6-1974

Bulletin - Western Michigan University: The Undergraduate
Catalog 1974-1975

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 Arts and Sciences

Dean of the College of Business

Dean of the College of Education

Dean of the College of Fine Arts

Dean of the College of General Studies

Dean of The Graduate College

Director of Housing

Director of Counseling

Dean 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.

The text paper used in this catalog contains 30 percent post consumer use recycled waste.
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: John T. Bernhard, Ph.D., LL.D.
State Supported, Co-educational

Colleges:
- Applied Sciences
- Arts and Sciences
- School of Social Work
- Business
- Education
- Fine Arts
- 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: 1974-75
- Fall Semester—September 3 - December 18
- Winter Semester—January 6 - April 26
- Spring Session—May 5-June 26
- Summer Session—July 1 - August 22
(Two sessions equal to one semester)
# CALENDAR FOR 1974

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# CALENDAR FOR 1975

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WESTERN MICHIGAN UNIVERSITY
UNIVERSITY CALENDAR 1974-75
Approved January 22, 1973

Fall Semester, 1974

August 31, Saturday ........................................ Final Registration
September 3, Tuesday ....................................... Classes Begin
October 11, Friday .......................................... Classes Dismissed 2 p.m. Friday only (Laboratories excepted)
October 12, Saturday ....................................... Homecoming
November 27, Wednesday .................................. Thanksgiving Recess (12 noon)
December 2, Monday ......................................... Classes Resume
December 18, Wednesday .................................. Semester Ends
December 18, Wednesday .................................. Commencement (7 p.m.)

Winter Semester, 1975

January 4, Saturday ......................................... Final Registration
January 6, Monday .......................................... Classes Begin
March 3, Monday ............................................. Semester Recess
March 10, Monday ............................................ Classes Resume
March 28, Friday ............................................. Good Friday Recess—p.m. only (12:00)
April 26, Saturday .......................................... Semester Ends
April 26, Saturday .......................................... Commencement (2 p.m.)

Spring Session, 1975

May 3, Saturday ............................................. Final Registration
May 5, Monday ................................................ Classes Begin
May 26, Monday ............................................. Memorial Day Recess
June 25, Wednesday .......................................... Session Ends

Summer Session, 1975

June 30, Monday .............................................. Registration, All Students
July 1, Tuesday ................................................ Classes Begin
July 4, Friday ................................................ Independence Day Recess
August 22, Friday ............................................. Session Ends
August 22, Friday .......................................... Commencement (6 p.m.)
BOARD OF TRUSTEES

Dr. Julius Franks, Jr., Grand Rapids  
Term Expires  
December 31, 1974

Philip N. Watterson, Cascade  
December 31, 1974

Mildred Swanson Johnson, Muskegon  
December 31, 1976

Robert D. Caine, Hickory Corners  
December 31, 1976

Fred W. Adams, Grosse Pointe  
December 31, 1978

Charles H. Ludlow, Kalamazoo  
December 31, 1978

John R. Dykema, Grosse Pointe Farms  
December 31, 1980

Maury E. Parfet, Hickory Corners  
December 31, 1980

John T. Bernhard, Kalamazoo  
Ex Officio

Robert D. Caine, Chairman
John R. Dykema, Vice Chairman
Robert W. Hannah, Secretary
Robert B. Wetnight, Treasurer
Administrative Officers

President ...........................................John T. Bernhard, Ph.D., LL.D.

Vice President for Academic Affairs ..................................................Stephen R. Mitchell, Ph.D.

Assoc. Vice President for Academic Affairs ......................................Philip Denenfeld, 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 .........................................................W. Chester Fitch, Ph.D.

Dean, College of Arts and Sciences .......................................................Cornelius Loew, Ph.D.

Dean, College of Business .................................................................Darrell G. Jones, Ph.D.

Dean, Continuing Education .................................................................Leo C. Stine, Ph.D.

Dean, College of Education .................................................................John E. Sandberg, Ed.D.

Dean, College of Fine Arts .................................................................Robert Holmes, Ph.D.

Dean, College of General Studies .........................................................Norman C. Greenberg, Ph.D.

Dean, The Graduate College .................................................................George G. Mallinson, Ph.D.

Dean, Admissions and Records ...............................................................Clayton J. Maus, M.S.

Dean of Students .................................................................Marie L. Stevens, M.A.

Controller ..............................................................Robert Beecher, J.D.
Administrative Groups

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 1973-74:

Laurel Grotzinger
James Casey
George Lowry
Michael Pritchard
James Jaksa

President
Vice President
Recording Secretary
Treasurer
Corresponding Secretary

UNIVERSITY COUNCILS

The University Councils are composed of members elected by the Faculty 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
*Stephen R. Mitchell, Vice President and Chairman
Norman C. Greenberg, Dean
Robert Holmes, Dean
W. Chester Fitch, Dean
Cornelius Loew, Dean
George G. Mallinson, Dean
John E. Sandberg, Dean
Carl Sachtleben, Director of Libraries

Elected
James A. Jaksa 1974
Gale E. Newell 1974
Larry Oppliger 1974
William S. Bennett 1975
Mary A. Cain 1975
Dean R. Tyndall 1975
Shirley Bach 1976
Donald P. Bullock 1976
Don C. Iffland 1976
Students: Pat Cayemberg
Joanne Ernst
Susan Watts
GRADUATE STUDIES COUNCIL

Ex Officio
W. Chester Fitch, Dean
Cornelius Loew
George G. Mallinson, Chairman
John E. Sandberg
Arnold E. Schneider
*Stephen R. Mitchell, Vice President

Students: Burrell Berry
          John Davis
          Lou Steinberg

Elected
Frederick P. Gault 1973
Peter Schmitt 1973
Betty Taylor 1973
John T. Burke 1974
Stanley S. Robin 1974
John H. Stroupe 1974
T. D. Argyropoulos 1975
Laurel A. Grotzinger 1975
David R. Taylor 1975

RESEARCH POLICIES COUNCIL

Ex Officio
George G. Mallinson, Dean
Einard S. Haniuk, Director, Research Services
Stephen R. Mitchell, Vice President

Students: Thomas J. Umlauf
          Gary Rochau

Elected
John R. Rizzo, Chairman 1973
Uldis Smidchens 1973
Howard E. Farris 1974
Cora E. Marrett 1974
Werner Sichel 1974
Russell M. Goldfarb 1975
Robert E. Shamu 1975
David A. Sheldon 1975

STUDENT SERVICES COUNCIL

Staff
Charles Donnelly, Associate Dean of Students
Sally Pippen, Housing Program

Faculty
Robert L. Betz
Fred Decker
Geraldine Richardson
Clarence N. Van Deventer

Students
John Adamo 1973
Bob Friedinger 1973
Ron Becker 1973
Allan Healy 1973
Lee Hobrla 1973
Zahid Hussain 1973
Larry Hoxie 1973
Doug Merkle 1973
Fred Rohlf 1973

Administrative Groups
Administrative Groups

CAMPUS PLANNING COUNCIL

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

Elected
Henry J. Beukema 1973
Kenneth E. Dickie 1973
Beth Schultz 1973
Harold W. Boles 1974
H. Nicholas Hamner 1974
Robert F. Maher 1974
Richard A. Hatch 1975
Robert G. Humiston 1975
Charles M. Woodliff 1975

Presidential Appointees
Harold O. Bahlke, College of General Studies
Cornelius Loew, Dean, College of Arts and Sciences
Joseph J. Eisenbach, Head, Special Education

Students
Paul Hamilton
Dick Wade

CONTINUING EDUCATION COUNCIL

Ex Officio
Leo C. Stine, Dean, Chairman

Presidential Appointees
Sidney Dykstra
Russell L. Gabier
Kenneth Simon

Elected
Darrell G. Jones 1973
G. Stewart Johnson 1973
Herbert H. Hannon 1974
Lawis H. Carlson 1974
Clayton A. Holaday 1975
Robert H. Barstow 1975

THE ATHLETIC BOARD

Leo C. Vanderbeck, Chairman and Faculty Representative, Mid-American Conference
Mark Orr, Student Representative

Presidential Appointees
Chauncey Brinn, Assistant to the V.P. for Academic Affairs
Clayton J. Maus, Dean of Admissions and Records
Robert B. Wetnight, Vice President for Finance
Faculty
Mary E. Burns, Professor of Social Work
Joseph C. McCully, Professor of Mathematics
Eldor C. Quandt, Assistant Professor of Geography

Ex Officio
Joseph T. Hoy, Director of Athletics
Ruth Ann Meyer, Assistant Director of Athletics
Rick Markoff, Director of Alumni Relations
William T. Kowalski, Representative of “W” Alumni Club

ACCREDITATION
In 1915 Western Michigan 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 School of Social Work is accredited by the Council on Social Work Education. 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, American Council on Education, American Association of State Colleges and Universities, and is on the approved list of the American Association of University Women.
Admission

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

Application for admission may be made to any semester or session. An acceptable secondary school or college transfer record is required for degree admission. College preparatory or academic subjects are given maximum weight in evaluating applications from beginning students. In addition, individual attributes and special abilities are given consideration.

The University welcomes students transferring from all educational institutions and supports this posture by granting full credit for transferable and applicable courses wherever possible. Western Michigan University is fully cognizant and supportive of the vital role which the community colleges fulfill in providing higher education to the people within the State of Michigan.

Transferring and re-entering (former) students may be admitted for any semester or session provided their records are satisfactory and evidence presented indicates that they will be academically successful.

The University recognizes the necessity for providing educational opportunities to people of all ages and levels of educational preparation. Further, University officials desire that adults in particular who are desirous of doing so, be given every opportunity possible to utilize prior education or occupational experiences. Consequently, whenever there is evidence to indicate that individuals will benefit academically and/or vocationally, these persons are encouraged to enter the University.

Admission to the University carries with it the responsibilities of meeting the standards of scholarship and conduct established by the students, faculty and administration. Therefore, admission and 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 disadvantaged, culturally deprived, or economically impoverished segments of our society to gain admission and to 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 an accredited high school, academy or the equivalent may be admitted upon presentation of an acceptable written record.

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

3. Admission by advanced standing: A student wishing to transfer from another accredited college, university, community or junior college, may be admitted upon presentation of an acceptable written transcript of credit. This transcript must be official, and mailed
Admission

directly from the institution previously attended to the Director of Admissions of this University. Transferred credits 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 applicant is processed individually, with separate evaluation of credit.

4. Permission to take classes as a guest: One who is regularly matriculated and in good standing at another college may be granted permission to take classes 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 guest application form may be secured at the office of the Registrar at any Michigan college.

5. 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, who is applying for readmission, has resolved his past academic difficulties. It is recommended, therefore, that the student include a written statement with the re-entry application.

6. 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.

APPLICATION FOR ADMISSION

Freshman — A Student Entering College for the First Time

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.

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

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

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

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

6. Admission to the University will be judged on the basis of the high school record established prior to the date of admission. The final record is, however, required at the close of the senior year to confirm the admission of all applicants admitted early. Realizing that at present the high school record is the most reliable single factor for predicting immediate college success, the Admissions Office refrains from relying heavily on test scores in decision making.

7. 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.

8. 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.

Transfer — A Student Who Has Attended Another College

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. Steps to take:

1. Complete an application for 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 and IV) 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.

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.
c. "D" grades, or the equivalent thereof, which are transferred may not be used in fulfilling major or minor requirements.

Permission to Take Classes (PTC)
This form of registration is open to nearly any adult (18 years or older), regardless of past educational preparation, who wishes to take classes through the University, on or off campus. Only the completed PTC form is necessary in order for the applicant to be granted Permission to Take Classes. Academic transcripts are normally not required unless specially requested by the Admissions Office.

The PTC student can register for any course for which he has the prerequisites. PTC students, at the undergraduate level, are subject to the same scholarship regulations as all other students. They may enroll in courses indefinitely so long as they meet scholarship standards.

PTC students may apply for admission to a degree program at anytime. They will, however, be expected to meet the existing standards of admission. They will be required, at the time that they seek degree admission, to provide all credentials required of degree seeking students.

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.

Notification of Admission
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.

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.

If a personal interview is desired, a request should be addressed to the Office of Admissions at least two weeks in advance of the desired date. 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.
Admission

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.

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.

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

The College-Level Examination Program enables traditional and non-traditional students to earn college credit by examination. Anyone may take CLEP tests to demonstrate his or her college-level competency no matter when, where or how this knowledge has been acquired: through formal study, private reading, employment experience, noncredit courses, military/industrial/business training or advanced work in regular high school courses. People of all ages have reduced the cost in time and money of their college education by successfully completing CLEP tests for credit. This program gives individuals the chance to validate and receive credit for college-level knowledge they already possess.

Nonmatriculated students and adults will find that the General Examinations are particularly important: (a) Interest in a formal degree program after considerable work experience and informal study; (b) For considering a degree program on a part-time basis where the time required to reach their goal is an important factor.

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 Sciences, and Social Sciences. All five tests are 60 minutes each in length.

Thirty (30) semester hours of credit toward graduation—to be designated as General Education credit in the College of Arts and Sciences—will be awarded for scoring at the 50th percentile or above on all five CLEP General Examinations. For that achievement, the full freshman-sophomore level General Education requirement (27 semester hours) will be waived.

If a score at the 50th percentile or above is achieved on fewer than all five of the CLEP General Examinations, then for each individual examination scored at that level, graduation credit and waiver of the appropriate General Education requirement will be granted as follows:
1. If the student scores at the 50th percentile or above on the Social Sciences-History examination, six (6) hours of credit will be awarded and the six-hour Social and Behavioral Science requirement will be waived.

2. If the student scores at the 50th percentile or above on the Humanities examination, six (6) hours of credit will be awarded and the six-hour Humanities and Fine Arts requirement will be waived.

3. If the student scores at the 50th percentile or above on the English Composition examination, six (6) hours of credit will be awarded and one-half of the six-hour Humanities and Fine Arts requirement will be waived.

4. If the student scores at the 50th percentile or above on the Natural Science examination, six (6) hours of credit will be awarded and the six-hour Natural Science and Mathematics requirement will be waived.

5. If the student scores at the 50th percentile or above on the Mathematics examination, six (6) hours of credit will be awarded and one-half of the Natural Science and Mathematics requirement will be waived.

**REGISTRATION**

**Advance Registration**

In the interest of providing to as many students as possible their requested schedules Western offers, through its Registration Office, advance registration. Student fees must be paid on or before two weeks prior to final registration or the advance registration will be cancelled. A final day for registration is designated for those who did not advance register and for those whose advance registration was cancelled.

The procedure for advance registration is set forth in the Schedule of Classes, issued prior to each semester and each session.

LATE REGISTRATION FEE—See Page 43.
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 Education, 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 FINE ARTS**

**BACHELOR OF SCIENCE IN MEDICINE**

(Physicians' Assistants)

**BACHELOR OF MUSIC**

**BACHELOR OF SCIENCE**

The student who completes a curriculum conforming to the requirements of this degree, with a minimum of 40 hours taken from the General Education program and for courses in Language and Literature, Science or Social Science areas, is eligible for the degree of Bachelor of Science.

**BACHELOR OF SCIENCE IN ENGINEERING**

(Industrial)

**SECOND BACHELOR'S DEGREE**

A student who earns a bachelor's degree at Western Michigan University and who subsequently becomes a candidate for another bachelor's degree may, by earning 30 semester hours of residence credits 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 FINE ARTS
MASTER OF MUSIC
MASTER OF OCCUPATIONAL THERAPY
MASTER OF SCIENCE
MASTER OF SCIENCE IN ACCOUNTANCY
MASTER OF SCIENCE IN BUSINESS
MASTER OF SCIENCE IN LIBRARIANSHIP
MASTER OF SCIENCE IN STATISTICS
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 122 hours of credit.

The student must meet the following requirements or their equivalent:

GENERAL REQUIREMENTS

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

b. 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 and Industrial Supervision, Automotive Engineering Technology and Aviation Engineering Technology, Physicians' Assistants Program, 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.

c. Each student must complete 35 hours of work in approved General Education courses and/or non-professional courses in the College of Arts and Sciences. Beginning with the Fall semester, 1973, students graduating with an Associate of Science degree from Michigan two-year colleges, which are signatory to the Michigan Association of Collegiate Registrars and Admissions Officers General Education Agreement, will automatically have fulfilled freshman-sophomore level general education requirements. General education requirements of eight semester hours at the junior and senior levels will continue to be required.

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

e. Each student must complete two semester hours of general physical education. Freshmen are urged to arrange their schedules so that they complete their two-hour physical education requirement no later than their sophomore year. 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. Veterans of Military Service (minimum of one year continuing active duty) shall, upon request, be granted two hours of general physical education credit. A maximum of eight hours of general physical education may be counted towards graduation.
Degree Requirements

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. 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.

GENERAL EDUCATION REQUIREMENTS

Western Michigan University requires a minimum of 35 semester hours of general education courses in order for a student to graduate. These are requirements which are applied to all students in the University and which are substantially the same for all curricula. Non-vocational in nature, these requirements attempt to insure some degree of breadth for every student at W.M.U., and to provide some work in each of the following areas: (1) Humanities and Fine Arts, (2) Social and Behavioral Sciences, (3) Natural Sciences and Mathematics and (4) The Non-Western World.

The general education requirement may be met by completing either (1) the Distribution Program, or (2) an Integrated Program. These are described below, and additional information may be obtained from your curriculum adviser. Any W.M.U. students enrolled prior to the Fall semester of 1973 are also eligible to meet their general education requirement via the General Studies program which is described in all W.M.U. catalogs from 1965-66 through 1972-73.

1. The Distribution Program

This General Education Program option involves a large number of courses from the following colleges within the University: Arts and Sciences, Applied Sciences, Business, Fine Arts, and General Studies. Within certain guidelines it allows students to take work in a number of different departments. The virtue of the Distribution Program is twofold: 1) The student has a great deal of freedom in fulfilling General Education requirements and 2) The courses which make up the Distribution Program include those which deal with the skills and techniques of knowledge within a specific discipline.
Degree Requirements

(English, Geology, Sociology, etc.) as well as those with a multi-disciplinary approach (General Studies).

2. The Integrated Programs

These Programs are designed to introduce students to a single subject from different points of view. In Program F, for example, the subject "Technology in Culture" is approached from the following points of view: Environment and Technology; Society and Technology; Man and Technology; Technology, Past, Present and Future. The virtue of the Integrated Programs is also two-fold: (1) students have a choice of 7 different programs; (2) in each program students deal with the inter-relationships between "ways" of knowing—the "integration" of knowledge—hence the name, Integrated Programs.

All Departmental courses listed in italics in this catalog and all General Studies courses have been approved for General Education purposes.

COURSES AND REQUIREMENTS FOR THE DISTRIBUTION PROGRAM

Requirements

From the courses listed below, students may design their General Education Program. There are six stipulations:

1. The program must total at least 35 semester hours of credit.

2. At least six semester hours must be completed satisfactorily in each of the following three areas:
   A. Humanities and Fine Arts
   B. Social and Behavioral Sciences
   C. Natural Sciences and Mathematics

3. At least one course must be completed satisfactorily in a fourth area: the Non-Western World.

4. At least eight semester hours must be completed satisfactorily at the junior-senior (300-500) level.

5. No more than two courses from the same department (except General Studies courses) may be counted towards the total of 35 hours.

6. Hours used towards the 35 hour General Education Requirements cannot apply towards curricular, major or minor requirements (certain curricular exceptions to this rule have been approved by the University General Education Committee. Information regarding these exceptions may be obtained from curriculum advisors.)
**Degree Requirements**

Courses (For full course descriptions refer to Department Listings)

<table>
<thead>
<tr>
<th>AREA I</th>
<th>HUMANITIES &amp; FINE ARTS:</th>
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<tbody>
<tr>
<td>(Art: 120, 130, 140, 220, 221, 581, 583, 585, 586, 588, 589, 593, 596, 597); (Arts &amp; Sciences: 145A-B); (Bus. Ed.: 142); (Comm. Arts &amp; Sciences: 220); (English: 105, 107, 110, 111, 150, 210, 222, 305, 311); (General Studies—Humanities: 102, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 305, 315, 316, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413); (Languages—Classics: 350, 360, 375, 450; French: 100, 101, 375; German: 100, 101, 375; Greek: 100, 101; Italian: 100, 101; Latin: 100, 101; Russian: 100, 101, 375); (Linguistics: 100); (Music: 150, 151, 152, 350, 351); (Philosophy: 100, 200, 201, 220, 301, 303, 305, 307, 310, 311, 312, 313, 314, 322, 323, 330, 332, 333, 334); (Religion: 200, 305, 306, 312, 313, 331, 333)</td>
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<tr>
<th>MINIMUM 6 HOURS</th>
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<tr>
<td>AREA II</td>
<td>SOCIAL &amp; BEHAVIORAL SCIENCES:</td>
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<tr>
<td>(Accountancy: 301); (Anthropology: 100, 210, 240, 425); (Arts &amp; Sciences: 200, 300); (Business Ed.: 140, 292); (Economics: 100, 201, 202, 313); (Engin. Tech.: 378); (General Studies—Soc. Science: 120, 121, 122, 123, 220, 221, 223, 224, 225, 255, 256, 355, 421, 422, 423, 455, 456, 457); (Geography: 101, 205, 244, 311, 361, 380, 383, 384, 385); (History: 100, 101, 102, 103, 104, 105, 300, 306, 307, 312, 314, 315, 341, 344, 346, 390); (Management: 300, 404); (Marketing: 190); (Military Science: 100, 101); (Political Science: 100, 250, 300, 313, 340, 343, 344, 350, 360, 361); (Psychology: 190); (Sociology: 100, 101, 171, 190, 200); (Social Work: 100); (Religion: 323, 324, 332)</td>
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<th>MINIMUM 6 HOURS</th>
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<tr>
<td>AREA III</td>
<td>NATURAL SCIENCES &amp; MATHEMATICS:</td>
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<tr>
<td>(Anthropology: 250); (Biology: 107 234, 300); (Chemistry: 101, 102, 103, 105, 109, 140); (General Studies—Science: 130, 131, 132, 133, 330, 430, 431, 432, 433); (Geography: 100, 105, 204, 206); (Geology: 100, 107, 130, 131, 300, 312, 444); (Math: 100, 116, 190, 200, 366); (PEW: 100); (Physics: 102, 104, 106, 110, 111, 120)</td>
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<tr>
<th>MINIMUM 3 HOURS</th>
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<tr>
<td>AREA IV</td>
<td>NON-WESTERN WORLD:</td>
</tr>
<tr>
<td>(Anth.: 220); (Engl.: 312, Options B &amp; C); (Gen. St.: 304); (Geog. 381, 382, 386, 387, 389, 390); (Hist.: 370, 371, 381, 386, 389, 581, 583, 584, 588); (Ling.: 571, 572); (Mus.: 352); (Po. Sci.: 341, 342, 343, 345); (Rel.: 302, 303, 307, 308); (Soc. 530, 535, 536)</td>
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| AREA V | OPTIONAL ELECTIVES: May be used towards the 35 hour requirement but not to satisfy area requirements I-II-III-IV. (Business—General: 305); (General Studies—General: 100, 101, 222, 331); (General Studies—Integrated: 155, 260, 424); (Geography: 350); (IEGM: 102); (Management: 102, 200). |
INTEGRATED PROGRAMS AND REQUIREMENTS

Requirements

Any of the following seven Integrated Programs satisfies the General Education Requirement. There are four stipulations:

1. Student course work, elected in consultation with his program coordinator, must total at least 35 semester hours of credit.
2. With certain exceptions, no course work may be applied toward a curricular, major or minor requirement. For exceptions, consult your curriculum advisor.
3. At least eight semester hours must be completed satisfactorily at the junior-senior (300-500) level.
4. Every program must include an introduction to the Non-Western World.

Programs (For more complete descriptions, see College of General Studies listings)

Program A: Getting it Together (GIT)
This Program is designed to help students expand their awareness in two directions: (1) the Self, (2) the Self's environment, i.e., Context. From the “double” perspective of Self and Context, students will be able to examine personal as well as historical experience and knowledge per se, (Post-Freudian Thought, for example).

Program B: World Explorations
Through actual exploration of the world, this Program is designed to acquaint the student with the drama and discovery occurring at the frontiers of today's knowledge.

Program C: The Twentieth Century Experience
This Program focuses on the meaning of Twentieth Century existence. Central concerns will be: (1) Where have we come from? How? Why? (2) Where are we now? Why? (3) Where are we headed? How? Why?

Program D: Non-Western World Studies
This Program is designed to offer the student a better understanding of his own culture by studying and comparing various Non-Western cultures. The student will investigate and explore the aesthetic creations, philosophical thought, and social organizations of these cultures which comprise such a sizeable and important portion of human achievement.

Program E: Environments of Man: Patterns of Change
This Program combines the views of science, social science, and the humanities in an exploration of responses humans have made and will be required to make to the environments of nature, culture, society and self. The Program focuses on the change and diversity in human environments in an effort to better understand alternatives for the future.

Program F: Technology in Culture
This Program (1) investigates the interactions between various aspects of technology and other segments of our culture; (2) attempts to develop an awareness of responsibility for the problems brought about by these interactions; (3) offers the student skills to use in meeting these responsibilities.
Program G: Inquiry

This Program is designed to allow the student to pursue his General Education Requirement independently. It centers on the habits of intelligent independent inquiry (asking useful questions, mobilizing resources, designing systematic investigation, etc.) and offers faculty support and guidance.

GENERAL EDUCATION REQUIREMENT
FOR TRANSFER STUDENTS

1. Students transferring with MACRAO approved Associate Degrees from Michigan Community Colleges.

The following Michigan Community Colleges have signed the MACRAO agreement, and transfer students with one of the degrees listed below are considered to have fully met all Freshman-Sophomore general education requirements at Western Michigan University. Such students need only satisfy Western's Junior-Senior general education requirement. In no case will this exceed eight semester hours of coursework.

Students transferring from these institutions without an approved Associate degree, will be evaluated to the fullest extent possible according to the general education criteria in effect at the respective community college.

Bay De Noc Community College  AA
Delta College  AA, AS
Glen Oaks Community College  AA, AS
Gogebic Community College  AA, AS
Grand Rapids Junior College  AA
Highland Park Junior College  AA, AS
Jackson Community College  AA
Kloogg Community College  AA, AS
Kirtland Community College  AA
Lake Michigan College  AA, AS
Lansing Community College  AA, AS*
Monroe County Community College  AA, AS
Montcalm Community College  AA
Mott Community College (formerly Genesee Community College)  AA, AS
Muskegon Community College  AA
North Central Michigan College  AA, AS
Northwestern Michigan College  AA
Oakland Community College  AA, AS
St. Clair County Community College  AA
Schoolcraft College  AA, AS
Southwestern Michigan College  AA
Wayne County Community College  AA, AS
Washtenaw Community College  AA, AS
West Shore Community College  AA, AS

*Agreement applies only to degrees conferred by the Division of Arts and Science and specifically exempts degrees conferred by the division of Applied Arts and Science.
Degree Requirements

2. Transfer students from other Michigan Community Colleges

May satisfy the General Education requirement by:

A. Completion of a General Studies program (provided that such student's initial enrollment at the 2 year institution occurred before the Fall term of 1974)
B. Completion of a Distribution Program.
C. Completion of an Integrated Program.

In order to determine remaining general education requirements such students should contact their curriculum advisor.

3. Students from Out-of-State Two-Year Colleges

Students from Senior (Four Year) Colleges

May satisfy the General Education requirement by:

A. Completion of a Distribution Program.
B. Completion of an Integrated Program.

In order to determine remaining general education requirements such students should contact their curriculum advisor.

A student transferring 90 or more semester hours is eligible to have the Junior-Senior general education requirement waived, provided that a minimum of 30 semester hours are from a four year college or university. Such students should contact their curriculum advisor for further information.

WESTERN MICHIGAN UNIVERSITY
GENERAL EDUCATION EQUIVALENTS
(FOR TRANSFER STUDENTS)

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

1. Students with a MACRAO approved Associate degree from a Michigan community college may complete their requirements by earning eight semester credits from 300-500 level courses approved for General Education purposes. A course in the Non-Western World must be included in this course work unless a suitable substitute was transferred.

2. Students not covered by #1 above must meet the following WMU requirements:

   A. Humanities and Fine Arts—A minimum of six semester credits from the following fields:
      Art Appreciation or Art History
      Theatre (Introduction or History)
      Film (Appreciation or History)
      Literature (English or English translation)
      Writing (Composition or Creative)
      General Humanities
      Foreign Language (1st year only)
      Music (Appreciation or History)
      Philosophy (and Logic)
      Religion (non-doctrinal)
Degree Requirements

B. Social and Behavioral Sciences—This area may be satisfied by a minimum of six semester hours drawn from any of the following:

Anthropology (Cultural and Ethnology)
Economics (Principles, problems and consumer education)
History
General Social Science
Geography (Regional, Human)
Political Science (Introduction, principles; international relations; foreign and comparative political systems; general government)
Psychology (general)
Sociology (Introduction, principles; social problems)
Social Work (Introduction only)
Environmental Studies (general)
General Business (courses relating to social issues or consumer education)
Minority Studies (general)

C. Natural Sciences and Mathematics—A minimum of six semester credits from the following fields:

Anthropology (physical)
Biology (general, non-major course; outdoor science)
Chemistry (general)
Geography (excluding regional or human geography)
Geology (Physical, historical, or oceanography)
Math (introductory level algebra, analysis, or statistics; survey of mathematical ideas)
Physics (general, non-major course; astronomy)
General Physical Science
General Biological Science
General Earth Science
Environmental Science (emphasis on chemistry, physics, biology, geology, or geography)
Philosophy or Methodology of Science

D. Non-Western World—In order to satisfy this requirement a student must have completed a minimum of three semester credits in Cultural Anthropology or in a social science course emphasizing contemporary aspects of non-western regions and societies.

E. Students with less than the required course work in any of the above areas A, B, C, or D must make up deficient hours by selecting from appropriate WMU General Education courses. Furthermore, courses used to satisfy General Education requirements may not ordinarily be counted towards curricular, major or minor requirements, and no more than two courses from any one department may be used.

F. All students must meet the minimum requirement of 35 semester hours in General Education, and this must include at least eight semester hours of work in 300-500 level courses.
STUDENT PLANNED CURRICULUM

The Student Planned Curriculum is designed for students who desire to enroll in a specific course of study not otherwise available through existing university programs. This curriculum affords students the opportunity for individualized inter-disciplinary study not restricted by departmental or college boundaries.

University requirements (Bachelor's Degree) include:

1) General Education requirements.
2) University electives sufficient to meet graduation requirements.
3) An Open Curriculum—an organized plan of study created by the student with the assistance of an official University academic advisor any time before he has completed 75 credit hours, and which he might revise as it seems appropriate.

Information concerning enrollment in the Student Planned Curriculum may be obtained from the Counseling Center, which will in turn refer the student to an appropriate academic advisor.

COLLEGES AND CURRICULAR OFFERINGS

COLLEGE OF APPLIED SCIENCES

Agriculture

Distributive Education

Electrical Engineering Technology

Engineering and Technology
   Engineering Graphics Technology
   Industrial Engineering
   Industrial Supervision
   Manufacturing
   Metallurgical Engineering Technology

Home Economics
   Dietetics
   Home Economics in Business
   Home Economics in Education
   Home Economics General

Industrial Education
   Industrial Arts
   Vocational-Technical Education
   Printing Management

Mechanical Engineering Technology

Occupational Therapy

Paper Science and Engineering
   Paper Science
   Paper Engineering
Transportation Technology
  Automotive Management and Service
  Automotive Engineering and Technology
  Aviation Technology and Management
  Aviation Engineering and Technology
  Flight Technology

Two-year Terminal Curricula
  Food Distribution
  Petroleum Distribution
  Aircraft Technology

COLLEGE OF ARTS AND SCIENCES
Liberal Arts
Anthropology
Biology
Chemistry
Geography
Geology
History
International and Area Studies
Language (French, German, Latin, Russian, Spanish. Limited courses are available in Greek.)
Linguistics
Mathematics

Communication Arts and Sciences (formerly Speech)
Economics
English
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

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 FINE ARTS
- Art
- Dance
- Music

COLLEGE OF GENERAL STUDIES
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.

Dentistry

Dr. Leonard Beuving, Adviser

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 predental 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. A useful source handbook, "Admission Requirements of American Dental Schools" is on a 2-hour reserve in Waldo Library and many of the current dental school catalogs are available in the preprofessional advisor's office. Predental students should see the preprofessional advisor in Room 122 Wood Hall for curriculum suggestions, a Dental School Advisory Kit, Dental Aptitude Test application forms, centralized application service information, and Preprofessional Evaluation Committee services. In addition, predental students are encouraged to join the Medical Science Association which is composed of students interested in health science careers.

The curriculum suggestions listed below assure completion of the predental course requirements in two years. This sequence, however, can be altered according to your interests.

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading and Composition</td>
<td>6</td>
<td>Biology</td>
<td>3-6</td>
</tr>
<tr>
<td>Biology 100, 101 or 102</td>
<td>6</td>
<td>Physics 110, 111</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 101, or 102, 120</td>
<td>8</td>
<td>Organic Chem. 360, 361</td>
<td>8</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
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</tr>
<tr>
<td>Physical Education</td>
<td>1-2</td>
<td></td>
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</tr>
<tr>
<td>Mathematics 100, 120 or 120, 121 or 122, 123 or 200, 260</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Preprofessional Curricula

Recommended Third Year
Major and minor requirements
General Education
Psychology
Electives

Dr. D. W. Nantz, Advisor

Students who wish an engineering program, other than that offered in the College of Applied Sciences should consult the adviser. He will help the students plan a program to permit transfer to either Michigan State University, Michigan Technological University, Oakland University, University of Michigan (Ann Arbor or Dearborn campus) or Wayne State University.

Frequent and significant changes have occurred in the curricula of these and other engineering schools in recent years. Thus, each student should seek counseling during his first semester of enrollment. Representative course schedules have been prepared on the basis of suggestions received from these institutions.

