</td>
</tr>
<tr>
<td>227</td>
<td>General Physical Education (Golf)</td>
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</tr>
<tr>
<td>228</td>
<td>General Physical Education (Tennis)</td>
<td>1 hr. Spring</td>
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<td>229</td>
<td>General Physical Education (Gymnastics)</td>
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</tr>
<tr>
<td>230</td>
<td>General Physical Education (Ice Hockey)</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>231</td>
<td>General Physical Education (Soccer)</td>
<td>1 hr. Fall</td>
</tr>
</tbody>
</table>
PROGRAMS FOR SPECIALIZING STUDENTS

Pattern 1—Group Major in H.P.E.R. (36 Hours)

Required courses for the group major in health, physical, and recreation education are 150, 160, 240, 280, 330, 352, 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, Spec. Ed. 585. Elect minimum of two courses from PEM 244, 260, 348, 430, 580, 590.

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.E.R. (24 Hours)

Required courses for the group minor in H.P.E.R. are 150, 160, 240, 280, 330, 390, 460.


Animal Biology 101 (or Biol. 100) and Mammalian Anatomy 210 are required in biological science.

Pattern II-B—Recreation Minor (20 Hours) (Non-Teaching)

REQUARED CORE

Physical Education

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>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>
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</tbody>
</table>

TOTAL: 8

ELECTIVES

Group 1—Arts and Crafts

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</tr>
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<tbody>
<tr>
<td>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>
</tr>
</tbody>
</table>

Group II—Aquatics

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>Swimming**</td>
<td>1</td>
</tr>
<tr>
<td>430</td>
<td>Advanced Swimming</td>
<td>1</td>
</tr>
</tbody>
</table>
Group III—Activity Skills ........................................... 3-4 hrs.

**Physical Education**
- 390 Teaching of Physical Education** ................................ 4
- 150 Foundations of Physical Education .............................. 3
- 100-215 General Physical Education ................................. 4
- 160 Introduction to Coaching ......................................... 3

Group IV—Additional Electives ........................................ 5-11 hrs.

**Biology**
- 234 Outdoor Science for Teachers .................................. 3
- 232 or 233 (Seasonal) ................................................ 3

**Physical Education**
- 244 Sports Officiating .............................................. 2
- 260 Intramural Sports ............................................... 2
- 280 Found. of Sports Injuries ...................................... 2

**Music**
- 290 Recreational Music ............................................. 2

**Occupational Therapy**
- 334 Recreation for Handicapped ................................... 2

**Geography**
- 350 Conservation Natural Resources ............................. 3

**Sociology**
- 368 Welfare Organization ......................................... 2

**Library**
- 546 Story Telling .................................................... 2

**Teacher Education**
- 310 Stories for Childhood ......................................... 2

**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 II-C—Health Education Group Minor (24 hours)

See Page 517.
DESCRIPTION OF COURSES

150 Foundation of Physical Education 3 hrs.

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.

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.

Taught by a 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.

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.

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.

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.

280 Foundations of Sports Injuries 2 hrs.

Advanced first aid knowledge and skills, needed by coaches and physical educators, are studied. Prerequisites: Biol. 100 or 101; a standard first aid card is highly recommended.

330 Swimming 1 hr.

This course for physical education majors and minors is basic.
Instruction 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.
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.
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 is discussed.

333 Coaching of Track 2 hrs.
The accepted forms for starting, sprinting, hurdling, distance 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.

335 Coaching of Tennis 2 hrs.
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.
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.
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.
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.
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.
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.

390 Teaching of Physical Education 2 hrs.
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 2 hrs.
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.
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.
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.

561 Problems in Interscholastic and Intercollegiate Athletics 2 hrs.
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.
580 **Prevention and Treatment of Sports Injuries** 3 hrs.

Survey of sport medicine with emphasis on injury prevention, diagnosis, and management. An in-depth study is made of specific injuries occurring frequently to sports' participants. Lecture: 2 hrs/week; Lab.: 2 hrs/week. Prerequisites: PEM 280, Biol. 210, 219; or consent of graduate adviser.

590 **Exercise Physiology** 2 hrs.

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.

598 **Readings in Health, Physical Ed., and Recreation** 1-3 hrs.

Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Prerequisite: Approval of department head.
Physical Education for Women

Billye Ann Cheatum, Head
Mardell Anderson
Helen Brown
Mary Brown
Harriett Creed
Ruth Davis
Eleanor Douglass
Frances Ebert
Jean Friedel
Clara Gamble
Elisabeth Hetherington
Janet Kanzler
Opal Klammer
Margaret Large
Patricia Lemanski
Luretta McCray
Ruth Ann Meyer
Margie Jeanne Miner
John Newton
Wendy Olson
Anna May Robertson
Candace Roell
Norma Stafford
Barbara Stephenson
Janet Stillwell
Nellie Webb

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 31 of this catalog** .............................................. 40 hrs.
   A. Required courses .................................................................................. 33 hrs.
      Biology 101 replaces General Studies 107
   B. Liberal Arts
      Biology 210 .................................................................................................. 4
      Biology 219 .................................................................................................. 4

2. **Required Professional Courses** ............................................................................... 35 hrs.
   PEW 190 Philosophical Foundations of Physical Education .............................................. 3
   PEW 294 Analysis of Movement ............................................................................. 3
   PEW 392 Measurement and Evaluation ................................................................... 3
   PEW 132 Basic Motor Skills .................................................................................. 1
   PEW 123 Beginning Contemporary Dance ............................................................. 1
   PEW 290 Teaching of Physical Education in the Elementary School ....................... 3
   PEW 292 Teaching of Physical Education in the Secondary School ......................... 3
   PEW 390 Scientific Bases of Human Activity ......................................................... 3
### 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 31 of this catalog** ........................................ 41 hrs.
   A. Required Courses ........................................ 33 hrs.
      Biology 101 replaces General Studies 107
      Teacher Education 230 replaces 222
   B. Liberal Arts
      Biology 210 ........................................ 4
      Biology 219 ........................................ 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 140</td>
<td>Badminton and Tennis</td>
<td>1</td>
</tr>
<tr>
<td>PEW 120</td>
<td>Stunts and Tumbling Or Beginning Gymnastics</td>
<td>1</td>
</tr>
<tr>
<td>PEW 131</td>
<td>Field Sports</td>
<td>1</td>
</tr>
<tr>
<td>PEW 142</td>
<td>Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 135</td>
<td>Rhythmic Movement for Children</td>
<td>1</td>
</tr>
<tr>
<td>PEW</td>
<td>Elect 1 officiating course</td>
<td>1</td>
</tr>
<tr>
<td>PEW</td>
<td>Two swimming courses from general program</td>
<td>2</td>
</tr>
<tr>
<td>PEW 144</td>
<td>Track and Field</td>
<td>1</td>
</tr>
<tr>
<td>PEW 121</td>
<td>International Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEW 143</td>
<td>Introductory Games and Sports</td>
<td>1</td>
</tr>
<tr>
<td>PEW</td>
<td>Activities</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>PEW 215</td>
<td>Bowling</td>
<td>1</td>
</tr>
<tr>
<td>PEW 129</td>
<td>Golf Take 2</td>
<td>1</td>
</tr>
<tr>
<td>PEW 115</td>
<td>Archery</td>
<td>1</td>
</tr>
<tr>
<td>PEW 148</td>
<td>Softball Take 1</td>
<td>1</td>
</tr>
<tr>
<td>PEW 146</td>
<td>Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 124</td>
<td>Social Forms of Dance Take 1</td>
<td>1</td>
</tr>
<tr>
<td>PEW 102</td>
<td>Modern Jazz</td>
<td>1</td>
</tr>
</tbody>
</table>
2. **Required Professional Courses** ............................................. 35 hrs.
PEW 190 Philosophical Foundations of Physical Education .......................... 3
PEW 294 Analysis of Movement ................................................. 3
PEW 392 Measurement and Evaluation ........................................ 3
PEW 132 Basic Motor Skills .................................................. 1
PEW 123 Beginning Contemporary Dance ..................................... 1
PEW 290 Teaching of Physical Education in the Elementary School ............ 3
PEW 192 Teaching of Physical Education in the Secondary School ............. 3
PEW 170 Recreation and Society .............................................. 3
PEW 390 Scientific Bases of Human Activity ................................. 3
PEW 296 Physical Education for Physical and Learning Disabilities .......... 3
PEW 120 Stunts and Tumbling  Or
141 Beginning Gymnastics .................................................. 1
PEW 135 Rhythmic Movement for Children .................................. 1
PEW 121 International Dance ................................................ 1
PEW 144 Track and Field ..................................................... 1
PEW Swimming—1 course................................................................ 1
PEW 143 Introductory Games and Sports ..................................... 1
PEW 172 Camp Leadership ..................................................... 3

**DANCE EDUCATION**

**Hours Required for this Curriculum** ........................................ 124 hrs.

1. **General Studies as described on page 31 of this catalog** ................. 41 hrs.
A. Required courses .................................................................... 33 hrs.
Teacher Education 230 replaces General Studies 222
Biology 101 replaces General Studies 107
B. Liberal Arts
Biology 210 ................................................................. 4
Biology 219 ................................................................. 4

2. **Required Professional Courses** ............................................. 35 hrs.
PEW 190 Philosophical Foundations of Physical Education .......................... 3
PEW 294 Analysis of Movement ................................................. 3
PEW 392 Measurement and Evaluation ........................................ 3
PEW 132 Basic Motor Skills .................................................. 1
PEW 123 Beginning Contemporary Dance ..................................... 1
PEW 482 History and Philosophy of Dance ................................... 3
College of Education

PEW 384  Dance Education for Secondary School  3
PEW 182  Beginning Choreography  3
PEW 382  Advanced Choreography  3
PEW 282  Dance Accompaniment  2
PEW 133  Intermediate Contemporary Dance  1
PEW 121  International Dance  1
PEW 124  Social Forms of Dance  1
PEW 204  Dance Activities for Children  2
PEW 233  Advanced Dance Techniques  2
PEW 388  Staged Productions  3

AQUATICS EDUCATION
This major will qualify a student to conduct a total swimming program in a large high school.