MICHIGAN STATE UNIVERSITY

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Social Science</td>
<td>8</td>
<td>MATH Math 272, 274</td>
<td>7</td>
</tr>
<tr>
<td>MATH Math 106, 122, 123</td>
<td>9</td>
<td>PHYS Physics 210, 211</td>
<td>8</td>
</tr>
<tr>
<td>CHEM General Chemistry*</td>
<td>8</td>
<td>Phys. General Education</td>
<td>8</td>
</tr>
<tr>
<td>103, 109</td>
<td></td>
<td>Electives</td>
<td>4</td>
</tr>
<tr>
<td>ENG English Comp.</td>
<td>6</td>
<td>Physical Education</td>
<td>1</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>TOTAL</strong></td>
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MICHIGAN TECHNOLOGICAL UNIVERSITY

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<th>S.H.</th>
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<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG English 105</td>
<td>4</td>
<td>PHYS Physics 210, 211</td>
<td>8</td>
</tr>
<tr>
<td>MATH Math 122, 123</td>
<td>8</td>
<td>MATH Math 272, 274</td>
<td>7</td>
</tr>
<tr>
<td>CHEM Gen. Chemistry**</td>
<td>8</td>
<td>PSCI Economics 201, 202</td>
<td>6</td>
</tr>
<tr>
<td>103, 109</td>
<td></td>
<td>MET Statics 256</td>
<td>3</td>
</tr>
<tr>
<td>IEGM Drafting** 131, 136</td>
<td>6</td>
<td>MET Strength of Materials</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>4</td>
<td>353</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>30</td>
<td><strong>TOTAL</strong></td>
<td>31</td>
</tr>
</tbody>
</table>

*Students in Chemical, Metallurgical or Materials Engineering, and students in Meteorology, Oceanography or Physics, should take Chemistry 102 and 120.
**Chemical Engineers should omit Drafting 131, 136 and Chem 103, 109 and take Chem 102, 120, 362, 363.
### Preprofessional Curricula

#### OAKLAND UNIVERSITY

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG</td>
<td>English* 105, 305</td>
<td>8</td>
<td>MATH</td>
</tr>
<tr>
<td>MATH</td>
<td>Mathematics 106, 306</td>
<td>3</td>
<td>PHYS</td>
</tr>
<tr>
<td>MATH</td>
<td>Mathematics 122, 123</td>
<td>8</td>
<td>MET</td>
</tr>
<tr>
<td>CHEM</td>
<td>General Chemistry 103, 109</td>
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<td>MET</td>
</tr>
<tr>
<td></td>
<td>History, Literature or Humanities Elect.</td>
<td>3-4</td>
<td>ECON</td>
</tr>
<tr>
<td>TOTAL</td>
<td>30-31</td>
<td></td>
<td>TOTAL</td>
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</table>

#### UNIVERSITY OF MICHIGAN

<table>
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<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>Math 306, 122, 123</td>
<td>10</td>
<td>PHYS</td>
</tr>
<tr>
<td>Electives**</td>
<td>8</td>
<td>MET</td>
<td>Statics 256</td>
</tr>
<tr>
<td>CHEM</td>
<td>Chemistry* 103, 109</td>
<td>8</td>
<td>MET</td>
</tr>
<tr>
<td>TOTAL</td>
<td>32</td>
<td>ECON</td>
<td>Economics 201, 202</td>
</tr>
</tbody>
</table>

#### WAYNE STATE UNIVERSITY

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG</td>
<td>English 105</td>
<td>4</td>
<td>MATH</td>
</tr>
<tr>
<td>MATH</td>
<td>Mathematics 122, 123</td>
<td>8</td>
<td>PHYS</td>
</tr>
<tr>
<td>CHEM</td>
<td>Gen. Chemistry 101 or 102</td>
<td>4</td>
<td>SOCIO</td>
</tr>
<tr>
<td>PHYS</td>
<td>Physics 210</td>
<td>4</td>
<td>PSCI</td>
</tr>
<tr>
<td>Socio-Humanistic Elective</td>
<td>6</td>
<td>MATH</td>
<td>Mathematics 360, 506</td>
</tr>
<tr>
<td>ECON</td>
<td>Economics 201</td>
<td>3</td>
<td>MET</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
<td></td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

### Law

Advisors: Morrison, Batch, Bliss, Casey, Gossman, McCarty

No special college program is required or recommended by most law schools. In general, law schools urge a solid four-year program lead-

*Two writing courses, English 105 and 305 will satisfy Oakland University writing requirement.

**Students in Chemical, Materials and Metallurgical Engineering should take Organic Chemistry 362 and 363 during the sophomore year. Engineering Drawing is required in Naval Architecture, Civil Engineering and Mechanical Engineering. All other receive elective credit.

***Students electing Mechanical Engineering 256, 353, 354 will be given four hours credit for Engineering Mechanics 211 and five hours general credit.

****Students in Chemical, Metallurgical and Materials Engineering and students in Oceanography, Atmospheric and Oceanic Science or Physics should take Chemistry 102 and 120.
Preprofessional Curricula

ing to a Bachelor's degree. 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.

The freshman student is urged to concentrate his first year of studying in satisfying first year general education requirements and also in improving his writing and speaking skills by taking courses in English and Communication.

A freshman student should see a Pre-Law advisor during his first semester for assistance in selecting his curriculum. A transfer student should see a Pre-Law advisor as soon as possible.

Librarianship

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

Medicine and Osteopathy

Dr. Leonard Beuving, Advisor

Although only 90 credit hours of undergraduate studies are required, most medical and osteopathic schools expect students to finish four years of college work before admission. The required Medical College Admission Test is offered at Western Michigan University and should be taken during the Spring prior to the student's application to osteopathic or medical schools in the Fall of his senior year.

A student planning to do his premedical work at Western Michigan University should refer to the catalogs from the medical or osteopathic schools of his choice and should plan his college work to meet their requirements. A useful source handbook, "Medical School Admission Requirements, U.S.A. and Canada", is on 2-hour reserve in Waldo Library and many of the current medical and osteopathic school catalogs are available in the preprofessional advisor's office. Preosteopathic and premedical students should see the preprofessional advisor in Room 122 Wood Hall for curriculum suggestions, Medical and/or Osteopathic Advisory Kits, Medical College Admission Test application forms, centralized application service forms, and Preprofessional Evaluation Committee services. In addition, premedical and preosteopathic students are encouraged to join the Medical Science Association in order to participate in a variety of hospital experiences and to meet other students interested in health science careers.

The curriculum suggestions listed below assure early completion of most premedical and preosteopathic course requirements. This sequence, however, can be altered according to the student's interests.
Major and Minor Requirements

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading and Composition</td>
<td>6</td>
</tr>
<tr>
<td>Biology 100, 101 or 102</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 101, or 102, 120</td>
<td>8</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1-2</td>
</tr>
<tr>
<td>Mathematics 100, 120 or 120, 121 or 122, 123 or 200, 260</td>
<td>8</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Biology</td>
<td>3-6</td>
</tr>
<tr>
<td>Physics 110, 111</td>
<td>8</td>
</tr>
<tr>
<td>Organic Chem. 360, 361</td>
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<tr>
<td>General Education</td>
<td>8</td>
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</tbody>
</table>

Recommended Third Year

<table>
<thead>
<tr>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major and minor requirements</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td>Psychology</td>
</tr>
<tr>
<td>Electives</td>
</tr>
</tbody>
</table>

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.
Major and Minor Requirements

6. Under certain conditions General Education 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. Courses in General Education
   b. Required professional courses in education
   c. Required courses in general physical education

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. Exceptions are not granted for students seeking teacher certification.

PROGRAMS REQUIRING MAJOR AND MINOR SLIPS

(In All Cases Check Catalog Requirements)

<table>
<thead>
<tr>
<th>Accountancy</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>African Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>American Studies</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>Anthropology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Art</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Asian Studies</td>
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<tr>
<td>Biology</td>
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<tr>
<td>Black Americana Studies</td>
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<tr>
<td>Business Education</td>
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<td>Chemistry</td>
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<td>Yes</td>
</tr>
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<td>Communication Arts and Sciences</td>
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<td>No</td>
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<tr>
<td>Comparative Cross Cultural Studies</td>
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<td>Yes</td>
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<tr>
<td>Dance</td>
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<td>Distributive Education</td>
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<tr>
<td>Earth Science</td>
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<tr>
<td>Economics</td>
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## Major and Minor Requirements

<table>
<thead>
<tr>
<th>Major and Minor Requirements</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
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<tbody>
<tr>
<td><strong>Electrical Engineering</strong></td>
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<tr>
<td>Technology</td>
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<tr>
<td><strong>Engineering and Technology</strong></td>
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<tr>
<td>Engineering Graphics Technology</td>
<td>(curricular offering only)</td>
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<tr>
<td><strong>Industrial Engineering</strong>****</td>
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<tr>
<td>Industrial Supervision</td>
<td>(curricular offering only)</td>
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<tr>
<td>Manufacturing</td>
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<tr>
<td>Metallurgical Engineering Technology</td>
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<tr>
<td><strong>English</strong>*</td>
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<td>General Business</td>
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<td>Administrative Services</td>
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<td>Business Law</td>
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<td>General Business</td>
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<td>Insurance</td>
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<td>Public Administration</td>
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<td>Geography</td>
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<td><strong>History</strong>*</td>
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<td><strong>Home Economics</strong></td>
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<td>Clothing-Textile</td>
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<td><strong>Industrial Education</strong></td>
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<td>General Industrial Arts</td>
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<tr>
<td>Drawing</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Electricity-Electronics</td>
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<td>Graphic Arts</td>
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<tr>
<td>Metalworking</td>
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<td>Yes</td>
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<tr>
<td>Power-Auto Mechanics</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Woodworking</td>
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<td>Yes</td>
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<tr>
<td>Vocational-Technical Education</td>
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<tr>
<td>Technical Drafting</td>
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<tr>
<td>Architectural Drafting</td>
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<tr>
<td>Auto Mechanics</td>
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<tr>
<td>Cabinet Making</td>
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<tr>
<td>Carpentry</td>
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<tr>
<td>Electronics</td>
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<td>Machine Tool</td>
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<td>Printing</td>
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<td>Yes</td>
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<tr>
<td>Printing Management</td>
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</tr>
<tr>
<td>Integrated Creative Arts</td>
<td>(None)</td>
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</tbody>
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*Major and minor slips are required for all students taking an English major or minor with writing emphasis.

**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.

****Minor available for statistics majors only.
### Major and Minor Requirements

<table>
<thead>
<tr>
<th>Language</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>Yes</td>
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</tr>
<tr>
<td>German</td>
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<td>Latin</td>
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<td>Russian</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Spanish</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Latin American Studies</td>
<td>(None)</td>
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<tr>
<td>Librarianship</td>
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<tr>
<td>Linguistics</td>
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<tr>
<td>Mathematics</td>
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<tr>
<td>Mechanical Engineering</td>
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<td>(curricular offering only)</td>
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<tr>
<td>Technology</td>
<td>Medical Technology</td>
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<td>Medieval Studies</td>
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<td>Paper Engineering</td>
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<td>Philosophy</td>
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<tr>
<td>Physics</td>
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<td>Religion</td>
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<td>Sociology**</td>
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<tr>
<td>Special Education</td>
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<td>Blind and Visually Impaired</td>
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<td>Crippled and Home Bound</td>
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<td>Emotionally Disturbed</td>
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<td>Speech Pathology and Audiology</td>
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<td>Transportation Technology</td>
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<td>Automotive Management and</td>
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<td>Aviation Technology and</td>
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<td>Aviation Engineering and</td>
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<td>Technology</td>
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<tr>
<td>Flight Technology</td>
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</tbody>
</table>

*(curricular offering only)
Certificates

TEACHER CERTIFICATION—PROVISIONAL

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

1. Michigan 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. A second three year renewal may be granted the applicant who presents an 18 semester hour planned course of study approved by the University. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first certificate.

2. Michigan 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. A second three year renewal may be granted the applicant who presents an 18 semester hour planned course of study approved by the University. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first 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).
Certificates

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

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.
Student Fees

Student fees are assessed on a credit hour basis. Fees per credit hour are:

- Resident undergraduate: $20.00
- Non-Resident undergraduate: $46.00
- Resident graduate: $28.00
- Non-Resident graduate: $62.00

Students carrying less than three hours will be assessed the appropriate rate plus a $10.00 service fee.

Student Assessment—
A student assessment of $1.50 per semester and 75¢ per session will be collected from all graduate and undergraduate students at time of registration. This assessment is for the support of student organizations and is subject to approval by student referendum every two years.

LATE REGISTRATION FEE—A late registration fee of $20.00 will be assessed each student who registers after the final day of registration as established by the Director of Registration. This fee does not apply to those students completing drop-add procedures, only to students who did not register prior to the first day of classes.

This fee is a charge for the special handling required. It is not refundable.

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 VALIDATION DEPOSIT (Entering Students)—A $50 Deposit is required of all new beginning students, transfer students, and former students who have been reactivated for admission on campus for the Fall Semester. The Deposit will be applied towards the Student Fees in each case and must be paid according to certain prescribed dates which are provided by the Admissions Office at the time of admission. Refunds of this Deposit are also made in accordance with detailed instructions received with the certificate of Admission.

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.
Student Fees

FLIGHT INSTRUCTION—Based on the courses taken, fees range from $300 to $450 per course. For a specific course fee, consult Department of Transportation Technology.

ROOM AND BOARD—Cost of room and board is $640 a student for each semester. The rate for room only in those residence halls which do not provide board is $225 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, labor, and utilities, the University reserves the right to increase the charge during the year, if in its opinion, such an increase is necessary.

Address requests for housing 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—Changes in student credit hour load prior to the end of the final day for adding a course are considered to be reassessments, and a refund will be granted, in full, for any net reduction in such credit hour load. Alternatively, an increase in credit hour load will result in an upward adjustment of the fee assessment.

REFUND SCHEDULE:

For Complete Withdrawal

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. Refunds to students who made an Admission Deposit will be reduced by the $50 deposit.

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

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

FLIGHT INSTRUCTION FEES—Refund of flight instruction fees will be made in accordance with the policy established by the Department of Transportation Technology.

RESIDENCY:

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

1. Since normally a student comes to Western Michigan University for the primary or sole purpose of attending the University rather than to establish a domicile in Michigan, one who enrolls in the University
as a non-resident shall continue to be so classified throughout his attendance as a student, unless and until he demonstrates that his previous domicile has been abandoned and a Michigan domicile established.

2. 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.

3. No student 18 years of age, or older, shall be eligible for classification as a resident unless the student shall be domiciled in Michigan and has resided in Michigan continuously for not less than one year immediately preceding the first day of classes of the term for which classification is sought.

4. A student shall not be considered domiciled in Michigan unless the student is in continuous physical residence in this state for one year and intends to make Michigan his permanent home, not only while in attendance at the University but thereafter as well, and has no domicile elsewhere.

5. The residence of a student who otherwise would be classified as a non-resident will follow that of his or her spouse if the spouse is classified as a resident.

6. An alien lawfully admitted for permanent residence in the United States and who has obtained his permanent visa, his wife and minor children, who have met the other requirements herein for residence, may register as residents of this state.

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>X</td>
<td>Failure (Unofficial Withdrawal)</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>Credit</td>
<td></td>
</tr>
<tr>
<td>NC</td>
<td>No Credit</td>
<td></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.

COMPREHENSIVE EXAMINATIONS

Each department shall have the authority with the approval of its dean, to establish a procedure for granting credit for any course in that department through comprehensive examinations. All comprehensive examinations should be administered by authorized personnel determined by the department. Each department should determine those courses for which the comprehensive examination procedure would apply.

All credit by examination is subject to the following regulations:

1. All credit will be posted as credit only without grade or honor points. Students who do not achieve a sufficient score for credit will have no entry made.

2. Credit by comprehensive examination in courses numbered 300 or higher can be used to meet the requirement that one-half of all academic work must be completed at a four-year degree granting institution.

3. Credit by comprehensive examination can be used to meet all other University graduation requirements except the minimum residence requirements.

4. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.

5. All credit by comprehensive examination is normally considered undergraduate credit.

Examination fees are assessed on a clock hour basis and are the same for all students. The current fee schedule:

- Less than four clock hours $25.00
- Four clock hours to eight clock hours $50.00

By special arrangement some course examinations may require higher fees.

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 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 in General Education 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.

**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 x 3, or 12 honor points.

**GRADE-POINT AVERAGE**

A grade-point average is obtained by dividing the total number of honor points earned by the total number of semester hours of work for

*Directed Teaching, a required course, is taken on a credit/no credit basis.
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.
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 or 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. (Initiate this action at the Records Office.) The final date for dropping will be published in the Schedule of Classes. Students may not withdraw from one class or from all classes after this date without penalty.

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 Level
0-89 Non-credit courses
90-99 Terminal course credit that may not be applied toward degree programs
100-199 Courses primarily for Freshmen
200-299 Courses primarily for Sophomores
300-399 Courses primarily for Juniors and Seniors
400-499 Courses primarily for Seniors
500-599 Courses for advanced undergraduates and graduate students
600-699 Courses for graduate students only
700-799 Graduate Seminars, Theses, Independent Research, etc.

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

EXAMINATIONS

1. All students enrolled in a course in which a final examination is given must take the examination.

2. 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.
Graduation

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.

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 reapplication 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
Graduation

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. All credits and honors points earned at Western Michigan University during all enrollment periods except the final enrollment period will be counted.
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 45 semester hours of credit, of which 35 hours must be in courses with grades, at Western Michigan 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. Additional copies are one dollar each. No transcript will be released except upon written authorization of the student.

FOREIGN STUDENTS

Western Michigan University has long encouraged the enrollment of students from other countries. The presence of foreign students within the student body establishes an international dimension which encourages both formal and informal cross-cultural contacts and the development of positive interpersonal relationships on the campus as well as in the community.

The Office of Foreign Student Affairs deals with the special needs and circumstances of foreign students such as processing of applications for admission, conducting an orientation program for new foreign students prior to each enrollment period, assisting with housing arrangements, coordinating community programs involving foreign students, providing advisement on matters related to each student's immigration status, serving as a liaison between the student and his sponsor, and offering personal and social counseling on a wide variety of concerns.

While at the University, foreign students may participate in numerous academic and social activities. Students are invited to become involved in these activities according to their interests and available time.

Any foreign student interested in seeking admission to Western should contact the Office of Foreign Student Affairs for an application form and instructions.

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 performance 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 member 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/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 be 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.
Student Services

CAREER PLANNING AND PLACEMENT

Two services with closely related purposes are offered to Western students and alumni. The first is designed to assist the individual in making a career choice, while the second is to help the person in obtaining an entry level position or an upgrading of present position which reflects the training, experience, and interests of the candidate.

CAREER PLANNING—Western Michigan University offers many unique and challenging curricula in each of its seven colleges. Students are encouraged to visit or call the Career Planning and Placement Office, and make an appointment to talk with one of the trained counselors for advice in relating their career or vocational interests to a choice of curriculum.

Close liaison is maintained with the Counseling Center and the Testing Services Office in helping students make decisions regarding their future occupation(s). Seminars and orientation sessions for students are a part of the function of both Career Planning and Placement.

PLACEMENT—Western Michigan University operates a centralized placement service and offers continuous services to seniors, graduates and employers. A complete credential file may be established by any W.M.U. senior, and by eligible graduate students and alumni. Further information on eligibility may be obtained by calling 616-383-1710. Special assistance includes:

Setting up interview sessions on campus between employers and candidates.

Making personal referrals to employers on availability of trained individuals.

Maintaining a daily updated job availability board and an occupational library.

Publishing a weekly employment bulletin of job vacancies which is widely distributed on and off campus, and supplementing this with periodic listings of summer and part time employment needs. A bulletin mailing fee is charged.

This office is located in the Knollwood Building one block south of the corner of West Michigan Avenue and Knollwood Street, and is open from 8 a.m. to 12 noon, and 1-5 p.m. Monday through Friday.

CONDUCT AND DISCIPLINE

Rules and regulations covering student conduct are developed by the Student Services Council composed of faculty, administration and students. The policies, when approved, are published in The Code of Student Life. 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 and harmonious, functioning of the whole community."

The Dean of Students has the overall responsibility for student conduct and discipline. It is implemented by the Office of University Judiciaries. When infractions of rules and regulations occur, violators will be referred to the Office of University Judiciaries for disposition.

**COUNSELING CENTER**

Many important decisions and situations will confront students while they are at Western Michigan University. They will need to make decisions regarding courses, curricula, and vocational choice. They may become involved in social and personal situations which leave them feeling confused and upset. In addition, it is likely the inherent stresses of university life will cause most students, at some time, to feel emotional discomfort. The University Counseling Center, located on the main floor of the Student Services Building, exists to help students deal effectively with such concerns.

Accredited by the International Association of Counseling Services, the Center is staffed with professionally trained counselors and psychologists. Among the services provided by the Counseling Center are:

- **Individual counseling**, providing students with an opportunity to discuss various concerns including vocational planning, academic counseling, educational goals and personal or emotional difficulties.
- **Group sessions and workshops**, designed to increase self-understanding, facilitate life styles and career decisions, improve relationships with others, increase leadership skills and eliminate behaviors that are self-defeating.
- **Occupational-Vocational Library**, which provides a wide variety of information concerning careers as well as a substantial number of catalogs and bulletins from other American colleges and universities.
- **Training and Internship programs**.

Students using the counseling service are assured of complete confidentiality.

Appointments may be made by telephone or by stopping at the Counseling Center reception desk between 8 a.m. - 12 noon or 1 - 5 p.m., Monday through Friday.

**HEALTH SERVICE**

**POLICIES AND PROCEDURES:**

Western Michigan University Health Center provides facilities for medical, surgical, physical, or psychiatric examinations. All undergraduate students, and new student transfers 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. If no physical examination is on file, the usual customary fee for an office call will be charged until the
physical examination is on file. Registration is not considered complete until the health examination has been received. In order to assure uniformity of records, the University Health Center blank is sent to each student by the Admissions office along with the individual's notification of acceptance as a student.

WHO IS ELIGIBLE FOR CARE:

All undergraduates regularly enrolled in the University and taking 7 or more credit hours are entitled to health service during the term in which they are enrolled. Spouses of eligible students are seen by appointment and on a fee basis. The Health Center is not presently staffed adequately to provide care for children of students. A validated identification card must be presented when service is requested. Part-time students, taking 6 credit hours or less in a semester, or 1 to 3 hours in a session are charged a fee for each clinic visit. Faculty members employed full time and enrolled in one or more courses are not considered students and are not eligible for care at the Health Center.

A student is entitled to use the Health Center facilities only when he or she is enrolled in the University. The date and time limitations of enrollment are established from the University calendar, in the Western Michigan University catalog.

LOCATION:

The student Health Center is located on the west side of Gilkison Drive, north of Michigan Ave. The emergency entrance is on the south side of the building, just west of the main entrance.

HOURS:

Monday through Friday hours are 8 a.m. to 4:30 p.m. Saturday hours, 9 a.m. to 12 noon, are for urgent or emergency services only. Summer session hours, Monday through Friday are 8 a.m. to 4:15 p.m. Visiting hours for the hospital section patients are limited to 2 p.m. to 4 p.m. and 7 to 8 p.m. Monday through Friday and 2:30 to 4 p.m. Saturday and Sunday.

EMERGENCY SERVICE:

When the University is in session there is a 24-hour emergency service with nurses on duty. This service is available at all times at the emergency entrance. A service fee is charged for after hours emergency service. There is no after hours emergency service during the summer session.

TO SEE A PHYSICIAN—OUTPATIENT CLINIC:

Students are seen by appointment except for emergencies. Appointments can be made by calling 383-6005. If you cannot keep an appointment, call to cancel it. Your failure to cancel an appointment will compromise another student's opportunity to see a physician.

PSYCHIATRIC CONSULTATIONS:

Consultations are made on a referral basis by our physicians and/or on an appointment basis.

FEES:

No fee is charged the full time student for his or her visit to the Health Center if the visit occurs during the hours of 8 a.m. to 4:30 p.m.
Monday through Friday. A service fee is charged for students requesting service between the hours of 4:30 p.m. and 8 a.m. and on Saturdays after 12 noon until Monday morning. In addition to the service fee, students are charged conventional fees for all medications, medical supplies, x-rays and clinical laboratory diagnosis.

ALLERGY PATIENTS:

Students, who have procured special medication or allergy vaccines at their own expense, may have these substances stored at the Health Center and may have the scheduled administration of the medication performed there for a minimal fee for each treatment. Consultants are called upon by the recommendation of the staff physician and their professional fees are charged to the patient.

GENERAL INFORMATION:

In cases of acute illness or serious accidents a student patient may be taken to the Health Center or the emergency room of a local hospital. If an emergency case is taken to the Health Center during non clinic hours, the nurse on duty may confer with the physician on call, refer the patient to an emergency room at a hospital or arrange for temporary care pending the 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 nearest relative or friend will be notified as early as possible.

No operative procedures will be performed on students under the age of 18 without permission of the parents, except in cases of extreme emergency or life threatening situations. Cost related to hospitalization, including fees of outside consulting physicians, are the responsibility of the student or the parents. It shall not be the responsibility of the University to pay for such hospitalization or consultation.

STUDENT HEALTH INSURANCE:

To cover some of the medical expenses which may be incurred, it is strongly recommended a student carry a health and accident insurance policy. Most parents have such coverage; however, it is advisable to review the provisions of the policy regarding dependent's age 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.

Parents of foreign students may have an insurance policy which provides benefits to a son or daughter but such policies frequently provide benefits only when an illness or accident occurs in the family's country. Citizens of other nations who are studying or conducting research as foreign students on a temporary U. S. visa, e.g. F-1, J-1, B-2, A-2, etc., are required to maintain health and accident insurance coverage while they are attending the University which will provide benefits in the United States. Students not covered by an existing insurance policy may be interested in the group health and accident policy offered to students through the University. Foreign students may also wish to contact the Office of Foreign Student Affairs for information about other desirable insurance programs.
HOUSING POLICIES

HOUSING REGULATIONS

It is a condition of enrollment at Western Michigan University that all Freshman and Sophomore students live in a residence hall on campus. The classification of a student is determined by the number of semester hours earned that are acceptable to Western Michigan University.

Juniors, Seniors, and Graduate students may live in housing of their own choosing.

EXEMPTION OF REGULATION

A request for exemption from regulations to occupy housing other than a residence hall on campus must be submitted by ALL FRESHMAN AND SOPHOMORE STUDENTS regardless of age, marital status, part-time status, commuter status, etc. Exemption requests must be submitted to the Off-Campus Housing Office, Student Services Building, for approval. A form is provided for this purpose.

GUIDELINES FOR GRANTING EXEMPTIONS

MARRIED STUDENTS—those living with their spouses. Proof of marriage may be required.

SOPHOMORES—members of a fraternity or sorority may elect to live in their fraternity or sorority house provided it is registered with the Office of Student Activities.

PART-TIME STUDENTS—those carrying 6 hours or less during fall and winter semesters and 4 hours or less during spring and summer sessions.

COMMUTING STUDENTS—those living in the homes of their parents. A personal interview with the parent may be required to confirm the student’s housing arrangement before an exemption is granted.

UNIQUE CIRCUMSTANCES—such as severely physically handicapped persons, those with medical or psychological conditions, Bronson Hospital student nurses living in Truesdale Hall, unwed mothers, seminary students living in residence, and veterans of the Armed Forces.

Students will not be granted exemptions for financial reasons. They are expected to have the financial resources to attend W.M.U. or seek financial assistance from the Office of Student Financial Aid and Scholarships.

CHANGE OF ADDRESS

ALL STUDENTS MUST REPORT THEIR ACTUAL LOCAL ADDRESS WHILE ATTENDING THE UNIVERSITY.

HOUSING VIOLATIONS

Any student who violates the University regulations regarding housing policies will be referred to the Office of University Judiciaries. For further information regarding University regulations, please consult the Office of the Dean of Students.
Housing Policies

RESIDENCE HALLS—20 residence halls of various styles serve approximately 7,000 students.

MARRIED HOUSING—590 married student apartments consisting of 341 one-bedroom and 249 two-bedroom, in either furnished or unfurnished styles.

SORORITY/FRATERNITY HOUSES—Privately owned and operated by various fraternal organizations for their members.

UNIVERSITY OMBUDSMAN

The position of University Ombudsman was created to investigate and mediate grievances and to provide justice for all members of the University community. Simple and rapid procedures have been established for the hearing of requests, complaints and grievances. The Ombudsman investigates such matters, and where he discovers a malfunction in the administrative process or an abuse of power, he assists the individual in accomplishing a quick and fair resolution of his problem. He can remedy some problems by himself, but when appropriate, he refers persons to other University members and/or offices. The Ombudsman is authorized to make thorough investigations and has direct and prompt access to all University offices and relevant records. He is especially alert to the chief causes for student concerns, and makes recommendations for the elimination of these causes consistent with the fundamental purpose of the University.

RELIGIOUS ACTIVITIES

Western Michigan University recognizes that helping people to clarify their values, to act on their commitments, to articulate their own beliefs and to understand the beliefs of others, is an important part of the educational process. The University endorses no particular faith or religious tradition, but it welcomes and facilitates the presence of many religious organizations.

A broad spectrum of religious opportunities including traditional, contemporary and experimental worship; individual and small group Bible studies; workshops and retreats; study-travel experiences, social concerns, religious drama, and action groups is available to interested students.

The campus ministry staff is available to students and their families for personal and religious counseling, information on all campus religious programs, and materials and resources for religious activities.

The Office of Religious Activities, which is a part of University Student Services, assures equality in the University’s relationships with more than 15 student religious organizations and the 12 campus ministers currently present on campus.

The Kanley Memorial Chapel facility includes an interfaith Chapel, several meeting rooms and offices. It is maintained by the University as a center for religious activities and serves as the meeting place for most student religious organizations. It is also the home of three regular Sunday worship services, and provides a popular site for student weddings. The Office of Religious Activities and six campus ministers have offices in the building.
In addition to Kanley Memorial Chapel, there are five student centers operated by specific denominations on or near campus. Specific information regarding the religious groups on or near campus is available in the Office of Religious Activities.

STUDENT ACTIVITIES AND ORGANIZATIONS

Classes, professors, and term papers are an ever present part of one's college experience, but the University recognizes that classroom activities alone do not provide the total education today's college students are seeking.

Students can enrich and broaden their collegiate life by becoming involved in any number of the more than 200 organizations coordinated and sanctioned by the Office of Student Activities located in the Student Services Building.

To develop leadership skills, acquire valuable vocational training, gain new friends, get to know faculty members and administrators, serve the campus and the community—a student need only become involved in the extracurricular activities available on campus.

Organizations are divided into these interest areas:

- Departmental and Professional
- Honorary
- Publications and Communication
- Religious
- Service Organizations
- Social
- Special Interest
- Student Government

TESTING SERVICES

Testing Services provides many guides for students seeking self-understanding. Vocational Interest Inventories, Personality Assessments, Aptitude and many other types of tests are available. There is a minimal cost to cover the scoring.

Testing Services also offers assistance in planning research projects and papers. Scanning sheets are available free to students for the purpose of collecting data and for various types of statistical analysis.

Testing Services has the most extensive "Test File" in this area. These files can be of assistance for class projects or general information. They are open to both students and faculty members at no cost.

Testing Services is located at West Hillside Apartments.

MINORITY STUDENT SERVICES

The Office of Minority Student Services is primarily responsible for increasing the minority population and participation throughout the University. We attempt to accomplish this portion of our responsibility by:

1. Identifying and stimulating potential college students from the ninth through the eleventh grades.
2. Recruiting minority seniors into the various curricula and programs at Western Michigan University.

These tasks are accomplished through an extensive program of state wide visitations to high schools and communities, when we meet with students, parents, faculty and community leaders.
An equally important function of the Office of Minority Student Services is to insure that the University provides the necessary supportive services (tutoring and counseling), the quality of academic and student life and the experiences which will provide all minority students at Western Michigan University the best possible opportunity for a successful and relevant educational experience.

Among its objectives and goals The Office of Minority Student Services includes the recruitment of Native American and Latino students.

Relevant experiences are provided through the Minority Groups and Human Rights course offerings, which emphasize Chicano cultural awareness and experiences.

The Office of Minority Student Services provides the services necessary for the successful recruitment and retention of Native-American students.

Additionally, activities which emphasize awareness, unity, and attempts to meet the social and cultural needs that are required if the Native-American student is to attain and maintain his identity throughout the campus community.

**MARTIN LUTHER KING, JR. PROGRAM**

The Martin Luther King Program is a special enrichment program for marginal students. The program conducted by the faculty and staff at Western Michigan University has a threefold purpose. (1) It provides educational opportunities for a significant number of minority students. (2) It encourages marginal students to pursue higher education by providing an incentive and the necessary remedial help. (3) It expedites routine procedures and operations for admission to the University for students of minority extraction.

Students spend seven and one-half weeks during the summer on the campus of Western Michigan University and are enrolled in six hours of academic course work. They participate in special seminars, cultural enrichment programs, make field trips, and enjoy a variety of entertainment.

The Martin Luther King Program conducts a year-round program and offers a continuation of the types of experiences that were initiated during the summer. Throughout the school year the program performs the following additional functions. (1) provides assistance with the selection of courses commensurate with student interest and abilities while still fulfilling the requirements of the University; (2) provides tutorial services for students who may need assistance with group work; (3) supervises the program’s study center and insures that the necessary time is devoted to academic activities and (4) provides special counseling to students with problem situations.

Students in this program are actively recruited from schools in the Southwestern Michigan area. However, students outside this area may apply and be admitted even though staff visitation and concerted recruitment efforts are limited to the target area.

**VETERANS' ASSISTANCE**

Answers to questions pertaining to veterans educational assistance, benefits and other problems may be obtained at the Office of the
Veterans' Coordinator, Room 3210 Administration Building. The telephone number is 383-8151.

The areas of assistance include, but are not limited to: veterans educational benefits, vocational rehabilitation benefits, flight training benefits and tutorial assistance. Veterans should contact the Veterans Coordinator to initiate G.I. benefits or to resolve difficulty receiving the G.I. benefits.

Veterans who change their place of education, enrollments and current mailing addresses should contact this office. Proof of a change in dependents should be sent directly to the V.A. Regional Office in Detroit. Forms can be obtained at the Academic Records Office.

STUDENT FINANCIAL AID AND SCHOLARSHIPS

The Office of Student Financial Aid and Scholarships administers the Long-Term Loan, the College Work-Study, the Supplemental Educational Opportunity Grant, the Short-Term Loan, Law Enforcement Education, Off Campus Part-Time Employment, and the University Scholarship Programs.

Several sources of loans are available at Western, including long term loans under the National Direct Student Loan Program, the Federally Insured Student Loan Program, and the 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 College Work-Study program and off-campus job placement are administered by the Office of Student Financial Aid and Scholarship. For regular on-campus University employment see section under “Student Employment.”

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 (Application for Financial Assistance) forms are available at the Office of Student Financial Aid and Scholarships. They may also be obtained from most Michigan high schools.

Scholarship applications must be completed by March 15. For further information please contact the Office of Student Financial Aid and Scholarships.

Information concerning fellowships may be obtained from the Graduate College.

In awarding financial assistance, Western utilizes the recommendations of the College Scholarship Service. An entering student who plans to apply for a National Direct Student Loan, a Supplemental Educational Opportunity Grant, a College Work-Study job and/or Scholarship must submit a copy of the Parents’ Confidential Statement to the College Scholarship Service, designating that a copy of the PCS be sent to Western Michigan University.
FINANCIAL AID PROCEDURES

In seeking financial assistance through the Office of Student Financial Aid and Scholarships, a student interested in a National Direct Student Loan, the College Work-Study Program, or the Supplemental 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 and Scholarships.

2. Complete a Western Michigan University Application for Financial Assistance. The aid application may be obtained from Michigan high schools or the Office of Student Financial Aid and Scholarships. Application deadline date, is March 15.

3. Arrange for a personal interview with a staff member of the Office of Student Financial Aid and Scholarships. Incoming Freshmen and Transfer students starting the Fall Semester should arrange for this interview during their summer orientation and/or preregistration period.

SCHOLARSHIPS

Distinguished University Scholarships

NATIONAL MERIT FINALISTS SCHOLARSHIPS—Western Michigan University is an institutional member of the National Merit Scholarship Corporation and sponsors five scholarships to National Merit finalists. Recipients are selected on the basis of high school recommendations, scholastic achievement and test scores.

PAUL V. SANGRENN 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 considered are those with outstanding scholastic records and who have been active in extra curricular activities.

WALDO-SANGRENN SCHOLAR AWARDS—Established to honor the University's first two presidents, Dr. Dwight B. Waldo and Dr. Paul V. Sangren. To be considered for this award, a student must be a W. M. U. upperclassman of high academic achievement (a 3.5 is desirable) and submit a project proposal with evidence of imagination, originality, creativity. Maximum amount of the award for the academic year is $1,000. Application and information concerning this award may be obtained from the Office of Student Financial Aid and Scholarships.

General University Scholarships

BOARD OF TRUSTEES SCHOLARSHIPS—Students who have achieved a 3.0-3.49 G.P.A. are considered for awards from $100-$500 for the academic year. These awards are renewed automatically if the established guidelines are met.
COMMUNITY COLLEGE TRANSFER SCHOLARSHIPS—Offered each year to Michigan upper division community college transfer students who have earned an associate degree or have completed fifty-six (56) credit hours upon entering W.M.U. Transfer students who have achieved a 3.0-3.49 G.P.A. will be considered for awards ranging from $100-$500. Transfer students with a 3.5 or above will be considered for awards ranging from $500-$700. Community College transfer students entering W.M.U. below the junior level will compete under the general scholarship guidelines.

UNIVERSITY SCHOLARSHIPS—Students who have achieved a 3.5-4.0 G.P.A. are considered for awards from $300-$700 for the academic year. These awards are renewed automatically if the established guidelines are met.

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. BENTLEY FOUNDATION SCHOLARSHIP AWARD FOR EXCELLENCE—The Alvin M. Bentley Foundation grants three $750 Awards for Excellence to incoming freshmen who are graduates of Michigan high schools. The scholarships are awarded for one year but may be renewed upon recommendation of the University Scholarship Committee.

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.

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

GENERAL MOTORS FOUNDATION SCHOLARSHIP—One four year General Motors Scholar award is given annually to a freshman of high academic achievement and high school recommendations with a career objective in the fields of business or engineering. The stipend amount of the scholarship is based on the recommendation made to the University Scholarship Committee by the College Scholarship Service.

ELIZABETH DURAND HEBBEN SCHOLARSHIP—Originally the support for this funding was initiated by Elizabeth Durand Hebben who, as a student at Western Michigan University, became aware of the many students with financial difficulties involved in their educational program. The desire to help these students resulted in the continuing of this support through the establishment of this award through the generous contributions of Elizabeth and George Hebben. Consideration is given to junior and senior students with high academic standings and/or
Scholarships

distinctive financial needs. The award can be renewed for more than one semester; the stipend is based on need and availability of funds. Selections will be made by the University Scholarship Committee.

1968 SENIOR CLASS SCHOLARSHIP—This scholarship fund was created by contributing members from the class of 1968. Two annual scholarships of $100 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.

THE EDWIN AND ADELAIDE STEFFEN SCHOLARSHIP—This award is provided by the funding of a living trust through the generosity of Edwin and Adelaide Steffen to recognize students who have graduated from Saginaw, Decatur or L'Anse high schools. The award will be granted to entering freshmen for one semester or academic year, based upon the yield of the fund and the number of candidates applying. A grade point average of 3.0 or above is required with a demonstrated financial need.

HAZEL WIRICK RECOGNITION AWARD—An award of $250 a year for a junior or senior with an overall 3.0 grade point average and the recommendation of the Biology Department.

COLLEGE OF APPLIED SCIENCES

Agriculture

AGRICULTURE ALUMNI—Open to any Agriculture major in good standing. Amounts of award vary but usually range from $100-$125. Apply directly to the Agriculture Department.

KALAMAZOO FARM BUREAU—Students of less than senior standing who are Agriculture majors are eligible for one of the four Kalamazoo Farm Bureau scholarships worth $125 each. Apply directly to the Agriculture Department.

MICHIGAN FARM BUREAU—The Michigan Farm Bureau awards four scholarships of $125.00 each annually to the senior students chosen as the outstanding students majoring in Agriculture. Apply directly to the Agriculture Department.

Engineering Technology

AMERICAN FOUNDRYMEN'S SOCIETY SCHOLARSHIP—The Central Michigan Chapter offers two $250 scholarships per year. The Detroit Chapter offers a $400 William D. Innes Memorial, and a $500 Theodore R. Schroeder Memorial Scholarship per year. Apply directly to the Engineering and Technology Department.

SOCIETY OF MANUFACTURING ENGINEERS (Phillip J. Beatty Memorial)—The Society of Manufacturing Engineers offers scholarships of $150-$250 to Engineering or Technology students, sophomore standing or above. Apply directly to Engineering and Technology Department.

DURAMETALLIC SCHOLARSHIP—The Durametallic Corporation offers two $250 scholarships per year to students enrolled in Engineering Technology. Apply directly to the Engineering and Technology Department.
Scholarships

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

H. H. HARRIS FOUNDATION—Has made funds available to students in engineering and technology with an interest in the foundry industry. As many as four awards have been made ranging from $1,000-$2,000. Apply directly to the Engineering and Technology Department.

INDUSTRIAL MANAGEMENT SOCIETY SCHOLARSHIPS—The Industrial Management Society offers $250 scholarships to sophomores, juniors or seniors enrolled in an Engineering Technology curriculum and student members of IMS in good standing. Apply directly to the Engineering and Technology Department.

Food Distribution

FOOD DISTRIBUTION SCHOLARSHIPS—Each year Western offers a number of scholarships to qualified students majoring in Food Distribution. Amounts are variable. Applications may be obtained from the Department of Distributive Education.

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

INDUSTRIAL EDUCATION

CLAUSING CORPORATION SCHOLARSHIP—The Clausing Corporation offers a scholarship to stimulate interest in Industrial Education. The scholarship is open to all graduating seniors in Michigan high schools who have had at least one course in Industrial Arts and who plan to enter the Industrial Education curriculum. The award is for $225 the first year and renewable for an additional three years for a total of $900.

S.M.E. SCHOLARSHIPS (Phillip J. Beatty Memorial)—The Society of Manufacturing Engineers offers two scholarships per year to Industrial Education students, sophomore standing or above. Apply directly to the Industrial Education Department.

S.P.E. SCHOLARSHIPS—The Society of Plastic Engineers offers two scholarships each year. Provisions include free student membership to SPE, open invitation as a guest to monthly sectional dinner meetings and commitment from the student to either pursue Plastics Education or employment in the industry. Apply directly to the Industrial Education Department.

MILITARY SCIENCE

MILITARY SCIENCE R.O.T.C. SCHOLARSHIPS—Four, three, two and one year scholarships are available to qualified male and female stu-
Scholarships

Each scholarship provides for all tuition, textbooks and laboratory fees in addition to an allowance of $100 per month for up to ten months each school year. Four-year scholarships are open on a competitive basis to high school seniors who plan to enter Army R.O.T.C. as freshmen. Applications must be submitted between September 1 and December 31 of the previous academic year. The other scholarships are open only to those Military Science students who participate as cadets in R.O.T.C. Students who desire scholarship applications or other information should contact the Head of the Military Science Department.

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 directly 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 $150 annually. Apply directly to the Department of Occupational Therapy.

PAPER SCIENCE AND ENGINEERING

Up to 70 scholarships ranging in size from $210-$875 a semester are available to students majoring in the Paper Science and 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., and 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 enrollment in the curriculum of the Department of Paper Science and Engineering.

The scholarship program is supported by major contributions from the following:
Members of the Paper Technology Foundation

Albany International Corporation
Allied Paper Incorporated
American Can Company—R & D
American Cyanamid Company
Anglo-American Clays Corporation
Appleton Papers, Inc.
Appleton Wire Works Corporation
Asten-Hill Manufacturing Company
BASF Wyandotte Corporation
The Bauer Bros. Company
Beloit Corporation
Benlo Chemicals
The Black-Clawson Company
Blandin Paper Company
Boise Cascade Corporation
Boxboard Research Development Association (BRDA)
Brown Company
Buckman Laboratories, Inc.
Burgess Cellulose Foundation Named Scholarship Fund
CPC International, Inc.
The Louis Calder Foundation
Mae Munter Calligan Scholarship
Olin W. Callighan Scholarship Fund (in memoriam)
Cameron Machine, Midland-Ross Corporation
Cargill, Incorporated
Celanese Coatings & Specialties Co.
Stein, Hall Products
Central Soya Company, Inc.
Champion International
Ciba-Geigy Corporation
Clark & Vicario Corporation
Consolidated's Civic Foundation, Inc.
Container Corporation of America
Bert Cooper
Diamond International Corporation
Diamond Shamrock Chemical Company, Norco Chemical Division
Domtar Pulp and Paper, Inc.
The Dow Chemical Company
The Draper Brothers Company
Theodore W. Dunn Memorial Scholarship Fund
Eastman Kodak Company
Engelhard Minerals & Chemicals Corporation
Fox River Paper Company
Freeport Minerals Company

French Paper Company
Georgia Kaolin Company
Georgia-Pacific Corporation
P. H. Glatfelter Company
Philip H. Glatfelter Scholarship Fund
D. S. & R. H. Gottesman Foundation
Grain Processing Corporation
Hammermill Paper Company
Albert S. Harman Scholarship Fund
Hercules Incorporated
Hoerner Waldorf Corporation
Hooker Chemical Corporation
J. M. Huber Corporation
Hyuck Corporation
ITT Rayonier, Inc.
Improved Machinery, Inc.
Industrial Nucleonics Corporation
International Paper Company Foundation
Ircon, Inc.
The Johnson Corporation
Kimberly-Clark Foundation, Inc.
Knox Woolen Company
The Lindsay Wire Weaving Co.
Chas. T. Main, Inc.
The Mead Corporation Foundation
Measurex Corporation
Menasha Corporation Foundation
Michigan Carton Co.
Monsanto Company
Morden Machines Company
Nalco Chemical Company
National Gypsum Company
The NL Industries Foundation, Inc.
The NSC Foundation, Inc.
Nekoosa-Edwards Paper Company, Inc.
Nicolet Paper Company
The Orr Felt Company
Owens-Illinois, Inc.
Oxford Paper Company
Packaging Corporation of America
Pfizer, Inc.
PIMA-Northwestern Division
Potlatch Forests, Inc.
Raybestos-Manhattan, Inc.
Ronningen-Petter, Division of Dover Corp.
Russel H. Savage Scholarship
St. Regis Paper Company
Sandoz Foundation, Inc.
Scholarships

Scott Paper Company Foundation
J. E. Sirrine Company
Sonoco Products Company
A. E. Staley Manufacturing Company
Stauffer Chemical Company
Fredrick W. Sutherland Scholarship—W. A. Kirkpatrick
Stowe-Woodward Co.
TAPPI—Kalamazoo Valley Section

Thiele Kaolin Company
Union Camp Corporation
Vicksburg Foundation (Norman Bardeen Scholarship)
Westvaco Foundation
Weyerhaeuser Company Foundation

PETROLEUM DISTRIBUTION

PETROLEUM DISTRIBUTION—Each year Western offers a number of scholarships to incoming freshmen majoring in Petroleum Distribution. Amounts are variable and applications should be obtained from the Department of Distributive Education.

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. Apply directly to the Department of Distributive Education.

“MIKE” JENKINS MEMORIAL SCHOLARSHIP AWARD—An award of $100 a year to be presented to the petroleum student with the highest overall grade point average. To be awarded in February of each year. The overall will be determined from the previous Fall semester grade report. Apply directly to the Department of Distributive Education.

DETROIT 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.

MICHIGAN SHELL JOBBERS MEMORIAL SCHOLARSHIP—A scholarship award of $500 to an incoming freshman in Petroleum Distribution at Western. The scholarship is presented in honor of Mr. Larry C. Hull, long-time friend of Michigan Shell Jobbers. The scholarship is based on need and high school academic record. Apply directly to the Department of Distributive Education.

PRINTING MANAGEMENT

NORTHEASTERN PRINTERS, INC.—An award of $300 a year, to be divided equally between the Fall and Winter semesters, is available to high school graduates enrolling in the Printing Management Curriculum. Applicants must have been residents of Michigan for six months prior to the date of admission and must have a high school GPA of 3.0 or above. This award is renewable if the recipient maintains a 2.5 GPA overall and a 3.0 GPA in graphic arts courses. Apply directly to Printing Management, Department of Industrial Education.

PRINTING HOUSE CRAFTSMEN—The Kalamazoo Valley Club of Printing House Craftsmen has established two four-year scholarships in
Printing Management at Western Michigan University for residents of the State of Michigan. The scholarship pays $215 for each full semester and is renewable throughout the four years required to complete the curriculum. Apply directly to Printing Management, Department of Industrial Education.

TRANSPORTATION TECHNOLOGY

DUKE HARRAH MEMORIAL SCHOLARSHIP—Awards up to $250 will be available each semester to students in Aircraft Technology, Aviation Engineering Technology, and Management or Aviation Engineering Technology. All undergraduates who have completed at least 15 semester hours at WMU are eligible. Selection will be based on need and demonstrated scholarship. Apply directly to the Transportation Technology Department.

LUBRIZOL SCHOLARSHIP—An award of $500 for a student in Automotive Engineering Technology. To be eligible, a student must be a junior or senior in the curriculum. Transfer students are eligible after completing 15 semester hours at WMU. Apply directly to the Transportation Technology Department.

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 Director, Medical Technology Curriculum, College of Arts and Sciences.

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 Director, Medical Technology Curriculum, College of Arts and Sciences.

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 Director, Medical Technology Curriculum, College of Arts and Sciences.
Scholarships

MUSIC

PERFORMANCE AWARDS—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-$300 per year, are available in the following areas: Ensemble, Applied Music, Music Education, Music Theory, Music Therapy, Music History, Composition, Special Ability, and Drum Major. For detailed information concerning dates of application and auditions, write to the Chairman of the Department of Music.

HARPER MAYBEE SCHOLARSHIPS—Awards are made by the Department of Music through the Harper Maybee Scholarship Fund to students in their final year of music study. The awards are made in the amount of $200 per semester to outstanding senior music majors, who carry a minimum overall grade point average of 3.0, and who demonstrate major evidence of accomplishment in their chosen field of music concentration. Funds for these scholarships, which honor the first Chairman of the Department of Music, are contributed by alumni and friends of Western Michigan University.

MAE ARNOLD THACKER SCHOLARSHIPS—Awards are made by the Department of Music through the Mae Arnold Thacker Scholarship Fund to students in their final year of music study. The awards are made in the amount of $200 per semester to outstanding senior music majors, who carry a minimum overall grade point average of 3.0, and who demonstrate major evidence of accomplishment in their chosen field of music concentration. Funds for these scholarships are contributed by Nelle M. Thacker (class of 1920) to honor the memory of her mother, Mae Arnold Thacker.

HONORS STRING QUARTET AWARDS—Made possible by a grant from the Kalamazoo Symphony Society, these awards pay tuition, applied music fees, and an honorarium (total value approximately $600 per year). The awards are granted to two violinists, one violist, and one cellist of outstanding ability (preferably freshmen) each year and are renewable provided the student maintains a minimum grade point average of 2.75. Recipients perform in an Honors String Quartet, the University Orchestra, and the Kalamazoo Symphony. Apply directly to the Music Department.

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

THEODORE PRESSER SCHOLARSHIP—An award of $200 per semester is made through the Theodore Presser Foundation to a senior who is majoring in Public School Music at Western Michigan University. This student is selected from a list of students who are nominated by the Department of Music Faculty. The recipient, in addition to showing outstanding promise as a public school music teacher, must carry an overall grade point average of at least 3.0.
POLITICAL SCIENCE

ARDEN J. ELSASSER MEMORIAL SCHOLARSHIP—This scholarship has been established by the League of Women Voters of the Kalamazoo area in memory of Arden J. Elsasser who gave faithful service to this organization and contributed to the Kalamazoo community. The award, which is made annually, will normally be $300. This amount may be varied depending on the availability of funds. Application is open to women undergraduates or graduates majoring in political science at Western Michigan University. Applicants must have a minimum grade point average of 3.0 overall and in Political Science, and must have second semester junior standing by the end of the term in which the award is granted. See Chairman, Political Science Department for information and application.

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.

College of Business

GENERAL SCHOLARSHIPS OPEN TO ALL STUDENTS IN COLLEGE OF BUSINESS

BUSINESS—American National Bank Scholarship: An annual award to any student enrolled in the Business Administration curriculum. The award is based on scholarship ability and financial need. Apply directly to the College of Business.

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 $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. Apply directly 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 directly to the College of Business.
**Scholarships**

**KYSOR INDUSTRIAL CORPORATION SCHOLARSHIP**—Two annual awards for any student enrolled in a College of Business Curriculum, apply directly 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.

**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. 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. Contact the Department of Accounting, College of Business.

**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, College of Business.

**BUSINESS EDUCATION AND ADMINISTRATIVE SERVICES**

**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 SCHOLARSHIP—An academic year scholarship of $250 is awarded to an insurance major with Senior status. Apply to Dr. W. L. Burdick, Department of General.

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, Finance Area.

MARKETING

DOW MARKETING SCHOLARSHIPS—Three scholarships in the amount of $500.00 each are awarded during the Winter semester for the following school year to declared marketing majors of junior class standing (56-87 hours) who are carrying a minimum of 12 semester hours and whose cumulative grade point averages are at least 2.5. Also considered are work experience, participation in University and community activities, and faculty recommendations. Awards are available in amounts of $250.00 per person during registration for the Fall semester and again during registration for the Winter semester, provided the minimum grade point average of 2.5 and course load of 12 semester hours are maintained. Application forms can be obtained from and should be turned in to the Marketing Department Secretary, 224 North Hall, East Campus, by February 15.

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.

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.

MILITARY SCIENCE—All Advanced Course ROTC Cadets receive $100.00 per month for up to ten months of each school year.

UNION OIL FOUNDATION—A grant of up to $500.00 a year to a minority student. The student must be majoring in Petroleum Distribution. Apply directly to the Department of Distributive Education.
STUDENT LOANS

LONG TERM LOANS

NATIONAL DIRECT STUDENT LOAN FUND

Through this program, formerly the National Defense Student Loan, loans are available to students who have a demonstrated financial need. Full-time undergraduates may borrow up to but not exceed $2,500 in the first two years in college, and not exceed $5,000 as an undergraduate. A graduate student may borrow up to $10,000, including loans received as an undergraduate. The actual amount borrowed may not exceed the student's demonstrated need. The interest rate of 3% and repayments start nine months after leaving college. The minimum monthly repayment is $30. Part or all of the loan is forgiven for those teaching in specified areas; under stated provisions partial cancellation is also provided for military service. Repayment may be deferred up to three years while in service in the Armed Forces, or as a volunteer in the Peace Corps or VISTA. 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 and Scholarships. This application must be completed by March 15 preceding the start of the Fall Semester.

FEDERALLY INSURED STUDENT LOAN

The federal government guarantees loans made by private lending institutions (banks, savings and loans, credit unions) to undergraduate and graduate students up to a maximum of $2,500 per year. The agency within each state which administers this program may at its discretion lower this maximum; in Michigan (Michigan Higher Education Assistance Authority) the limit is $1,500. Undergraduates may borrow up to $7,500 and graduates may borrow up to $10,000 including undergraduate loans. These loans bear a 7 percent simple interest rate which is waived for the student while attending college and nine months after leaving school on that portion of the loan which is equal to the student's need; the latter is the difference between the educational costs and the student's resources including any expected family contribution to be determined by criteria established by the U. S. Office of Education. The student should apply directly to his local lending institution which participates in this program. The names of participating institutions can be obtained from your high school principal or counselor or for those in Michigan at WMU's Office of Student Financial Aid and Scholarships.

To qualify for the interest waiver the student must demonstrate a financial need, which involves the completion of a Parents' Confidential Statement or, if the applicant meets the criteria for independent status set by the U.S. Office of Education, an Independent Student Statement must be completed. The latter is obtained from the WMU Office of Student Financial Aid and Scholarships.

UNITED STUDENT AID FUND PROGRAM

Students unable to qualify for a National Direct Student Loan and unable to obtain a Michigan Higher Education Assistance Authority loan (for a nonresident of Michigan unable to obtain a federally guaranteed 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.
SHORT TERM LOANS

The loan funds listed below provide emergency assistance for enrolled full time undergraduate and graduate students to meet educational expenses. These loan funds have been established by University friends, alumni, faculty, and staff. Many of these funds provide loans for a maximum of 6 months at interest of 5 percent. Some funds restrict loans to students in certain curricula, of various academic ranks, from a given geographical location, etc. Application for these loans must be made in person at the Office of Student Financial Aid and Scholarships.

SHORT TERM LOANS

A.A.U.W. GRADUATE SOCIAL WORK Fund
A.A.U.W. NURSERY EDUCATION Loan Fund
ALPHA BETA EPSILON, Xi CHAPTER, Loan Fund
ALUMNI Short-Term Loan Fund
AMERICAN BUSINESS CLUB Loan Fund
A. ROBERT ANDERSON MEMORIAL Loan Fund
ASSOCIATED WOMEN STUDENTS Loan Fund
AUSCO Loan Fund
FANNIE BALLOU MEMORIAL Fund
AMELIA BISCOMB MEMORIAL Loan Fund
WILLIAM R. AND EMMA WALES BROWN Student Loan Fund
ERNEST BURNHAM RURAL Loan Fund
CHAPMAN Student Loan Fund
COLLEGE OF APPLIED SCIENCES Loan Fund
DOROTHY DALTON Loan Fund
DELTA SIGMA THETA Loan Fund
DISTRIBUTIVE EDUCATION Loan Fund
THE GORDON AND FERNE ELFERDINK Loan Fund
MICHAEL FINLEY MEMORIAL Loan Fund
FOREIGN STUDENT AID Loan Fund
JAMES GARDNER MEMORIAL Loan Fund
HARRIS-BRIGHAM Loan Fund
LEROY H. HARVEY MEMORIAL Loan Fund
EUNICE E. HERALD HOME ECONOMICS Loan Fund
DELDEE M. HERMAN FORENSIC Loan Fund
JOHN C. HOEKJE Loan Fund
INTER-FRATERNITY COUNCIL Loan Fund
FREBURN W. JAMES Loan Fund
JOHN JENKINS MEMORIAL Loan Fund
KALAMAZOO AREA CHAPTER MAEDC Loan Fund
KALAMAZOO LADIES’ LIBRARY ASS’N. Loan Fund
KALAMAZOO MOTOR FREIGHT Loan Fund
JEROME E. J. KEANE Loan Fund
KIWANIS EDUCATIONAL AID Fund
THE DR. RADFORD KUYKEN DALL Loan Fund
ALICE LOUISE LEFEVRE MEMORIAL Fund
ELIZABETH E. LICHTY Loan Fund
MARVEL F. LIDDY Student Loan Fund
THE DAVID E. LING MEMORIAL Loan Fund
LARRY G. LOCHNER MEMORIAL Fund
Student Loans

RAYTH W. LOWER MEMORIAL Loan Fund
THE CHARLES H. MAHER Loan Fund
THE R. C. MAHON FOUNDATION Loan Fund
MILDRED MALONEY MEMORIAL Loan Fund
MATHEMATICS FACULTY MEMORIAL Loan Fund
WILLIAM MC CRACKEN 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
CHARLES S. NICHOLS MEMORIAL Loan Fund
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
PIMA (MICHIGAN DIVISION) Loan Fund
ARCHIE S. POTTER MEMORIAL Fund
DOUGLAS V. RATCLIFFE MEMORIAL Loan Fund
SOPHIA REED—MARY MOORE HOME ECONOMICS Loan Fund
NELLIE N. REID MEMORIAL 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
SOUTHWESTERN STATE EMPLOYEES' CREDIT UNION Loan Fund
MARION R. SPEAR OCCUPATIONAL THERAPY Fund
GEORGE SPRAU Loan Fund
KENNETH H. SQUIRES MEMORIAL Loan Fund
MR. AND MRS. J. FRED STALEY Fund
STATE D.A.R. SCHOLARSHIP Loan Fund
HELEN STATLER Fund
STONE D.A.R. Student Loan Fund
RON STRAWSER MEMORIAL Loan Fund
STUDENT Loan Fund
MARION TAMIN MEMORIAL FRENCH Loan Fund
TAPPI (KALAMAZOO VALLEY SECTION) Loan Fund
THE UNIVERSITY DAMES OF WMU Loan Fund
DR. CHARLES VAN RIPER SPEECH PATHOLOGY AND AUDIOLOGY Loan Fund
DWIGHT B. WALDO MEMORIAL Fund
WALTER WEGERLY SCHOLARSHIP Loan Fund
JAMES A. WELCH FOUNDATION Loan Fund
WMU LANGUAGE DEPARTMENT Loan Fund
WMU PAPER TECHNOLOGY ALUMNI ASSOCIATION Loan Fund
WMU PARENTS ASSOCIATION Loan Fund
WMU SOUTHERN CALIFORNIA ALUMNI Loan Fund
WMU SPEECH Loan Fund
W. DEAN WORDEN Loan Fund
CRYSTAL WORNER MEMORIAL Fund
EDUCATIONAL OPPORTUNITY GRANT PROGRAMS

Basic Program

This program entitles an undergraduate student to receive a grant which cannot exceed 50 percent of the actual cost of attending an institution and cannot exceed $1,400 per student per year minus the expected parental contribution as determined by criteria established by the U.S. Commissioner of Education. In the event that the entitlement is not adequately funded, the grants will be pro-rated.

A student must file the appropriate Basic Educational Opportunity Grant Application form which must be sent to the address indicated on the form. Such applications are obtainable from the high school or the WMU Office of Student Financial Aid for Scholarships.

Supplemental Program

Under this program federal funds are made available to Western Michigan University to award grants to undergraduate students of exceptional financial need. These grants range in amount from $200 to $1,500.

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 and Scholarships 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 and Scholarships. In addition, he must submit to this office a photostatic copy of his family's last income tax statement (Form 1040 or 1040A).

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 for students, undergraduates and graduates, who need such earnings to attend or remain in college. Priority must be given to students with the greatest financial need. 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.

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 $400 per semester are available for full-time or part-time students, undergraduates and graduates, who are full-time employees of publicly funded law enforcement agencies.

Loans up to $1,100 per semester are available for full-time undergraduate and graduate students enrolled in the "Corrections Program," offered by the School of Social Work. Loan recipients must be employed in or intend to enter, the "Law Enforcement" profession.

Applications are obtainable from WMU's Office of Student Financial Aid and Scholarships.

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 addresses:

The Tuition Plan
Concord, New Hampshire 03301

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 a week. Students may find work in the city of Kalamazoo in such places as restaurants, hotels and motels, service stations, police departments, factories, hospitals, and offices, retail stores; as babysitters. Students interested in part-time off-campus work opportunities should apply at the Office of Student Financial Aid and Scholarships. 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 overall 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 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.

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

MATHEMATICS—This prize is awarded to the Mathematics senior judged by the Department of Mathematics to have exhibited the highest proficiency and promise. The Grover Bartoo Memorial Scholarship is awarded annually to the outstanding junior Mathematics major. Annual prizes are awarded to the three freshman students of Mathematics scoring highest on a competitive examination.

The Charles H. Butler Award is awarded annually to one or two outstanding teaching assistants for their excellence in teaching. The selection of the recipients of this award is partially based on undergraduate student evaluations of their teaching.

MILITARY SCIENCE—The University President’s Award is presented each year to the cadet selected as the Cadet Corps Commander. Academic Achievement Awards and Military Achievement Awards are presented annually to the top student in each of the four Military Science Courses. An award is presented each year to the Western Michigan Cadet who places highest at the annual Advanced ROTC Summer Camp.

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

**PAPER 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 Philosophy Prize was established by the Department of Philosophy in honor of the late Robert Friedmann upon his retirement. The Award is given annually to the outstanding senior Philosophy student.

**PHYSICS**—The Charles J. Wilcox Memorial Award, made possible by family and friends of a physics graduate student, is given annually to one or two outstanding graduating seniors majoring in physics. Also, copies of a Handbook of Chemistry and Physics are awarded annually 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.

**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.

**ASSOCIATION OF THE UNITED STATES ARMY**—The AUSA presents an annual award to the outstanding MS III (Junior) Military Science student based on achievement in academic and military studies. An AUSA Military History Award is presented annually to the Military Science student demonstrating scholastic excellence in Military History studies.
ALUMNI AFFAIRS AND DEVELOPMENT

The Office of Alumni Affairs and Development at Western Michigan University seeks to coordinate programs related to its alumni and the fund raising efforts of the University. The areas of Alumni and Development provide two distinctly different functions:

ALUMNI

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

The Alumni Office helps coordinate Alumni Homecoming, Alumni Continuing Education programs, Alumni tours, Distinguished Alumni Awards, and the Alumni Awards for Teaching Excellence. In addition, the Alumni Office serves in an advisory capacity to the Student Alumni Service Board which aids in the communications process between students and alumni. The 25 member Alumni Board of Directors includes a President, two Vice Presidents and the Director of Alumni Relations who serve as the Executive Secretary. Alumni clubs, constituent societies and individual alumni throughout the nation participate in scholarship, grant, loan fund programs and social events. The publications arm of the Western Michigan University Alumni Association, The ALUMNUS, is published quarterly for its membership.

Alpha Beta Epsilon, a sorority with 17 chapters and approximately 700 members, is a group of Western alumnae whose chief project is to provide scholarships.

DEVELOPMENT

The Development outreach of the University seeks to raise private support for academic programs and building projects in addition to loans and scholarships. This support is received from alumni, parents, friends, business and industry, and foundations. Presently the three major areas of Development are: Annual Fund which through its direct mail program and personal solicitation seeks to solicit annual support; Planned Giving Services which provides consultation on estate and tax planning, including wills, bequests, charitable trusts, gifts of insurance, securities and other properties; Future Capital Campaigns which will be conducted by the University to raise major support for buildings and program projects. The contributions received through these efforts will insure financial support for students and the continued high quality of education at the University.
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, Central Michigan, Eastern Michigan, Kent State, Miami, Ohio, Toledo, Ball State and Northern Illinois. 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 "Association for Intercollegiate Athletics for Women", the "Mid-West Association of Intercollegiate Athletics for Women" and the "State of Michigan Athletic Association for Women". These organizations set the standards and policies governing athletic competition for women and sponsor the state, regional and national tournaments.

Tennis was the first sport for women at Western Michigan University offered on an intercollegiate basis. Competition is presently offered in field hockey, volleyball, basketball, speed swimming, synchronized swimming, bowling and tennis with gymnastics and track and field offered on an extramural basis.

Any full-time student with an average of 2.00 or better may try-out for any of the teams. Place and date of try-outs is posted in Oakland Gymnasium and published in the "Western Herald".

The intercollegiate program at Western is sponsored by the Department of Physical Education for Women.

INTRAMURAL

An extensive intramural program provides opportunity for men and women students to engage in recreational sport activities on campus as members of residence hall, fraternity, sorority, or independent teams. Numerous activities such as touch football, basketball, volleyball, tennis, hockey and bowling are offered. Any sport in which a sufficient number of students indicate an interest may be added to the intramural schedule.

In addition to scheduled sports, athletic facilities are available for recreational play. Information about and reservations for facilities such as gymnasium areas, the swimming pool, and paddleball courts may be obtained by contacting the Intramural Office.

AUDIO 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

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

SPEECH AND HEARING CLINIC

Among the services provided students are those offered in the clinical facilities of the Department of Speech Pathology and Audiology, located in the Speech and Hearing Center on East Campus. Individuals who have classroom or personal problems because of a speech, language or hearing difference may receive diagnostic and treatment attention in this modern clinic.

THEATRE

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 in or doing technical work on at least five productions in the Shaw Theatre, four or more in the Arena Theatre, as well as a number of student-directed "laboratory productions" each semester. Both adult and children's theatre are performed. In addition, opportunities for intensive, concentrated study and practice in the theatre arts are available through the Summer session.

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. The ERC is concerned with the total range of instructional media and educational technology for the improvement of teaching and learning. 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.

UNIVERSITY LIBRARIES

The University Libraries consist of the Dwight B. Waldo (Main) Library, the Business Library, the Music Library, the Physical Sciences
Library, and the Educational Resources Center Library. The collection numbers over 1,100,000 bibliographic items including books, bound periodicals, music scores, recordings, maps, documents and materials on microform. Over 11,000 periodicals and serials and 100 newspapers are currently received.