Hours Required for this Curriculum  124hrs.
1. General Studies as described on page 31 of this catalog  41hrs.
   A. Required Courses  33hrs.
      Biology 101 replaces General Studies 107
   B. Liberal Arts
      Biology 210  4
      Biology 219  4

2. Required Professional Courses  35hrs.
PEW 190  Philosophical Foundations of Physical Education  3
PEW 294  Analysis of Movement  3
PEW 392  Measurement and Evaluation  3
PEW 132  Basic Motor Skills  1
PEW 123  Beginning Contemporary Dance  1
PEW 390  Scientific Bases of Human Activity  3
PEW 155  Teaching of Swimming  3
PEW 250  Teaching of Speed Swimming and Diving  2
PEW 252  Teaching of Synchronized Swimming  2
PEW 350  Swimming for the Exceptional Child  3
PEW 400  Practicum  1
PEW 108  Speed Swimming  1
PEW 214  Synchronized Swimming  1
PEW 120  Stunts and Tumbling Or  1
141  Beginning Gymnastics  1
PEW 137  Small Craft  2
PEW 118  Springboard Diving  1
In addition, choose one of the following areas of concentration:

1. Dance
   - International Dance .................................................. 1 hr.
   - Social Forms of Dance .................................................. 1
   - Intermediate Dance Techniques ..................................... 2

2. Individual Sports—Choose 4
   - Tennis and Badminton .................................................... 1
   - Bowling ........................................................................ 1
   - Golf ............................................................................. 1
   - Archery .......................................................................... 1
   - Track and Field .............................................................. 1

3. Team Sports
   - Field Sports ................................................................. 1
   - Volleyball ...................................................................... 1
   - Basketball ...................................................................... 1
   - Softball .......................................................................... 1

**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.
      - Biology 101 replaces General Studies 107
      - Teacher Education 230 replaces General Studies 222
   B. Liberal Arts
      - Communication Arts and Sciences .................................. 3
      - Biology 210 .................................................................. 4

2. Required Professional Courses ............................................. 35 hrs.
   A. General Professional Courses ......................................... 24
   B. Special Area of Emphasis ............................................... 11

3. General Professional Courses .............................................. 24 hrs.
   - PEW 170 Recreation and Society ...................................... 3
   - PEW 370 Organization and Administration of Recreation .......... 3
   - PEM 370 Community Recreation ........................................ 2
College of Education

PEW 272  Music and Drama in Recreation .............. 3
PEW 143  Introductory Games and Sports .............. 1
IE  190  Arts and Crafts for Teachers .................. 3
PEW  General Physical Education Activity
         Courses ........................................... 3
PEW 470  Recreational Facilities and Areas ........... 3
PEW 342  Health Education in the Elementary
         School ........................................... 3

Emphasis I—Outdoor Education
and Camping Emphasis ...................................... 11 hrs.
PEW 172  Camp Leadership ............................... 3
PEW 137  Small Craft .................................... 2
PEM 270  Outdoor Education ............................. 2
PEW 101  Recreational Games ......................... 1
PEW 400  Practicum ..................................... 3

Emphasis II—Mentally, Physically
and Socially Handicapped .................................... 11 hrs.
Sp Ed 530  Education for Exceptional Children ...... 3
Sp Ed 588  Psychopathology of the Exceptional
         Child ............................................ 2
PEW 296  Physical Education for Physical and
         Learning Disabilities ............................. 3
PEW 400  Practicum ..................................... 3

PEW 172  Camp Leadership ............................... 3
PEW 271  Recreation for the Exceptional Child ...... 3
LIB  546  Story Telling .................................. 2
PEW 400  Practicum ..................................... 3

MINORS

PHYSICAL EDUCATION MINOR IN ELEMENTARY EDUCATION

Hours Required for this Minor ........................................ 20 hrs.

1. General Studies
   Biol. 101 replaces General Studies 107
   Biol. 210 Mammalian Anatomy
   T.E. 230 replaces G.S. 222

2. Required Professional Courses
   PEW 294  Analysis of Movement ........................ 3hrs.
   PEW 290  Teaching of Physical Education in the
            Elementary School ................................ 3
   PEW 170  Recreation and Society ........................ 3
### Physical Education Minor in Secondary Education

**Hours Required for this Minor** ........................................ 21 hrs.

1. **General Studies**
   - Biol. 101 replaces General Studies 107
   - Biol. 210 Mammalian Anatomy
   - TEED 230 or G.S. 222

2. **Required Professional Courses**
   - PEW 294 Analysis of Movement ................................. 3hrs.
   - PEW 292 Teaching of Physical Education in the Secondary School ........................................ 3
   - PEW 390 Scientific Bases of Human Activity ............. 3
   - PEW 392 Measurement and Evaluation ......................... 3
   - PEW 132 Basic Motor Skills ..................................... 1
   - PEW 120 Stunts and Tumbling Or ............................. 1
   - 141 Beginning Gymnastics .................................. 1
   - PEW 121 International Dance .................................. 1
   - PEW 123 Beginning Contemporary Dance .................. 1
   - PEW Elect 1 officiating course ........................... 1
   - PEW Two Individual sports .................................. 2
   - PEW Two team sports ........................................... 2

3. **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
- PEM 270  Outdoor Education ......................................................... 2
- PEM 371  Procedures and Materials in Recreation .......................... 2
- PEW 400  Practicum ............................................................................. 3
- PEW 272  Music and Drama in Recreation ....................................... 3
- I.E. 190  Arts and Crafts for Teachers .......................................... 3
- PEW 143  Introductory Games and Sports ....................................... 1
- PEW 470  Recreational Facilities and Areas .................................. 3

**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 Interschool 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
- PEW 461  First Aid and Athletic Training ...................................... 2
- PEW 368  Administration and Organization of Intramural Sports ........ 2
- PEW 260  Coaching and Advanced Techniques of:
  - Basketball ....................................................................................... 2
  - Field Hockey .................................................................................. 2
  - Volleyball ....................................................................................... 2
  - Gymnastics ................................................................................... 2
  - Tennis ............................................................................................ 2
  - Track and Field ............................................................................... 2
- PEW 360  Elect 1 officiating course ................................................ 1
- PEW 400  Practicum ............................................................................ 1
- PEW 148  Softball ..............................................................................
- PEW 146  Basketball .......................................................................... Take 1
- PEW 215  Bowling .............................................................................
- PEW 129  Golf ...................................................................................


SWIMMING MINOR

Hours Required for this Minor ........................................... 21 hrs.

1. **General Studies**
   - Biol. 101 replaces General Studies 107
   - Biol. 210 Mammalian Anatomy

2. **Required Professional Courses**
   - PEW 155 Teaching of Swimming ......................... 3
   - PEW 252 Teaching of Synchronized Swimming .......... 2
   - PEW 250 Teaching of Speed Swimming and Diving ....... 2
   - PEW 294 Analysis of Movement .......................... 3
   - PEW 190 Philosophical Foundations of Physical Education .......... 3
   - PEW 132 Basic Motor Skills .............................. 1
   - PEW 123 Beginning Contemporary Dance ................. 1
   - PEW 120 Stunts and Tumbling Or ........................ 1
   - 141 Beginning Gymnastics ................................ 1
   - PEW 118 Springboard Diving ............................ 1
   - PEW 214 Synchronized Swimming ....................... 1
   - PEW 108 Speed Swimming ................................ 1
   - PEW 400 Practicum ....................................... 2

DANCE MINOR

Hours Required for this Minor ........................................... 20 hrs.

1. **General Studies**
   - Biol. 101 replaces General Studies 107
   - Biol. 210 Mammalian Anatomy

2. **Required Professional Courses**
   - PEW 482 History and Philosophy of Dance .......... 3
   - PEW 294 Analysis of Movement .......................... 3
   - PEW 384 Dance Education for Secondary Schools .... 3
   - PEW 586 Dance and Related Arts ....................... 3
   - PEW 132 Basic Motor Skills .............................. 1
   - PEW 102 Modern Jazz .................................... 1
   - PEW 121 International Dance ............................ 1
   - PEW 124 Social Dance ................................... 1
   - PEW 123 Beginning Contemporary Dance ................. 1
   - PEW 133 Intermediate Contemporary Dance ............. 1
   - PEW 204 Dance Activities for Children ............... 2
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. General Studies
   Biol. 101 replaces General Studies 107
   Biol. 210 Mammalian Anatomy

2. Background Courses ............................................. 5-6 hrs.
   A. Physical Education Majors .................................. 5 hrs.
      Sp. Ed. 530 Education for Exceptional Children 3
      Sp. Ed. 488 Psychopathology of the Exceptional Child 2
   B. Special Education Majors .................................. 6 hrs.
      PEW 290 Teaching Physical Education in the Elementary School 3
      PEW 292 Teaching Physical Education in the Secondary School 3

3. Required Courses ............................................... 15 hrs.
   PEW 296 Physical Education for Physical and Learning Disabilities 3
   PEW 271 Recreation for the Exceptional Child ....... 3
   PEW 356 Seminar (Health for the Exceptional Child) 3
   PEW 400 Practicum ............................................. 3
   PEW 493 Psycho-Education Field Experience ....... 3

4. 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.

   PEW 132 Basic Motor Skills—required 1
   PEW 204 Dance Activities for Children 1
   PEW 120 Stunts and Tumbling Or
   PEW 141 Beginning Gymnastics 1
   PEW 121 International Dance 1
   PEW 143 Introductory Games and Sports 1
   PEW 111 Beginning Swimming 1
Physical Education for Women

PEW 112 Intermediate Swimming ............................... 1 hr.
PEW 211 Life Saving ............................................. 1
PEW 213 Water Safety Instructors .............................. 1
PEW 101 Recreational Games .................................. 1
PEW 123 Contemporary Dance .................................. 1
PEW 215 Bowling .................................................. 1

HEALTH EDUCATION MINOR (24 Hours)

(See group minors)
See page 517.

COURSE DESCRIPTIONS

GENERAL PHYSICAL EDUCATION COURSES

100 Personal Physical Education .............................. 1 hr.
101 Recreational Games ....................................... 1 hr.
102 Modern Jazz ................................................... 1 hr.
103 Beginning Fencing .......................................... 1 hr.
104 Softball ........................................................ 1 hr.
105 LaCrosse ......................................................... 1 hr.
106 Skiing (additional fee) ..................................... 1 hr.
107 Skating (additional fee) ................................... 1 hr.
108 Speed Swimming ............................................. 1 hr.
109 Horsemanship (additional fee) (riding times adjusted to student schedules) .......................................................... 1 hr.
110 Beginning Stunts, Tumbling and Gymnastics .......... 1 hr.
111 Beginning Swimming (unable to swim in deep water) .......................................................... 1 hr.
112 Intermediate Swimming and Diving (able to swim in deep water) ......................................................... 1 hr.
113 Basketball ....................................................... 1 hr.
114 Volleyball ........................................................ 1 hr.
115 Archery (205) .................................................... 1 hr.
116 Skin Diving ....................................................... 1 hr.
117 Scuba Diving 1 hr.
118 Springboard Diving 1 hr.
119 Field Hockey 1 hr.
121 International Dance 1 hr.
122 Relaxation 1 hr.
123 Beginning Contemporary Dance 1 hr.
124 Social Forms of Dance 1 hr.
126 Ballet 1 hr.
128 General Physical Education 1 hr.
129 Beginning Golf 1 hr.
130 Movement for Athletes 1 hr.
133 Intermediate Contemporary Dance 1 hr.
135 Rhythmic Movement for Children 1 hr.
A study of creative dance for children using movement exploration and art materials as stimuli for movement problem solving.
138 Canoeing 1 hr.
139 Sailing 1 hr.
200 Beginning Tennis 1 hr.
201 Intermediate Tennis 1 hr.
(Prereq. 200 or written permission of instructor)
202 Badminton 1 hr.
203 Intermediate Golf 1 hr.
(Prereq. 129 or permission of instructor)
204 Dance Activities for Children 2 hrs.
A study of all dance and rhythmic activities for the elementary school child. (Dance majors or permission of instructor)
207 Intermediate Fencing 1 hr.
(Prereq. 103 or permission of instructor)
208 Intermediate Gymnastics 1 hr.
(Prereq. 110 or with permission of instructor)
211 Life Saving 1 hr.
212 Advanced Swimming and Diving 1 hr.
213 Water Safety Instructors 1 hr.
Must have current life saving certificate
214 Synchronized Swimming 1 hr.
215 Bowling (additional fee) 1 hr.
Physical Education for Women

223 Intermediate Dance Techniques
   (Dance majors or permission of instructor)  2 hrs.
237 Track and Field  1 hr.
340 Physical Education for the Elementary Classroom Teacher
   This course is required of all persons enrolled in Elementary Education curricula.  1 hr.

SPECIAL ACADEMIC COURSES

241 Physical Education and Recreation for Teachers  2 hrs.
   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.
   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

120 Stunts and Tumbling  1 hr.
131 Field Sports  1 hr.
132 Basic Motor Skills  1 hr.
137 Small Craft  2 hrs.
140 Badminton and Tennis  1 hr.
141 Beginning Gymnastics  1 hr.
142 Volleyball  1 hr.
143 Introductory Games & Sports  1 hr.
144 Track and Field  1 hr.
146 Basketball  1 hr.
148 Softball  1 hr.
PHYSICAL EDUCATION ACADEMIC COURSES

150 First Aid  
2 hrs.  
The standard course in first aid techniques leading to Red Cross certification.

155 Teaching of Swimming  
3 hrs.  
The techniques of water safety, swimming, diving, and pool and waterfront management. Includes participation with students.