The main collection is housed in the Dwight B. Waldo Library which is named for the first President of the University. Built in 1959, it was enlarged in 1967 to almost double its original size. Also housed in Waldo Library are the School of Librarianship, the University Archives, and the Audiovisual Center.

The Library system is a depository for Michigan and United States government documents, and receives the microprint edition of United Nations documents and official records.

The microform collection of over 260,000 contains such items as the Human Relations Area File, the American Periodical Series, Early American Newspapers of the 18th and 19th centuries, the U.S. National Archives, books printed in Great Britain from 1475-1640, and ERIC documents (documents in educational research published by the Educational Resources Information Center.

Other special collections include:

1. The Ann Kercher Memorial Collection on Africa is an extensive collection of materials on Africa south of the Sahara. Started more than a decade ago, the collection has grown rapidly to become a noteworthy addition to the University Libraries holdings.

2. The South Asia Collection is another area of unusual strength. Together with the African collection it represents the University's strong commitment to 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 collection of books and papers of the pioneer American ecologist, Charles C. Adams.

7. The Map Library, a unit of Reference Services, acquired its 100,000th Map during the 1972/73 fiscal year, making it the second largest academic library collection in the State of Michigan and the third largest of all map libraries in the State. The current collection of 112,000 items includes Army and U.S. Geological Survey maps, some antique maps of special historical interest and various domestic and foreign maps which are cataloged and available for use. In addition to the maps, the Map Library also possesses over 700 atlases.

The Business Library, located in North Hall, has a collection of some 33,000 books supplemented by special microform collections, annual reports from businesses and industries, and current subscriptions to 500 periodicals and newspapers.

The Music Library is on the second floor of Maybee Music Hall. In addition to some 18,500 books and scores and extensive holdings in music music
periodicals, this branch contains a collection of 10,000 phonograph records and extensive listening facilities.

The Physical Sciences Library contains some 43,000 volumes in the fields of Mathematics, Astronomy, Physics and Geology, and has subscriptions to 600 periodical titles.

The Educational Resources Center Library in Sangren Hall comprises some 176,000 bibliographic items and receives 670 periodical titles. The Center, a cooperative venture between the University Libraries and the College of Education, combines the best facilities and practices of library and audiovisual services into a single center for the improvement of instruction and learning.

The University Libraries is 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 to expedite loan requests to and from other libraries. Any student or faculty member may obtain interlibrary loan services through the Inter-library Loan Office in Waldo Library. 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.

The entire resources and services of the University Libraries system are available for your use when you are a student at Western.

MOTION PICTURE SERVICES

Motion Picture Services produces films for educational purposes at Western. In 1972/73 Motion Picture Services received international recognition in the form of several awards for its film "Return". 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 Department of Public Safety. In general, only upper-class students (Juniors or above) are eligible to operate or park a motor vehicle on University property. Freshmen and sophomores living at home and commuting or having 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 playback system which provides supplementary lesson material day and night, seven days a week, for WMU students in their residence halls and at other selected locations on the campus. The MAD System presents material for language, general studies, business, music and a variety of other courses on eleven separate channels. The MAD programs are
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, University Chorale, Collegiate Singers, Women's Chorus, Men's Glee Club, Varsity Vagabonds, Campus Choir, and Opera Workshop. The University also offers opportunities for participation in small ensemble groups for voices, strings, woodwinds, brass, and percussion, including Jazz Lab Band.

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

Threshold, the WMU 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.

RADIO

WMUK is the FM voice of Western Michigan University broadcasting at 102.1 on the dial with 50,000 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 broadcasting in 1951, with a power of 400 watts. In 1954, a Kellogg Foundation grant made possible a power increase to 39,000 watts. And in 1973, through a federal grant, WMUK increased its effective radiated power to 50,000 watts and moved its transmission facilities off campus. WMUK now serves an area 80 miles in radius, which includes most of the southwestern quarter of the state.
WMUK is a charter member affiliate of NPR, the National Public Radio interconnected network of some 150 non-commercial radio stations across the nation.

WMUK won Major Armstrong Awards for excellence in community service programming in 1969 and 1972. The station also won the 1972 Corporation for Public Broadcasting award for extraordinary service to the community through public radio.

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 Officers' Training Corps (R.O.T.C.) Program at Western Michigan University offers all males and females an opportunity to secure a commission as a Second Lieutenant in the United States Army while studying for and obtaining a bachelor degree in the area of his or her choice.

The Military Science Department offers academic courses oriented toward leadership and management theory with emphasis on its military application. A Minor in Military Science is also available to those who apply.

The Military Science Department sponsors several extracurricular activities that students here at Western have found to be an interesting challenge. These include the R.O.T.C. Rifle Team, Western Rangers, and the Association of the United States Army (AUSA).

Additional opportunities for students enrolled in this program include flight training for those who desire and qualify. Scholarships that pay for all tuition and fees plus related school expenses are available on a competitive basis.

TELEVISION

In its role as one of the mass media services provided by the Division of Instructional Communications, the television facilities support over 100 courses with televised instructional materials over a closed-circuit network of seven channels, reaching 350 classrooms as well as several non-academic areas. These television lessons are produced in two modern, four-camera television studios utilizing broadcast quality equipment and systems. Television materials may be preserved on videotape, using a wide range of recording formats. A staff of media producers, engineers, graphic artists, cinematographer/photographers and various other special-skills personnel support the facility.

Television Services was started in 1960 and its use is continually 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 national distribution.
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.

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, meeting rooms, Department of Dance offices, and Division of Continuing Education.

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

WEST CAMPUS

ADMINISTRATION BUILDING—Administrative offices.

ARCADIA—Department of Public Safety.

BEHAVIORAL RESEARCH LABORATORY—Psychology Department.

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, Political Science, 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 and the Dean, College of Fine Arts.

HILLSIDE (Apts.) EAST—Alumni, Martin Luther King Program, Graphic Arts, International and Area Studies, Custodial.

HILLSIDE (Apts.) WEST—Honors College, Testing Services, and Cistercian Studies.

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

HARPER C. MAYHEE 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.

MOORE HALL—Offices and classrooms for School of Social Work, offices for General Studies and Anthropology.

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, and Sociology; the Education Resources Center, and the Reading Center and Clinic.

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.
ATHLETIC FACILITIES

GARY PHYSICAL EDUCATION CENTER

1. Physical Education Building:
   Includes a regulation swimming pool, 9 handball courts, gymnasium floor 90 feet by 120 feet, 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.

2. Intramural Building:
   Includes a multipurpose gymnasium 120 feet by 235 feet which accommodates four basketball courts, six volleyball courts, ten badminton courts, four tennis courts, and a gymnastics area. An artificial surface 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.

UNIVERSITY RECREATION BUILDING

1. Ice Arena:
   Facilities include: a regulation hockey rink, 85 feet by 200 feet; seating capacity 5,000; four one-wall handball courts; weight room; dressing rooms for women and men.

2. Natatorium:
   Facilities include: swimming pool 120 feet by 50 feet; seating capacity of 600; movable bulkhead; two one-meter and one three-meter diving boards; classrooms; locker facilities; staff offices.
READ FIELDHOUSE

Provides indoor facilities for intercollegiate athletic programs of basketball, and track. It has seating capacity of 9,500; a hard surface mainfloor area of 160 feet by 212 feet; a 220 yard rubber-asphalt indoor track.

WALDO STADIUM

An intercollegiate football stadium with artificial turf and 25,000 seats is also used for recreation, intramural activities and instruction in addition to competitive athletics.

HYAMES FIELD

A collegiate baseball field with seating for 2,500. Immediately adjacent to Hyames Field is a second baseball diamond for baseball practice and physical education classes.

KANLEY FIELD

A running track with all-weather surface including a regulation soccer field on the infield.

INTRAMURAL FIELDS

Three multipurpose recreation fields are located in Goldsworth Valley adjacent to Goldsworth Apartments; five additional fields, located at the west end of Goldsworth Valley, are used by physical education classes and the Intramural-Recreational Sports Program.

TENNIS COURTS

Twenty asphalt courts in the Ellsworth Hall-Goldsworth Valley area accommodate physical education classes, intramural and recreational sports and the intercollegiate tennis program. Davis Courts are located on Davis Street below East Hall.

BOWLING ALLEYS

Twenty bowling alleys are available in the University Student Center for physical education classes and recreation.

OAKLAND GYMNASIUM

Located on the East Campus, this building houses the Women's Physical Education Department and the Department of Military Science (ROTC).
The Honors College

Samuel I. Clark, Director of Honors

The Honors College coordinates all Honors work at Western Michigan University. Honors programs designed for bright, creative, enterprising and talented students, are flexible, accommodating to the particular talents and inclinations of students. Classes are often small, often follow the style of seminars. There is opportunity for independent and inter-disciplinary study.

Members of the Honors College pursue programs of study which will widen their intellectual interests and competence while deciding on their fields of specialty. They are expected to equip themselves with the basic intellectual skills of communication, clear thinking, and writing. They are encouraged to learn a foreign language and to become acquainted with literature and the arts. Above all, they are urged to pursue their own academic interests with programs tailored to their individual talents.

A minimum grade point average of "B" is required both to enter the Honors College and to continue in its programs. Upon admission to Western Michigan University students may be admitted to the Honors College in one of three ways: directly from high school into the Freshman General Education Honors Program; as a transfer student entering Western from another institution; or as a Sophomore or Junior after a year's work at Western. Honors College members must, in their Senior year, 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.

The College from time to time organizes foreign study seminars, special seminar courses, field trips, film programs, public speakers and performances. It manages a substantial undergraduate assistance program providing research opportunities for students. The Honors College assists its students in securing financial aid, applying for scholarships, and fellowships, seeking admission to graduate schools, and realizing foreign study-travel-work opportunities.

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

THE GENERAL EDUCATION HONORS PROGRAM is an Honors College alternative course program for the General Studies requirements. Freshmen enter the program when they first enter the University and are in a sense "provisional" members of the Honors College.

The program seeks to present a challenging and engaging educational experience for many of the University's most promising entering students. The program offers opportunity for small classes, provocative instructors, and considerable intellectual freedom. General Education Honors consists of approximately 36 semester hours of study, pursued mainly during the Freshman and Sophomore years.

Students normally meet the 36 hour requirement by completing 12 credit hours in each of three general areas: Humanities, Social Science, Natural Science.
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, departmental honors 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. They generally serve Junior and Senior students.

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

Departments having honors programs are: Accountancy, Art, Biology, Chemistry, Economics, English, Geography, History, Management, Mathematics, Modern and Classical Languages, Occupational Therapy, Philosophy, Physics, Political Science, Anthropology and Sociology.

THE HONORS COLLEGE CURRICULUM 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. It 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.

This curriculum seeks to provide maximum freedom and flexibility. It 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.

The formal expectations of the curriculum are as follows:

1. Adequate quality of performance (routinely established through a minimum “B” grade point average).
2. Competency in the Humanities (12 credit hours).
3. Competency in the Social Sciences (12 credit hours).
4. Competency in the Natural Sciences (12 credit hours).
   A. Competency in the Life Sciences (at least 4 hours in Biology or Psychology).
   B. Competency in the Physical Sciences (at least 4 hours in Chemistry, Geography, Geology or Physics).
5. Basic 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).
6. Basic competency in Mathematics (routinely satisfied by four years of high school mathematics or first year courses in college mathematics).
7. Participation in Physical Education (routinely satisfied by two semester hours of physical education).
8. A departmental or interdepartmental major concentration.
9. A departmental or interdepartmental minor concentration.
10. An Honors College senior paper (or equivalent) properly approved and accepted.
11. An Honors College oral examination properly passed.
12. Adequate overall course work in the University (routinely satisfied by 122 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.

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.
Honors College 208  Physical Properties of Nature  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.

Honors College 290  Honors Seminar  Variable Credit
An undergraduate seminar for freshman-sophomore honors students. The content of the seminar varies and will be announced in advance. Admission by permission.

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 upper level 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, Hillside West, Western Michigan University.
College of Applied Sciences

W. CHESTER FITCH, Dean

DON W. NANTZ, Director of Academic Counseling

ROBERT E. BOUGHNER, Managing Director of the Institute of Technological Studies

ELMER J. BRUNE Director of Cooperative Education

Departments:

Agriculture
Distributive Education
Electrical Engineering and Technology
Engineering and Technology
Home Economics
Industrial Education
Mechanical Engineering Technology
Military Science
Occupational Therapy
Paper Science and Engineering
Transportation Technology
UNDERGRADUATE PROGRAMS

The needs of students are served by the College by providing many programs which develop an understanding of and a capability to perform jobs in education, business, and industry for which employment opportunities exist. Students are encouraged to develop an understanding of themselves in relation to society.

Careers in

VOCATIONAL AND PRACTICAL EDUCATION

Agriculture
Distributive Education
Home Economics Education
Industrial Education
Technical Education
Vocational-Industrial Education

Careers in

ENGINEERING AND ENGINEERING TECHNOLOGY

Computer Systems Engineering
Environmental Engineering
Industrial Engineering
Paper Engineering
Automotive Engineering Technology
Aviation Engineering Technology
Electrical Engineering Technology
Engineering Graphics Technology
Mechanical Engineering Technology
Metallurgical Engineering Technology

Careers in

PROFESSIONAL AND TECHNICAL MANAGEMENT

Agriculture
Aircraft Technology
Aviation Technology and Management
Automotive Management and Service
Dietetics
Flight Technology
Food Distribution
General Curriculum
Home Economics—General Degree
Home Economics in Business
Industrial Supervision
Manufacturing
Military Science
Occupational Therapy
Paper Science
Petroleum Distribution
Printing Management
Vocational-Technical Management
GRADUATE PROGRAMS

The College of Applied Sciences offers graduate programs in Engineering and Technology, Home Economics, Occupational Therapy, Paper Science and Engineering, and cooperates with the College of Education in providing Master's Degree programs in Teaching of Distributive Education, Teaching of Home Economics, and Teaching of Industrial Education. Operations Research is offered as an interdisciplinary program in conjunction with Industrial Engineering, Management, Economics, and Mathematics.

ACADEMIC COUNSELING PROGRAM

D. W. Nantz, Director of Counseling and Admissions

A student oriented counseling service for each academic program and related professional careers associated with the College is staffed with senior faculty who are concerned with the current and ongoing needs of the student. Students are urged to contact the counselor in their particular curricular area during their first semester of enrollment in order that they may plan an individual program of courses which will provide them the greatest rewards for their efforts and correspond with their goals. In addition, proper planning will maximize their benefits from the courses taken and minimize their problems with respect to registration.

Course offerings by semester for the years 1974-78 may be obtained in the College counseling office, Room 2038, I&ET Building.

TRANSFER PROGRAM

A student may transfer into a Bachelor of Science degree program from a community college or other on-campus programs by making proper application and having a credit evaluation of the work he has previously taken. A student is then required to complete a normal curriculum as outlined. Of the minimum of thirty credits required of all candidates for a bachelor's degree (page 22) in the College of Applied Sciences curricula, a transfer student must complete at least eighteen hours within the department, of which at least nine must be within the student's major area.

COOPERATIVE EDUCATION AND FIELD EXPERIENCE

Students may gain experience and knowledge about a professional field of interest by enrolling in a cooperative education program or in a field experience course. Additional information may be obtained from the Academic Counseling Office of the College of Applied Sciences.
SCHOLARSHIPS

Scholarships which are available specifically for students in the College are controlled by the individual departments within the College of Applied Sciences. A listing may be found on pages 64-77.

PROFESSIONAL AND HONORARY SOCIETIES

Professional and honorary societies representing the occupations of the various departments are a vital part of a student's program and serve as an opportunity to get involved in the activities engaged in by these various occupations.

SPECIAL ENGINEERING AND TECHNOLOGY PROGRAMS

Cooperative Education  E. J. Brune, Director

Students enrolled in the Engineering, Engineering Technology and related degree curricula 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 AAS 300, Coordinated Industry. 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.

Foundry

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 prepare for work in this industry. The series will be selected in consultation with a 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.

Manufacturing

The program in Manufacturing is composed of a requirement regarding the minimal level of proficiency in several areas, a co-requirement of credits in these areas and a technical elective sequence permitting specialization. The selection of the courses in these co-areas will be based upon the student's prior experience in the particular areas in which he is specializing. The specialization sequence will consist of a series of specifically related courses and cognate courses.

A Bachelor of Science degree requires an associate degree in Applied Science (60 S.H.) plus sixty hours at Western Michigan University and two hours of physical education.
THE GENERAL CURRICULUM

The General Curriculum is designed especially for those students who desire a program which leads to a baccalaureate degree and which at the same time provides flexibility in the selection of courses.

Students electing this curriculum are required to complete a major, a minor, a General Education program (See General Education, page 23) of this catalog), and two semester hours of physical education. Ordinarily, these requirements total 80-90 semester hours. The balance of the Bachelor of Science degree program, amounting to approximately 35 semester hours, may be elected from the courses of any department.

Departments within the College of Applied Sciences which offer majors in the General Curriculum are Agriculture, Distributive Education, Home Economics, and Industrial Education. Approval of the Department Chairman in an area must be secured in order to enroll in this curriculum. A Bachelor of Science degree requires 122 credit hours.

The Manufacturing Curriculum is specifically designed for students who have completed an Associate Degree Program (or the equivalent) in Applied Sciences. It is made up of three parts:

PART I: MINIMUM LEVEL OF ACHIEVEMENT IN SIX AREAS
GRAPHICS: ability to make and read working drawings.
MATERIALS AND PROCESSING: basic machining operations and applications; one other manufacturing process including standard materials.
SCIENCE: principles of chemistry and physics.
ELECTRICAL: principles of circuits, electronics and machines as applied to manufacturing.
TECHNICAL ANALYSIS: elements of calculus, statistics, proficiency in a basic computer language, engineering mechanics for analysis of simple static force systems, and stresses in machinery, fasteners, and bearings.
MANUFACTURING MANAGEMENT: principles of manufacturing management, economics, accounting, human relations and communications.

NOTE: All students will enroll in IEGM 499, an independent study project, for 1 semester hour to determine the student’s competence in each of the above areas.

PART II: MANUFACTURING DEGREE REQUIREMENTS
(A 48 semester hour program of study designed to develop a higher degree of proficiency in areas outlined in Part I; and development of an area of specialization selected by the student (Technical Electives). The student in conference with his counselor will select
studies in the following areas with approximately the semester hours set forth:)

MATERIALS AND PROCESSING  6 S.H.
ELECTRICAL ENGINEERING TECHNOLOGY  9 S.H.
TECHNICAL ANALYSIS  9 S.H.
MANUFACTURING MANAGEMENT  9 S.H.
TECHNICAL ELECTIVES (Specialization)  15 S.H.

PART III: GENERAL EDUCATION

(12 semester hours of courses designed to establish individual awareness of social responsibilities in government, ecology, man-to-man relations, and history.)

The Manufacturing Program requires sixty semester hours at Western Michigan University in addition to the sixty semester hours completed in an Associate Degree Program, yielding a total of 120 semester hours required for a Bachelor of Science Degree. (Two semester hours of physical education are also required and may be completed during the Associate Degree Program or at Western Michigan University. They are in addition to the 120 semester hours required.)

ACADEMIC COUNSELING

Dr. D. W. Nantz, Room 2038, Industrial and Engineering Technology Building, is available to assist in individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and help solve academic problems.

INSTITUTE OF TECHNOLOGICAL STUDIES

The Institute of Technological Studies has been established to permit the College of Applied Sciences to better serve commerce and industry in Southwestern Michigan. Services are provided in the areas of industrial engineering and cost reduction, solution to technical and product problems, and in-plant training of such diverse topics as industrial supervision, engineering economy and capital budgeting. Experimental facilities, including digital computers, are available. On-going programs are being conducted by the Center for Depreciation Studies and the Center for Metric Education and Studies. For information, write to Professor R. E. Boughner, Managing Director of the Institute.
Agriculture

Bachelor of Science Degree

Leo O. Baker, Head

The department offers a four year degree program in the distribution of agricultural products and the technical services rendered to farmers by the many agriculturally related industries. The program is designed to provide: (1) basic training for workers in services sponsored by government and farmer group organizations; (2) basic training for students planning to enter employment in the many agriculturally related industries; (3) technical information in the production of agricultural commodities (including both soil and animal studies) needed by farm families dependent upon sales of farm products; (4) land use as it relates to agriculture and our environment; and (5) to prepare teachers of agriculture for public secondary schools. The program requires 30 semester hours of Agriculture for a major or 18 semester hours for a non-teaching minor. This curriculum requires a minimum of 122 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 minor and who qualify for the secondary certificate may teach general or basic agriculture in Michigan high schools.

AGRICULTURE

Bachelor of Science Degree

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 8 semesters.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td></td>
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# College of Applied Sciences

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<tr>
<th>Course</th>
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<td></td>
<td>AGR</td>
<td>300</td>
<td>Farm Organization &amp; Management</td>
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<td>3 3 3 3 3 3 3</td>
</tr>
<tr>
<td></td>
<td>AGR</td>
<td></td>
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<td>1 2 3 4 5</td>
<td>3 3 3 3 3 3 3</td>
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<td>ACTY</td>
<td>201</td>
<td>Accounting Concepts and Applications OR</td>
<td>1 2 3 4 5</td>
<td>3 3 3 3 3 3 3</td>
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<td>ACTY</td>
<td>210</td>
<td>Principles of Accounting</td>
<td>1 2 3 4 5</td>
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<td>MGMT</td>
<td>200</td>
<td>Decision Making with Statistics OR</td>
<td>1 2 3 4 5</td>
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<td>BUS</td>
<td>340</td>
<td>Business Law</td>
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**RELATED COURSES**

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<th>Credit Hours</th>
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<td>1 2 3 4 5</td>
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<td></td>
<td>CAS</td>
<td>104</td>
<td>Business and Professional Speech</td>
<td>1 2 3 4 5</td>
<td>3 3 3 3 3 3 3</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION—DISTRIBUTION PROGRAM**

| AREA I       | Humanities                  | 1 2 3 4 5 | 3 3 3 3 3 3 3 |
| AREA II      | Social Science*             | 1 2 3 4 5 | 3 3 3 3 3 3 3 |
| AREA III     | Natural Science & Mathematics (4 hours of Mathematics included in curriculum) | 1 2 3 4 5 | 3 3 3 3 3 3 3 |
| AREA IV      | Non-Western World           | 1 2 3 4 5 | 4 4 4 4 4 4 4 |
| AREA V       | Optional Electives          | 1 2 3 4 5 | 4 4 4 4 4 4 4 |
|             | Writing Requirement**      | 1 2 3 4 5 | 3 3 3 3 3 3 3 |

**PHYSICAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
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</thead>
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<tr>
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<td>PEGN</td>
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<td>Physical Education</td>
<td>1 2 3 4 5</td>
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**ELECTIVES**

<table>
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<th>No.</th>
<th>Course Title</th>
<th>Semester</th>
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<tbody>
<tr>
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<td>Approved Electives**</td>
<td>1 2 3 4 5</td>
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</table>

**TOTAL FOR GRADUATION—122 HOURS**

<table>
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<tr>
<th>Semester</th>
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<tr>
<td>1 2 3 4 5 6 7 8</td>
<td>14 15 15 16 16 16 16 17</td>
</tr>
</tbody>
</table>

*Four hours to be taken in the 300-500 level in Area I or Area II.
**IEGM 102 or BED 142 or ENG 105.
***Minor requirements must be met.

**RECOMMENDED ELECTIVES**

- Chemistry 101 or 102
- Biology 101, 102, 103
- BIO 323 Plant Pathology
- GS 112 Geological Science
- BIO 542 Entomology
- BIO 234 Outdoor Science
- GEOG 244 Economic Geography
COURSE DESCRIPTIONS

100 Agriculture Science 3 hrs.
A brief perspective of the field of agriculture and an overview of the entire agriculture 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 (Crop Production) 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 field crops.

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.
It includes such topics as the care and planting of trees, flowers, 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.
College of Applied Sciences

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

Bachelor of Science Degree

Raymond A. Dannenberg, Chairman
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.

COOPERATIVE EDUCATION PROGRAMS

The Department has two cooperative programs. One is food distribution, designed to develop occupational competencies for management in the food industry. The other is for middle management positions in the petroleum field. These programs are jointly sponsored with the industries. The students in food and petroleum programs may earn a certificate in two years or complete a four-year program for a Bachelor of Science degree. Cooperative education uses an alternate semester-in-school and semester-on-the-job approach.

DISTRIBUTIVE TEACHER EDUCATION

The Department has a degree program for the preparing of teacher-coordinators of cooperative education programs and project method programs and teachers of preparatory and vocational-technical subjects. It qualifies one to receive both the Vocational and Secondary Provisional Certificates.

CONSULTATIVE 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.

DISTRIBUTIVE EDUCATION CURRICULUM

Bachelor of Science Degree

The four year curriculum in Distributive Education contains three program options and the student selects one of them.

1. Distributive Teacher Education
2. Food Distribution
3. Petroleum Distribution

A. General Education

Requirements as described on page 26 of the catalog must be met.
B. Curriculum Requirements ........................................ 15-27 hrs.
ACTY 210 and 211 Principles of Accounting ...................... 6
ECON 201 and 202 Principles of Economics ......................... 6
D ED 202 and 302 Coordinated Distribution Practices 0-12
D ED 500 Seminar in Distributive Education ....................... 3

C. Major Areas of Specialization .................................. 24-30 hrs.
Option 1.—Distributive Teacher Education
D ED 572 Teaching Techniques in Cooperative Education .......... 2
D ED 573 Coordination Techniques in Cooperative Education ....... 2
D ED 570 Organization and Operation of Distributive Education .... 2
D ED 130 Food Distribution Industry ................................ 3
D ED 120 Introduction to Petroleum Industry ...................... 3
MKTG 375 Principles of Retailing .................................. 3
MKTG 270 Salesmanship ............................................. 3
MKTG 374 Advertising ............................................... 3
MKTG Electives ..................................................... 9

Option 2.—Food Distribution
D ED 130 Food Distribution Industry ................................ 3
D ED 132 Food Distribution Merchandising .......................... 3
D ED 231 Food Distribution Supervision .............................. 3
D ED 232 Food Distribution Operations .............................. 3
D ED 109 Industry Survey ........................................... 3
D ED Electives ..................................................... 10

Option 3.—Petroleum Distribution
D ED 109 Industry Survey ........................................... 3
D ED 120 Introduction to Petroleum Industry ...................... 3
D ED 220 Properties and Application of Petroleum Products ....... 3
D ED 230 Service Station Supervision ................................ 3
D ED 380 Handling of Petroleum Products .......................... 3
D ED 327 Petroleum Distribution Finance ........................... 3
D ED Electives ..................................................... 7

D. Minor Sequence in General Business recommended .......... 15-20 hrs.
E. Physical Education ............................................... 2 hrs.
F. Curriculum Electives ............................................. 0-19 hrs.
G. Education Courses—Option 1. only ............................. 21 hrs.
TEED 250 Human Development and Learning ......................... 4
TEED 300 Teaching and Learning ................................... 3
TEED 410 Seminar in Education .................................... 2
TEED 470 Directed Teaching ........................................ 9
IED 520 Principles of Vocational Education ....................... 3

Minimum hours required for the curriculum: 120 hours plus 2 hours physical education.

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.
CERTIFICATE

The two-year certificate programs are: (1) Food Distribution which emphasizes the merchandising, operating and supervising functions of the retail food outlet. (2) Petroleum, preparing young people in the distribution methods and techniques used by the petroleum industry. Both of them are work-study programs.

**FOOD DISTRIBUTION**

A. Minimum hours required for this curriculum ........................................... 61 hrs.

B. Course Requirements

1. General Education .................................................. 21 hrs.
   Humanities and Fine Arts Area ........................................... 3 hrs.
   Social and Behavioral Science Area ................................. 9 hrs.
   Economics 201, 202 and Elective ....................................
   Natural Sciences and Mathematics Area ............................. 3 hrs.
   Optional General Education Elective Area ......................... 6 hrs.
   Computer Usage 102 ...................................................
   Business and Professional Speech 104 ..............................

   DED 130 Food Distribution Industry ...................................
   DED 132 Food Distribution Merchandising .........................
   DED 231 Food Distribution Supervision ................................
   DED 232 Food Distribution Operations ............................... 3 hrs.
   DED 109 Industry Survey ............................................
   HEC 116 Family Foods (Supermarket) ............................... 2 hrs.
   DED 202 Coordinated Distribution Practices ....................... 6 hrs.

   ACTY 210 Principles of Accounting ..................................
   BED 242 Business Communications ..................................

4. Physical Education .................................................. 1 hr.

5. Electives ............................................................. 10 hrs.

**PETROLEUM DISTRIBUTION**

A. Minimum hours required for this curriculum ........................................... 61 hrs.

B. Course Requirements

1. General Education .................................................. 18 hrs.
   Humanities and Fine Arts ...........................................
   Social and Behavioral Sciences ....................................
   Natural Science and Mathematics ................................. 3 hrs.
   Optional Electives ...................................................

   DED 120 Introduction to Petroleum ................................
   DED 220 Application of Petroleum Products ........................
   DED 230 Service Station Supervision ................................
   DED 109 Industry Survey ............................................
   DED 202 Coordinated Distribution Practices ....................... 6 hrs.
After completing a certificate program, a student may transfer into the degree program upon the recommendation of the counselor.

**COURSE DESCRIPTIONS**

**109 Industry Survey**

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**

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. Freshman-Sophomore level.

**302 Coordinated Distribution Practices**

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. Junior-Senior level.

**500 Seminar in Distributive Education**

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**

Directed, individual study of topics and areas of interest which are not otherwise treated in departmental courses. Consent of Department Chairman.

**FOOD**

**130 Food Distribution Industry**

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  
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  
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  
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  
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: Food Distribution 231.

332 Food Distribution Systems Control  
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  
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.

140 Issues in Oil  
This course is designed as a survey course to discuss and examine current issues in the oil industry. Such issues as oil shortage, depletion allowance, oil industry profits, and international oil companies will be studied. Not open to Petroleum Distribution majors.
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.

DISTRIBUTIVE-COOPERATIVE TEACHER 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 Curriculum Development in Distributive Education 2 hrs.
This course provides for mastery of the techniques necessary for curriculum development in the high school, community college, area vocational center and adult education programs. Recommended for cooperative teacher coordinators.
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 Electrical Engineering and Technology Department offers curricula in Engineering and in Technology designed primarily to prepare personnel for the support and the practice of engineering at the professional level. The programs are unique in that they provide extensive laboratory experience requiring applications of engineering principles.

Cooperative Education

Students may pursue a cooperative plan of education, whereby alternate semesters are spent working for compensation in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, maintenance management, and field divisions of major companies.

Academic Counseling

Students should contact the Electrical Engineering and Technology academic counselor as early as possible. The counselor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by Departmental counselors.

The academic counselor, Dr. Wilcox, is located in Room 2038, Industrial and Engineering Technology building.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this Department may be found on pages 100-102.

Two Year Curriculum

(Students may secure a two-year vocational certificate in Electronics by completing a series of courses which have been approved by the counselors in that field.)

ELECTRICAL ENGINEERING TECHNOLOGY

Bachelor of Science Degree

The Electrical Engineering Technology curriculum is an applied engineering program in the following fields: electrical power, instrumentation, communication electronics, and industrial electronics. Electives may be used to broaden the program to include an area such as supervision, design and development, manufacturing or industrial sales and distribution.
A bachelor of science degree requires 128 semester credit hours. An overall average of 2.00 must be obtained in EET courses for graduation.

A minor may be secured upon approval of the Department’s counselor and by completing fifteen to twenty semester hours of work. Minors for students enrolled in curricula in the Electrical Engineering and Technology Department may only be obtained from departmental offerings other than those in the engineering and technology curricula and Transportation Technology curricula.

**Bachelor of Science Degree**

Candidates for the degree Bachelor of Science must complete the following program:

The following schedule is an example of one leading to graduation in 8 terms using the General Education-Distribution program.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 250</td>
<td>Logic Design</td>
<td>3 3</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>EET 210</td>
<td>Electrical Circuits</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 220</td>
<td>Electronic Circuits</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 230</td>
<td>DC Machines and Transformers</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 310</td>
<td>Electrical Circuits Analysis</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 320</td>
<td>Electronic Devices</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 330</td>
<td>AC Machines</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 360</td>
<td>Transmission Lines and Fields</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EET 420</td>
<td>Industrial Electronics</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 450</td>
<td>Digital Systems</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EET 460</td>
<td>Communication Electronics</td>
<td>4 4</td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>EET 440</td>
<td>Measurement and Instrumentation</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EET 470</td>
<td>Servomechanisms</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Electrical Engineering Technology Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 256</td>
<td>Statics</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MET 355</td>
<td>Dynamics</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MET 353</td>
<td>Strength of Materials</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MET 330</td>
<td>Thermo-Fluid Dynamics</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IEGM 105</td>
<td>Industrial Calculations</td>
<td>1 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET 120 or 121 or 221 or IEGM 280</td>
<td>Manufacturing Processes Elective</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 131</td>
<td>Engineering Drafting</td>
<td>3 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 271</td>
<td>Electrical and Mechanical Properties of Materials</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 122, 123</td>
<td>Calculus</td>
<td>8 4 4</td>
<td>8 4 4</td>
<td></td>
</tr>
<tr>
<td>MATH 106</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

\[EET \text{ 541, 542, 545 or 4 hours of upper-class IEGM or MET courses may be substituted for any one of these courses with the approval of the departmental counselor.}\]
College of Applied Sciences

**Course**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>CHEM 101 or 102 or 103</td>
<td>4 4 .. .. .. .. .. .. .. ..</td>
</tr>
<tr>
<td>Physics 210, 211</td>
<td>8 .. 4 4 .. .. .. .. ..</td>
</tr>
</tbody>
</table>

**General Education—Distribution Program**

**AREA I Humanities and Fine Arts**

| 6 | 3 |

**AREA II Social and Behavioral Science**

| 6 3 3 |

**AREA III (8 hours included in curriculum.)**

**AREA IV Non-Western World Electives**

| 4 |

**AREA V Writing Requirement**

(Recommended IEGM 102 or BED 142 or Eng 105)

| 3 3 .. .. .. .. .. .. |

8 hours included in curriculum

**PEGN Physical Education**

| 2 1 1 |

**Electives**

| 13 3 3 3 4 .. .. .. |

**TOTAL FOR GRADUATION**

| 128 HOURS |

Students entering WMU for the first time may elect to complete their program under the General Education—Distribution programs or the General Education Integrated program. If a student elects the Integrated program, his schedule would be changed as follows:

**General Education-Integrated**

**EXAMPLE: Technology in Culture (Program F)**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Course GINT 180</td>
<td>4 4 .. .. .. .. .. .. ..</td>
</tr>
<tr>
<td>Block Course 1</td>
<td>4 .. 4 .. .. .. .. .. ..</td>
</tr>
<tr>
<td>Block Course 2</td>
<td>4 .. .. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>Block Course 3</td>
<td>4 .. .. .. 4 .. .. .. ..</td>
</tr>
<tr>
<td>Science and Technology in the Non-Western World GINT 472</td>
<td>4 .. .. .. .. .. .. 4 ..</td>
</tr>
<tr>
<td>Capstone Course</td>
<td>4 .. .. .. .. .. .. 4</td>
</tr>
<tr>
<td>PEGN Physical Education</td>
<td>2 1 1 .. .. .. .. ..</td>
</tr>
<tr>
<td>Electives</td>
<td>8 .. 4 .. .. .. .. ..</td>
</tr>
</tbody>
</table>

**TOTAL FOR GRADUATION—**

| 128 HOURS |

*Four hours from 300-500 level courses in AREAS I and IV.