160 Theory of Coaching  
2 hrs.  
The philosophy, principles, administration, organization, guidelines, and motivating techniques of coaching.

170 (276) Recreation and Society  
3 hrs.  
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.  
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.  
The study of and experimentation in compositional principles of dance. Prereq: PEW 123 and 133 or permission of instructor.

190 (151) Philosophical Foundations of Physical Education  
3 hrs.  
The application of past history and philosophy to current movements and trends in physical education.

223 Intermediate Dance Technique  
2 hrs.  
The study of the development and analysis of building movement sequences and dance techniques above the beginning level. Prerequisite: PEW 123 and 133.

233 Advanced Dance Technique  
2 hrs.  
A study of advanced dance technique with experience in original creation or movement patterns and dance sequences.

250 Teaching of Speed Swimming and Diving  
2 hrs.  
Teaching progressions and techniques for springboard diving and speed swimming, and procedures for conducting meets.
252 **Teaching of Synchronized Swimming** 2 hrs.

The progressions and teaching techniques for synchronized swimming skills; show production, organization of clubs and competitive events.

260 **Coaching and Advanced Technique Series** 3 hrs.

Coaching and advanced skills, selection of a team, preparation, judging and conducting competitive events.

271 **Recreation for the Exceptional Child** 3 hrs.

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.

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.

The study of the rhythmic composition of dance movement and the use of techniques and instruments used in accompanying movement. Prereq: PEW 123, 133 and 223.

290 **Teaching Physical Education in the Elementary School** 3 hrs.

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: PEW 132, 120, 135 and 121.

292 **Teaching Physical Education in the Secondary School** 3 hrs.

The secondary school program including characteristics of students, school program, methods of instruction, observation and participation with students.

294 **Analysis of Movement** 3 hrs.

The study of the movement of muscles and the application of kinesiology to physical activity. Prerequisite: Biology 210.
296 Physical Education for Physical and Learning Disabilities 3 hrs.

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.

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.

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.

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.

The study of various handicaps, values, of swimming and teaching techniques for the exceptional child. Includes practical experiences with handicapped children.

356 Seminar (Health for the Exceptional Child) 3 hrs.

The course is directed toward the study of the health and problems of the exceptional child.

360 Officiating Series 1 hr.

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.

The problems, policies, finances, eligibility, awards, officiating, publicity and procedures related to the intramural program.

370 Organization and Administration of Recreation 3 hrs.

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.
  The study of varied use of time, space and force in dance design leading to dance works in production. Prerequisite: PEW 182.

384 **Dance Education for Secondary School** 3 hrs.
  The study of teaching procedures for all forms of dance in the secondary school.

388 **Staged Productions** 3 hrs.
  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.
  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.
  The elements of test construction, item analysis, administration of a test and elementary statistics.

400 **Practicum** 1-4 hrs.
  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.
  The knowledge and skill in meeting emergencies. The use of massage, strappings, and training room techniques. Prerequisite: Biology 100 and 210.

470 **Recreational Facilities and Areas** 3 hrs.
  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.
  The study of the history of the development of dance as it is cul-
College of Education

turally determined and the philosophies which have influenced
dance in education. Dance Majors or permission of instructor.

491 Introduction to Research 3 hrs.

The techniques fundamental to an individual approach to re-
search and problem solving.

493 Psycho-Educational Field Experience 3 hrs.

The study of the family, psychological and educational problems
of the handicapped child. Field experience will be assigned in co-
operation with the Reading Center and Clinic.

514 Methods and Materials in Health Education 2 hrs.

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. (Pre-
requisites: PEW 353, 354 or consent of instructor.)

516 Issues in Health Education 3 hrs.

The focus will be placed on current health issues. May be de-
signed to deal with one issue or several.

545 Philosophies of Physical Education 2 hrs.

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.

The administrative procedures and problems connected with
physical education programs, including scheduling, facilities, per-
sonnel problems and public relations.

586 Dance and the Related Arts 3 hrs.

The study of the common principles and elements of dance,
drama, music, art, and television. Dance Majors, and Minors,
Aquatics Majors and Swim Minors.
College of General Studies

ROBERT M. LIMPUS,
Dean

OLLIN J. DRENNAN,
Associate Dean

Academic Areas:
Humanities
Science
Social Science
The College 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 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

A survey of Ancient, Medieval, Renaissance, and Reformation cultures, this course shows how the present is a product of the past, and how peoples, ideas, and institutions widely separated in space and time have contributed to the Western cultural tradition.

101 Modern Western Civilization 4 hrs. Fall, Winter

An examination of Western culture from the seventeenth century, this course surveys Early Modern Europe; the era of the Enlightenment; political, industrial, and intellectual revolutions; the rise of democracy, nationalism, and imperialism; and the period of the World Wars to the present.

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 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 that 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.

SOCIAL SCIENCE AREA

David S. DeShon, Chairman

202 Man and Society  
4 hrs. Fall, Winter

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  
4 hrs. Fall, Winter

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  
4 hrs. Fall, Winter

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.
College of General Studies

205 Race and Culture 4 hrs. Fall, Winter

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.

INTER-AREA COURSES

240 Special Studies 1-4 hrs.

Various extra-classroom activities, including projects associated with travel of recognized educational value. Prior arrangement with faculty member and prior approval of a General Studies Area Chairman are required.

399 Field Experience 2-8 hrs.

This course is for students who wish to pursue a program of independent study combining academic work with social, civic or political field work. Prerequisites: a written outline of the student's project, approved by a faculty supervisor, and approval from the office of the Dean. Elective credit only.

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 4 hrs. Fall, Winter

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 in Intellectual History 4 hrs. Fall, Winter

An historical study of how man’s intellectual environment has molded his view of the world, and how his increasing knowledge of that world, in turn, has affected other intellectual endeavors.

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.

403 Criticism of Mass Media 4 hrs. Fall, Winter

Helps students to develop critical standards for evaluating mass media content in terms of the nature, function and influence of broadcasting, press and film in our society.

404 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.

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.
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. School Library Experience (407) is required during the last year of work. A portion of the Directed Teaching assignment is also spent in one of the cooperating school libraries. A course in audiovisual media is highly recommended.

A departmental laboratory containing books and other materials in library science and related fields is provided in the School of Librarianship.

**PRE-PROFESSIONAL CURRICULUM**

Bachelor of Arts or Bachelor of Science Degree

Candidates in the College of Arts and Sciences 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 a
subject field; and (3) a minor in librarianship.

A typical pre-professional library science program of studies follows:

**Course Requirements:**

Total hours required for this curriculum ........................................ 124 hrs.

1. General Studies requirements

2. Humanities
   - Modern Language .................................................. 8
   - English electives .................................................. 8
   - Communication Arts & Sciences 130 ................................. 3
   - Elective .................................................................. 3

3. Sciences
   - Elective .................................................................. 3

4. Social Sciences
   - Government elective .................................................. 3
   - History elective ....................................................... 3
   - Sociology 200 ......................................................... 3
   - Elective .................................................................. 3

5. Librarianship
   - Librarianship as a Profession: Introduction 100 ... 2
   - Fundamentals of Library Organization 230 ............... 3
   - Building Library Collections 510 ............................... 3
   - Reference Service 512 .............................................. 3
   - Cataloging Principles 530 ......................................... 3
   - Reading Interests of Young Adults 542 or
     Storytelling 546 or Teacher Ed. 548 ......................... 2-3

6. Physical Education or Military Science ......................... 4

7. Electives and Departmental Requirements for Subject Major
The Graduate College

DESCRIPTION OF COURSES

Undergraduate

100 Librarianship as a Profession: Introduction*  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.

407 School Library Experience  3 hrs. Fall, Winter

An introduction to library activities and services through assignment to a selected school library. A minimum of 90 hours of observation and participation under supervision of the cooperating school librarian and a library school faculty member is required. Grades on a pass/fail basis. Must be completed before Directed Teaching.

Upperclassmen and Graduate Students

506 Introduction to Computers  1 hr. Fall, Winter

Flow charts and computer programs will be prepared in the BASIC LANGUAGE to be run on a digital computer. Prerequisite: 1-1/2 yrs. h.s. algebra or Math 100.

510 Building Library Collections  3 hrs. Fall, Winter

Principles of selection and evaluation of books and non-book materials, appraisal of printed aids, book reviewing media and

*Courses open to students in other departments
other sources of information used in building the library collection. Opportunity given for developing competence in writing annotations and book reviews.

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 courses. Attention given to organization and methods of reference services in the library.

516 Elementary School Library Materials* 3 hrs. Fall, 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.

530 Cataloging Principles 3 hrs. Fall, Winter

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 information.

542 Reading Interests of Young Adults* 3 hrs. Fall, 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, Winter

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.
Abedin, Syed Z., 1970, Assistant Professor of Social Science  
B.A., M.A., Aligarh Muslim (India); M.A., Pennsylvania

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, Phillip D., 1964-68; 1970, Assistant Professor of Humanities  
B.A., Western Michigan; M.A., Ohio

Adams, Richard G., 1970, Assistant Professor of Social Work  
B.A., Omaha; M.S.W., Nebraska

Adams, Sam B., 1946, Associate Professor of Music  
B.A., Kentucky; M.A., Columbia

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

Aldrich, Lyman C., 1970, Adjunct Assistant Professor and Research Associate of Paper Science and Engineering  
B.A., Oglethorpe

Allen, Francis W., 1953, Associate Professor, Library  
B.S., Colby; B.A.L.S., M.A.L.S., Michigan

Allgood, William T., 1969, Assistant Professor of Music  
B.M., East Carolina; M.M., Illinois

Alm, Brian R., 1971, Instructor in English  
B.A., Augustana College; M.A., Chicago

Alvarez, Elsa, 1964, Assistant Professor of Spanish  
M.A., Iowa; Ph.D., Havana

Anderson, Mardell B., 1968, Instructor in Women’s Physical Education  
B.S., M.A., 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
Ansel, James O., 1949, Professor of Teacher Education and Director of Rural 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

Appel, 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

Armstrong, James W., 1969, Assistant Professor of Teacher Education  
B.S., Northwestern

Arnold, Peri Ethan, 1970, Assistant Professor of Political Science  
B.A., Roosevelt; M.A., Chicago

Ashbaugh, Lawrence L., 1969, Assistant Professor of Special Education  
B.S., Clarion State; M.Ed., Pennsylvania State

Asher, Eston J., Jr., 1954, Director of Institutional Research and Professor of Psychology  
B.S., Kentucky; M.S., Ph.D., Purdue

Averitt, R. Douglas, 1970, Instructor in History  
B.S., M.A., Memphis State

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, Professor and Area Chairman of Humanities  
B.Ed., Wisconsin State; M.A., Ph.D., Minnesota

Bailey, Frederick S., 1958, Director of Off-Campus Education and Assistant Professor of Teacher Education  
B.S., M.A., Western Michigan; Ph.D., Michigan State

Bailey, Keith D., 1955, Assistant Professor of Teacher Education  
B.S., M.A., Western Michigan

Bailey, Thomas C., 1970, Assistant Professor of English  
B.A., Oberlin; M.A., Missouri

Baker, Lee O., 1954, Professor and Head, 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 Paul II, 1967, Assistant Professor of Social Science  
B.S., M.S., Michigan
Faculty

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 H., 1963, Assistant Professor of Humanities
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

Bechtel, William J., Jr., 1970, Instructor in Art
B.F.A., Kansas City Art Institute

Beck, Roy A., 1967, Assistant Professor of Communication Arts and Sciences
B.S., Southeast Missouri State; M.S., Southern Illinois

Beech, Beatrice, 1971, Assistant Professor, Library
B.A., Michigan State; M.S.L.S., Western Michigan

Beech, George T., 1960-64; 1965, Professor of History
B.A., Michigan State College; Ph.D., Johns Hopkins

Beelick, Delbert B., 1970, Assistant Professor of Business Education and Administrative Services
B.B.A., M.B.A., Western Michigan

Behm, Harley D., 1967, Professor and Chairman, Department of Transportation Technology
B.S., Northern Montana; M.Ed., Ed.D., Missouri

Bendix, John L., 1955, Professor of Industrial Education
B.S., Stout State; M.A., Minnesota; Ed.D., Indiana

Benne, Max E., 1964-68; 1969, Associate Professor of Teacher Education
B.S., M.S., Ed.D., Michigan State

Bennett, Roger A., 1965, Assistant Professor of Natural Science
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

Bergeron, Raymond E., 1970, Instructor in Engineering and Technology
B.S., (M.E.T.); M.S. (M.E.T.), Western Michigan

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 F., 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 University

Betz, Robert L., 1961-62; 1963, Professor of Counseling and Personnel
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

Beuving, Leonard J., 1970, Assistant Professor of Biology
B.A., M.A., Ph.D., University of California (Berkeley)

Bibza, Irene S., 1965, Assistant Professor of Home Economics
B.S., Carnegie Institute of Technology; M.S., Auburn

Bischoff, Guntram G., 1965, Associate Professor of Religion
University of Bonn, University of Gottingen;
B.D., Th.D., Princeton Theological Seminary

Bjerregaard, Carl, 1968, Associate Professor of Music
B.Mus., Western Michigan; M.M., Michigan State

Blacking, John A., 1970, Professor of Anthropology
B.A., M.A., Ph.D., Cambridge

Bladt, Dorothy L., 1968, Associate Professor of Teacher Education
B.S., University of Chicago; M.S., Ed.D., Northern Illinois

Blagdon, Charles A., 1957, Assistant Professor of Business Education
and Administrative Services
B.A., Kalamazoo; M.A., Michigan State

Blasch, Donald, 1961, Director, Institute of Blind Rehabilitation and
Professor of Special Education
B.E., Northern Illinois; M.A., Chicago

Blefko, Robert L., 1968, Associate Professor of Mathematics
B.A., Kutztown State College of Pa.; M.A., Ph.D.,
Pennsylvania State

Bliss, James R., 1968, Associate Professor of General Business
B.A., Nebraska Wesleyan; J.D., Michigan

Blocksma, Ralph, 1970, Adjunct Professor of Speech Pathology and
Audiology
B.A., Calvin; M.D., Michigan

Bluman, Dean E., 1970, Associate Professor of Engineering and
Technology
B.A., Hiram; B.S., Carnegie Institute of Technology
M.S., Michigan State; Ph.D., West Virginia

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 Political Science, Hungaricae Elisabethiane
University; M.S., Western Michigan
Faculty

Boettcher, Richard E., 1969, Associate Professor of Social Work
B.A., Augustana; M.S.W., Washington; Ph.D., Minnesota

Boles, Harold W., 1961, Professor and Head, Department of Educational Leadership
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

Boothroyd, Gregory W., 1970, Assistant Professor, Counseling Center
B.A., M.A., Western Michigan; Ph.D., Michigan

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; Ph.D., Boston

Boughner, Robert, 1967, Assistant Professor of Engineering and Technology
B.S.I.E., Wayne State; M.B.A., Western Michigan

Boouma, Donald H., 1960, Professor of Sociology
B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Bournazos, Kimon, 1965, Associate Professor of Business Education and Administrative Services
B.S., M.S., Ph.D., Michigan State

Bourziel, Esther M., 1966, Intern Coordinator, Assistant Professor of Teacher Education
B.A., Wayne State; M.A., Michigan State

Boven, Donald E., 1953, Associate Professor of Men's Physical Education
B.S., M.A., Western Michigan

Bowers, Robert S., 1937, Professor and Head, Department of Economics
B.A., Kansas Wesleyan; M.A., American; Ph.D., Wisconsin

Bowman, Boice, 1969, Instructor in Men's Physical Education
B.S., Western Michigan

Boyd, William S., Jr., 1969, Assistant Professor of Mathematics
B.S., Southwestern at Memphis; Ph.D., Tennessee

Bradfield, Leila A., 1970, Assistant Professor of Sociology
B.S., M.S., Ph.D. Cornell

Bradley, George E., 1951, Professor 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
Faculty

Brail, 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

Brashear, Robert M., 1969, Assistant Professor of Teacher Education
B.S., Memphis State; M.R.E., Southwestern Seminary;
M.Ed., Texas Christian; Ph.D., Texas

Brawer, Milton J., 1960, Professor of Sociology and University
Ombudsman
B.A., Harvard; Ph.D., Columbia

Brayton, Thomas R., 1970, Instructor in Management
B.B.A., M.B.A., Western Michigan

Breed, Sterling L., 1956, Associate Professor, Counseling Center
B.S., M.A., Western Michigan

Breisach, Ernst A., 1957, Professor and Chairman, Department of History
Matura, Realgymnasium Knittlefeld and Vienna VII; Ph.D., Vienna;
Dr. rer. oec., Hochschule fuer Welthandel

Breisach, Herma E., 1967, Assistant Professor, Library, Serials
Librarian. 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

Brenton, Beatrice, 1969, Assistant Professor of Teacher Education
B.S., Stout State; M.A., Ph.D., Michigan State

Brewer, Richard D., 1959, Professor of Biology
B.A., Southern Illinois; M.S., Ph.D., Illinois

Brewer, Robert N., 1970, Instructor in Social Science
B.S., Utah

Brink, Lawrence J., 1940, Associate Professor of Industrial Education
and Director, Printing Services
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, Professor and Chairman, Department of
Communication Arts and Sciences; Director, Center for
Communication Research
B.A., Westminster; M.A., Ph.D., Wisconsin

Brown, Donald J., 1960, Associate Professor of Chemistry
B.A., Ph.D., Syracuse

Brown, Helen, 1947, Associate Professor of Women’s Physical
Education
B.S., M.A., Northwestern
Brown, Mary C., 1968, Instructor in Women’s Physical Education
  B.A., Albion; M.S., Syracuse

Brown, Russell W., 1951, Associate Professor of Music
  B.P.S.M., Oklahoma State; M.Mus.Ed., Notre Dame

Bruce, Phillip L., 1963, Associate Professor of Industrial Education
  B.S., M.S., Kansas State College of Pittsburgh; Ed.D., Missouri

Brune, Elmer J., 1956, Associate Professor of Engineering and Technology
  B.S., M.A., Western Michigan

Brunhumer, Walter J., 1957, Professor of History
  B.A., M.A., Marquette; Ph.D., Northwestern

Bryan, Clifford E., 1970, Assistant Professor of Sociology
  B.A., William Penn; M.A., Ph.D., Western Michigan

Buchtel, Foster S., 1965, Director of Office of Research Services
  B.A., Akron; M.B.A., Western Michigan

Buckley, Joseph T., 1970, Associate Professor of Mathematics
  B.S., Boston College; Ph.D., Indiana

Buckner, Michael J., 1968, Assistant Professor, Library, Science Librarian
  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

Bullmer, Kenneth, 1970, Assistant Professor of Counseling and Personnel
  B.S.B.A., Washington; M.A., Michigan; Ed.D., Indiana

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

Burian, William A., 1969, Associate Professor of Social Work
  B.S., John Carroll; M.S.W., Boston College; Ph.D., Chicago

Burke, John T., 1962, Professor and Head, Department of Accountancy
  B.S., Carroll; M.A., Ph.D., Michigan State; C.P.A., State of Wisconsin

Burke, Richard T., 1964, Assistant Professor of History and Administrative Asst.
  B.A., M.A., Boston; Ph.D., Northwestern

Burns, James W., 1968, Associate Professor of Teacher Education
  B.S., Central Connecticut; M.Ed., Ed.D., Pennsylvania State

Burns, Mary Esther, 1969, Professor of Social Work
  B.A., M.S.W., Michigan; Ph.D., Chicago

Buthala, Darwin A., 1970, Associate Professor of Biology
  B.S., South Dakota State; M.A., 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
Faculty

Buys, William E., 1964, Professor of Communication Arts and Sciences
B.A., Albion; Ph.D., Wisconsin

Byerly, Kenneth B., 1970, Assistant Professor of Social Science
B.A., LaVerne College; B.D., Bethany Theological Seminary

Byle, Arvon D., 1963, Associate 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

Cain, Mary A., 1962, Associate Professor of Teacher Education
B.A., Michigan; M.A., Western Michigan; Ph.D., Michigan State

Callan, Edward T. O. D., 1957, Professor of English
B.A., Witwatersrand; M.A., Fordham; D.Litt. et Phil., South Africa

Cannon, Zane, 1965, Assistant Professor of Marketing
B.S., M.A., Western Michigan

Cardenas, Mercedes, 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

Carlos, Hazel L., 1970, Instructor in English
B.A., Jackson State; M.A., Western Michigan

Carlson, Bernadine P., 1953, Assistant Professor of English
B.A., M.A., Western Michigan

Carlson, Lewis H., 1968, Associate 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, Professor of Counseling and Personnel

Carney, John M., 1966, Assistant Professor of Art

Carroll, Hardy, 1970, Assistant Professor of Librarianship
B.A., Guilford; B.D., Hartford Theological Seminary; M.S.L.S., Drexel Institute of Technology

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

Castel, Albert E. III, 1960, Professor of History
B.A., M.A., Wichita; Ph.D., Chicago
Faculty

Cha, Ellen, 1966, Assistant Professor, Library, Catalog Librarian
   B.A., Korea; M.A., Bucknell; M.A.L.S., Michigan
Chambers, Bill M., 1960, Associate Professor of Men’s Physical Education
   B.A., Kentucky; M.A., Marshall
Chang, Albert Y., 1970, Adjunct Assistant Professor of Biology
   B.S., National Taiwan; M.A., California; Ph.D., Illinois
Chapel, Joe R., 1965, Associate Professor, Reading Center and Clinic and
   Teacher Education
   B.A., Western Michigan; M.A., Michigan State
Chartrand, Gary, 1964, Professor of Mathematics
   B.S., M.S., Ph.D., Michigan State
Cheatum, Billye Ann, 1967, Associate Professor and Head, Women’s
   Physical Education
   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
Christensen, Arthur L., 1959, Assistant Professor of Teacher Education
   B.A., Michigan; M.A., Western Michigan
Clampit, Maryellen, 1971, Assistant Professor of English
   B.A., Brooklyn; M.A., Bowling Green
Clark, Phillip, 1970, Assistant Professor of Teacher Education
   B.S., M.A., Ed.D., Western Michigan
Clark, Samuel L., 1948, Director of Honors College and Professor
   of Political Science
   B.A., Ph.D., Chicago
Clarke, A. Bruce, 1967, Professor and Head, Department of Mathematics
   B.A., Saskatchewan; M.S., Ph.D., Brown
Clay, Shirley S., 1970, Assistant Professor of English
   B.A., Kent State
Clysdale, J. Patrick, 1958, Associate Professor of Men’s Physical
   Education and Assistant Director of Athletics
   B.S., M.A., Western Michigan
Coats, William D., 1966, Associate Professor of Educational Leadership
   B.A., Ohio; M.A., Ph.D., Michigan
Cohen, Eckford, 1970, Visiting Lecturer in Mathematics
   Ph.D., Duke
Cohen, Martin, 1960, Assistant Professor of Librarianship
   B.A., Harvard College; B.S., Simmons; M.A., Boston Teachers College
Cohn, Jill, 1971, Assistant Professor of English
   B.A., M.A., Michigan
Cole, Roger L., 1959, Chairman, Department of Modern and Classical Languages and Professor of German
B.A., M.A., Ph.D., Michigan

Collins, Carol I., 1967, Instructor in Music
B.A., Michigan State; M.A., Western Michigan