*By using Elective hours a student may complete any of the seven integrated programs.*
The objective of the Computer Systems Engineering Curriculum is to provide students with the basic technical knowledge and skill required for the design, analysis, implementation, and modification of electronic digital systems. The emphasis in this program is on the "hardware" and programming aspects of minicomputer interfacing as applied to manufacturing processes and experimental research.

A bachelor of science degree requires 128 semester credit hours. An overall average of 2.00 must be obtained in EET courses for graduation.

<table>
<thead>
<tr>
<th>Course Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 250</td>
<td></td>
<td>Basic Logic Circuits</td>
<td>3 3</td>
</tr>
<tr>
<td>EET 210</td>
<td></td>
<td>Electrical Circuits</td>
<td>4 4 4</td>
</tr>
<tr>
<td>EET 220</td>
<td></td>
<td>Electronic Circuits</td>
<td>4 4 4</td>
</tr>
<tr>
<td>EET 310</td>
<td></td>
<td>Electrical Circuits Analysis</td>
<td>4 4</td>
</tr>
<tr>
<td>EET 320</td>
<td></td>
<td>Electronic Devices</td>
<td>4 4</td>
</tr>
<tr>
<td>EET 420</td>
<td></td>
<td>Industrial Electronics</td>
<td>4 4</td>
</tr>
<tr>
<td>EET 450</td>
<td></td>
<td>Digital Circuits and Systems</td>
<td>4 4</td>
</tr>
<tr>
<td>EET 451</td>
<td></td>
<td>Interfacing</td>
<td>4 4</td>
</tr>
</tbody>
</table>

**CURRICULUM REQUIREMENTS**

| IEGM 131 Engineering Drafting | 3 3 |
| CHEM 101 or 102 or 103         | 4 4 |
| PHYSICS 210, 211               | 8 4 |
| MATH 122, 123 Calculus         | 8 4 |
| MATH 306 Intro. to Computer Language | 2 2 |
| MATH 230 Elementary Linear Algebra | 4 4 |
| MATH 270 Multivariate Calculus | 3 3 |
| MATH 274 Differential Equations | 3 3 |
| MATH 362 Probability or MATH 360 Statistical Methods | 3 3 |
| MATH 508 Automatic Programming Systems or MATH 509 Data Structures | 3 3 |
| MATH 599 Independent Study     | 1 1 |

**GENERAL EDUCATION—DISTRIBUTION PROGRAM**

| AREA I Humanities and Fine Arts² | 6 3 3 |
| AREA II Social and Behavioral Science | 6 3 3 |
| AREA III (8 hours included in curriculum.) | 6 3 3 |
| AREA IV Non-Western World Electives² | 4 4 |
### College of Applied Sciences

#### Course Overview

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA V Writing Requirement</td>
<td></td>
<td>(Recommended IEGM 102 or BED 142 or Eng 105)</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 hours included in curriculum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEGN Physical Education</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
*Approved Electives          |           | 17 hours to be taken from the courses below. | 3           |             | 3           |             |             |             |             |             |
|                             |           | At least 6 hours must be from group I | 4           |             | 4           |             |             |             |             |             |
| General Electives (17)      |           |                                     | 17          |             | 3           | 3           |             |             |             | 3           |
| Total hours for graduation  |           |                                     | 128         | 14          | 15          | 15          | 17          | 17          | 17          | 16          |

**Approved Electives**

**GROUP I**

- **MET 256 Statics**
- **MET 330 Thermo-Fluid Dynamics**
- **MET 353 Strength of Materials**
- **MET 355 Dynamics**

**GROUP II**

- All EET courses in the 200 through 500 level
- **IEGM 436 Computer Graphics**
- **IEGM 419 Intro. Operations Research**
- **MET 420 Computer Aided Manufacturing**
- **PARP 590 Instrumentation and Process Control**
- **PARP 591 Instrumentation and Process Control**
- **MATH 360 Statistical Methods**
- **MATH 507 Numerical Analysis**

Students entering WMU for the first time may elect to complete their program under the General Education—Distribution programs or the General Education Integrated program. See the previous page.
COURSE DESCRIPTIONS

ELECTRICAL ENGINEERING AND TECHNOLOGY

100 Fundamentals of Circuits and Electronics
3 hrs. Fall, Winter, Spring
Basic principles of electricity, magnetic devices and electronics with emphasis on applications in other disciplines. May not be used as prerequisite for other EET courses except 101. Cannot be used as credit in EET curriculum. Prerequisites: Math 100 and High School Physics.

101 Fundamentals of Electronics and Machines
3 hrs. Fall, Winter, Summer
Basic principles of electronics, AC machines and DC machines with emphasis on applications in other disciplines. May not be used as prerequisite for other EET courses. Cannot be used as credit in EET curriculum. Prerequisite: EET 100.

210 Electrical Circuits
4 hrs. Fall, Winter
Analysis of direct and alternating current circuits using Ohm's Law, Kirchhoff's Laws, mesh and nodal analysis, superposition, Thevenin's Theorem, Norton's Theorem and other network theorems and equations. Phasors, expressed as complex numbers in both polar and rectangular form, are used in analyzing steady-state alternating current circuits. Prerequisites: Three years college preparatory math including trig or Math 100 and High School Physics.

220 Electronic Circuits
4 hrs. Fall, Winter
An introduction to analysis and design of electronic devices, circuits, and systems. 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: EET 210.

230 DC Machines and Transformers
4 hrs. Winter, Spring
Fundamentals of magnetism and magnetic circuits. Analysis and application of the following: DC machines, DC motor controls, single-phase transformers, and electric power circuit protective devices. Prerequisite: EET 210.

250 Logic Design
3 hrs. Fall, Summer
Analysis and design of combinational and sequential logic systems. Prerequisite: Math 100.

310 Electrical Circuit Analysis
4 hrs. Fall, Winter, Spring
320 Electronic Devices  4 hrs. Fall, Winter
Analysis, design and construction of modern electronic circuits using solid-state devices and integrated circuits. Prerequisites: EET 220, 310 (EET 310 may be taken concurrently).

330 AC Machines  4 hrs. Fall, Winter

360 Transmission Lines and Fields  3 hrs. Fall, Winter
Basic field theory and the study of transmission lines at radio frequencies and power frequencies. Prerequisite: EET 310.

420 Industrial Electronics  4 hrs. Winter, Spring
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: EET 250, 320.

440 Measurements and Instrumentation  4 hrs. Fall, Winter
Theory, calibration, and application of electronic instruments used in the measurement of electrical, magnetic and nonelectrical quantities. Design, construction and standardization of electronic instruments used in measurement and control. Prerequisites: EET 250, 320.

450 Digital Systems  4 hrs. Fall, Winter
Introduction to minicomputer programming and interfacing. Prerequisites: EET 250, 320 or consent of instructor.

451 Computer Interfacing
Analysis of computer hardware systems and analog-digital conversion systems. Prerequisite: EET 450.

460 Communication Electronics  4 hrs. Fall, Summer
Introduction to linear systems. Analysis of amplitude, angle and pulse modulation systems and noise effects. Analysis and design of common communication circuits. Prerequisites: EET 320, 360.

470 Servomechanisms  4 hrs. Winter, Spring
Analysis and synthesis of linear feedback systems by the use of Laplace transforms, Bode diagrams, Nyquist plots, Nichols charts and Root-Locus plots. Computer-aided analysis. Prerequisite: EET 310 or MET 360.

490 Independent Research and Development  1-4 hrs.
Individual research or special project in electrical 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.
498 Readings in Electrical Engineering Technology 1-4 hrs.
A course in which advanced students may elect to pursue a program of readings in areas of special interest. Prerequisite: Permission of the instructor with whom the student wishes to work.

499 Studies in Electrical Engineering Technology 1-4 hrs.
A program of independent study to provide advanced students with the opportunity to explore a topic of interest under the guidance of a faculty member. Prerequisite: Permission of the instructor with whom the student wishes to work.

510 Advanced Circuits 3 hrs. Winter
Advanced circuit analysis, steady-state and transient responses, writing and solving integro-differential equations by classical methods using Laplace transforms, network theorems, Fourier series analysis, complex frequency, poles and zeros. Prerequisite: EET 310.

530 Electrical Power Systems 3 hrs. Spring
Engineering considerations of generating equipment, transmission and distribution systems, switch gear and industrial power distribution. Prerequisite: EET 330.

560 Electrical Fields 3 hrs. Fall
Electrostatics including such topics as Coulomb's Law, Gauss's Law, Maxwell's equations, Laplace's and Poisson's equations, Faraday's Law, Stoke's Theorem and Ampere's Law. Use is made of vector calculus in rectangular, cylindrical and spherical coordinates. Prerequisite: EET 360.
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 application of engineering principles to such industrial functions as product design and improvement, production planning and control, manufacturing engineering, and plant engineering.

A bachelor of science degree in the curricula listed below can be earned only by completing one of the curricula offered by the department.

A minor may be secured upon approval of the department's Counselor and by completing fifteen to twenty semester hours of work. No minor will be given in Industrial Supervision or Industrial Engineering.* Minors for students enrolled in curricula in the Engineering and Technology Department may only be obtained from departmental offerings other than those in the engineering and technology curricula and transportation technology curricula.

Coop-Education

Students enrolled in any Engineering and Technology degree curriculum may pursue a cooperative plan of education, whereby alternate semesters are spent in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, maintenance management, and field service divisions of major companies.

Academic Counseling

Students should contact an Engineering and Technology academic counselor as early as possible. The counselors are available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by Departmental counselors.

*A minor in Industrial Engineering is available only to students with a major in Statistics.
The following academic counselors are located in Room 2038, Industrial and Engineering Technology building:

- Engineering Graphics Technology, Metallurgical Engineering Technology, Industrial Engineering and
- Industrial Supervision ....................................... Dr. W. A. Wichers
- Manufacturing .................................................. Dr. D. W. Nantz

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this Department may be found on pages 102-105.

The following curricula are offered:

**FOUR YEAR CURRICULA—B.S. DEGREE**

1. Industrial Engineering
2. Industrial Supervision
3. Engineering Graphics Technology
   (2-Year Certificate—Drafting and Design Technology)
4. Metallurgical Engineering Technology
5. Manufacturing

**INDUSTRIAL ENGINEERING**

Bachelor of Science in Engineering (Industrial) Degree

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 engineering management, production planning and control, plant organization, technical design related to manufacturing processes, inspection, plant safety and employee and employer relations.

A selection of one of two groups of courses provide the student an opportunity to concentrate on either the economics, management, and operating systems in industry or the design of products and technological systems used in operations.

A “C” average or better must be earned in the required technical courses.

A Bachelor of Science in Engineering Degree requires 128 semester hours.

**REQUIREMENTS**

Candidates for the degree Bachelor of Science must complete the following program:

The following schedule is an example of one leading to graduation in 8 semesters beginning with Fall.
<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
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<td>Physics</td>
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<td>All courses in either Group A or Group B technical electives must be completed to satisfy the requirements for a B.S. degree. The students must select either group A or B and inform their counselor in writing of their selection prior to registering for the equivalent of the sixth semester in the program.</td>
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</table>
The Industrial Supervision curriculum provides the essential academic background in humanities, social sciences and communications; the necessary technical subjects; and an involvement with the basic human relation skills used by industry when dealing with people. The Industrial Supervisor may direct production employees working on line operations or may direct staff personnel specifically assigned to assist the line in meeting its objectives.

A selection of one of the two groups of courses provides the student an opportunity to concentrate in either the supervision of line/manu-

*Four hours to be taken in the 300-500 level courses in either Area I or Area II.
**ENG 105 or BED 142 or IEGM 102.
facturing operations or the supervision of staff/management functions directly allied to the line.

A "C" average or better must be earned in the required technical courses.

A bachelor of science degree requires 128 semester hours.

**REQUIREMENTS**

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
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<th>Semester</th>
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**Spring of Last Year**

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TECHNICAL ELECTIVES REQUIREMENTS

Twelve semester hours of selected courses, all in either Group A or Group B technical electives, must be completed to satisfy the requirements for a B.S. degree. The students must inform their counselor in writing of their selection prior to registering for the equivalent of the sixth semester in the program.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
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<td>OR</td>
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<td><strong>GROUP B—STAFF SUPERVISION</strong></td>
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**GENERAL EDUCATION—DISTRIBUTION PROGRAM**

| AREA I | Humanities* | .. | 3 | 4 | .. | .. | .. | .. |
| AREA II | Social Science* | .. | 3 | 3 | .. | .. | .. | .. |
| AREA III | Natural Science and Mathematics | (Eight hours included in curriculum) |.. | .. | .. | .. | .. | .. |
| AREA IV | Non-Western World | .. | .. | .. | .. | .. | .. | 4 | .. |
| AREA V  | Optional Electives | (Eight hours included in curriculum) | Writing Requirement** | 3 | .. | .. | .. | .. | .. |

*Four hours to be taken in the 300-500 level courses in either Area I or Area II.

**ENG 105 or BED 142 or IEGM 102.**
**College of Applied Sciences**

<table>
<thead>
<tr>
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**ENGINEERING GRAPHICS TECHNOLOGY**

Bachelor of Science Degree

The Engineering Graphics Technology curriculum is a program in the field of symbolic communication related to the product and tooling activities of industry including the areas of communication methods, graphic science, and industrial processes and materials.

The program prepares students to assume such leadership roles in design and drafting activities as section leader, checker, reprographics supervisor, standards administrator, and chief draftsman.

A "C" average or better must be earned in the required technical courses.

A bachelor of science degree requires 128 semester hours.

**REQUIREMENTS**

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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<td>Descriptive Geometry</td>
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<td>IEGM 236</td>
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<td>IEGM 332</td>
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<td>IEGM 333</td>
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<td>MATH 106</td>
<td>Introduction to Computers</td>
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<td>BUS 182</td>
<td>Beginning Typewriting</td>
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*Four hours to be taken in the 300-500 level courses in either Area I or Area II.

**ENG 105 or BED 142 or IEGM 102.
TWO-YEAR CERTIFICATE PROGRAM IN DRAFTING AND DESIGN TECHNOLOGY

Students may receive a two-year certificate in Drafting and Design Technology by completing 62 semester hours of approved courses. This program is designed specifically to train persons for industrial drafting careers in layout, detailing and engineering design activities. Upon successful completion students may transfer into the four-year Engineering Graphics Technology program and work toward a bachelor of science degree.

METALLURGICAL ENGINEERING TECHNOLOGY
Bachelor of Science Degree

The Metallurgical Engineering Technology curriculum is a program of applied engineering in the areas of foundry and materials engineering involving process control, product development, production, and supervision.

This program prepares students for leadership roles in metal casting and other metal fabricating industries.

A “C” average of better must be earned in the required technical courses.

A bachelor of science degree requires 128 semester credit hours.

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
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<tr>
<th>Course No.</th>
<th>Course Title</th>
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</table>
### Course Descriptions

**GENERAL ENGINEERING AND TECHNOLOGY**

**102 Technical Communications**
3 hrs. Fall, Winter, Spring

Practical writing skills; bibliographical research; data analysis and presentation; format for problems, pages and outlines. Effective reading and listening.

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**Metallurgical Engineering**

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<thead>
<tr>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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<td>MET 353</td>
<td>Strength of Materials</td>
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<td>MET 330</td>
<td>Thermo-Fluid Dynamics</td>
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<td>MET 354</td>
<td>Testing of Materials</td>
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<td>MATH 123</td>
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**General Education Requirements—DISTRIBUTION PROGRAM**

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<th>Non-Western World</th>
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Writing Requirement** 3

**Physical Education Requirements**

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**Electives**

|            | 2, 3, 4, 5, 5                    |

**Total for Graduation** 128, 16, 16, 16, 16, 16, 16

*Four hours to be taken in the 300-500 level courses in either Area I or Area II.

**ENG 105 or BED 142 or IEGM 102.**

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**COURSE DESCRIPTIONS**

(Course descriptions in italics are approved for General Education purposes.)
105 Industrial Calculations 1 hr. Fall, Winter, Spring
Methods of calculation used in industry. Approximations, slide rule, calculator, and computers in relation to industrial calculations. Slide rule instruction. Prerequisite: Math 100 or H.S. trig. and logarithms.

300 (AAS 300)* Co-op Internship 3 hrs.
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.

378 Development of American Technology 4 hrs. Winter
The development of American technology is presented as a response to cultural factors and innovations by technologists. Case studies of successive styles of technology illustrate the technological/societal interaction.

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

498 Readings in Engineering and Technology 1-6 hrs. Fall, Winter, Spring, Summer
Independent readings in engineering and technology. Open only to junior 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 6 hrs.

499 Studies in Engineering and Technology 1-6 hrs. Fall, Winter, Spring, Summer
Independent studies in engineering and technology. Open only to students 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 6 hrs.

INDUSTRIAL ENGINEERING

100 Introduction to Industry 2 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 Work Analysis 3 hrs. Fall, 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. Prerequisites: IEGM 100 or 105.

*Reference Course Number in 1973-74 Catalog.
Industrial Engineering

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: IEGM 100 or 105, Math 260 or 360.

310 Engineering Economy 3 hrs. Winter, Spring
Application of principles of engineering economy for establishment of equipment and system feasibility. Interest, equivalence, taxes, depreciation, uncertainty and risk, incremental and sunk costs, and replacement models. Prerequisite: Math 123 or 200; Econ 202.

326 Production Control 3 hrs. Fall, Winter, Summer
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. Prerequisites: IEGM 100 or 105, Math 260. Not open to Industrial Engineering majors.

404 Material Handling and Layout 4 hrs. Fall, Winter
Planning and integrating an effective and economical interrelationship between men, equipment, and materials in the manufacture and distribution of any given product. Prerequisites: IEGM 305; 310; 326, or 416. (May be concurrent.)

405 Work Systems Design 3 hrs. Fall, Winter
Concepts and strategies for the design and improvement of work systems in public and private organizations. Advanced techniques for systems analysis and the management of improvement programs. A supervised team project is required. Prerequisite: IEGM 305.

410 Senior Seminar 1 hr. Fall
A seminar for senior industrial engineering and supervision students. Topics for discussion will be centered about the role of the industrial engineer and supervisor at his place of work and his obligation to society. Prerequisite: Senior standing.

416 Operations Control in Manufacturing 4 hrs. Fall
The function of production and inventory operations. Control of manufacturing production systems, modeling. Prerequisites: Math 360, IEGM 310 (307).

418 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: Senior standing, IEGM 102 or equivalent.

419 Introduction to Operations Research 3 hrs. Winter
History and growth of operations research. The development of mathematical concepts and models concerned with industrial engineering problems. Topics include linear programming, queuing theory, game theory, and simulation. Prerequisite: Math 360.

505 Advanced Methods Engineering 3 hrs. Winter
Synthesis of effective work methods using a predetermined basic motion time system. Methods-Time Measurement, standard data system development and administration. Prerequisite: IEGM 305.
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: IEGM 308.

518 Engineering Valuation and Depreciation 3 hrs. Winter
A study of the valuation of industrial property with emphasis on methods of estimating depreciation. Topics include concepts on value, the courts and valuation, property and other accounting records, cost indexes, estimation of service life, and methods of estimating depreciation. Prerequisite: IEGM 310 or equivalent.

INDUSTRIAL SUPERVISION

322 Industrial Safety 2 hrs. Fall, Winter, Spring
Importance of safety in industry. Cost of accidents, fundamentals of accident prevention; elements of effective safety programs, accident investigation, and OSHA. Prerequisite: Upperclass standing.

402 Principles of Industrial Supervision 3 hrs. Fall, Winter, Spring
Supervisory duties and responsibilities of foremen, engineers, and technicians in industry. Prerequisite: Senior standing.

403 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.

420 Modern Industrial Practices 6 hrs. Spring
Students will observe and analyze actual supervisory and managerial functions in industrial and service establishments. Conference procedures will be used in exploring many facets of supervisory and managerial practices and procedures. A charge of $30 for transportation is required. Prerequisite: IEGM 308, 326, 402, 403, 404, 405 or consent.

422 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 IEGM 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. Not open to students with credit in IEGM 402.
130 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.

131 Engineering Drafting 3 hrs. Fall, Winter, Summer
Essentials of drafting—lettering, instrument usage, applied geometry, sketching, orthographic projections, auxiliaries and sections, dimensioning practice, detail and assembly drawing, and standard drafting practices. Pictorial drawing, charts and graphs. Prerequisite: IEGM 130 or equivalent.

136 Descriptive Geometry 3 hrs. Fall, Winter, Summer
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: IEGM 131.

236 Graphical Solutions 2 hrs. Winter

330 Machine Drafting 3 hrs. Fall, Winter, Spring
Elementary design of machine components. Motion and power transmission devices are analyzed from product function and manufacturing feasibility aspects. Dimensions, including geometric tolerancing, in layout, detail and assembly drawings. Design using standard parts. Prerequisite: IEGM 131.

331 Production Drafting 3 hrs. Fall, Spring
Engineering documentation as it relates to product drafting. Drawings of product components and assemblies, and associated lists are analyzed. Microfilming and reproduction of engineering documents, checking, and standards administration. Prerequisite: IEGM 330.

332 Design of Production Tooling I 2 hrs. Fall

333 Design of Production Tooling II 2 hrs. Winter
Principles of production tooling as related to the design of stamping and extruding dies and injection molds for metal and plastics industries. Cost analysis, production processing, and material considerations in design. Prerequisite: IEGM 332.

431 Industrial Drafting Practices 2 hrs. Winter, Summer
Organization, administration, procedures and methods involving personnel, planning, equipping, and systematizing an industrial drafting department. Prerequisite: IEGM 331.
138

College of Applied Sciences

434 Technical Illustration 3 hrs. Winter
Techniques of illustrating for technical publications such as engineering reports, technical and service manuals and parts catalogs. Prerequisite: IEGM 131.

436 Computer Graphics 2 hrs. Winter, Summer
A study of the use of computers in engineering graphics. Use of the digital plotter in completing engineering documents using existing and student-originated sub-routines and programs. Investigation of and study in the newly developing areas of computer graphics and their applications. Prerequisites: IEGM 131, Math 306 (FORTRAN).

438 Industrial Design 3 hrs. Winter
Design and development of manufactured products through a study of basic elements of industrial design. Models, mock-ups and prototypes will be constructed of student's designs. Prerequisite: IEGM 131.

538 Product Design and Development 3 hrs. Summer
The conceptual design and development of a product including the preparation of a working model. Product proposal, engineering documentation and engineering analysis of the product. Prerequisite: IEGM 438 or consent of instructor.

METALLURGICAL ENGINEERING TECHNOLOGY

170 General Metallurgy 4 hrs. Fall, Winter, Summer
Mechanical properties of metals. Effect of geometry of loading, strain rate, and fatigue on the behavior of metals. Selection and heat treatment of alloys with emphasis on the ferrous based alloys.

271 Electrical and Mechanical Properties of Materials 3 hrs. Winter, Spring
Principles of physical metallurgy emphasizing electrical and magnetic properties of materials.

280 Metal Casting I 3 hrs. Fall, Winter, Spring
Introduction to cast metals technology and laboratory experience in industrial casting processes. Prerequisite: IEGM 170 or IEGM 271 or IEGM 371.

371 Metallurgy and Materials Failure 4 hrs. Fall, Winter, Spring
Physical metallurgy, applications, and analysis of service of ferrous metals and high strength alloys used in the aviation industry.

372 Chemical Metallurgy 3 hrs. Fall
Introduction to chemical thermodynamics. Thermodynamic properties of the solid state, extractive metallurgy, solidification of alloys, solid state diffusion, oxidation and corrosion of metals. Prerequisites: Chemistry 103 and Math 123.

373 Physical Metallurgy 4 hrs. Winter
Introduction to the defect structure of metals and alloys, and simple theories of deformation and fracture. Structure insensitive properties of metals are considered relative to the defect structure of metals. Prerequisites: Chemistry 103, Math 123, and Physics 110.
376 Metallurgy 3 hrs. Fall
Corrosion, physical properties, principles of alloying, and fabrication of metals. Not open to metallurgy majors. Failure analysis of materials. Prerequisite: IEGM 170 or 371.

380 Metal Casting II 3 hrs. Summer
Theory and application of the metallurgy of casting alloys, gray iron, ductile and malleable iron, steel, brass, bronze and aluminum alloys. Melting, casting and heat treating processes will be analyzed for each alloy. Basic theory of the solidification of metals. Prerequisite: IEGM 280.

470 Metal Fabrication 3 hrs. Winter
Fundamentals of elasticity, plasticity and the mechanical forming methods and industrial processes of metal fabrication: rolling, forging, extrusion, drawing and powder metallurgy. Prerequisites: IEGM 373 or 376 and MET 354.

485 Die Casting 3 hrs. Winter
Production of die casting, including design, melting, casting and finishing processes emphasizing production of quality castings economically. Prerequisite: IEGM 280.

572 X-Ray Diffraction 3 hrs. Fall
X-ray methods of crystal structure determination are applied to non-destructive testing, cold working, age hardening and phase changes in metal alloys. Prerequisites: Math 123, Phys. 210.

573 Engineering Materials 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: IEGM 376 or 373.

584 Casting Design 3 hrs. Fall
Engineering design of castings based on stress analysis and capabilities of production casting processes. Prerequisites: IEGM 280 (254), MET 256.

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

Major areas in Home Economics include:
- Business
- Dietetics
- Education
- General

Minor areas in Home Economics include:
- Clothing/Textile
- Family Life
- General
- Occupational Education in Food Service

Academic Counseling
An academic counselor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by Departmental counselors.

The academic counselors are located in Room 2038, Industrial and Engineering Technology building, or in the Department of Home Economics.

In the early September and/or January students should complete their Pre-planning forms to ensure enrollment in the desired courses. This is done in the Applied Science Counseling Center, Industrial and Engineering Technology building, Room 2038.

Additional Information
General information regarding counseling, scholarships and special programs of interest to students in this Department may be found on pages (100-102).
Occupational Educational Minor in Food Service
24 Semester Hours

The Food Service minor has been developed at the recommendation of the State Vocational Division of the Michigan Department of Education that Home Economics Education students be prepared to teach Occupational Education in at least one area. Students selecting this minor will be prepared to teach courses in Occupational Food Service Cluster.

Counselor: Dr. Margaret Jane Brennan

Required 16 Hours

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<td>HEC 512</td>
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<td>HEC 598</td>
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Elect 8 Hours

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<td>SOC 200</td>
<td>Principles of Sociology</td>
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<td>ECON 201</td>
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<td>Guidance</td>
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CLOTHING/TEXTILE MINOR*

The Clothing/Textile minor is offered for the benefit of those students outside the Home Economics department who wish to complement their major in a needed specialty area. The minor consists of 15 hours with three basic courses (9 hours) required. The remaining (6 hours) will be elected according to the need of the individual.

Counselor: Ms. Alice Kavanaugh

Required Courses

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<td>HEC 201</td>
<td>Clothing Construction</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses (minimum 6 hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 216</td>
<td>Interior Accessories</td>
<td>3</td>
</tr>
<tr>
<td>HEC 304</td>
<td>Consumer Problems of Clothing</td>
<td>3</td>
</tr>
<tr>
<td>HEC 306</td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td>HEC 316</td>
<td>Dressmaker</td>
<td>3</td>
</tr>
<tr>
<td>HEC 350</td>
<td>Home Furnishings</td>
<td>3</td>
</tr>
<tr>
<td>HEC 356</td>
<td>Demonstration</td>
<td>2</td>
</tr>
<tr>
<td>HEC 400</td>
<td>Advanced Textiles</td>
<td>2</td>
</tr>
<tr>
<td>HEC 406</td>
<td>Tailoring</td>
<td>3</td>
</tr>
<tr>
<td>HEC 408</td>
<td>Flat Pattern Design</td>
<td>2</td>
</tr>
<tr>
<td>HEC 420</td>
<td>Display</td>
<td>2</td>
</tr>
<tr>
<td>HEC 504</td>
<td>Sociological and Psychological Aspects of Clothing</td>
<td>2</td>
</tr>
</tbody>
</table>

*Home Economics majors are not eligible for this minor.
GENERAL HOME ECONOMICS MINOR

The General Home Economics minor is open to students from other curricula for a 20 semester hour, non-teachable minor.

Counselor: Miss Florence Tooke

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HEC 101</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 201</td>
<td>Clothing Construction</td>
<td>3</td>
</tr>
<tr>
<td>HEC 212</td>
<td>Food for Man</td>
<td>3</td>
</tr>
</tbody>
</table>

HEC 298 Mate Selection and Marriage 3

Consumer Problems of Clothing 3

Consumer Education 3

Elective 2

FAMILY LIFE EDUCATION MINOR

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

COUNSELORS: David Holland, Darrell Thomas


Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>HEC 220</td>
<td>Sex Education—An Introduction to Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>HEC 254</td>
<td>Human Growth and Development</td>
<td>4</td>
</tr>
<tr>
<td>HEC 298</td>
<td>Mate Selection &amp; Marriage</td>
<td>3</td>
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Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH 220</td>
<td>Introduction to Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101</td>
<td>Animal Biology</td>
<td>3</td>
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<tr>
<td>BIOL 219</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 205</td>
<td>The Human Body in Health and Disease</td>
<td>4</td>
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<tr>
<td>CAS 170</td>
<td>Interpersonal Communication I</td>
<td>3</td>
</tr>
<tr>
<td>CAS 236</td>
<td>Social Issues and Action Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CAS 570</td>
<td>Studies in Communications</td>
<td>3</td>
</tr>
<tr>
<td>CP 580</td>
<td>Principles and Philosophy of Guidance</td>
<td>2</td>
</tr>
<tr>
<td>HEC 120</td>
<td>Transitions to Adulthood</td>
<td>3</td>
</tr>
<tr>
<td>HEC 212</td>
<td>Food for Man (not for HEC majors)</td>
<td>3</td>
</tr>
<tr>
<td>HEC 238</td>
<td>Housing</td>
<td>3</td>
</tr>
<tr>
<td>HEC 352</td>
<td>Consumer Education</td>
<td>3</td>
</tr>
<tr>
<td>HEC 375</td>
<td>Coordinated Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>HEC 504</td>
<td>The Socio-Psychological Aspects of Clothing</td>
<td>2</td>
</tr>
<tr>
<td>Course</td>
<td>Title</td>
<td>Credit</td>
</tr>
<tr>
<td>----------</td>
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<td>--------</td>
</tr>
<tr>
<td>HEC 515</td>
<td>Marriage and Family in Maturity</td>
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<tr>
<td>PSY 150</td>
<td>Introduction to the Science of Behavior</td>
<td>3</td>
</tr>
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<td>PSY 160</td>
<td>Personality and Developmental Psychology</td>
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<tr>
<td>PSY 510</td>
<td>Advanced General Psychology</td>
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<tr>
<td>PHIL 201</td>
<td>Introduction to Ethics</td>
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<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
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<td>SOC 210</td>
<td>Modern Social Problems</td>
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<tr>
<td>SOC 320</td>
<td>Introduction to Social Psychology</td>
<td>3</td>
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<tr>
<td>TEED 508</td>
<td>Parent Education</td>
<td>2</td>
</tr>
<tr>
<td>TEED 535</td>
<td>Introduction to Teaching the Disadvantaged</td>
<td>3</td>
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<tr>
<td>TEED 555</td>
<td>Alcohol Education</td>
<td>2</td>
</tr>
<tr>
<td>TEED 560</td>
<td>Practicum: Sociological and Psychological</td>
<td>2</td>
</tr>
</tbody>
</table>

*All transfer students should see a Family Life Advisor regarding transfer credits.

**HOME ECONOMICS IN BUSINESS (HEC Curriculum)**

**Fashion Merchandising Option (HEB Major)**

Bachelor of Science Degree

This option is for students wishing to pursue careers in the fashion fields of merchandising. Large department stores, specialty shops, and boutiques have opportunities in buying and management. Mfgs., fabricators, buying offices as well as various types of media are related fields of interest for students with this orientation.