Collins, LTC Richard C., 1970, Assistant Professor of Military Science
B.S., Kansas State

Comaromi, John P., 1970, Associate Professor of Librarianship
B.A., M.A.L.S., M.A., (English); Ph.D., Michigan

Combs, William W., 1962, Professor of English
B.A., Mississippi; M.A., Ph.D., Harvard

Comer, Charles D., 1968, Instructor in Men's Physical Education
B.S., Bowling Green State; M.A., Western Michigan

Condic, Joseph M., 1966-69; 1970, Assistant Professor of Humanities
B.A., St. Joseph’s; M.A., Chicago

Conrath, Elaine D., 1970, Coordinator of Directed Teaching
B.A., Michigan; M.A., Western Michigan

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; Ph.D., Massachusetts

Cooney, Seamus, 1971, Assistant Professor of English
B.A., University College (Dublin); M.A., Indiana

Copps, John A., 1959, Professor of Economics
B.S., Ph.D., Wisonsin

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

Cornish, Robert E., 1970, Instructor in Teacher Education
B.A., M.A., Western Michigan

Cottrell, June, 1970, Instructor in Communication Arts and Sciences
B.S., M.A., Western Michigan

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

Cowden, David J., 1969, Assistant Professor of Teacher Education
B.S., M.S., Northern State; Ed.D., South Dakota

Coyne, Monique Y., 1968, Instructor in French
B.A., M.A., Western Michigan
Faculty

Coyne, Thomas E., 1962, Vice President for Student Services
B.A., Western Michigan; M.A., Michigan

Crane, Loren D., 1965, Associate Professor of Communication Arts and Sciences
B.A., Brigham Young; M.A., Ph.D., Ohio State

Craven, Joseph A., Jr., 1969, Instructor in Humanities
B.A., M.A., Denver

Creed, Harriett K., 1967, Assistant Professor of Women's Physical Education
B.S., Chattanooga; M.S., Tennessee

Crowell, Ronald A., 1966, Assistant Professor of Teacher Education
B.A., Michigan State; M.A., Toledo

Cudney, Milton R., 1964, Professor, Counseling Center
B.S., Western Michigan; M.A., Michigan; Ph.D., Ohio State

Culp, Robert L., 1957, Assistant Professor of Men's Physical Education
B.A., Kalamazoo; M.A., Western Michigan

Cummings, John W., 1962, Associate Professor of Transportation Technology
B.S., Lewis; M.A., Chicago Teachers College

Curl, David H., 1966, Professor of Teacher Education
B.F.A., Ohio; M.S., Ed.D., Indiana

Cutbirth, Nancy, 1971, Assistant Professor of English
B.A., Stanford; M.A., Texas

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., Baroda College; M.A., University of Baroda (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 Men's Physical Education
B.S., Miami; M.A., Michigan

Daniels, James E., 1963, Associate Professor of Accountancy
B.S.B.A., Kansas State of Pittsburg; M.B.A., Ph.D., Arkansas

Dannenberg, Raymond A., 1956, Professor of Distributive Education
B.S., Western Michigan; M.A., Ph.D., Michigan

Darling, Dennis E., 1967, Assistant Professor of Industrial Education
B.S., Stout State; M.A., Ball State; Ph.D., Michigan State

Davenport, James A., 1957, Associate Professor of Educational Leadership
B.A., M.A., Western Michigan; Ed.D., Columbia

Davidson, Clifford O., 1965, Assistant Professor of English
B.S., St. Cloud State College; M.A., Ph.D., Wayne State
Faculty

Davidson, Robert, 1964, Instructor in Music

Davies, Douglas, 1968, Assistant Professor of Humanities
B.A., M.A., San Francisco State

Davis, Charles, Jr., 1967, Associate Professor of Engineering and Technology
B.S.E.E., Michigan State; M.S.E.E., Michigan

Davis, Richard A., 1965, Associate Professor of Geology
B.S., Beloit College; 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, Assistant Professor of History
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B.A., Florida; M.S., Ph.D., Florida State

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B.A., Sarah Lawrence; M.L.S., U.C.L.A.

Hobbs, George W., 1965, Assistant Professor of Men’s Physical Educ.
B.A., Michigan State; M.A., Michigan

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Hokenstad, Merl C., Jr., 1968, Professor and Director, School of Social Work
B.A., Augustana College; M.S.W., Columbia; Ph.D., Brandeis

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Faculty

Holland, David, 1970, Associate Professor of Home Economics
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Holmes, Robert, 1966, Professor and Head, Department of Music
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Holt, Imy V., 1961, Professor of Biology
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Horton, Paul B., 1945, Professor of Sociology
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Houston, Charles O., Jr., 1965, Professor of Social Science
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Howell, James A., 1964, Associate Professor of Chemistry
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Howson, Arthur T., 1967, Director, Muskegon Directed Teaching Office
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Huitema, Bradley E., 1968, Assistant Professor of Psychology
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  B.A., Nebraska Wesleyan; M.A., Washington; Ph.D., Nebraska
Hunt, Mary Ida, 1966, Assistant Professor of Speech Pathology and Audiology
  B.S., M.A., Western Michigan
Huston, Susan, 1968, Instructor in History
  B.A., Oberlin; M.A., Western Michigan
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  B.S., Western Michigan; M.A., Michigan
Hutchins, Forrest O., 1966, Instructor in Transportation Technology
  B.S., Southeastern Louisiana College
Hutchinson, Ronald R., 1966, Adjunct Associate Professor of Psychology
  M.A., Southern Illinois; M.S., Ph.D., Yale
Iffland, Don C., 1956, Professor and Chairman, Department of Chemistry
  B.S., Adrian; M.S., Ph.D., Purdue
Inselberg, Edgar, 1966, Associate Professor of Biology
  B.S., Cornell; M.S., Ph.D., Illinois
Inselberg, Rachel M., 1966, Associate Professor of Teacher Education
  B.S., Philippine Women's University; M.S., Illinois; Ph.D., Ohio State
Irvin, Laura J., 1970, Associate Professor of Communication Arts and Sciences
  B.S., Northwestern
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  B.A., Western Reserve; M.A., Ph.D., Indiana
Jackman, Albert H., 1959, Professor and Head, Department of Geography
  B.S., Princeton; Ph.D., Clark
Jackson, James W., 1970, Lecturer in German
  B.A., M.A., Western Michigan
Jaksa, James A., 1967, Associate Professor of Communication Arts and Sciences
  B.A., Central Michigan; M.A., Michigan; Ph.D., Wayne State
Jamison, Frank R., 1967, Associate Professor, Division of Instructional Communications
  B.A., Missouri; M.S., Syracuse; Ed.S., Colorado State College
Janes, Raymond L., 1957-60; 1963, Professor and Head, Department of Paper Science and Engineering
  B.S., Western Michigan; M.S., Ph.D., Institute of Paper Chemistry (Lawrence)
Jasso, Arturo F., 1970, Assistant Professor of Spanish
  B.A., New Mexico; M.A., Kansas; Ph.D., Missouri
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  B.S., M.A., Ed.S., Western Michigan
Faculty

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Johnson, Gordon O., 1960, Associate Professor of Industrial Education and Administrative Assistant, College of Applied Sciences
B.S., Northeast Missouri State; M.Edu., Missouri; Ed.D., Indiana

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B.S.E. (M.E.); Michigan; M.S. (M.E.), Michigan State; P.E.

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Johnston, William Arnold, 1966, Assistant Professor of English
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Joyce, Richard E., 1970, Assistant Professor of Humanities
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B.S., M.S.W., Wayne State

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Kaiser, Steven C., 1970, Instructor in Men's Physical Education
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Kanzler, Janet, 1968, Assistant Professor of Women's Physical Education
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Kanzler, William H., 1961, Professor of Teacher Education
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Kapoor, S. F., 1967, Assistant Professor of Mathematics
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Karsten, David, 1967, Assistant Professor of Communication Arts and Sciences
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Kaufman, Maynard L., 1963, Associate Professor of Religion
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Kazmerski, Kenneth J., 1970, Assistant Professor of Social Work
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Keely, Charles B., 1970, Assistant Professor of Sociology
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Kim, C. I. Eugene, 1961, Professor of Political Science
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Kissel, Johannes A., 1968, Assistant Professor of German
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Klammer, Opal, 1962, Assistant Professor of Women's Physical Education
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Klammer, Waldemar E., 1956, Associate Professor of Industrial Education
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Klein, George, 1958, Associate Professor of Political Science
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Klein, Patricia, 1967, Assistant Professor of Social Science
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Klein, Roy S., 1967, Assistant Professor of Engineering and Technology
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Kline, James E., 1963, Assistant Professor of Paper Science and Engineering
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Kohrman, George E., 1951, Dean, College of Applied Sciences and
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B.S., M.A., Ed.D., Missouri

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Kosberg, Edward T. P., 1970, Instructor in History
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Kowal, Jan S., 1971, Assistant Professor, Library
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Kramer, Philip H., 1970, Associate Professor of Social Work
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ABITUR, Goethegymnasium Karlsruhe (Germany); B.A., M.A.,
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Kruglak, Haym, 1954, Professor of Physics
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Kukolich, Stephen I., 1965, Professor of Paper Science and Engineering
B.S., Grinnel College; M.S., Ph.D. (Lawrence) Institute of Paper
Chemistry
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B.A., New Asia (Hong Kong); Dipl. rer. pol., Dr. rer. pol., Marburg  
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B.A., Oakland University; M.A., Boston

Kusmiss, John H., 1965, Associate Professor of Physics  
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Kuykendall, Radford B., 1957, Professor of Communication Arts and Sciences  
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Kyriazis, John P., 1969, Instructor in History  
B.A., M.A., Colorado

Kyser, Daniel A., 1947, Professor of Music  
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Laing, Robert A., 1970, Assistant Professor of Mathematics  
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Lambe, Cameron W., 1962, Professor and Acting Chairman, Department of Teacher Education  
B.S., M.Ed., Ed.D., Wayne State

Lamper, Neil, 1959, Associate Professor of Counseling and Personnel  
B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Landis, Joseph B., 1969, Assistant Professor of Sociology  
B.A., Wooster; M.A., Yale

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B.A., Toronto; M.A., Wayne State; Ph.D., Michigan

Large, Wilda F., 1964, Associate Professor of Social Science, Liberal Arts  
B.A., M.A., Western Michigan

Larsen, Philip T., 1970, Assistant Professor of Natural Science  
B.A., Rutgers; M.Ed., Ph.D., Pennsylvania State

LaRue, Robert, 1964-65; 1966, Assistant Professor of English  
B.A., Occidental College; M.F.A., Oregon

Lawrence, Jean M., 1959, Associate Professor of Biology  
B.A., Yankton; M.A., Wellesley; Ph.D., Northwestern

Lawson, E. Thomas, 1961, Professor and Head, Department of Religion  
B.D., M.A., Ph.D., Chicago

Leader, Alan H., 1963, Professor of Management  
B.S., M.S., Rochester; D.B.A., Indiana

Lee, Carleton L., 1969, Professor and Director, Black Studies Programs  
B.A., Talladega College; M.A., Chicago; Ph.D., Chicago

Lee, Hung Peng, 1970, Assistant Professor of Social Science  
B.A., National Northeastern (Peiping); M.A., New York
Lee, Wilma D., 1970, Instructor in Social Science
B.S., M.S., Indiana

Leisenring, James J., 1969, Adjunct Assistant Professor of Accountancy
B.A., Albion; M.B.A., Western Michigan; C.P.A. State of Michigan

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B.S., Illinois State Normal; M.A., Colorado State

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B.A., Northern Michigan; M.S., Michigan

Lewis, Alice E., 1956, Associate Professor of Occupational Therapy
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Lewis, David, 1962, Professor of Sociology
B.A., M.A., Maryland; Ph.D., Michigan State

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B.A., M.A., Ph.D., Michigan State

Lex, Barbara W., 1970, Assistant Professor of Anthropology and Social
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B.A., M.A., Ph.D., Syracuse

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B.S., M.S., Ph.D., Michigan State

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B.A., Northwestern; M.A., Ph.D., Chicago

Lindbeck, John R., 1957, Professor of Industrial Education
B.S., M.A., Ph.D., Minnesota

Lindenmeyer, Carl, 1969, Assistant Professor of Engineering and Technology
B.S., Northwestern

Linder, Herman W., 1970, Assistant Professor of Transportation Technology
B.S., M.Ed., Illinois (Urbana)

Lindstrom, Carl A., 1959, Associate Professor of Teacher Education
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Littna, Francis M., 1965, Associate Professor of Humanities
Doctor’s Degree in Law and Economics (Prague)

Livingston, William, 1964, Assistant Professor of Communication Arts and
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B.A., Humboldt State; M.A., Illinois
Faculty

Lloyd, Bruce A., 1967, Professor of Teacher Education
B.S., M.Ed., Ph.D., Ohio University

Loew, Cornelius, 1956, Dean, College of Arts and Sciences and Professor of Religion
B.A., Elmhurst; B.D., S.T.M., Union Seminary; Ph.D., Columbia

Löffler, Reinhold L., 1967, Assistant Professor of Anthropology
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Logan, Walter O., 1970, Instructor in Accountancy
B.S., Ferris State; M.B.A., Michigan State; C.P.A., State of Florida

Lohr, Frances E., 1968, Associate 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, Associate Professor of Art
B.A., M.A., North Carolina

Lowe, James J., 1965, Associate Professor, Counseling Center
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Lowrie, Jean E., 1951-57; 1958, Professor and Director, School of Librarianship
B.A., Keuka; B.S.L.S., Western Reserve; M.A., Western Michigan; Ph.D., Western Reserve

Lowry, George G., 1968, Associate Professor of Chemistry
B.A., Chico State; M.S., Stanford; Ph.D., Michigan State

Lyon, David O., 1963, Associate Professor of Psychology
B.A., Hamilton; Ph.D., Indiana

MacDonald, Richard R., 1967, Assistant Professor of Sociology
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B.A., M.A., Western Michigan

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Maher, Robert F., 1957, Professor and Chairman, Department of Anthropology
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Maier, Paul L., 1959, Professor of History
  B.A., B.D., Concordia Seminary; M.A., Harvard; Ph.D., Basel

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  B.A., DePaul (Illinois)

Malamazian, John D., 1966, Lecturer in Blind Rehabilitation
  B.S., Illinois

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  B.A., Adelphi; M.L.S., Indiana

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  B.S., M.A., New York State; Ph.D., Michigan

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  B.A., Kalamazoo; M.A., Michigan

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  B.A., Northwestern

Malott, Richard W., 1966, Associate Professor of Psychology
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Manis, Jerome G., 1952, Professor of Sociology and Director, Center for Sociological Research
  B.A., Wayne State; M.A., Chicago; Ph.D., Columbia

Manis, Laura M., 1966, Assistant Professor, Counseling Center
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  B.Ed., Southern Illinois; M.A., Ph.D., Iowa

Marrett, Cora E., 1969, Assistant Professor of Sociology
  B.A., Virginia Union; M.A., Ph.D., Wisconsin

Marshall, Dorothy, 1970, Instructor in English
  B.A., M.A., Western Michigan

Marshall, Duane W., 1960, Lecturer in Paper Science and Engineering
  B.S., M.S., Virginia Polytechnic Institute
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Martin, Gerald C., 1959, Professor of Educational Leadership  
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Martinson, William D., 1970, Professor and Head, Department of Counseling and Personnel  
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Marvin, F. Theodore, 1962, Assistant Professor of Humanities and Administrative Assistant to the Dean, College of General Studies  
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Mason, Arthur T., 1970, Adjunct Assistant Professor of Management  
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Mason, John L., 1971, Instructor in Engineering and Technology  
B.S.E., M.S.E., Michigan

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B.S., Ashland; M.S., Wisconsin

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McConnell, Linda L., 1970, Coordinator of Directed Teaching  
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McCray, Luretta, 1969, Instructor in Women’s Physical Education  
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McCully, Joseph C., 1956, Professor of Mathematics  
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McCuskey, Dorothy, 1957, Professor of Educational Leadership  
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McGehee, Richard V., 1963-66; 1967, Associate Professor of Geology  
B.S., Texas; M.S., Yale; Ph.D., Texas
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B.A., Michigan State; M.A., Michigan; Ed.D., Michigan State

Miller, Diann J., 1968, Instructor, Counseling Center
B.S., Wisconsin State; M.A., Western Michigan

Miller, Eldon J., 1970, Associate Professor of Men’s Physical Education
B.S., M.S., Wittenberg

Miller, Genevieve N., 1966, Lecturer in Blind Rehabilitation
B.S., Iowa

Miller, George S., 1964, 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 College

Miller, John T., 1963, Assistant Professor of Men’s Physical Education
B.S., M.A., Western Michigan

Miller, Marilyn L., 1966, Assistant Professor of Librarianship
B.S., Kansas; M.A.L.S., Michigan

Miller, Ralph N., 1946, Professor and Chairman, Department of English
B.A., Wayne State; M.A., Michigan; Ph.D., Northwestern

Miller, Robert B., 1956, Associate Professor of Physics
B.A., Manchester; M.S., Ph.D., Michigan State

Miller, Samuel O., 1970, Associate Professor of Social Work
B.A., Dakota Wesleyan; M.S.W., Boston; Ph.D., Chicago

Milton, Donald, 1965, Associate Professor of Philosophy
B.A., Gustavus Adolphus; M.A., Minnesota

Miner, Margie J., 1957, Associate Professor of Women’s Physical Education
B.S., Western Illinois; M.S., Wisconsin; M.A., Western Michigan

Mitchell, James L., Jr., 1964, Associate Professor of Accountancy

Mochizuki, June, 1966, Assistant Professor, Counseling Center
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B.A., Wooster; B.D., McCormick Theological Seminary

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B.S., M.A., Western Michigan

Moore, Daniel, 1963, Professor of Teacher Education
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Faculty

Moore, Winston D., 1969, Instructor in Anthropology and Social Science  
B.A., M.A., Washington State

Morell, Gilbert W., 1956, Assistant Professor of History  
B.A., Western Michigan; M.A., Michigan

Morreale, Joseph, 1970, Instructor in Economics  
B.A., Queens College; M.A., State University of New York at Buffalo

Morris, William C., 1961, Assistant Professor of Accountancy  

Morrison, William F., 1959, Professor of General Business  
B.A., J.D., State University of Iowa

Mortimore, Fredric J., 1967, Director, Institute of International and Area Studies and Associate Professor of Teacher Education  
B.A., M.A., Ph.D., Michigan State

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B.S., Miami; M.A., New York; Ph.D., Michigan State

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B.S., Central Michigan; M.Ed., Wayne State

Mountjoy, Paul T., 1964, Professor of Psychology  
B.S., Lawrence; M.A., Ph.D., Indiana

Mowen, Howard A., 1949, Professor of History  
B.A., Baldwin-Wallace; M.A., Ph.D., Western Reserve

Mowry, Ronald, 1971, Adjunct Assistant Professor of Social Work  
B.A., Reed; M.S.W., Washington

Murphy, John M., 1962, Assistant Professor of English  
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

Nagler, Robert C., 1956, Professor of Chemistry  
B.S., William Penn; M.A., Missouri; Ph.D., State University of Iowa

Nahm, Andrew C., 1960, Professor of History  
B.A., Andrews; M.A., Northwestern; Ph.D., Stanford

Nangle, John E., 1964, Assistant Director of Institutional Research and Associate Professor of Psychology  
B.Sc., Northwestern; M.A., Bradley; Ph.D., Michigan State

Nantz, Don W., 1952, Professor of Engineering and Technology  
B.S., M.S., Stout State; Ed.D., Bradley

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B.A., M.A., Michigan State
Faculty

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B.A., Hamline; M.A., Ph.D., Minnesota

Nelson, James D., 1970, Assistant Professor of Mathematics
B.S., M.S., Kentucky; Ph.D., Kentucky

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B.S., Wayne State; M.B.A., Western Michigan

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B.F.A., M.F.A., Drake

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B.S., M.B.A., Ph.D., Ohio State; C.P.A., States of New York and Ohio

Newell, Gale E., 1968, Associate Professor of Accountancy
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Newton, John, 1970, Assistant Professor of Women’s Physical Education
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B.A., Alma; M.A., Michigan

Nobes, Leon D., 1966, Assistant Professor of Communication Arts and Sciences
B.A., M.A., Western Michigan

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B.A., M.A., Ph.D., Northwestern

Nodel, Emanuel, 1961, Associate Professor of History
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Null, Thomas W., 1945, Associate Professor of Business Education and Administrative Services
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O'Connor, Arthur J., 1964, Director of University Information
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Odom, Sue K., 1970, Instructor in History
B.A., M.A., North Texas State

Olenchak, Frank R., 1966, Assistant Professor of Teacher Education
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Olsen, Ronald W., 1970, Assistant Professor of Biology
B.S., Utah, M.S., Ph.D., Wisconsin

Olson, Wendy Lee, 1967, Assistant Professor of Women’s Physical Education
B.S., Michigan

Olton, Roy, 1957, Professor and Chairman, Department of Political Science
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Orlofsky, Fred C., 1966, Assistant Professor of Men’s Physical Education
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Overmire, Thomas G., 1969, Adjunct Professor of Biology
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Overton, Harvey W., 1955, Professor of Humanities
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   B.A., Wilson; M.A., Purdue

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   B.S., M.A., Utah

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   B.S., Syracuse; M.S., Vanderbilt

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   B.A., Vanderbilt; M.A., Harvard

Petro, John W., 1961, Professor of Mathematics
   B.A., M.S., Ph.D., University of Iowa

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   B.A., M.A., Miami University

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   B.A., Virginia State; M.A., New York; Ph.D., Ohio State

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   B.A., Pomona College; M.A., Ph.D., California (Berkeley)

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   B.S., Eastern Illinois; M.A., Ph.D., Michigan

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   B.A., M.A., Michigan

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   B.A., Ripon; M.A., Ph.D., Wisconsin
Platt, Clarice, 1967, Associate Professor of Social Work
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Poel, Robert, 1970, Assistant Professor of Natural Science
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B.A., Western Michigan; M.A., Stanford; Ph.D., Oregon

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B.A., Denison; M.A., Michigan

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B.A., M.A., Michigan State

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Ratliffe, Sharon, 1965, Assistant Professor of Communication Arts and Sciences
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Raup, Henry A., 1960, Associate Professor of Geography
B.A., Kent State; M.A., Ph.D., Illinois

Ray, Harold L., 1960, Professor of Men's Physical Education and Assistant Director of Athletics
B.A., M.S., Syracuse; Ph.D., Ohio State

Rayford, Erwin W., 1967, Associate Professor of Industrial Education
B.S., Wisconsin State; M.E., Ed.D., Missouri

Rayl, Leo S., Jr., 1965, Associate Professor of Engineering and Technology
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Reid, Kenneth E., 1968, Assistant Professor of Social work
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B.S., M.A., Western Michigan

Renstrom, Peter G., 1969, Assistant Professor of Political Science
B.A., Macalester; M.A., Michigan State

Rhodes, Curtis A., 1966, Assistant Professor of Art
B.F.A., Kansas; M.F.A., Ohio

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B.S., Wisconsin; M.A., Western Michigan

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B.A., M.A., Western Michigan

Riley, James E., 1960, Associate Professor of Mathematics
B.A., M.A., Western Michigan; Ph.D., Michigan State