**COUNSELOR:** Ms. Alice Kavanaugh

**REQUIREMENTS**

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100</td>
<td>HEC</td>
<td>100</td>
<td>Design Principles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 101</td>
<td>HEC</td>
<td>101</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 103</td>
<td>HEC</td>
<td>103</td>
<td>Line and Design</td>
<td>2</td>
</tr>
<tr>
<td>HEC 201</td>
<td>HEC</td>
<td>201</td>
<td>Clothing Construction</td>
<td></td>
</tr>
<tr>
<td>HEC 206</td>
<td>HEC</td>
<td>206</td>
<td>Introduction to Fashion Merchandising</td>
<td></td>
</tr>
<tr>
<td>HEC 207</td>
<td>HEC</td>
<td>207</td>
<td>Textile Products</td>
<td></td>
</tr>
<tr>
<td>HEC 208</td>
<td>HEC</td>
<td>208</td>
<td>Fashion Accessories</td>
<td>2</td>
</tr>
<tr>
<td>HEC 309</td>
<td>HEC</td>
<td>309</td>
<td>Fashion Promotion</td>
<td>3</td>
</tr>
<tr>
<td>HEC 352</td>
<td>HEC</td>
<td>352</td>
<td>Consumer Education</td>
<td></td>
</tr>
<tr>
<td>HEC 304</td>
<td>HEC</td>
<td>304</td>
<td>Consumer Problems of Clothing OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td></td>
<td>Home Furnishings OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td></td>
<td>Housing</td>
<td></td>
</tr>
<tr>
<td>HEC 306</td>
<td>HEC</td>
<td>306</td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td>HEC 420</td>
<td>HEC</td>
<td>420</td>
<td>Display</td>
<td>2</td>
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</table>

**MAJOR COURSES**

33 hrs.
College of Applied Sciences

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HEC 216 Interior Accessories 1-3 OR</td>
<td></td>
</tr>
<tr>
<td>305 Experimental Clothing Techniques 3 OR</td>
<td></td>
</tr>
<tr>
<td>316 Dressmaker Tailoring 3 OR</td>
<td></td>
</tr>
<tr>
<td>400 Advanced Textiles 2 OR</td>
<td></td>
</tr>
<tr>
<td>406 Tailoring 3 OR</td>
<td></td>
</tr>
<tr>
<td>504 Soc. and Psy. Aspects of Clothing 2</td>
<td></td>
</tr>
<tr>
<td>HEC 375 Coordinated Field Experience*</td>
<td>2-6</td>
</tr>
</tbody>
</table>

*Recommended

**MINOR COURSES**

- Communication Arts and Sciences 20 hrs.

**RELATED COURSES**

- Writing Option* 3
- MGT 102 Computer Usage* 3
- ACTY 210 or 201 Accounting 3
- MGT 300 Fundamentals of Management* 3
- MKT 374 Advertising 3
- MKT 375 Principles of Retailing 3
- MKT 476 Retail Merchandising and Promotion 3

**SCIENCE**

- CHEM Chemistry* 4

**GENERAL EDUCATION**

- 22 hrs.
  - *Meet General Education requirements (13 hours included in curriculum) 6 6 10
  - Additional Electives 5 hrs.
  - (from College of Arts and Sciences or acceptable General Education courses) 2 3

**PHYSICAL EDUCATION**

- 2 hrs.
  - Meet Physical Education requirements 1 1

**ELECTIVES**

- Approved Electives 15 hrs.
- TOTAL FOR GRADUATION 122 hrs.

**HOME ECONOMICS IN BUSINESS**

(HEC Curriculum)

Clothing/Textile Option (HEB Major)
Bachelor of Science Degree

This option is for students interested in employment with textile-producing companies (fabrics, fibers, yarns, interfacing, etc.); commercial pattern companies; appliance and laundry products companies; and
other related industries such as manufacturers of zippers, scissors, trims and others.

COUNSELOR: Ms. Alice Kavanaugh

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR COURSES</td>
<td>HEC</td>
<td>100</td>
<td>Design Principles</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>101</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>103</td>
<td>Line and Design</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>201</td>
<td>Clothing Construction</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>304</td>
<td>Consumer Problems of Clothing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>306</td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>350</td>
<td>Home Furnishings</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>352</td>
<td>Consumer Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>356</td>
<td>Demonstration Tech.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>420</td>
<td>Display</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>216</td>
<td>Interior Accessories 1-3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>316</td>
<td>Dressmaker Tailoring 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>400</td>
<td>Advanced Textiles 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>406</td>
<td>Tailoring 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>408</td>
<td>Flat Pattern 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC</td>
<td>504</td>
<td>Soc. and Psy. Aspects of Clothing 2</td>
<td></td>
</tr>
</tbody>
</table>

| MINOR COURSES | Retailing                     | 15 hrs. | 3 9 3 |

| RELATED COURSES | ECON 100 Economics*           | 3       |
|                 | CAS 170 Interpersonal Communication I |         |
|                 | ACCTY 210 Accounting          | 3       |
|                 | CAS 240 Broadcast Communications |         |
| SCIENCE         | CHEM Chemistry*               |         |

| GENERAL EDUCATION | Meet General Education requirements. *(10 hours included in curriculum) | 6 6 7 6 |
|                  | Additional Electives          | 5 hrs.  |
|                  | (from college of Arts and Science or acceptable General Education courses) | 3 2 |

| PHYSICAL EDUCATION | Meet Physical Education requirements. | 1 1       |
College of Applied Sciences

Dietetics
(DI Curriculum) (DI Major)
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. A dietitian is also qualified for positions in commercial food establishments as restaurants, hotels, airlines, and industrial feeding. Other areas open are school cafeterias, community nutrition positions and food service in the Armed Forces. A minimum of 30 S.H. in Home Economics is required.

Counselor: Dr. Betty Taylor

Requirements
Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Year Enrolled</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td>1 2 3 4</td>
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<tr>
<td>MAJOR COURSES</td>
<td>32 hrs.</td>
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<tr>
<td>HEC 114</td>
<td>114</td>
<td>Food Preparation and Meal Planning</td>
<td>5</td>
<td></td>
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</tr>
<tr>
<td>HEC 101</td>
<td>101</td>
<td>Textiles</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC 201</td>
<td>201</td>
<td>Clothing Construction</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC 210</td>
<td>210</td>
<td>Nutrition</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC 312</td>
<td>312</td>
<td>Quantity Foods</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>HEC 410</td>
<td>410</td>
<td>Diet and Disease</td>
<td>2</td>
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<td></td>
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<tr>
<td>HEC 412</td>
<td>412</td>
<td>Community Nutrition</td>
<td>3</td>
<td></td>
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<td>HEC 510</td>
<td>510</td>
<td>Advanced Nutrition</td>
<td>3</td>
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<tr>
<td>HEC 512</td>
<td>512</td>
<td>Institutional Management</td>
<td>3</td>
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<tr>
<td>HEC 518</td>
<td>518</td>
<td>Advanced and Experimental Foods</td>
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<tr>
<td>MINOR COURSES</td>
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<tr>
<td>See Advisor for Mixed Science Minor to see which courses will count toward minor.</td>
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</table>

RELATED COURSES

<table>
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<th>Credit Hours</th>
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<td></td>
<td></td>
<td>1 2 3 4</td>
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</tr>
<tr>
<td>PSY 190</td>
<td>190</td>
<td>General Psychology</td>
<td>3</td>
<td></td>
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<tr>
<td>SOC 200</td>
<td>200</td>
<td>Principles of Sociology</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td>201</td>
<td>Principles of Economics*</td>
<td>3</td>
<td></td>
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<tr>
<td>MGMT 352</td>
<td>352</td>
<td>Manpower Management</td>
<td>3</td>
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<tr>
<td>TEED 250</td>
<td>250</td>
<td>Human Development and Learning</td>
<td>4</td>
<td></td>
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</tr>
<tr>
<td>ACCTY 201</td>
<td>201</td>
<td>Accounting</td>
<td>4</td>
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### Home Economics

<table>
<thead>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>SCIENCE</td>
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<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>101</td>
<td>or 102</td>
<td>Chemistry*</td>
<td>4</td>
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<tr>
<td>BIOL</td>
<td>101</td>
<td></td>
<td>Animal Biology</td>
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<td>120</td>
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<td>4</td>
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<tr>
<td>BIOL</td>
<td>219</td>
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<td>Human Physiology*</td>
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<tr>
<td>CHEM</td>
<td>365</td>
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<td>Organic Chemistry</td>
<td>4</td>
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<td>BIOL</td>
<td>412</td>
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<td>Microbiology</td>
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<td>CHEM</td>
<td>450</td>
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<td>Biochemistry</td>
<td>3</td>
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</tbody>
</table>

### GENERAL EDUCATION

- Meet General Education requirements *(11 hours included in curriculum)*
- Additional Electives (from College of Arts and Sciences or acceptable General Education courses)

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
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</tbody>
</table>

### PHYSICAL EDUCATION

- Meet Physical Education requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
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### ELECTIVES

- Approved Electives

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13 2 2 6 3</td>
<td></td>
</tr>
</tbody>
</table>

### TOTAL FOR GRADUATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>122 31 30 30 31</td>
<td></td>
</tr>
</tbody>
</table>

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## HOME ECONOMICS IN BUSINESS

(HEC Curriculum)

Food Option (HEB Major)

Bachelor of Science Degree

This option is scientifically oriented for depth in study of foods in relation to the business field. Students may pursue careers in the equipment field, food research, public utility companies, mass media productions, quality testing, technical writing, or governmental food agencies.

COUNSELOR: Dr. Betty Taylor

### REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR COURSES</td>
<td>HEC 100</td>
<td>Design Principles</td>
<td>3 3 3 3 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC 101</td>
<td>Textiles</td>
<td>3 3 3 3 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEC 114</td>
<td>Food Preparation and Meal Planning</td>
<td>5 5 5 5 5</td>
<td></td>
</tr>
</tbody>
</table>
### Course Title and Details

<table>
<thead>
<tr>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Year Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 210</td>
<td>Nutrition</td>
<td>1 2 3 4</td>
<td>3</td>
</tr>
<tr>
<td>HEC 312</td>
<td>Quantity Foods</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 356</td>
<td>Demonstration Techniques</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>HEC 414</td>
<td>Home Equipment</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 510</td>
<td>Advanced Nutrition</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 512</td>
<td>Institutional Management</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 518</td>
<td>Advanced and Experimental Foods</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>HEC 519</td>
<td>Experimental Foods</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### MINOR COURSES

- Communication Arts and Sciences
  - (recommended)
  - 20 hrs.
  - 9 7 4

### RELATED COURSES

- CAS 104 Business and Professional Speech OR Interpersonal Communication I Writing Option*
  - 3
- ECON 201 Economics*
  - 3
- CAS 240 Broadcast Communication
  - 3
- MGMT 352 Manpower Management
  - 3

### SCIENCE

- CHEM 101 General Chemistry*
  - 4
- BIOL 107 Biological Science*
  - 4
- CHEM 120 Qualitative Analysis
  - 4
- CHEM 365 Organic Chemistry
  - 4
- BIOL 412 Microbiology
  - 4

### GENERAL EDUCATION

- Meet General Education requirements *(14 hours included in curriculum)*
  - 9 6 6*
- Additional Electives
  - 5 hrs.
  - (from College of Arts and Sciences or acceptable General Education courses)

### PHYSICAL EDUCATION

- Meet Physical Education requirements
  - 1 1 .. ..

### ELECTIVES

- Approved Electives
  - 5 hrs.
  - 3 2

### TOTAL FOR GRADUATION

- 122 hrs.
  - 30 31 30 31

### HOME ECONOMICS GENERAL CURRICULUM

(HEC Curriculum)

Bachelor of Science Degree (HEC Major)

A student completing a Bachelor of Science degree in the Home Economics General Curriculum may pursue courses in the several areas of

*Recommended
Home Economics of one's particular own interest. This curriculum is intended for those not pursuing career preparation in a particular area of Home Economics.

COUNSELOR: Miss Florence Tooke

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
<th>Credit</th>
<th>Hours</th>
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<tbody>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>2</td>
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<tr>
<td>4</td>
<td></td>
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</tr>
</tbody>
</table>

**MAJOR COURSES**

- HEC 100 Design Principles 3 hrs.
- HEC 101 Textiles 3 hrs.
- HEC 114 Food Preparation and Meal Planning 5 hrs.
- HEC 120 Transitions to Adulthood 3 OR 298 Mate Selection and Marriage 3
- HEC 201 Clothing Construction .. 3 .. ..
- HEC 210 Nutrition .. 3 .. ..
- HEC 238 Housing .. 3 .. ..
- HEC 254 Human Growth and Development .. 4 ..
- HEC 304 Consumer Problems of Clothing .. .. 3 ..
- HEC 350 Home Furnishing 3 OR 352 Consumer Education 3 OR
- HEC 354 Home Management 2 OR 406 Tailoring 3
- HEC 356 Demonstration Techniques .. .. .. 2 ..
- HEC 414 Home Equipment .. .. .. 3 ..

**MINOR COURSES**

15 hrs. .. 6 3 6

**GENERAL EDUCATION**

35 hrs.

Meet General Education requirements (hours included in curriculum) 9 9 8 9

Additional Electives 5 hrs.

(from College of Arts and Sciences or acceptable General Education courses) 3 .. 2 ..

**PHYSICAL EDUCATION**

2 hrs.

Meet Physical Education requirements 1 1 .. ..

**ELECTIVES**

Approved Electives 25 hrs. 3 3 10 12

**TOTAL FOR GRADUATION**

122 hrs. 30 32 30 30

**HOME ECONOMICS EDUCATION**

(HE Curriculum)

(HEE Major)

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 or Food Service minors 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.

COUNSELOR: Dr. Margaret Jane Brennan

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
</tr>
</thead>
</table>

**MAJOR COURSES**

- HEC 100 Design Principles
- HEC 101 Textiles
- HEC 114 Food Preparation and Meal Planning
- HEC 201 Clothing Construction
- HEC 210 Nutrition
- HEC 238 Housing 3 OR
- HEC 254 Human Growth and Development
- HEC 298 Mate Selection and Marriage
- HEC 304 Consumer Problems of Clothing
- HEC 340 Home Economics Education
- HEC 352 Consumer Education
- HEC 354 Home Management
- HEC 356 Demonstration
- HEC 414 Home Equipment

44 hrs.

**MINOR COURSES**

Teachable minor of at least 20 hours required. Group minors require 24 hours

20 hrs.

**RELATED COURSES**

- TEED 300 Teaching and Learning
- TEED 410 Seminar
- TEED 450 School and Society
- TEED 471 Directed Teaching

17 hrs.

**GENERAL EDUCATION**

Meet General Education requirements

35 hrs.

- Additional Electives (from College of Arts and Sciences or acceptable General Education courses)

5 hrs.

**PHYSICAL EDUCATION**

Meet Physical Education requirements

2 hrs.
Home Economics

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 341</td>
<td>Methods of Occupational Education (recommended)</td>
<td>7 hrs. 3</td>
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<tr>
<td></td>
<td>Approved Electives</td>
<td></td>
</tr>
<tr>
<td>TOTAL FOR GRADUATION</td>
<td></td>
<td>130 hrs. 33</td>
</tr>
</tbody>
</table>

COURSE DESCRIPTIONS

Department of Home Economics

100 Design Principles (2-2)*
Presentation and study of the principles and design. Application through individual project.

3 hrs.

101 Textiles (3-0)
A study of basic textiles from the consumer's point of view to provide a knowledgeable use of fibers.

3 hrs.

103 Line and Design (2-0)
An in depth study of color, line, design and texture as related to clothing for the human figure and personality types. Case studies and personal problems are analyzed. HEB majors only.

2 hrs.

114 Preparation and Meal Planning (3-4)
Basic principles of food preparation. Planning and serving of meals with emphasis on management. Majors.

5 hrs.

116 Family Foods (Supermarket) (2-0)
A study of foods with reference to processing, marketing, and use in the home, and the basic principles of nutrition. Supermarket majors only.

2 hrs.

120 Transitions to Adulthood (3-0)
A study of communication, interpersonal relationships, and development of the person during later adolescence and early adulthood.

3 hrs.

201 Clothing Construction (1-4)
Three areas are included in this course: basic construction techniques, pattern alteration and fitting, and the study of line design as related to clothing.

3 hrs.

206 Introduction to Fashion Merchandising (3-0)
A presentation of principles of merchandise selection, sources of buying information, responsibilities of buyers in various types of firms. Fashion trends and consumer activity are placed in perspective as an essential in conjunction with product knowledge and development in both apparel and non-apparel fashions. FM majors only.

3 hrs.

*Indicates hours of lecture and laboratory per week (lecture hour-laboratory hour).
207 Textile Products (2-0) 2 hrs.
Comprehensive study and evaluation of the properties of natural and man-made textile fibers used to produce clothing and household fabrics including floor covering. Course presentation is an integration of product, usage, and sales planning. Prerequisite: H. Ec. 101. FM majors only.

208 Fashion Accessories (2-0) 2 hrs.
A study of quality, craftsmanship, and design as they relate to non-textile merchandise such as leather goods, furs, jewelry, ceramics, glassware, silver and furniture. Includes technical terminology, sources, manufacturing processes and uses important to selection, buying and merchandising. FM majors only.

210 Nutrition (3-0) 3 hrs.
A study of the essential nutrients and their function in the human body. Prerequisite: Science one semester.

212 Food for Man (3-0) 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.

216 Interior Accessories (1-4) Variable 1-3 hrs.
Three five-week mini courses, each complete in itself. Prerequisite: HEC 201 or Consent of Instructor.
- a. Types of handwork as applied to interior accessories and clothing (five weeks, one credit).
- b. Slip Cover Techniques. Pillows and bolsters will be included (five weeks, one credit).
- c. Draperies, curtains, and window treatments such as valances, cornices, etc. (five weeks, one credit).

220 Sex Education—An Introduction to Human Sexuality (3-0) 3 hrs.
The 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, material health and current issues in sex education.

238 Housing (3-0) 3 hrs.
A course designed to give an overview of the basic principles, planning, methods and materials used in residential construction; financial and sociological aspects, zoning ordinances and building codes considered.

254 Human Growth and Development (4-0) 4 hrs.
This course involves study of the physical, social, emotional, and intellectual growth and development of children and adolescents. Nursery Laboratory 9 hrs. required per semester. Hours to be arranged. Home economics Nursery Laboratory offers participation experience with 2-4 year old children.

298 Mate Selection and Marriage (3-0) 3 hrs.
Integration of information on love, mate selection, marital communication, problem solving, and sexuality.
304 Consumer Problems of Clothing (1-4) 3 hrs.
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. Prerequisite: 201.

305 Experimental Clothing Techniques (0-4) 2 hrs.
Experiences in clothing construction with emphasis on special problems relative to varied fabrics and design. Prerequisite HEC 201.

306 History of Costume (3-0) 3 hrs.
Survey of the development of costume from ancient to modern times with its application to contemporary dress. The course covers social, political, religious and cultural influence on design.

309 Fashion Promotion (3-0) 3 hrs.
Imagination, planning, and coordination are incorporated into a program of sales promotion for textile and non-textile merchandise. Students complete assigned projects planned to develop creativity and sound sales promotion techniques. Prerequisites: 206, 207, 208.

312 Quantity Foods (1-4) 3 hrs.

316 Dressmaker Tailoring (1-4) 3 hrs.
Construction of tailored garments using time-saving methods. A minimum of two garments will be completed. Prerequisite: HEC 201, 304 or 305, or Consent of Instructor.

340 Home Economics Education (4-0) 4 hrs.
Course designed to acquaint students with the teaching field of home economics. Include 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 home experiences programs, and methods of teaching for junior and senior high schools as well as adult homemaking classes. Prerequisite: H. Ec. 254.

341 Occupational Education in Home Economics (2-0) 2 hrs.
Designed to familiarize the student with occupational education. Skills related to Home Economics, analysis, and methods of job preparation will be emphasized. Consideration will be given to formulating job descriptions. Stress will be on the application of techniques and methods or organizing instruction into job clusters for a functional instructional plan. Prerequisite: 340.

350 Home Furnishings (3-0) 3 hrs.
Basic study of the elements and principles of furnishing a home. Prerequisite: H. Ec. 100 or permission of instructor.

352 Consumer Education (3-0) 3 hrs.
A study of the functions of consumers in our economy with emphasis on money management and decision making.
College of Applied Sciences

354 Home Management (2-0) 2 hrs.
A study of the theory and the principles of management in the home.

356 Demonstration Techniques (0-4) 2 hrs.
Demonstration principles and techniques as used in Home Economics teaching and business careers.

375 Coordinated Field Experience 2-4 hrs.
Field experience under the supervision of the Home Economics Department and the cooperating organizations. The program involves a pre-planned, supervised experience with the permission of the Department Chairman and under the direction of an instructor in the subject matter area: Clothing and Textiles, Food and Nutrition, Family Life, Fashion Merchandising, Home Economics Education. A statement of objectives, written materials and a performance appraisal will be required. May be repeated for a maximum of twelve semester hours credit.

400 Advanced Textiles (2-0) 2 hrs.

406 Tailoring (1-4) 3 hrs.
Principles and practices involved in the custom method of constructing tailored suits or coats; fitting, handling, pressing, and custom finishing of wool fabrics. Prerequisites: H. Ec. 101, 201, and 304.

408 Flat Pattern Design (0-4) 2 hrs.
A study of the drafting techniques employed in the flat pattern method for designing clothing. Prerequisite: H. Ec. 201 and 304 or permission of instructor.

410 Diet and Disease (2-0) 2 hrs.

412 Community Nutrition (2-2) 3 hrs.
Explores the role of nutrition in the health of a community. Field trips will emphasize professional competencies necessary for dietitians working in various community situations. Prerequisites: 312, 410. Dietetics majors.

414 Home Equipment (2-2) 3 hrs.
A study of principles of home equipment with applications toward the areas of Home Economics in business and education with lecture and laboratory experience.

420 Display (2-0) 2 hrs.
A study of the visual presentation of merchandise theories and techniques. HEB majors only.

450 Teaching Sex Education in the School (3-0) 3 hrs.
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. Prerequisite: H. Ec. 220, or approval of the instructor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>502</td>
<td>Textile Clinic (2-0)</td>
<td>2 hrs.</td>
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<tr>
<td></td>
<td>A workshop type program. Specialists and visual aids will present the</td>
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<td></td>
<td>newest information on textiles. To be followed by a study of methods</td>
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<tr>
<td></td>
<td>implementing the new learnings. Prerequisite: H. Ec. 101 or permission</td>
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<tr>
<td></td>
<td>of instructor.</td>
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<tr>
<td>504</td>
<td>The Socio-Psychological Aspects of Clothing (2-0)</td>
<td>2 hrs.</td>
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<tr>
<td></td>
<td>A study of the social and psychological implication of clothing for the</td>
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<td></td>
<td>individual and the family. This course brings together some of the</td>
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<td>pertinent findings of these two fields as they relate to the total area of</td>
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<td></td>
<td>clothing, ranging from the individual’s selection of clothing as an</td>
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<td>expression of personality and social status to the impact of the clothing</td>
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<tr>
<td></td>
<td>and fashion industries on the national economy.</td>
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<tr>
<td>510</td>
<td>Advanced Nutrition (3-0)</td>
<td>3 hrs.</td>
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<tr>
<td></td>
<td>Study of recent developments in nutrition through readings and</td>
<td></td>
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<tr>
<td>512</td>
<td>Institutional Management (3-0)</td>
<td>3 hrs.</td>
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<tr>
<td></td>
<td>Study of institutional administration, job analysis, labor policies,</td>
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<tr>
<td></td>
<td>personnel problems and cost control in different types of food-service</td>
<td></td>
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<tr>
<td>515</td>
<td>Marriage and Family in Maturity (3-0)</td>
<td>3 hrs.</td>
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<tr>
<td></td>
<td>A study of marital and family interaction in middle and later years.</td>
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<tr>
<td>518</td>
<td>Advanced and Experimental Foods (2-4)</td>
<td>4 hrs.</td>
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<tr>
<td></td>
<td>Concentrated study of principles of food preparation. Development of</td>
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<tr>
<td></td>
<td>experimental techniques and opportunities for individual studies. Pr-</td>
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<tr>
<td>519</td>
<td>Experimental Foods (0-4)</td>
<td>2 hrs.</td>
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<tr>
<td></td>
<td>Individual research in chemical and physical properties of foods. De-</td>
<td></td>
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<tr>
<td></td>
<td>velopment of research studies, writing and reporting techniques. Pr-</td>
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<tr>
<td></td>
<td>requisite: H. Ec. 518.</td>
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<tr>
<td>552</td>
<td>The Homemaking Center and the Equipment (2-0)</td>
<td>2 hrs.</td>
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<tr>
<td></td>
<td>Consideration of fundamentals in planning laboratory and living area</td>
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<tr>
<td></td>
<td>in terms of needs with special emphasis on built-ins, furnishings and</td>
<td></td>
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<tr>
<td></td>
<td>equipment. Selected problems to be chosen by the individual.</td>
<td></td>
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<tr>
<td>598</td>
<td>Readings in Home Economics</td>
<td>Variable</td>
</tr>
<tr>
<td></td>
<td>Upper levels students may enroll with permission of the chairman and</td>
<td>1-4 hrs.</td>
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<tr>
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<td>an instructor in a specific subject matter area; Clothing and Textiles,</td>
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<td></td>
<td>Foods and Nutrition, Family Life, Fashion Merchandising, and Home</td>
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<tr>
<td></td>
<td>Economics Education.</td>
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</tbody>
</table>
Industrial Education

John L. Feirer, Head

Michael B. Atkins  Wallace F. Fillingham  John R. Lindbeck, on leave
John L. Bendix  W. Lloyd Gheen  William K. Purdy
Phillip L. Bruce  Rex E. Hall  Erwin W. Rayford
Arvon D. Byle  Gilbert R. Hutchings  Charles G. Risher
Dennis Darling  Gordon O. Johnson  Walter Schwersinske
Lindsay G. Farnan  Waldemar E. Klammer  James L. Ulmer

INDUSTRIAL EDUCATION DEPARTMENT

The Industrial Education Department, one of the largest in the country with an excellent staff and laboratories, offers several different programs to prepare teachers and professional personnel for education and industry.

PROGRAMS

1. Industrial Education curricula are designed to prepare teachers of Industrial Education for the junior and senior high school levels. The student must select one major and one minor from the technical areas available.

2. Vocational-Technical curricula are designed to prepare certificated teachers and supervisors of Vocational-technical subjects for the secondary school, community college, and industrial training.

3. Printing Management is a program designed for middle management personnel in the graphic arts industry. It includes a major in graphic arts with options in business and marketing.

4. Other Options.

a. General Industrial Education Degree without teaching is designed to prepare an individual with a general industrial background. The exact combination of courses will be determined by the needs of the students.

b. Manual Arts Therapy is a program designed to prepare the industrial education major to work in the area of mental and physical rehabilitation in private, public and government hospitals. It includes participating (Directed Teaching) one semester at an approved veterans' hospital.
c. Industrial Education Teaching Minor, students not majoring in Industrial Education, may take a general Industrial Education minor. This includes 20 hours of technical courses plus 6 hours of professional industrial education courses. (IED 342 & IED 344).

VOCATIONAL CERTIFICATION

Individuals can obtain vocational certification under either the Industrial Education or the Vocational-Technical curriculum as follows:

Industrial Education—A student graduating with an Industrial Education degree and who now has or later obtains two years of valid occupational experience may be eligible for vocational certification in the occupation in which he has his industrial experience providing he has a teaching major or minor in the same area.

Vocational-Technical—The student must complete the requirements for a degree in Vocational-Technical Education with a major or minor in the area of occupational endorsement, and must have a minimum of two years of relevant work experience. Students may enroll in a cooperative industrial program to secure the occupational experience or through appropriate competency examinations. A student must complete the curriculum and have two years of appropriate work experience to graduate.

The major difference between the two routes is that the Vocational-Technical curriculum is designed specifically for the student who wishes to become a vocational teacher in a specific technical field. The Industrial Education curriculum offers the opportunity to teach in the several industrial areas without vocational certification. The graduate may obtain vocational certification upon the fulfillment of the work experience requirements.

COUNSELING

Students interested in any of the above programs should contact: Counseling Department for Industrial Education, Tel: 383-1900, or College of Applied Science Counseling Office Tel: 383-1941. A qualified counselor is available to help students plan their program in any of the careers described above.

TRANSFER STUDENTS

Students enrolled in community college technical programs are encouraged to transfer into one of the above programs since they can apply most of the technical courses to a major or minor sequence with the approval of the curricular counselor. At least half of the fifty semester hours of technical work, must be taken at Western.

EMPLOYMENT OPPORTUNITIES

Even though there is an over-supply of certified teachers in many areas, the prospects for securing a teaching position in industrial, vocational and technical education remain bright. Certain specialized teaching areas including industrial education have retained a high index of demand.
INDUSTRIAL EDUCATION CURRICULA
Bachelor of Science Degree

Minimum hours required for this curriculum .................................. 122 hrs.
General Education* See Requirements, Page 23
Technical major in one of the following areas ................................ 30
General Industrial Arts
Drawing
Electricity-Electronics
Graphics Arts
Metalworking
Power-Automechanics
Woodworking
Technical minor in any of the above areas other than
the major (a Plastics minor is also available) ................................. 20

Teacher Education
Human Development and Learning 250 ........................................ 21 hrs.
Teaching and Learning in Jr. or Sr. H.S. 300 ................................. 4
Directed Teaching 470-9 hrs. Seminar in Education 410-2 hrs.,
School and Society-3 hrs. (usually taken concurrently in one
semester) ....................................................................................... 14 hrs.

Professional I ED Courses .......................................................... 6
I ED 342 Course Construction .................................................... 3
I ED 344 Teaching of Ind. Ed. .................................................... 3
Physical Education ......................................................................... 2

VOCATIONAL-TECHNICAL CURRICULUM
Bachelor of Science Degree

A. Minimum hours required for this curriculum ............................... 122 hrs.
B. Course Requirements

1. General Education Requirements (see page 23)
2. Mathematics (6 hrs. of which may be counted for General
   Education requirements in Natural Science and Math-
   ematics) ....................................................................................... 8 hrs.
3. Technical Major ......................................................................... 30 hrs.
4. Technical Minor ......................................................................... 20 hrs.
5. Option I (Vocational-Industrial Education leading to
   Secondary Teaching Certificate.................................................. 27 hrs.
   Education requirements (See College of Ed.) ............................ 18
   I ED 342 Course Construction ................................................ 3
   I ED 344 Teaching of Ind. Education ........................................ 3
   I ED 512 Prin. of Voc. Education ............................................. 3
6. Option II (Industrial Cooperative Education) leading to
   Secondary Teaching Certificate ................................................. 31 hrs.
   Education requirements (See College of Ed.) ............................ 18
   D ED 572 Teaching Tech. in Coop. Education ............................ 2
   D ED 473 Coord. Techs. in Coop. Education .............................. 2
   I ED 342 Course Construction ................................................ 3
   I ED 344 Teaching of Ind. Education ........................................ 3
   I ED 512 Prin. of Voc. Education ............................................. 3

*IEGM 102 (AAS 120) Technical Communications and Math 100 Algebra are required.
7. Option III (Technical Education) without teaching certificate .......................... 30 hrs.
   I ED 342 Course Construction ........................................... 3
   CAS 104 Bus. and Prof. Speech ........................................ 3
   D ED 573 Coord. Techs. in Coop. Education ...................... 2
   IEGM 422 Conference Leadership ..................................... 3
   IEGM 402 Principles of Ind. Supervision ......................... 3
   I ED 512 Prin. of Voc. Education .................................. 3
   PSYCH Psychology ...................................................... 3
   Electives ..................................................................... 10

8. Physical Education .......................................................... 2 hrs.

C. Degree—Major consists of one or two options:
   Vocational-Industrial Education (Certificate)
   Technical Education (Non-Certificate)
   Directed Teaching must be done in an approved vocational program.

PRINTING MANAGEMENT CURRICULUM
Bachelor of Science Degree

Minimum hours required for this curriculum ................. 122 hrs.

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>A. General Education requirements must be met. ......... 40 hrs.</td>
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<tr>
<td>(Includes 19 hours of courses required below)</td>
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<tr>
<td>B. Graphic Arts ......... 35 hrs.</td>
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<tr>
<td>I ED 150 Graphic Arts* 3 None</td>
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<tr>
<td>I ED 152 Letterpress Presswork 3 I ED 150</td>
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<td>I ED 250 Typographic Design 3 I ED 150</td>
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<td>I ED 254 Machine Composition 3 I ED 150</td>
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<tr>
<td>I ED 350 Photolithographic Techniques 3 I ED 150</td>
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<tr>
<td>I ED 351 Lithographic Presswork 3 I ED 150</td>
<td></td>
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<tr>
<td>I ED 450 Advanced Presswork 3 I ED 152, 351</td>
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<tr>
<td>I ED 452 Estimating 3 Upperclass</td>
<td></td>
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<tr>
<td>I ED 551 Halftone Photo Processes 3 I ED 350</td>
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<tr>
<td>I ED 552 Estimating 2 I ED 452</td>
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<tr>
<td>I ED 553 Printing Production Management 3 Upperclass</td>
<td></td>
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<tr>
<td>PAPR 550 Paper Industry Processes 3 Upperclass</td>
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*I ED 150 Graphic Arts may be waived after review of high school experience.
<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>C. Industrial Supervision</td>
<td>12 hrs.</td>
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<tr>
<td>IEGM 105 Industrial Calculations</td>
<td>1</td>
<td>MATH 100 or 116</td>
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<tr>
<td>IEGM 305 Work Analysis</td>
<td>3</td>
<td>IEGM 105, MGMT 200</td>
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<tr>
<td>IEGM 322 Industrial Safety</td>
<td>2</td>
<td>Upperclass</td>
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<tr>
<td>IEGM 402 Principles of Industrial Supervision</td>
<td>3</td>
<td>Senior Standing</td>
</tr>
<tr>
<td>IEGM 403 Industrial Labor Relations</td>
<td>3</td>
<td>Senior Standing</td>
</tr>
<tr>
<td>D. General Business**</td>
<td>15 hrs.</td>
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<tr>
<td>ACTY 201 Accounting Concepts &amp; Applications</td>
<td>3</td>
<td>None</td>
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<tr>
<td>MGMT 200 Decision Making with Statistics</td>
<td>3</td>
<td>MATH 100 or 116</td>
</tr>
<tr>
<td>MGMT 300 Fundamentals of Management</td>
<td>3</td>
<td>None, (ECON 201 Recommended)</td>
</tr>
<tr>
<td>MGMT 420 Futures Planning</td>
<td>3</td>
<td>MGMT 200</td>
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<tr>
<td>MGMT 553 Planning &amp; Analysis for Production</td>
<td>3</td>
<td>MGMT 200</td>
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<tr>
<td>MGMT 557 Inventory Management</td>
<td>3</td>
<td>MGMT 200</td>
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<tr>
<td>Marketing**</td>
<td>15 hrs.</td>
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<tr>
<td>MKTG 370 Marketing</td>
<td>3</td>
<td>ECON 201</td>
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<tr>
<td>MKTG 374 Advertising</td>
<td>3</td>
<td>MKTG 370</td>
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<tr>
<td>MKTG 376 Sales Administration</td>
<td>3</td>
<td>MKTG 370</td>
</tr>
<tr>
<td>MKTG 470 Industrial Marketing</td>
<td>3</td>
<td>MKTG 370</td>
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<tr>
<td>MKTG 474 Advertising Copy &amp; Layout</td>
<td>3</td>
<td>MKTG 370, 374</td>
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<tr>
<td>E. Data Processing</td>
<td>6 hrs.</td>
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<tr>
<td>MGMT 102 Computer Usage</td>
<td>3</td>
<td>None</td>
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<tr>
<td>MGMT 555 Electronic Data Processing</td>
<td>3</td>
<td>MGMT 102</td>
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<tr>
<td>F. MATH 100 Algebra or</td>
<td>4 hrs.</td>
<td>None</td>
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<tr>
<td>MATH 116 Finite Mathematics with Applications</td>
<td>3</td>
<td>MATH 100 or 3 yrs. College Prep. Math.</td>
</tr>
<tr>
<td>G. ECON 201 Principles of Economics</td>
<td>3 hrs.</td>
<td>None</td>
</tr>
<tr>
<td>H. An approved Writing Course***</td>
<td>3 hrs.</td>
<td>None</td>
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<tr>
<td>I. Physical Education</td>
<td>2 hrs.</td>
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<tr>
<td>J. Electives</td>
<td>21 hrs.</td>
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</tbody>
</table>

**Either General Business or a Marketing Minor may be selected.

***Includes any writing course included in General Education Area I or IEGM 102 Technical Communications.
COURSE DESCRIPTIONS

VISUAL COMMUNICATIONS

DRAFTING

120 Survey of Drafting 3 hrs.
A survey course in general drawing predicated on man's ability to symbolize graphically in life and industry. Emphasis is placed on the underlying concepts involved in freehand perspective, flat drawing, elementary shading, technical sketching, multiview drawing, sectional views, size description, pictorial drawing, and basic graphic analysis.

226 Industrial Graphics 3 hrs.
An extension of 120 emphasizing standardized and industrial graphic practices. Course content encompasses view analysis by direct and orthogonal methods, sections, primary, and secondary auxiliaries, precision measurements, fasteners, pictorials, surface development and basic principles of descriptive geometry. New developments and studies in graphics and drafting are presented as they relate to industry. Drawings and intermediates will be reproduced on white print equipment. Prerequisite: I ED 120 or consent of instructor.

227 Technical Sketching 3 hrs.
A study of freehand and mechanical methods of illustrating. Primary consideration is given to angular, parallel, and oblique perspective as a basis for freehand illustration. Emphasis is then placed on various types of paraline drawings, techniques of shades and shadows, shading films, and pencil and ink renderings for reproduction. Selected problems in surface treatment and textures, still life, and chalkboard practice. Prerequisite: I ED 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 ED 226.

520 Architectural Graphics 3 hrs.
A graphic study of architectural details and construction methods of frame and masonry veneer residential dwellings. Emphasis placed on residential planning and design principles. Design of a single-family dwelling including preliminary studies, floor plans, elevations, all necessary details, plot plan, specifications, and cost estimate required. Drawings will be reproduced. Prerequisites: I ED 120 Survey of Drafting, or equivalent, and I ED 405 Introduction to Building Practices (can be taken simultaneously).

522 Laboratory Practices in Drafting 2 hrs.
Methods and problems of teaching drafting and graphics on the secondary level. Emphasis is placed on a review of secondary and collegiate texts, resource materials, problem design, and drawings. Prerequisite: twelve hours in Drafting and Junior classification.
524 Commercial Architectural Design  
Basic experience in designing light commercial structures. Emphasis placed on planning, traffic flow, exterior design, materials, and structural details. Prerequisite: I ED 520 or equivalent.

525 Architectural Perspective and Rendering  
Intensive study of angular and parallel perspective. Emphasis placed on entourage and rendering techniques in preparing architectural presentation drawings. Prerequisite: I ED 520 or equivalent.

GRAPHIC ARTS AND PRINTING MANAGEMENT

150 Graphic Arts  
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  
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 ED 150.

250 Typographic Design  
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 ED 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 photo composition methods and equipment will be stressed. Economic, operational, and social implications of each area will also be explored. Prerequisite: I ED 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 ED 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. Prerequisite: I ED 150.

356 Printing Machine Maintenance
4 hrs.
This course is designed to acquaint the student with the problems of care and maintenance of printing machinery. Simple adjustments are made on the various machines.

450 Advanced Presswork
3 hrs.
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. Prerequisites: I ED 152 and 351.

451 Printing Processes
2 hrs.
A course designed to provide Paper Science and Engineering 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.

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 bookbinding, folding machines, stitching, plastic binding, punching, perforating, etc., is taken up.

551 Halftone Photo Processes
3 hrs.
Emphasis on halftone reproduction and related photo techniques. Posterization, duotones, basic color, and mechanical dropouts will be included. Prerequisite: I ED 350.

552 Estimating
2 hrs.
Continuation of Estimating 452. Special emphasis on use of Printing Industry Production Standards in pricing printed materials. Prerequisite I ED 452.

553 Printing Production Management
3 hrs.
Managerial procedures used in printing industries to forecast, plan, schedule and record production to control production costs. Hourly costs of printing machines will be developed by students.

MATERIALS AND PROCESSES
WOODWORK AND BUILDING CONSTRUCTION

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: I ED 100 General Woodworking.

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. Prerequisites: I ED 100 General Woodworking, and I ED 200 Machine Woodwork.

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: I ED 100 and/or 200.

405 Introduction to Building Practices 2 hrs.
Introduction to basic structures, building materials, and techniques. Emphasis placed on surveying practices, blueprint reading, building and material specifications, estimating, national and local building codes, financing, utilities, and environmental control.

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 made of wood and structural plastics. Prerequisite: I ED 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. Prerequisite: I ED 100.

506 Residential Building Construction 3 hrs.
Covers rough framing of a residential building including prefabrication methods as well as on-site building. Classroom work and laboratory experiences familiarize students with foundations, floor, and roof framing, exterior doors, windows, roofing, siding, urethane, insulation, other synthetic materials, and preparation for interior wall coverings, trim and cabinets. Prerequisites: I ED 100 or 200, and I ED 405 (can be taken simultaneously).

507 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. Pre-requisites: I ED 100 and/or 200.

508 Related Building Trades 3 hrs.
Covers areas related to residential building construction, masonry, concrete work, ceramic tile installation, electrical wiring, plumbing, building sheet metal work, and environmental control. Prerequisite: I ED 506.

METALS AND MACHINERY

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.

235 Machine Tool Metalworking 3 hrs.
Advanced theory and practice in the application of machine tool metalworking processes and procedures, with emphasis on plastic tooling for plastic minors. Prerequisite: I ED 234.

332 Tooling and Production Metalworking 3 hrs.
An advanced course in numerical control machining and programming. A study of the "state of the art" of the metalworking industry, its economic, social, and educational implications. Prerequisite: I ED 234.

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 ED 130.

335 Patternmaking and Foundry 3 hrs.
Basic principles, techniques, and materials pattern construction and metal casting with concentration on cast tooling for plastic minors.
A basic course in the joining of metals by fusion welding and brazing low temperature surface alloying materials. Included are principles and practices in the use of materials, tools, and equipment for S.M.A., S.T.A., and G.M.A. welding. Gas welding, brazing, off-hand and automatic flame cutting of ferrous metals, heat treating are also included. Prerequisite: I ED 130.

338 Advanced Metalworking 3 hrs.
Principles and practices in art metalworking and nonconventional metalworking processes. Prerequisite: I ED 130.

538 Problems in Metalworking 2 hrs.
Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Emphasis on methods of selecting and developing course materials for junior and senior high
166

College of Applied Sciences

school students. Course content adapted to meet individual needs. Prerequisite: I ED 234.

PLASTICS

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 ED 174.

578 Plastics Technology 2 hrs.
Comprehensive study of plastic materials and processes, and applications of thermoplastic, thermosetting, and selected synthetic materials. Product development emphasizes vacuum forming, compression, extrusion, injection, blow molding, lamination, casting, reinforcing, foaming, coating, and general fabrication.

POWER AND ENERGY

POWER—AUTO

180 Power Mechanics 3 hrs.
Deals with energy sources, power production and transmission. Emphasis on small Otto cycle engines.

280 Applied Energy and Power 3 hrs.
Historic development, economic and ecologic implications of applied energy and power. Emphasis on transportation, production and service applications. Prerequisite: I ED 180.

384 Automechanics for Teachers 3 hrs.
Advanced laboratory course for high school and community college automotive teachers. Emphasis on instructional materials and evaluation instruments. Prerequisites: I ED 342, TRAN 121, TRAN 126, and TRAN 226.

582 Applied Fluid Power 2 hrs.
Deals with fluid power development transmission and control systems. Laboratory experience requires application of fluid power to a manual or electrically powered machine.

584 Automotive Technology for Teachers 3 hrs.
Deals with recent technical developments, and current practices in automotive instruction.

*Courses in Auto Mechanics can be obtained from the Transportation Technology Department or by transfer from community colleges.
585 Advanced Automotive Technology for Teachers 3 hrs.
   Designed for automotive teachers and advanced undergraduates. Deals
   with advanced technical developments, and practices and problems unique
   to automotive instruction.

586 Laboratory Practices in Automechanics 3 hrs.
   Designed for technical school and/or community college transfer stu-
   dents. Emphasis on course development, teaching and evaluation meth-
   ods, instructional materials and equipment selection. Includes labora-
   tory practice applying teaching techniques. Prerequisites: I ED 584
   and I ED 585 or equivalent.

588 Power Laboratory Techniques 2 hrs.
   Advanced course treating recent applications of energy and power. Emphasis on laboratory planning and equipping, and instructional mate-
   rial evaluation and application to instruction. Prerequisite: I ED 180,
   or consent.

ELECTRICITY-ELECTRONICS*

160 Basic Electricity 3 hrs.
   This course provides both theoretical and practical applications of
   basic electrical principles. The cause, effects, and control of electrical
   currents in circuits will be discussed and demonstrated. Practical experi-
   ences 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
   to service electronic equipment. Laboratory problems will point toward
   fundamental applications of electronic test instruments in diagnosing
   malfunctions and servicing radio, TV, and other electronic devices. Also
   included are fundamentals of ham radio. Prerequisite: 3 hrs. of elec-
   tricity-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 laboratory teachers of
   electricity and electronics. Emphasis placed on new methods and ma-
   terials. Laboratory practice will apply new techniques and develop
   teaching projects for electricity and electronics instruction.

PROFESSIONAL
INDUSTRIAL EDUCATION

342 Course Planning and Construction
   Principles of analyzing, selecting and arranging instructional ma-
*Note: Additional courses in Electricity-Electronics can be obtained from the Electrical
   Engineering and Technology Department or by transfer from community colleges.
materials for instruction purposes. (Lesson plans, unit plans and complete courses of study.)

344 Teaching of Industrial Education 3 hrs.
This course deals with the many aspects of teaching the practical subjects. Included will be the role of the teacher, instructional material, lesson presentation, evaluation and classroom and lab management and administration. Prerequisite: I ED 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.

545 Safety Education for Industrial Teachers 2 hrs.
Fundamentals of accident prevention in industrial education laboratories, treating legal responsibility of teachers, safety requirements in relation to equipment, safe guarding, and safe operation.

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.

VOCATIONAL

The following courses are designed for professional preparation in all Vocational-Technical Education programs including those in Agriculture, Vocational-Technical Education, and Business Education teaching curriculum.

312 Industrial/Field Experience 3 hrs.
A cooperative education program involving a semester of full-time (or part-time equivalent) planned and supervised industrial/field experience. A written report of industrial/field activities is required. May be re-elected for a total of twelve hours credit.

510 Organization and Administration of Vocational Clubs 2 hrs.
The organization and administration of vocational youth organizations, at the national, state and local levels. The use of the youth organization as a public relations and/or teaching tool.

511 Field Experiences in Vocational Clubs 1 hr.
Directed individual study of the organization and administration of multi-section Vocational student organizations. Will include organization chart and list duties of the several functions to be performed. Prerequisite: I ED 510/Concurrent.
Principles of Vocational Education 3 hrs.
The place and function of the practical arts and vocational education in the modern school; fundamental principles upon which this work is based. For teachers of agriculture, business, home economics, industrial subjects, and administrators. For upperclassmen and graduate students. Prerequisite: I ED 344.

GENERAL INTEREST COURSES

170 Industrial Crafts Techniques 3 hrs.
An introductory course for teachers in the crafts area, including art metal, leather, lapidary, and plastics. Applications and procedures will be stressed.

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 hours of credit by arrangement.

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.

195 Applied Arts and Crafts 1 hr.
This course is intended as a supplementary course for the practical application of Industrial Arts for the Elementary Teacher, 190. Involves supervised teaching experience in local elementary school classrooms. Concurrent with I ED 190 enrollment.

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.
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 natural and synthetic materials.

370 Modern Manufacturing 2 hrs.
A study of the essentials and elements of industry as they pertain to modern manufacturing. Related issues of man and his relationships to technology and ecology are also examined. Laboratory experiences include the development and production of school related product.

570 Arts and Crafts Techniques 2 hrs.
Advanced laboratory experiences in internal plastic carving, leather work, model work, and related crafts in conjunction with a study of current technical literature in these areas. Written reports will be required. Course content adapted to individual needs.

572 Metric Conversion 3 hrs.
Study of origins and development of the modern metric system; and of problems involved in change-over from customary inch-pound system to the metric system of measurement. Course includes application with base ten system, and basic and derived units of the modern international metric measuring system.

573 Mechanics and Conditioning of Equipment 2 hrs.
Study of principles of machining wood, metal, and synthetic materials. Practice in installation, adjustment, preventive maintenance and conditioning of power equipment included. Emphasis on 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 required. Include selection, development and preparation of materials and instructional media for multiple activity instruction at junior and senior high school levels. Prerequisite: 15 hours in Industrial Education Technology.

590 Industrial Arts for the Elementary Schools 2 hrs.
Deals with problems of organizing, correlating and teaching constructional activities in elementary grades. Course materials, techniques, and materials in the industrial and craft areas emphasized through development of teaching unit.

592 Aerospace for Classroom Teachers 2 hrs.
Deals with educational, social, economic, and political implications of aerospace in the modern world. Study of basic aerospace materials and activities appropriate for different grade levels. Consideration given to aerospace literature and visual aids. Opportunities provided for participation and aerospace experiences. Open to elementary and secondary education students.

593 Arts and Crafts for Special Education Teachers 2 hrs.
Covers craft techniques in sketching, leather, wood, and related experiences. Emphasis on teaching procedures, methods, and materials.
594 Home Mechanics for the Blind 2 hrs.
Covers general knowledge and basic home mechanic skills in woodworking, electricity, plumbing, and general maintenance.

596 Consumer Automobile Principles 2 hrs.
A course in the methods and problems of providing automobile users with basic information on selecting, purchasing, and maintaining a personal motor vehicle. Designed primarily for Driver Education and Highway Safety instructors.
The Mechanical Engineering Technology Curriculum is an applied engineering program in the following fields: Manufacturing, Product Development, Energy Conversion, and Construction. Electives may be used to broaden the program to include an area such as supervision/administration, industrial marketing, testing and development.

A Bachelor of Science degree requires 128 semester credit hours. A "C" average or better must be earned in the required technical courses.

A minor may be secured upon approval of the department's chief counselor and by completing fifteen to twenty semester hours of work. Minors for students enrolled in curricula in the Mechanical Engineering Technology Department may only be obtained from departmental offerings other than those in the engineering and technology curricula and Transportation Technology curricula.

Coop-Education

Students enrolled in Mechanical Engineering Technology may pursue a cooperative plan of education, whereby alternate semesters are spent working for compensation in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, maintenance management, and field service divisions of major companies.

Academic Counseling

Students should contact the Mechanical Engineering Technology academic counselor as early as possible. A counselor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by departmental counselors.

The academic counselor, W. J. Stiefel, is located in Room 2038, Industrial and Engineering Technology building.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this Department may be found on pages 100-102.
Manufacturing

A Student interested in the Manufacturing area of Mechanical Engineering who already possesses an Associate degree may obtain a Bachelor of Science degree in Manufacturing with an additional 60 academic credit hours. For more information on this curriculum, see page 102 of the catalog.

REQUIREMENTS

Candidates for the degree Bachelor of Science-Mechanical Engineering Technology—must complete the following program:

Schedule below is an example of one leading to graduation in 8 semesters beginning Fall.

<table>
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<tr>
<th>Course</th>
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<th>No.</th>
<th>Course Title</th>
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<td>Numerical Control of Production</td>
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<td>Fluid Mechanics</td>
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College of Applied Sciences

Course

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<th>Dept. No.</th>
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<td>Mechanics and Heat</td>
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<tr>
<td>PHYS 211</td>
<td>Electricity and Light</td>
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</table>

**GENERAL EDUCATION—DISTRIBUTION PROGRAM**

| AREA I | Humanities*                        | 1 2 3 4 5 6 7 8 |
| AREA II| Social Science*                    | 1 2 3 4 5 6 7 8 |
| AREA III| Natural Science and Mathematics    | 1 2 3 4 5 6 7 8 |
| AREA IV| Non-Western World                  | 1 2 3 4 5 6 7 8 |
| AREA V | Optional Electives                 | 1 2 3 4 5 6 7 8 |
|        | Writing Requirement**              | 1 2 3 4 5 6 7 8 |

**PHYSICAL EDUCATION**

| PEGN | Physical Education                 | 1 2 3 4 5 6 7 8 |

**ELECTIVES**

| Approved Electives | 1 2 3 4 5 6 7 8 |

**TOTAL FOR GRADUATION—128 HOURS**

| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |

**120 Machining Metals**

3 hrs. Fall, Winter, Spring

Theory and laboratory experience in the basic techniques used in metal removal. Introduction to layout, measurement, machine use and cutting tool geometry. Consideration of numerical control and electro discharge machining.

**121 Manufacturing Processes**

3 hrs. Fall, Winter, Spring

Analysis of processes and controls used in manufacturing products of various materials. Laboratory experience and field trips.

**220 Production Tooling**

3 hrs. Fall, Winter

Design and fabrication of jigs, fixtures and gauges used in production. Methods, processing and cost considerations in relation to production tooling. Prerequisites: IEGM 130, MET 120.

**221 Industrial Welding**

3 hrs. Fall, Winter

The processes, techniques, and materials used to fabricate metal products by welding. Laboratory experience in application, design, and mechanical properties.

**256 Statics**

3 hrs. Fall, Winter, Spring, Summer

Mathematical and graphical techniques for ascertaining the magnitude of forces acting on structural bodies under static loads. Concepts of

*Four hours to be taken on the 300-500 level in either Area I or Area II.

**ENG-105 or BED-142 or IEGM-102.**
vectors, free body analysis and centroids. Prerequisites: Math 122 or 200, IEGM 100 or 105.

320 Pressworking of Metals 3 hrs. Fall, Winter
Standard pressworking methods are analyzed in the construction and use of dies for blanking, shaving, bending, forming and stamping metals in standard power presses and brakes. Prerequisites: MET 120, IEGM 131.

321 Numerical Control of Production 3 hrs. Winter, Spring
Use-oriented approach to the majority of the point-to-point processes used in industry. Problems in efficient processing, programming and computer applications. Prerequisite: MET 220.

330 Thermo-Fluid Dynamics 4 hrs. Winter, Summer
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.)

332 Thermodynamics 3 hrs. Fall, Winter, Spring
Fundamental laws of thermodynamics, including gas and vapor processes, both non-flow and steady-flow, and thermodynamic cycles. Prerequisite: Math 123.

338 Thermal Pollution and Energy Resources 3 hrs. Fall, Winter
This course is designed to provide an insight into the problems of thermal pollution and energy resources for General Studies and environmental programs. Not open to students with credit in a thermodynamics course. Prerequisite: Junior standing.

353 Strength of Materials 3 hrs. Fall, Winter, Spring, Summer
Compression, tension, shear, torsion, and bending forces in structural members, including distribution of stress, deflections, buckling, and fatigue on engineering materials. Prerequisites: MET 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: MET 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: MET 256 and Math 123.

358 Mechanism Analysis 3 hrs. Fall, Winter
Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis. Prerequisites: MET 256 and Math 123.

360 Control Systems 3 hrs. Fall, Winter, Spring
Theory and analysis of linear closed-loop control systems containing electronic, electro-magnetic, and mechanical components. Prerequisites: EET 100, MET 256, and Math 123.
420 Computer Aided Manufacturing 3 hrs. Winter
A study and application of Computer Programming for Machine tools. Prerequisites: MET 120 or 121, Math 122.

430 Fluid Mechanics 3 hrs. Fall, Winter, Spring
Static fluids and hydrostatic pressure on plane and curved surfaces. Analysis of the flow of fluids based on Bernoulli’s theorem. Flow orifices, pipe systems, and open channels. Prerequisites: MET 256 and Math 123.

431 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: MET 332 and 360.

433 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: MET 332.

435 Mechanical Engineering Laboratory 3 hrs. Fall, Winter, Spring
Principles of measurement, testing and evaluation of mechanical engineering systems. Prerequisites: MET 332, 353, and 430. Two of these courses may be taken concurrently with the laboratory.

453 Product Engineering 4 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: IEGM 131, MET 353.

454 Air Pollution Control Systems 3 hrs. Fall, Winter
Considers the nature of air pollution and the methods of monitoring and controlling emissions. Sampling and analysis techniques and devices are studied. Prerequisite: PSE 251.

490 Independent Research and Development 1-4 hrs.
Individual research or special project in Mechanical Engineering Technology.

498 Independent Readings 1-6 hrs.
An independent readings assignment, the description and purpose of which will be set forth in a form available at the departmental office.

499 Independent Studies 1-6 hrs.
An independent studies assignment, available only by special arrangement with an instructor and approved by the departmental chairman.

521 Welding Design Analysis 3 hrs. Winter
Production methods and design using modern techniques of electron beam welding, inertia welding, and application of lasers for welding. Use of various protective enclosures, plasma arc welding, automated electronic welding. Weld testing techniques. Prerequisite: MET 221.

553 Advanced Product Design 3 hrs. Fall
An engineering design project from concept to adoption. Static and
dynamic analysis. Mechanical systems design and layout. Prerequisites: MET 360, 453. (Offered alternate years.)

555 Mechanism Synthesis 3 hrs. Fall
Type, number and dimensional synthesis of planar mechanisms by graphical and analytical methods. Computer design using optimization methods. Prerequisite: MET 358. (Offered alternate years.)

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: MET 355 and 360 or Math 223.

559 Sound, Noise and Vibration Control 3 hrs. Fall
The effects of acoustical energy on the environment, methods of measurement, and governmental regulations are studied. No prerequisites.

560 Engineering Analysis 3 hrs. Fall
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: MET 360 or equivalent.
Military Science

LTC Samuel W. Focer, Jr., Head
MAJ Thomas R. Wolf
CPT Roy M. Capozzi
CPT Donald L. Mercer
CPT Donald Madison
MSG Richard L. Waters
SSG Robert O. Reitmeyer, Jr.

The Department of Military Science offers all male and female students at Western Michigan University courses intended to develop leadership and managerial skills and to broaden students' knowledge of the role of the military in society. Selected Advanced Course students become officers in the Army of the United States upon completion of the program. Students enrolled in this program are eligible for an 1D draft deferment, ROTC scholarships, membership on the Smallbore Rifle Team and Western's Rangers. Advanced course students are eligible for flight training during the senior year (student must pass required written and physical examinations) and a commission as a second lieutenant in the United States Army, either on active duty or in the Reserves.

The Head of the Department and all instructors are officers of the United States Army assigned to the University by permission of the University. They administer the Military Science Program and conduct all classes offered by the department. The government provides uniforms and textbooks for all students, with financial assistance for those in the last two years of the program (Advanced Course).

An activity fee of $2.00 per semester is charged for support of Military Science activities such as rifle team, military social events, and suitable achievement awards.

Minors in Military Science are available as shown here.

Military Science Minors

A. Military Science 300, 301, 401, 420 .......................... 11 hours
   General Education ............................................. 4 hours
   Management 352 ............................................... 3 hours
   History 519 or 594 or 595 (MS 400) .......................... 3 hours
   Elective* ....................................................... 2 or 3 hours

B. All Military Science** ........................................ 26 hours

A department minor slip is required.

*An elective of two or more hours will be chosen by the student from any one of the following areas: Anthropology, Geography, Sociology, or Political Science. This elective must have a course number of 200 or higher and be approved by the student's minor advisor.

**This minor is open only to those students interested in pursuing a career in the military as a commissioned officer, and who have evidenced superior academic and leadership performance prior to the time they request admittance into this program. A minimum grade point average of 2.75 in department subjects must be maintained.
FOUR YEAR PROGRAM

The four year Military Science Program is divided into a Basic Course (first two years) and an Advanced Course (last two years). Students who participate in basic course instruction are under no obligation to serve in the active Army or the Reserves.

BASIC COURSE

The basic course is designed to furnish a background of basic military subjects necessary to pursue the classes offered in the advanced course, and to provide a general knowledge of military affairs to those students who do not enter the advanced program. Students in the basic course, who wish to participate as cadets, are expected (1) to be physically qualified, (2) be of good moral character, and (3) sign an oath of loyalty to the United States. Students who have had three years of Junior R.O.T.C. (high school R.O.T.C.), or more than one year of active military service may substitute their prior training for the first two years of classes by securing the approval of the Professor of Military Science. Students who have completed the Basic Summer Camp are not required to attend basic course classes. Students thus excused will normally begin the advanced course classes at the start of their junior year. Records of students transferring from other institutions who have started either Army or Air Force Military Science Programs will be reviewed by the Professor of Military Science to determine proper placement in the Military Science Program.

(Course descriptions in italics are approved for General Education purposes.)

100 Contemporary Roles of National Defense 3 hrs.

The study of foundations of defense and subjects of current national military implication and interest. Subject material involves leadership, military involvement around the world, and other topics of current U.S. military/civilian interest.

101 Military Aspects of National Power 2 hrs.

A study of the factors contributing to national and international power; an introduction to the principles of warfare and the causes of international conflict.

120 Military Fitness I 1 hr.

Classes which combine physical and leadership training. Cadets will have an opportunity to present instruction and lead physical training exercises. Includes personal health, physical fitness, drill, and hiking and back packing. This course is taught in conjunction with the General Physical Education Department and must be registered for under PEGN 175 Special Activities. (See current Schedule of Classes.) Must be taken in conjunction with 101.

200—Principles of Cartology 2 hrs.

A study of topographical map reading, aerial photographs, and land navigation techniques. Emphasis is placed upon developing the student's ability to apply principles learned in the classroom to practical work in the field.
220—Military Fitness II 1 hr.

A continuation of Military Fitness I. Emphasis is placed on military related physical activities such as riflery, orienteering, and survival training. This course is taught in conjunction with the general Physical Education Department and must be registered for under PEGN 175 Special Activities. (See current Schedule of Classes.) Must be taken in conjunction with 200.

201 Human Behavior and Fundamentals of Tactical Employment 3 hrs.

A study of the tactical considerations and employment of small military units to include their organization in offensive and defensive warfare. Emphasis is placed on the role of the individual, group interaction and motivation in stress situations.

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 for purpose of attainment of a commission, 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, execute a contract with the government to finish the course, attend a six week summer camp, and accept a 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. Students accepted for the Advanced Course receive payment of $100 per month. Students attending summer camp are fed and quartered at the expense of the Government, paid at the rate of approximately $300.00 monthly while in camp, and are given a travel allowance 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 request such instruction and pass required written and physical examinations. Completion of this training may qualify 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.

One overnight field training exercise will be conducted each semester. The training will be a practical exercise emphasizing previous classroom instruction.

300 Advance Leadership and Management 3 hrs.

Studies of authority and responsibility, span of control, planning, coordinating, and decision making with emphasis on practical application to military situations. Prerequisite: Permission of Professor of Military Science (PMS).
301 Advanced Concepts of Tactical Employment 3 hrs.
A study of tactical situations. Development of planning, and co-
ordination sequences applicable to the employment of military resources.
Communications as a means of control in both conventional and uncon-
ventional warfare. Prerequisite: MS 300 or permission of PMS.

400 3 hrs.
Students will enroll in either History 519 (America and War), History
594 (War in the Modern World), or History 595 (History of War). Note:
Students must enroll in 420.

420 Practicum in Leadership 1 hr.
A study of the functions of the staff and its relationship to the com-
mander. Students are placed in actual positions to supervise the cadet
corps. Must be taken in conjunction with 400.

401 Command and Staff 4 hrs.
A comprehensive course in the fundamentals of military administra-
tive management, military law, intelligence, and counterintelligence.
Prerequisite: MS 300-MS 400 or permission of PMS.

TWO YEAR PROGRAM
For the students transferring into the University and currently en-
rolled students who have not taken Military Science classes because of
class conflicts, work schedules, etc., a two year program is available.
Students enter this program by applying for attendance at a Basic
Summer Camp of 6 weeks duration. Attendance and successful comple-
tion of this Basic Summer Camp then is substituted for the Basic
Course classes; therefore, the student has only to complete the Advanced
Course classes while he is finishing his overall degree requirement in
order to be eligible for a commission. The two year program student is
eligible for scholarships, financial assistance ($100 per month), draft
deferments, and free textbooks for Military Science classes. See the
paragraph on the Advanced Course for further information.
While at the Basic Summer Camp the student will be trained, fed
and housed at the expense of the government. He will also receive travel
pay plus a salary of approximately $326.00 per month. See the Professor
of Military Science for details of this program.

R.O.T.C. SCHOLARSHIPS
R.O.T.C. scholarships that provide for tuition, fees, books, and an
allowance of $100 per month are available. See Military Science on
page 67 in the Scholarships portion of this catalog.
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.

The following courses are offered on a credit/no credit basis only: OT 236, 440, 441, 450.
### Occupational Therapy

#### 3. Science
- *Bio.* 101 Animal Biology ........................................... 3
- Bio. 219 Human Physiology ........................................... 4
- O.T. 221 Gross Human Anatomy ..................................... 6
- O.T. 520 Kinesiology ............................................... 3

#### 4. Practical Arts
- O.T. 103 Ceramics .................................................. 3
- O.T. 110 General Crafts ............................................ 3
- I.Ed. 198 O.T. Woodworking ....................................... 3

#### 5. General Pathology
- O.T. 322 Psychiatric Conditions ................................... 3
- O.T. 524 Medical and Orthopedic Conditions ..................... 4

#### 6. Occupational Therapy
- O.T. 111 Therapeutic Media I ...................................... 2
- O.T. 210 Therapeutic Media II ..................................... 3
- O.T. 235 Developmental Assessment ................................ 3
- O.T. 323 Clinical Neurology ....................................... 3
- O.T. 330 Psychosocial Dysfunction Theory ......................... 3
- O.T. 331 Psychosocial Dysfunction Techniques .................... 2
- O.T. 333 Clinical Instruction in Psychiatry ...................... 2
- O.T. 410 Application in Physical Dysfunction—Techniques ........ 4
  - O.T. 430 Organization for Patient Services .................... 3
  - O.T. 440 Clinical Affiliation .................................... 3
  - O.T. 441 Clinical Affiliation .................................... 3
  - O.T. 442 Application in Physical Dysfunction—Treatment .......... 4
  - O.T. 443 Clinical Instruction in Physical Disabilities ........... 2
- O.T. 450 Senior Seminar ........................................... 2

#### 7. Physical Education ............................................. 2

#### 8. Electives to make 128 hours .................................. 3

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## COURSE DESCRIPTIONS

### 103 Ceramics

3 hrs.

Basic course in ceramic methods—covering pinch pots, slabs, tall pots, decorative slabs, simple sculpture, basic underglaze techniques, molds, glazing methods, kiln preparation, stacking and firing.

### 110 General Crafts

3 hrs.

To acquaint students with a wide variety of media applicable in the field of O.T. for treatment assignments with patients/clients. Emphasis on understanding of the basic techniques involved in each craft area.

### 111 Therapeutic Media I

2 hrs.

Designed to assist the student in gaining knowledge and understanding of specific skills and techniques needed to make a selective occupational placement of a worker with a disability. Prerequisite: Occupational Therapy major.
210 Therapeutic Media II 3 hrs.
Introduces student to the decision making process and affords the student the opportunity to use the process to select and to evaluate various therapeutic media and therapeutic processes. Students will participate in both laboratory and community experiences.

221 (321) Gross Human Anatomy 6 hrs.
A study of the structure and function of the various systems of the body. Lecture and laboratory. Prerequisites: Biology 101 or equivalent, Occupational Therapy major.

225 Growth, Development, and Aging 3 hrs.
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 motor development, physiology of aging, growth deterrents, and functional pathology in any of the above aspects. Prerequisites: Psychology 150, 160. Not offered in 1974-75.

235 Developmental Assessment 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: TEED 250 or consent, Occupational Therapy major.

236 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. Occupational Therapy major.

322 Psychiatric Conditions 3 hrs.
A series of lectures and discussion periods designed to assist the occupational therapy student to identify and characterize psychiatric conditions, to identify various treatment modalities, to trace the growth of the field of psychiatry, and to identify concepts of the law as applied to the psychiatric patient. Prerequisites: Psych. 150, 160; TEED 250 or concurrently; Occupational Therapy major—Fall Semester only.

323 Clinical Neurology 3 hrs.
Regional neuroanatomy and functional neurophysiology are presented. Emphasis is upon clinic signs that indicate neuropathology. Student will participate in a group paper presentation of a neurological disorder and will take part in a neurological exam.

330 Psychological Dysfunction—Theory 3 hrs.
A study of the philosophical and theoretical basis for the application of Occupational Therapy principles and techniques as a means of enhancing psychosocial functioning. Lecture, discussion, demonstration, student projects, resource people, movies, video tape and participatory experiences will be utilized in instruction. Prerequisite: O.T. 322 or concurrent.

331 Psychosocial Dysfunction—Techniques 2 hrs.
A laboratory class designed to develop skill in the use of techniques and media utilized in the practice of occupational therapy as a means of
enhancing psychosocial functioning. Participatory experiences such as role playing, task groups, student demonstrations, and independent projects will be utilized in instruction as well as film and video tapes. Prerequisite: O.T. 330.