Risher, Charles G., 1958, Professor of Industrial Education
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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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Robeck, George, 1968, Assistant Professor of Communication Arts and Sciences
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Robert, Andre, 1970, Adjunct Professor of Biology
M.D., Ph.D., Montreal

Roberts, Joe C., 1969, Instructor in Men’s Physical Education
B.S., Ohio State

Robertson, Anna M., 1966, Assistant Professor of Women’s Physical Educ.
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, Ellen P., 1970, Assistant Professor of Sociology
B.A., M.A., Ohio State; Ph.D., Purdue

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B.A., M.A., Ohio State; Ph.D., Purdue

Robinson, Frank B., 1966, Head, Department of Speech Pathology and Audiology
B.A., Western Michigan; M.S., Minnesota; Ph.D., Ohio State

Roell, Candace, 1956, Professor of Women’s Physical Education
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Rogers, Chester B., 1966, Assistant Professor of Political Science
B.A., M.A., Cincinnati; Ph.D., Northwestern

Rolls, Erlinda S., 1969, Assistant Professor, Library
B.A., Immaculata; M.S.L.S., Villanova

Rosegrant, William R., 1955, Associate Professor of English
B.A., Central Methodist College; M.A., Chicago

Ross, Martin H., 1966, Associate Professor of Sociology
B.S., M.S., Ph.D., Wisconsin

Ross, Myron H., 1961, Professor of Economics
B.S., M.A., Temple; Ph.D., Pennsylvania

Rossi, Ernest E., 1966, Associate Professor of Political Science
B.A., Duquesne; M.Litt.; Ph.D., Pittsburgh

Rossman, Jules, 1966, Associate Professor of Communication Arts and Sciences
B.A., New York; M.A., Ph.D., Michigan State
Faculty

Routt, William D., 1970, Assistant Professor of Humanities
B.A., M.A., Chicago

Rowekamp, William H., 1957, Associate Professor of Men’s Physical Education
B.A., Missouri; M.A., Western Michigan

Rozelle, David L., 1970, Instructor in History
B.A., M.A., Toledo

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B.S., Western Michigan; M.A., Michigan

Russell, Vera J., 1954, Assistant Professor of Teacher Education
B.S., M.A., Western Michigan

Rutherford, Ira A., 1970, Instructor in Social Science
B.A., Western Michigan

Rutherford, Phoebe, 1964, Assistant Professor of Biology
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Ryan, Alexander Boggs, 1962, Associate 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.

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B.A., Valparaiso; B.S.L.S., Western Reserve; M.A., Washington

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B.S., M.S., Western Michigan

Sadler, David F., 1955, Professor of English
B.A., Antioch; M.A., Ph.D., Minnesota

Sandberg, John E., 1971, Dean and Professor, College of Education
B.S., M.A., Ed.D., Washington State

Sanderlin, Fred, 1970, Instructor in English
B.A., Taylor; M.A., Eastern Michigan

Sanders, Neill, 1969, Professor of Music
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Schiffer, Pat D., 1965, Assistant Professor of Transportation Technology
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Schlack, Marilyn J., 1968, Coordinator of Directed Teaching
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Schlosser, Merle J., 1957, Associate Professor of Men's Physical Education
B.S., M.S., Illinois

Schmaltz, Lloyd J., 1959, Professor of Geology
B.A., Augustana; M.A., Ph.D., Missouri

Schmid, Harriet M., 1970, Assistant Professor of Occupational Therapy
B.S., Wayne State

Schmidt, Richard H., 1955, Professor of Psychology and Director of Professional Experiences, The Graduate College
B.S., M.S., Ed.D., Oklahoma State

Schmitt, Peter, 1965, Associate Professor of History
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B.S., Northern Iowa; M.A., Iowa; Ph.D., Michigan

Schnoor, Max C., 1967, Assistant Professor of Management
B.S., M.B.A., Wayne State

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B.S., Western Michigan; M.A., Michigan

Schreiber, William P., 1968, Assistant Professor of Teacher Education
B.S., M.Ed., Illinois

Schreiner, Erik A., 1963, Associate Professor of Mathematics
B.A., M.A., Ph.D., Wayne State

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Schultz, John R., 1970, Adjunct Associate Professor of Biology
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B.S., M.S., Michigan

Schut, A. L., 1966, Lecturer in Blind Rehabilitation
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Sebaly, A. L., 1945, Professor of Teacher Education and Director  
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Seber, Robert C., 1956, Professor of Mathematics  
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Sechler, Robert E., 1959, Associate Professor of Mathematics  
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Communications  
B.A., Columbia; M.A., New York

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B.A., Wooster; M.A., Chicago; Ph.D., Ohio State

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Sellin, Donald F., 1969, Professor of Special Education  
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B.S., Valparaiso; M.S., Indiana

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Sharma, Visho B. L., 1967, Professor of Social Science and Sociology  

Shaw, John F., 1970, Assistant Professor of Men's Physical Education  
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Shaw, Larry J., 1971, Instructor in English
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Sheldon, David A., 1966, Assistant Professor of Music
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Sheppard, John D., 1965, Associate Professor of Accountancy
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Shilts, Richard A., 1970, Instructor in Men's Physical Education
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Siehl, Chris M., 1967, Instructor in History
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Sievers, Gerald L., 1967, Associate Professor of Mathematics
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Smith, Curtis O. B., 1968, Assistant Professor of Music
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Smith, Dorothy E., 1963, Assistant Professor, Reading Center and Clinic and Teacher Education
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Smith, Herbert L., 1963, Associate Professor of Sociology
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Smith, Isabelle L., 1968, Assistant Professor of Home Economics
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Smith, Robert L., 1964, Associate Professor of Communication Arts and Sciences and Director of University Theatre
B.S., M.A., Bowling Green State; Ph.D., Michigan State

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Sorensen, Raymond R., 1950, Associate Professor of Men’s Physical Educ.
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Sorenson, Virginia, 1965, Associate Director, Grand Rapids Area Center and Associate Professor of Teacher Education
B.S., M.A., Western Michigan; Ed.S., Michigan State
Spaniolo, Charles V., 1965, Associate Professor and Associate Director, Counseling Center
B.A., M.A., Ph.D., Michigan State

Spaulding, Gayland, 1970, Instructor in Communication Arts and Sciences
B.A., Culver Stockton; M.A., Western Michigan

Spink, Ralph, M., 1966, Associate Professor, Division of Instructional Communications
B.S., Minnesota; M.A., Denver

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 Women's Physical Educ.
B.S., M.A., Michigan State

Stallman, Robert L., 1966, Associate Professor of English
B.A., M.A., New Mexico; Ph.D., Oregon

Stam, James C., 1970, Assistant Professor of Management
B.A., M.A., Wheaton; Ph.D., Stanford

Stech, Ernest L., 1970, Assistant Professor of Communication Arts and Sciences
B.A., Miami; M.A., Ph.D., Denver

Steen, Edwin B., 1941, Professor of Biology
B.A., Wabash; M.A., Columbia; Ph.D., Purdue

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, Professor of Chemistry
B.S., Oregon; Ph.D., California

Stephenson, Barbara Jean, 1960, Associate Professor of Women’s Physical Education
B.S., Western Michigan; M.S., Southern California

Stevens, Fred L., 1946, Associate Professor of Men’s Physical Education
B.S., M.A., Western Michigan

Stevens, Marie L., 1957, Dean of Students
B.A., Mills; M.A., Syracuse

Stewart, Mary Lou, 1959, Associate Professor of Teacher Education
B.A., Oberlin; M.A., Case 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 Women’s Physical Education
B.A., M.A., Michigan
Faculty

Stillwell, LaVern, 1965, Associate Professor of Communication Arts and Sciences
B.A., Lake Forest; M.A., Ph.D., Michigan

Stillwell, Lyda J., 1966, Assistant Professor of Communication Arts and Sciences
B.F.A., Texas; M.A., Washington

Stine, Leo C., 1952, Dean, Division of Continuing Education 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, W. Terry, 1967, Assistant Professor of English
B.A., Hartford; M.F.A., Iowa

Stoline, Michael R., 1967, Associate Professor of Mathematics
B.A., M.A., Ph.D., University of Iowa

Stolle, Hans J., 1970, Instructor in Geography
B.A., Ing. (Grad) Berlin; M.A., Western Michigan

Stoltman, Joseph P., 1971, Assistant Professor of Geography
B.A., Central Washington State; M.A.T., Chicago

Stordahl, Linn, 1970, Assistant Professor of English
B.S., Montana State; M.A., Colorado State

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, Associate Professor of Geology
B.S., M.A., Ph.D., Indiana

Streeter, Sue Ellen, 1970, Instructor in Humanities
B.A., M.A., Western Michigan

Stromsta, Courtney P., 1968, Professor of Speech Pathology and Audiology
B.S., Western Michigan; M.A., Ph.D., Ohio State

Stroud, Sarah Jane, 1956, Professor of Teacher Education
B.A., Kalamazoo; M.A., Western Michigan; Ph.D., Michigan State

Stroupe, John H., 1965, Associate Professor of English
B.A., Grinnell; Ph.D., Rochester

Stulberg, Julius, 1945, Professor of Music
B.A., M.A., Michigan State

Sud, Gian C., 1966, Associate Professor of Biology
B.S., M.S., Panjab; Ph.D., Wisconsin

Sundick, Robert I., 1969, Assistant Professor of Anthropology
B.S., State University of New York at Buffalo; M.A., Toronto
Suterko, Stanley, 1961, Assistant Professor of Special Education, Institute of Blind Rehabilitation  
B.S., Illinois; M.A., Western Michigan

Swanson, Curtis N., 1968, Assistant Professor of Transportation Technology  
B.S., M.S., Western Michigan

Swickard, Sara R., 1951, Professor of Teacher Education  
B.S., M.A., Ph.D., Ohio State

Swinehart, Richard W., 1970, Instructor in Engineering and Technology  
B.S., Michigan Technological

Swinehart, William T., 1971, Assistant Professor of Engineering and Technology  
B.S.E.E., M.S.E.E., Ohio University

Syndergaard, Larry E., 1968, Assistant Professor of English  
B.S., Iowa State; M.S., Ph.D., Wisconsin

Szalkowski, Anne O., 1955, Associate Professor of English  
B.A., Western Michigan; M.A., Michigan State

Taylor, Betty, 1947, Professor of Home Economics  
B.S., Iowa State; M.A., Columbia; Ph.D., Michigan State

Taylor, David R., 1968, Associate Professor of Teacher Education  
B.S., Wisconsin State; M.S., Ed.D., Northern Illinois

Taylor, Mary L., 1963, Associate Professor, Library; Public Services Librarian  
B.A., M.A., Western Michigan

Tessin, Melvin J., 1967, Instructor in Management  
B.A., Albion; M.B.A., Western Michigan

Thomas, Darrell B., 1969, Assistant Professor of Home Economics  
B.S., M.S., Brigham Young

Thomas, Nancy L., 1954, Assistant Professor of Teacher Education  
B.S., M.A., Western Michigan

Tooke, Florence, 1964, Assistant Professor of Home Economics  
B.S., M.S., Illinois State

Townsend, Robert, 1970, Instructor in Teacher Education  
B.A., Albion; M.A., Eastern Michigan

Trader, Robert B., 1951, Professor and Head, Department of Marketing  
B.S., Indiana; M.S., Pittsburgh; Ed.D., Michigan State

Travers, Robert M. W., 1965, Distinguished University Professor  
B.Sc., London; Ph.D., Columbia

Trimitis, George, 1969, Professor of Chemistry  
B.Sc., American University in Cairo (Egypt); Ph.D., Virginia Polytechnic Institute

Trimpe, Adrian, 1947, Associate Professor and Head, Department of Distributive Education  
B.S., Western Michigan; M.A., Michigan
Faculty

Turansky, Isadore, 1960, Associate Professor of Special Education
  B.S., Edinboro; M.Ed., Pittsburgh

Turner, Walter W., 1963, Associate Professor of Mathematics
  B.S., M.S., Ph.D., Michigan State

Tydeman, James E., 1958, Associate Professor, Library, Business Librarian
  B.A., B.S.L.S., Minnesota; M.A., Chicago

Tyler, Larry L., 1970, Assistant Professor of Social Science
  B.A., Kansas State; M.A., Ph.D., Missouri

Tyndall, Dean R., 1955, Associate Professor and Chairman, Department of Occupational Therapy
  B.S., M.A., O.T., Certificate; Western Michigan

Ulmer, James L., 1959, Associate Professor of Industrial Education
  B.S., M.S., Kansas State (Pittsburg)

Ulrich, Roger E., 1965, Research Professor of Psychology
  B.S., North Central College; M.A., Bradley; Ph.D., Southern Illinois

Underwood, James R., 1968, Instructor in French
  B.A., Mount Union; M.A., Middlebury (Paris)

Upjohn, William John, 1971, Adjunct Associate Professor of Management
  B.A., Hobart College

Urbick, Thelma, 1968, Assistant Professor of Counseling and Personnel
  B.A., M.A., Western Michigan; Ph.D., Michigan

Urich, Roger R., 1967, Associate Professor of Engineering and Technology
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VanDenBerg, Lois E., 1950, Assistant Professor of Teacher Education
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VanDePoler, James, 1967, Instructor in Transportation Technology
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VanderBeek, Leo C., 1956, Professor of Biology
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VanderKooi, Lambert R., 1970, Associate Professor of Engineering and Technology
  B.S.E., Calvin; M.S.E., Ph.D., Michigan

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VanDeventer, Clarence N., 1955, Associate Professor of Transportation Technology
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VanDeventer, William C., 1953, Professor of Biology
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VanRiper, Charles, 1936, Distinguished University Professor
  B.A., M.A., Michigan; Ph.D., Iowa

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  B.S., M.A., Western Michigan

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  B.A., Michigan; B.S.L.S., Columbia; B.A.L.S., Michigan

Vorce, Barrett M., 1969, Director, Grand Rapids Area Center
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Vuicich, George, 1968, Professor of Geography
  B.A., M.A., Ph.D., University of Iowa

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  B.A., Williams; M.A., Michigan State

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  B.S., Ed.M., State University of New York (Buffalo); Ph.D., Florida State

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  B.S., Hampton Institute; M.Ed., Wayne State

Walker, Jess M., 1965, Associate Professor of Teacher Education
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West, Stanley A., 1970, Assistant Professor of Anthropology and Computer Center  
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B.A., Gustavus Adolphus; M.A., Minnesota  

Wetnight, Robert B., 1951, Vice President for Finance and Professor of Accountancy  
Ph.B., M.B.A., Toledo; C.P.A., State of Ohio  

Whaley, Robert L., 1966, Assistant Professor of Music  
B.M., Kansas; M.M., Iowa  

White, Arthur T., 1969, Assistant Professor of Mathematics  
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B.A., Hope; Certificate, Boeing School of Aeronautics; M.A., Western Michigan; Ed.D., Michigan State
Widerberg, Lloyd C., 1964, Instructor in Special Education, Institute of Blind Rehabilitation
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Wienir, Paul, 1970, Assistant Professor of Sociology
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Winter, Ronald, 1969, Instructor in Men's Physical Education
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Wolf, Franklin K., 1970, Associate Professor of Engineering and Technology
B.S., Iowa State; M.S., Wisconsin

Wolinski, Gertrude, 1956, Assistant Professor of Mathematics
M.Ph., University of Warsaw
Faculty

Wolpe, Howard E., 1967, Associate Professor of Political Science
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Wolthuis, Ronald M., 1970, Instructor in Special Education
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Wood, Barry D., 1969, Instructor in Social Science
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Wood, Jack S., 1963, Associate Professor of Biology
B.S., Maine; M.S., Ph.D., Michigan State

Woodliff, Charles M., 1967, Director and Professor, Division of Instructional Communications
B.A., Wisconsin State; M.A., Syracuse; Ed.D., Montana

Woods, John W., 1955, Professor of English
B.S., M.A.T., Indiana

Work, Joseph T., 1963, Associate Professor of Music
B.M., M.M., Eastman School of Music; D.M.A., Michigan

Wright, Alden H., 1970, Visiting Assistant Professor of Mathematics
B.A., Dartmouth; Ph.D., Wisconsin

Wright, Charlotte H., 1971, Instructor in French
B.A., M.A., Michigan State; Certificat de Scolarite, L'Universite de Paris

Wyman, Robert F., 1964, Associate Professor of Men's Physical Education
B.S., M.Ed., Wayne State

Yang, Kung-Wei, 1966, Associate Professor of Mathematics
B.S., National Taiwan; Ph.D., Indiana

York, Zack L., 1940, Professor of Communication Arts and Sciences
B.A., Western Michigan; M.S., Ph.D., Wisconsin

Yost, Lewis M., 1968, Assistant Professor, Applied Sciences
B.S., Western Michigan; M.A., Michigan

Yunghans, Charles E., 1962, Assistant Professor of Engineering and Tech.
B.S.E.E., Valparaiso; M.S., Western Michigan

Yzenbaard, John, 1962, Assistant Professor of History
B.A., Western Michigan; M.A., Michigan

Zabik, Roger M., 1967, Associate Professor of Men's Physical Education
B.S., Ball State; M.S., Ed.D., Indiana

Zastrow, Joyce R., 1962, Associate Professor of Music
B.A., Valparaiso; M.M., Indiana

Zelder, Raymond E., 1964, Professor of Economics
B.A., Harvard; M.A., Ph.D., Chicago

Zelechowski, Hubert, 1963, Assistant Professor of Accountancy
B.S., Queens of the City, University of New York; M.B.A., Indiana; C.P.A., State of Michigan

Zender, Bryce R., 1969, Assistant Professor of Social Science
M.A.T., Ph.D., Michigan State
Zieg, Kermit C., Jr., 1969, Assistant Professor of General Business
B.S., Indiana; M.A., Ph.D., Ohio State

Ziegelmaier, James J., 1969, Assistant Professor of Natural Science
B.A., M.A., Catholic University of America

Zietlow, James P., 1965, Associate Dean, College of Arts and Sciences,
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B.S., DePaul; M.S., Ph.D., Illinois Institute of Technology

Zinn, David C., 1965, Assistant Professor of Economics
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Ziring, Lawrence, 1967, Associate Professor of Political Science
B.S., M.I.A., Ph.D., Columbia
Administrative Staffs

CENTRAL ADMINISTRATION

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Assistant to the Vice President for
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   for Academic Affairs ......................... Robert W. Hannah, Ph.D.
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  Vice President for Finance .......... Robert Beam, B.B.A.
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Audits, Director ...................... John W. Asma, M.B.A., C.P.A.
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Chief Accountant and
  Assistant Controller ............... Gerald Schwemmin, B.B.A., C.P.A.

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  Manager ............................. John G. Hungerford, M.A.
Bursar ................................. Harry Miller, B.A.
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Payroll Supervisor .................. Michael Weber, B.B.A.
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Auxiliary Enterprises, Director ........ Thomas J. Carr, M.A.

Printing Services, Director ........ Lawrence J. Brink, M.A.
Campus Bookstore, Director ........ Joseph T. MacLean, B.S.
Residence Hall Food Service, Director .......... James McKellin, B.S.
Residence Halls, Manager ............ Robert Peterson, M.A.
Miller Auditorium, Manager ........ Jack Pheneger, B.A.
University Student Center, Director .... Rodger Pruis, B.A.
Married Student Apartments, Manager .......... Robert Sprick, B.S.
Housing, Director ..................... Norman Potter, M.A.

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  Assistant Director ................. Leonard Newton, B.S.
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EMERITI

Rachel Acree, M.A.  Associate Professor of Home Economics  1929-1960
Agnes E. Anderson, M.S.  Assistant Professor of Business Education  1943-1965
Thelma Anton, M.A.  Associate Professor of English  1946-1966
Laverne Argabright, M.A.  Associate Professor of Biology  1917-1951
Maude Arthur, M.A.  Associate Professor of Education  1929-1959
Grover C. Bartoo, M.A.  Professor of Mathematics  1922-1946
Amelia Bauch, M.A.  Assistant Professor of Education  1924-1950
Albert B. Becker, Ph.D.  Professor of Speech  1937-1970
Fred A. Beeler, Ph.D.  Professor of Mathematics  1946-1968
Isabel Beeler, M.A.  Associate Professor of Counseling  1946-1968
Elmer R. Beloof, Ed.D.  Professor of Music  1946-1971
Margaret Felts Beloof, M.A.  Professor of Music  1946-1971
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Jane A. Blackburn, M.A.  Assistant Professor of Education  1921-1951
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Mary Bottje, M.A.  Associate Professor of Physical Education  1925-1956
James W. Boynton, M.A.  Associate Professor of Chemistry  1924-1968
William R. Brown, Ph.D.  Professor of English  1917-1956
Roy C. Bryan, Ph.D.  Professor of School Services  1937-1968
Georgiann Burge, M.A.  Assistant Professor of English  1948-1965
Grace L. Butler, A.B.L.S.  Assistant Professor of Education  1930-1949
Isabel Crane, M.A.  Professor of Mathematics  1920-1955
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William H. Cain, M.A.  Associate Professor of Counseling  1922-1962
Grace L. Butler, A.B.L.S.  Professor of Teacher Education  1947-1970
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Wendall B. Fidler, Ed.M.  Associate Professor of Distributive Education  1951-1971
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Anne V. Fuller, M.A.  Associate Professor of Biology  1947-1967
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Joseph W. Giachino, Ed.D.  Head and Professor, Department of Engineering and Technology  1939-1968
John W. Gill, M.A.  Associate Professor of Physical Education  1928-1969
Grace I. Gish, M.A.  Associate Professor of Education  1929-1962
Marion I. Hall  Assistant Professor of Education  1922-1954
Lucia C. Harrison, M.S.  Associate Professor of Geography  1909-1947
John B. Healey, J.D.  Associate Professor of General Business  1947-1970
H. Glenn Henderson, M.M.  Associate Professor of Music  1914-1956
Eunice E. Herald, Ph.D.  Head and Professor, Department of Home Economics  1955-1971
Bernice G. Hesselink  Assistant Comptroller  1916-1961
Emeriti

George H. Hilliard, Ph.D. Professor of Education 1922-1958
Frank J. Hinds, M.A. Professor of Biology 1935-1970
Ada Hoebeken, M.A. Assistant Professor of Language 1929-1943
Elizabeth Householder, M.A. Social Director, University 1937-1940
and Student Center 1953-1970
Frank C. Householder, M.A. Associate Professor of English 1934-1970
Fred S. Huff, M.A. Associate Professor of Industrial Arts 1920-1958
Mate Graye Hunt, M.A. Associate Professor of Librarianship 1946-1959
Doris L. Hussey, B.S. Assistant Professor of Physical Education 1918-1961
John G. Kemper, M.A. Professor of Art 1942-1970
Edna F. Kirby, M.A. Assistant Professor of Business Education 1938-1965
George A. Kirby, M.A. Associate Professor of Accounting 1936-1966
Lawrence G. Knowlton, Ph.D. Professor of Chemistry 1941-1968
Eunice E. Kraft, M.A. Associate Professor of Language 1920-1962
Stanley Kuffel, Ed.D. Professor of Psychology 1952-1970
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M. Dezena Loutzenhiser, M.A. Associate Professor of English 1923-1957
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C.B. MacDonald, M.A. Comptroller 1923-1962
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Helen E. Master, M.A. Associate Professor of English 1921-1962
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Cyril L. Stout, Ph.D. Professor of Geography 1947-1968
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Louise J. Walker, M.A. Associate Professor of English 1940-1965
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1922-1964
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