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. Prerequisite: OT 331 or concurrent.

410 Application in Physical Dysfunction—Techniques 4 hrs.
The objectives of occupational therapy in general medicine and rehabilitation serve as a basis for studying treatment techniques. Prerequisites: OT 235, 323, 520, 524. Must be taken concurrently with OT 442.

430 Organization for Patient Services 3 hrs.
Designed to assist the student in applying knowledge gained about the public health program to the field of rehabilitation, and to assist the student in gaining knowledge of supervision and administration principles. Prerequisites: OT 442 or concurrently; Occupational Therapy major.

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 331, 333 or 442, 443.

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 Dysfunction—Treatment 4 hrs.
A continuum course. Emphasis is placed on the process of evaluation, interpretation, planning and implementation as applied to occupational therapy. Prerequisites: OT 235, 323, 520, 524. Must be taken concurrently with OT 410.

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. Prerequisite: OT 442 or concurrent.

450 Senior Seminar 2 hrs.
The primary objective of the seminar is to serve an integrative function, bringing together knowledge and skills the student has developed during his or her professional program for analysis, evaluation and solution of health problems.

470 Functioning of the Older Adult 3 hrs.
The objective of this course is to provide understanding of the basic
psychological and physiological changes characteristic of human aging and pathological conditions which have consequences for function and behavior.

510 Arts and Crafts for Rehabilitation Teachers of the Blind 2 hrs.
Includes methods and techniques of teaching needlework, ceramics, and leatherwork to visually handicapped adults. Prerequisite: Occupational Therapy majors must have consent of Department Chairman.

520 Kinesiology 3 hrs.
Course includes an investigation of prerequisites and characteristics of normal voluntary movement, kinesiology of normal and abnormal upper extremity function, posture and gait, range of motion and muscle strength evaluation, activity analysis and an introduction to therapeutic exercise. Prerequisites: Bio. 219, OT 221.

524 Medical and Orthopedic Conditions 4 hrs.
A series of lectures providing an overview of medical and orthopedic conditions. Psychosocial aspects of disease and disability are discussed and an introduction to occupational treatment goals is provided. Prerequisite: Bio. 219.
The Department of Paper Science and Engineering offers three 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, environmental, and related fields. The breadth and depth of the programs are such that a significant number of graduates have progressed into management positions and to graduate school in the sciences.

The academic programs leading to B.S. degrees are 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. Three programs are offered so that the student may select one during or following his sophomore year.

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

The PAPER ENGINEERING program provides a background in engineering, with less emphasis on chemistry than Paper Science. This program will serve those students seeking to enter industry in the operational areas of manufacturing, technical service, process control and, eventually industrial management.

The ENVIRONMENTAL ENGINEERING programs are designed to develop engineering and scientific skills in graduates so that they may serve society and industry to reduce, control and eliminate pollution of water, air, and land. Three options are available: Paper Industry Processes (water, solid waste, and air pollution), Thermal-Energy (thermal pollution, energy resources, and noise), and Environmental Management (industrial engineering and management).
### COMPARISON OF PROGRAMS

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<th>Course Type</th>
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**TOTAL FOR GRADUATION: 136 hrs. 136 hrs. 130 hrs.**

*Additional hours within curriculum to total 35 hours.

**Thermal-energy and environmental management options also may be selected.

**WORK EXPERIENCE**—Industrial experience in all three programs is provided through employment by paper or related companies for at least one 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.

**SCHOLARSHIPS**—An extensive scholarship program is made possible through the membership of the Foundation. Scholarships from the Foundation are available for the following three programs: Paper Science, Paper Engineering, and Environmental Engineering (Paper Industry Processes Option). Close cooperation with the paper industry is maintained through committees of the Paper Technology Foundation, Inc. Information about these scholarships may be found in the scholarship section of this catalog.

**COUNSELING**—Students should contact a Paper Science academic counselor as early as possible. The counselors assist in individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions, transfer credit and electives must be approved by Department Chairmen.

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

A **MINOR** in Paper Science may be earned by completing the following 19 semester hours of departmental courses: 100, 202, 305, 333, and 442. A **MINOR** in Paper Engineering may be earned by completing the following 17 semester hours: 100, 202, 305, 442, and 590. Prerequisites
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

Bachelor of Science Degree

#### REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 8 semesters beginning Fall.

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<td>Current Topics in Pulp and Paper</td>
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College of Applied Sciences

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TECHNICAL-PROFESSIONAL

Electives* 9 hrs. 3 3 3

GENERAL EDUCATION—DISTRIBUTION PROGRAM

AREA I Humanities* 3 3
AREA II Social Science* 3 3
AREA III Natural Sci. and Math. (8 hrs. incl. in curr.) 3 3
AREA IV Non-Western World* 4
AREA V Optional Electives (8 hrs. incl. in curr.) Writing Requirement** 3

PHYSICAL EDUCATION 2 hrs. 1 1

TOTAL FOR GRADUATION: 136 hrs.

PAPER ENGINEERING

Bachelor of Science Degree

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program.

Schedule below is an example of one leading to graduation in 8 semesters beginning Fall.

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<th>Course</th>
<th>Semester</th>
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*Select from Paper Science, Chemistry, Engineering, Mathematics or business courses with approval by department chairmen.

**Select from IEGM 102, BED 142, or ENG 105.
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<td>Humanities**</td>
<td>AREA I</td>
<td>3</td>
<td></td>
<td>3</td>
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<tr>
<td>Social Science**</td>
<td>AREA II</td>
<td>3</td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

*Select from Paper Science, Chemistry, Engineering, Mathematics or business courses with approval by department chairmen.

**Eight hours at 300-500 level.
College of Applied Sciences

AREA III  Natural Sci. & Math. 
(8 hrs. incl. in curr.)

AREA IV  Non-Western World**  4

AREA V  Option Electives 
(8 hrs. incl. in curr.)
Writing Requirement**  3

PHYSICAL EDUCATION  2 hrs.  1  1

TOTAL FOR GRADUATION: 136 hrs. 17 16 16 16 17 17 2 18 16

ENVIRONMENTAL ENGINEERING
Bachelor of Science Degree

REQUIREMENTS
Candidates for the degree Bachelor of Science must complete the following program.
Schedule below is an example of one leading to graduation in 8 semesters beginning Fall.

<table>
<thead>
<tr>
<th>Course Department</th>
<th>Course Title</th>
<th>Semester</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
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<tr>
<td>PAPER SCIENCE</td>
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<td>7 hrs.</td>
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<tr>
<td>PSE 100</td>
<td>Intro. Pulp &amp; Paper Mfg.</td>
<td>3 3 3 3</td>
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<tr>
<td>PSE 202</td>
<td>Paper Manufacture</td>
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<tr>
<td>ENVIRONMENTAL ENGINEERING</td>
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<tr>
<td>PSE 251</td>
<td>Introduction to Industrial Environmental Eng.</td>
<td>3 3 3 3</td>
</tr>
<tr>
<td>PSE 353</td>
<td>Waste Water Treatment Systems</td>
<td>4 4 4 4</td>
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<td>PSE 451</td>
<td>Environmental Process Design</td>
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<tr>
<td>ENGINEERING</td>
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<td>IEGM 131</td>
<td>Engineering Drafting</td>
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<tr>
<td>MET 256</td>
<td>Statics</td>
<td>3 3 3 3</td>
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<tr>
<td>PSE 590</td>
<td>Instrumentation &amp; Process Control</td>
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<td>PSE 306</td>
<td>Process Engineering I</td>
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<td>Strength of Materials</td>
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<tr>
<td>or</td>
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<td>MET 360</td>
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<td>or</td>
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<td>PSE 591</td>
<td>or Mechanical Engineering Lab</td>
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<td>PSE 307</td>
<td>Process Engineering II</td>
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<tr>
<td>MET 435</td>
<td>or Thermo-Fluid Dynamics</td>
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<tr>
<td>IEGM 310</td>
<td>Engineering Economy</td>
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**Eight hours at 300-500 level.
***Select from IEGM 102, BED 142, or ENG 105.
<table>
<thead>
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<td>Introduction to Organic Chemistry</td>
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<td>Chemistry of Wood &amp; Pulp</td>
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<td>Mechanics and Heat</td>
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<td>Electricity &amp; Light</td>
<td>4</td>
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<tr>
<td>Introduction to Computers</td>
<td>4</td>
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</tr>
<tr>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>Calculus II</td>
<td>4</td>
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<tr>
<td>Differential Equations</td>
<td>4</td>
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<tr>
<td>Statistical Methods</td>
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<tr>
<td>Social Science*</td>
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<tr>
<td>Natural Sci. &amp; Math. (8 hrs. included)</td>
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<tr>
<td>Non-Western World*</td>
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<td>Optional Electives</td>
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<td>Writing Requirement</td>
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<td>Mechanics and Heat</td>
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<td>Calculus I</td>
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<tr>
<td>Differential Equations</td>
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<tr>
<td>Statistical Methods</td>
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</tbody>
</table>

**At least eight hours must be 300-500 level courses.**

**Select from one of three courses available (IEGM 102, BED 142, ENG 105).**

***Elect one of the three groups of electives. Courses shown with asterisk are required. Elect additional credits from same group to make a total of 29 credits.
100 Introduction to Pulp and Paper Manufacture 3 hrs.
A lecture-laboratory consideration of the fundamentals of papermaking processes and equipment. Some time will also be spent on coating, printing and other uses of paper. In this the student should acquire a basic understanding of the nature and scope of the paper industry. Prerequisites: High school chemistry, chemistry 101 or 102 concurrent.

150 Environmental Engineering Fundamentals 4 hrs. Winter
Designed for non-science majors to present the major concepts and tools of environmental control as they relate to industrial and municipal
air, water, and solid waste problems. Topics covered include nature and effects of pollution, reduction of effluents, processes of treatment, measuring of characteristics, governmental regulations and economics.

202 Paper Manufacture 4 hrs. Winter
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 treatment of papers and 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 4 hrs. Fall
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, and Organic Chemistry 360 or 365 concurrent.

251 Introduction to Industrial Environmental Engineering 3 hrs. Winter
Broad coverage of the causes, controls, and solutions of water, air, and land pollution problems of industry and municipalities. Chemical and biological evaluation of water and air effluents is introduced in the laboratory. Legal and economic implications are reviewed.

305 Mechanics and Optics of Fiber Systems 4 hrs. Fall
Lecture and laboratory study of the fundamental properties of fibers and fiber systems. Theories and techniques for evaluating paper properties are discussed. Subjects include mechanical strength testing, stress-strain behavior of fiber systems, basic of color measurement and light scattering and the use of the Kubelka-Munk theory. Prerequisites: Paper 202 and Physics 210.

306 Process Engineering I 4 hrs. Fall
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. Winter
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.

333 Chemistry of Wood and Pulp 4 hrs. Winter
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 or 365 (concurrent).
353 Waste Water Treatment Systems 4 hrs. Fall
A study of the fundamental principles, design considerations, and use of the unit processes and operations employed in waste water treatment. Physical, physicochemical, and biological treatments are considered.

352 Fiber Resource Conservation and Recycling 3 hrs. Fall
Consideration of the recovery of waste paper and other fiber sources for utilization in the manufacture of paper and paperboard. Topics include waste fiber collection, contaminant removal, implant reuse, effect on the processes and the products, and the economics involved.

440 Current Topics in Paper and Pulp 1 hr. Fall, Winter
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.

442 Coating and Converting of Paper 4 hrs. Winter
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. Prerequisites: Paper 202 and 305.

450 Solid Waste Treatment 2 hrs. Fall
Includes study of the practices, technology, and economics of solid waste generated by industry and by waste water treatment plants. Stressed are treatments of sludges, their disposal and utilization back in-process, and their conversion to by-products.

451 Environmental Process Design 4 hrs. Winter
A laboratory study of the design and operational factors of a number of unit processes and operations used in pollution control. The principles acquired in previous courses will be utilized to design selected segments of environmental control systems.

454 Air Pollution Control System
(MET) See course description under MET.

470 Senior Thesis 3 hrs. Fall, Winter
This course is designed to increase the student’s ability to develop a research or technical problem; to critically analyze the available information on this problem; to use this analysis to plan an experimental investigation; to carry out the experiments, and, finally, to present the completed program effectively both in writing and orally. About one-half of the semester is spent on developing the problem and completing the literature search. The second half is devoted to planning and initiating the experimental work.

471 Senior Thesis 3 or 4 hrs. Fall, Winter
A continuation of 470, including completion of the laboratory work and preparation of the final typed paper in duplicate. Oral presentation will be arranged.
499 Independent Studies
Variable, 1 to 6 hrs. Fall, Winter
Offers paper science and engineering majors with good scholastic records a program of independent study in an area arranged in consultation with the instructor. One to three hours credit per semester, cumulative to six hours.

530 Polymer Chemistry
2 hrs. Fall
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 or 365.

550 Paper Industry Processes
3 hrs. Winter
Offered primarily for students in graphic arts and printing management programs in order to provide a basic understanding of the major aspects of the science and technology of pulping, papermaking, coating, and evaluation of materials, especially as they relate to printing.

560 Advanced Topics in Pulp and Paper Engineering
3 hrs. Winter
A unified consideration of the pulp and paper plant and its subsystems stressing operating efficiencies from the engineering viewpoint. Includes design considerations, material and energy balances, power distribution, evaluation of equipment performance, and typical operating costs. Prerequisites: Paper 202, 203 and 307.

590 Instrumentation and Process Control
3 hrs. Fall
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
Continuation of Course 590.
3 hrs. Winter
Transportation Technology

Harley D. Behm, Chairman

John W. Cummings  Jon C. Kabbe  Pat D. Schiffer
Charles E. Dee  LaVerne M. Krieger  Curtis N. Swanson
Lance P. Dyar  Herman W. Linder  James VanDePolder
Herbert E. Ellinger  Robert J. Oliva  Clarence N. VanDeventer
Marvin E. Grunzke  Ronald L. Sackett  Edward Walker, Jr.
Forrest O. Hutchins

The Department of Transportation Technology offers programs designed to provide graduates with the background necessary to successfully assume a variety of positions in transportation-related industries. Bachelor of Science degree curricula are offered in Automotive Engineering Technology, Automotive Management and Service, Aviation Engineering Technology, Aviation Technology and Management, and Flight Technology. A two-year curriculum in Aircraft Technology is also available. The combination of specialized and general training is intended to allow employment flexibility, although most graduates are placed in the automotive or aviation industries. The Department also provides an Air Force ROTC Program designed to prepare officer candidates for duty as pilots and junior executives in the U.S. Air Force.

A Bachelor of Science degree in the curricula listed on the following pages can be earned only by completing one of the curricula offered by the Department. A student may not graduate from any Transportation Technology curriculum having received the grade of "D" in more than two required subjects in the curriculum.

A minor may be secured upon approval of the Department counselor and by completing fifteen to twenty semester hours of work. Minors for students enrolled in curricula in the Transportation Technology Department may only be obtained from Departmental offerings other than those in the engineering and technology curricula and Transportation Technology curricula.

Flight and aircraft technology courses are offered under technical school and airman agency certification by the Federal Aviation Administration (FAA). All of the aviation curricula permit students to qualify for the FAA Airframes and Powerplants license with some additional course work. The equivalent of the Aircraft Technology curriculum must be completed prior to taking the FAA examination.

Enrollment in flight courses is subject to a waiting list which is maintained at the aviation building.

Students will be permitted to enroll in advanced flight courses on the basis of results of the Department's Pilot Profile Analysis program. Participation in this program is required of all flight students.
Cooperative Education

Students enrolled in any Transportation Technology degree curriculum may pursue a cooperative plan of education, whereby alternate semesters are spent in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, maintenance management, and field service divisions of major companies.

Academic Counseling

Students should contact a Transportation Technology academic counselor as early as possible. Counselors are available to assist in individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by Departmental counselors.

The following academic counselors are located in Room 2038, Industrial and Engineering Technology Building:

- Automotive Curricula: Mr. Herbert E. Ellinger
- Aviation Curricula: Mr. C. N. VanDeventer

Additional Costs

Special lab fees are in effect for flight courses to cover the cost of airplane operation. The fee varies from $300 to $450, depending on the course.

Each student is required to have his own tools for aviation courses in airframes and powerplants. A basic list of required tools may be purchased for less than $100.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this Department may be found on pages 102-105.

### AUTOMOTIVE ENGINEERING TECHNOLOGY

Bachelor of Science Degree

The Automotive Engineering Technology curriculum is an applied engineering program leading to positions in design, development, testing, manufacturing, or service engineering within automotive-related industries.

#### REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program. The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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<tbody>
<tr>
<td>TRAN 122</td>
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<td>Automatic Transmissions</td>
<td>3</td>
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<tr>
<td>TRAN 121</td>
<td>3</td>
<td>Automotive Chassis</td>
<td>3</td>
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<td>TRAN 126</td>
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<td>Auto. Carburetion and Electricity</td>
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*Transportation Technology*
## RELATED ENGINEERING

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<td>TRAN 222</td>
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<td>Fuels and Lubricants</td>
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<tr>
<td>TRAN 226</td>
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<td>Automotive Engines</td>
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<td>TRAN 325</td>
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<td>Automotive Testing</td>
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<tr>
<td>TRAN 423</td>
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<td>Auto. Engineering Problems</td>
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### MECHANICAL ENGINEERING

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<td>MET 332</td>
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<td>Thermodynamics</td>
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<td>MET 353</td>
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<td>Strength of Materials</td>
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<td>MET 354</td>
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<td>Testing of Materials</td>
<td>3</td>
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<td>MET 355</td>
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<td>Dynamics</td>
<td>3</td>
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<td>MET 435</td>
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<td>Mech. Engineering Lab</td>
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<td>MET 430</td>
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<td>Fluid Mechanics</td>
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### TRANSPORTATION ENGINEERING

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<td>Fuels and Lubricants</td>
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<tr>
<td>TRAN 226</td>
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<td>Automotive Engines</td>
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<td>TRAN 325</td>
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### MATHEMATICS

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<td>MATH 123</td>
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### SCIENCE

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<td>PHYS 210</td>
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### ECONOMICS

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<td>Principles of Economics (micro)</td>
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<td>ECON 202</td>
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<td>Principles of Economics (macro)</td>
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</table>

### GENERAL EDUCATION—DISTRIBUTION PROGRAM

| AREA I   |          | Humanities | 3        |              |
| AREA II  |          | Social Science | 3 | 3          |
| AREA III |          | Natural Science & Mathematics (8 hrs. included in curriculum) | 4 | 4 |

| AREA IV  |          | Non-Western World | 4 | 4 |

*General Education must include 8 hours at the 300-500 level.*
### Transportation Technology

**Course**  
**Dept. No.**  
**Course Title**  
**Semester Credit Hours**

| AREA V | Optional Electives | (8 hrs. included in curriculum)  
|  | Writing Requirement** | 3 ... ... ... ... ...

**PHYSICAL EDUCATION**  
.. 1 .. 1 .. ...

**APPROVED ELECTIVES**  
.. 2 .. 3 3 .. 6

**TOTAL FOR GRADUATION:**  
128 HOURS  
15 15 16 16 17 16 17 16

### AUTOMOTIVE MANAGEMENT AND SERVICE

**Bachelor of Science Degree**

The automotive Management and Service curriculum prepares students for positions in supervision or management, sales, and service where technical knowledge of automobile construction and operation is necessary.

**REQUIREMENTS**

Candidates for the degree Bachelor of Science must complete the following program. The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

| Course **Dept. No.** | Course Title  
|  |  
| TRAN 121 | Automotive Chassis  
| TRAN 122 | Automatic Transmissions  
| TRAN 126 | Auto. Carburon and Electricity  
| TRAN 222 | Fuels and Lubricants  
| TRAN 226 | Automotive Engines  
| TRAN 322 | Auto. Service Management  
| TRAN 326 | Automotive Diagnosis  
| TRAN 421 | Automotive Analysis  
| IEGM 105 | Industrial Calculations  
| MET 120 | Machining Metals  
| IEGM 130 | Technical Drafting  
| EET 100 | Fund. of Circuits & Electronics  
| MET 121 | Manufacturing Processes  
| IEGM 308 | Quality Control  
| CAS 104 | Business and Professional Speech  

**SEMESTER**  
1 2 3 4 5 6 7 8

**CREDIT HOURS**  
3 ... ... ... ... ...

**ENG 105 or BED 142 or IEGM 102.**
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*General Education must include 8 hours at the 300-500 level.

**ENG 105 or BED 142 or IEGM 102.
AVIATION ENGINEERING TECHNOLOGY
Bachelor of Science Degree

The Aviation Engineering Technology curriculum is an applied engineering program offering preparation for careers in the aircraft industry in manufacturing, product development, technical sales, and other areas requiring application of technical skills and knowledge.

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program. The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
<th>Course</th>
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MECHANICAL ENGINEERING

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RELATED ENGINEERING

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ECONOMICS

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AVIATION TECHNOLOGY AND MANAGEMENT

Bachelor of Science Degree

The Aviation Technology and Management curriculum offers preparation for careers in the business and operations facets of the aviation industry as well as for supervision or management positions where technical knowledge of aircraft construction, operation and repair is an asset.

**REQUIREMENTS**

Candidates for the degree Bachelor of Science must complete the following program. The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

*General Education must include 8 hours at the 300-500 level.

**ENG 105 or BED 142 or IEGM 102.
<table>
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<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
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| TRAN 110 | Introduction to Aviation | 3 | \[
| TRAN 113 | Airframe Structures | 5 | \[
| TRAN 114 | Reciprocating Powerplants | 4 | \[
| TRAN 213 | A/F Hydraulic, Pneumatic and Aux. Systems | 4 | \[
| TRAN 230 | Aircraft Carburetion & Fuel Systems | 2 | \[
| TRAN 231 | Aircraft Fuel Systems Laboratory | 2 | \[
| TRAN 232 | Powerplant Evaluation and Systems | 4 | \[
| TRAN 313 | Airframe Electrical Systems | 4 | \[
| TRAN 315 | Aircraft Turbine Powerplants | 5 | 
| IEGM 130 | Technical Drafting | 2 | 
| IEGM 105 | Industrial Calculations | 1 | 
| MET 120 | Machining Metals | 3 | 
| MET 121 | Manufacturing Processes | 3 | 
| EET 100 | Fund. of Electric Circuits and Electronics | 3 | 
| IEGM 371 | Metallurgy & Material Failure | 4 | 
| IEGM 308 | Quality Control | 3 | 
| IEGM 326 | Production Control | 3 | 
| IEGM 402 | Principles of Industrial Supervision | 3 | 
| IEGM 422 | Conference Leadership | 3 | 
| ECON 201 | Principles of Economics (micro) | 3 | 
| ECON 202 | Principles of Economics (macro) | 3 | 
| ACTY 201 | Accounting Concepts and Applications | 3 | 
| MGMT 300 | Fundamentals of Management | 3 | 
| MKTG 370 | Marketing | 3 | 
| MATH 200 | Analysis and Applications | 4 | 
| MATH 106 | Introduction to Computers | 1 | 
| MATH 260 | Elementary Statistics | 4 | 
| CHEM | Chemistry | 4 | 
| PHYS 106 | Elementary Physics | 4 | 
| AREA I | Humanities | 3 | 

*General Education must include 8 hours at the 300-500 level.
College of Applied Sciences

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<td>AREA III Natural Science and Mathematics (8 hrs. included in curriculum)</td>
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<td>Writing Requirement**</td>
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PHYSICAL EDUCATION

APPROVED ELECTIVES

TOTAL FOR GRADUATION:

128 HOURS

FLIGHT TECHNOLOGY

Bachelor of Science Degree

The Professional Pilot program is oriented toward career-pilot positions in general aviation. Appropriate electives allow broadening to such fields as aircraft operations and airport management.

REQUIREMENTS

Candidates for the degree Bachelor of Science must complete the following program. The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>TRAN 110 Introduction to Aviation</td>
<td>1 2 3 4 5 6 7 8</td>
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<td>TRAN 114 Reciprocating Powerplants</td>
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<td>TRAN 113 Airframe Structures</td>
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<td>TRAN 200 Private Pilot Ground School</td>
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<td>TRAN 201 Introduction to Flight</td>
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<td>TRAN 230 Aircraft Carburetion and Fuel Systems</td>
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<td>TRAN 231 Aircraft Fuel Systems Laboratory</td>
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<td>TRAN 203 Primary Flight</td>
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<td>TRAN 213 A/F Hydraulic, Pneumatic and Aux. Systems</td>
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**ENG 105 or BED 142 or IEGM 102."
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### ENGINEERING AND TECHNOLOGY

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 100</td>
<td>Fund. of Electric Circuits and Electronics</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 105</td>
<td>Industrial Calculations</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 130</td>
<td>Technical Drafting</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>IEGM 371</td>
<td>Metallurgy and Material Failure</td>
<td>1</td>
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### BUSINESS AND ECONOMICS

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<tr>
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<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY 201</td>
<td>Accounting Concepts and Applications</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics (micro)</td>
<td>1</td>
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<tr>
<td>ECON 202</td>
<td>Principles of Economics (macro)</td>
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### MATHEMATICS

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<tr>
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</thead>
<tbody>
<tr>
<td>MATH 106</td>
<td>Introduction to Computers</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>MATH 200</td>
<td>Analysis and Applications</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
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### SCIENCE

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>PHYS 106</td>
<td>Elementary Physics</td>
<td>1</td>
<td>2</td>
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<tr>
<td>CHEM</td>
<td>Chemistry</td>
<td>1</td>
<td>2</td>
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<tr>
<td>GEOG 105</td>
<td>Our Physical Environment</td>
<td>1</td>
<td>2</td>
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<tr>
<td>GEOG 225</td>
<td>Intro. to Meteorology and Climatology</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION—DISTRIBUTION PROGRAM*

| AREA I | Humanities | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| AREA II | Social Science | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| AREA III | Natural Science and Mathematics (8 hrs. included in curriculum) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| AREA IV | Non-Western World | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

*General Education must include 8 hours at the 300-500 level.
AIRCRAFT TECHNOLOGY

Two-Year Certificate Curriculum

FAA Approved Technical School No. 3304
FAA Approved Airman Agency No. CE-08-01

The Aircraft Technology curriculum is intended for students who wish to qualify for the Federal Aviation Administration Airframe and Powerplant Mechanics license. Students may transfer into a B.S. degree program upon completion of this curriculum and the recommendation of his academic counselor. NOTE: Some of the courses listed below are offered only during Spring or Summer sessions—it is essential that planning be done with the assistance of the aviation counselor.

REQUIREMENTS

Candidates for the two-year certificate must complete the following program. The schedule below is an example of one leading to a two-year certificate beginning with Fall.

**ENG 105 or BED 142 or IEGM 102.
Transportation Technology

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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<tbody>
<tr>
<td>TRAN 315 Aircraft Turbine Powerplants</td>
<td>TRAN</td>
<td>315</td>
<td>Aircraft Servicing</td>
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<tr>
<td>TRAN 218 Aircraft Servicing</td>
<td>TRAN</td>
<td>218</td>
<td>FAA Maintenance Regulations</td>
<td></td>
</tr>
<tr>
<td>EET 100 Fund. of Electric Circuits and</td>
<td>EET</td>
<td>100</td>
<td>Technical Communication</td>
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<tr>
<td>EET 101 Fund. of Electronics and Machines</td>
<td>EET</td>
<td>101</td>
<td>Technical Drafting</td>
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<td>IEGM 130 Technical Drafting</td>
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<td>Machining Metals</td>
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<tr>
<td>MET 120 Metallurgy and Material Failure</td>
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<td>120</td>
<td></td>
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<td>PHYS 106 Elementary Physics</td>
<td>PHYS</td>
<td>106</td>
<td></td>
<td>4</td>
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<td>CHEM 103 General Chemistry</td>
<td>CHEM</td>
<td>103</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MATH 100 Algebra</td>
<td>MATH</td>
<td>100</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>TOTAL FOR GRADUATION: 87 HOURS</td>
<td></td>
<td></td>
<td>16 16 14 16 16 9</td>
<td></td>
</tr>
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AIR FORCE ROTC

Combined with normal requirements in a student's chosen curriculum, the AFROTC Program is designed to provide skills and knowledge needed to perform effectively as a professional officer in today's Air Force.

The program on Western's campus is operated as a satellite of the AFROTC detachment at the University of Michigan, Ann Arbor. Courses are taught by active duty Air Force officers holding adjunct professorships or by other WMU faculty as appropriate. The Air Force officers commute to Western's campus from Ann Arbor as necessary.

Successful completion of the program and attainment of a bachelor's degree leads to commissioning as a second lieutenant, U. S. Air Force Reserve, with active duty for periods ranging from 90 days to six years, depending upon category of entry. Emphasis is on commissioning pilot or navigator qualified candidates. All courses are open to any students who wish to enroll, subject to normal University procedures. Candidates for commissioning, however, are selected competitively from among students enrolled in an aviation curriculum or other curriculums, if Air Force flying qualifications are met. A student must have four semesters remaining in his academic program to be eligible.

Required field training during the summer between the sophomore and junior year prepares a student for the professional officer's course (POC) as outlined below. Freshman students may begin in the Army ROTC Program, completing the Air Force curriculum during the last two years.
All AFROTC Cadets in the POC are paid $100.00 a month while school is in session. In addition, a number of scholarships are available and awarded competitively. These scholarships pay full tuition and academic fees and provide reimbursement for text books. Students receive approximately $460.00 during the six weeks of summer camp, in addition to room and board, uniforms, and transportation. Additional information may be secured from the College Counseling Office, Room 2038, I & ET Building.

COURSE DESCRIPTIONS

GENERAL INTEREST COURSES

183 The Automobile and the Consumer (2-0)* 2 hrs. Fall, Winter
A course to help the consumer become aware of automobile maintenance which can help him minimize the cost and maximize the dependability and service life of his automobile.

222 Fuels and Lubricants (2-2) 3 hrs. Fall, Winter, Summer
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.

270 Transportation in the United States (3-0) 3 hrs. Fall
A survey of transportation in the U.S. including ground, air, and sea transport systems. Historical origins, current status and problems, and alternatives for the future are discussed.

380 Contemporary Military Systems (3-1) 3 hrs. Fall
The armed forces as an integral element of society. Examines the broad range of American civil/military relations and the context in which defense policy is formulated. Intended for AFROTC cadets. Includes one hour of cadet corp activities per week.

381 Seminar in Contemporary Military Systems (3-1) 3 hrs. Winter
A continuing examination of military power within the domestic and

*Indicates hours of lecture and laboratory per week (lecture hours—lab hours).
Transportation Technology

international environment, and its ability to fulfill assigned missions. Intended for AFROTC cadets. Includes one hour of cadet corps activities per week. Prerequisite: TRAN 380.

399 Field Experience 2-8 hrs. Fall, Winter, Spring, Summer
A program of practical experience and independent study to supplement and enrich classroom experiences. Written reports are required. May be repeated to a maximum of eight semester credit hours. Departmental approval required prior to registration.

480 Air Force Officer Development (3-1) 4 hrs. Fall
Concepts, principles and techniques essential to success as an Air Force leader. Practicum and laboratory centered on operational simulations. Intended for AFROTC cadets. Prerequisite: TRAN 381.

481 Air Force Systems Management (3-1) 4 hrs. Winter
Functions and techniques crucial to the effective management of simple and complex Air Force systems. The influence and control of power relationships within the organizational setting with operational simulations. Prerequisite: TRAN 480.

498 Studies in Transportation Technology 1-4 hrs. Fall, Winter, Spring, Summer
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 four hours.

AUTOMOTIVE

121 Automotive Chassis (2-3) 3 hrs. Fall, Winter
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 (2-2) 3 hrs. Fall, Winter
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 (3-4) 4 hrs. Fall, Winter
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. Prerequisite: EET 100 or IED 160.

226 Automotive Engines (3-4) 4 hrs. Fall, Winter
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 (2-0) 2 hrs. Winter
Principles involved in management of automotive repair shops including establishing objectives, organizational problems, controls, personnel management, merchandising, pricing, and customer relations. Prerequisite: Junior standing.

325 Automotive Testing (3-4) 4 hrs. Winter
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, MATH 122, 106.

326 Automotive Diagnosis (2-3) 3 hrs. Fall
Procedures and techniques used in evaluating performance and identifying malfunctions in automotive systems. Laboratory equipment as well as service shop test equipment will be used in diagnostic procedures. Prerequisites: TRAN 121, 122, 126, 222 and 226.

421 Automotive Analysis (2-2) 3 hrs. Winter, Spring
Analysis of current designs of major automotive systems concentrating on rationale for various design approaches and combinations used when considering engineering parameters such as standards, operating limitations, manufacturing restrictions, and repairability. Prerequisite: TRAN 326.

423 Automotive Engineering Problems (1-8) 4 hrs. Fall, Spring
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 MET 435 or approval of instructor.

AVIATION

110 Introduction to Aviation (3-0) 3 hrs. Fall, Winter, Summer
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 (2-8) 5 hrs. Fall, Winter, Spring
Theory and laboratory experience relating to fabric and metal covered structures, honey-comb construction, and plastics. Prerequisite: TRAN 110.

114 Reciprocating Powerplants (2-6) 4 hrs. Fall, Winter, Spring, Summer
Study of aircraft reciprocating powerplants. Classroom and laboratory experiences involving principles of operation, nomenclature, inspection, and overhaul procedures. Prerequisite: TRAN 110.
116 Aircraft Propellers (1-3) 2 hrs. Fall, Winter
Theory, operation, troubleshooting, and servicing of aircraft propeller systems for reciprocating and turbine engines. Prerequisite: TRAN 110.

200 Private Pilot Ground School (3-0) 3 hrs. Fall, Winter
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 (0-3) 2 hrs. Fall, Winter, Spring, Summer
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. Enrollment subject to waiting list.

203 Primary Flight (0-4.5) 3 hrs. Fall, Winter, Spring, Summer
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: Faculty approval, TRAN 200 and 201.

211 Powerplant Servicing (1-8) 4 hrs. Spring, Summer
Principles and practices covering powerplant inspection and related FAA forms, regulations, and maintenance procedures. Designed to reinforce skills and knowledge acquired in previous powerplant courses. Prerequisites: TRAN 116, 212.

213 Airframe, Hydraulic, Pneumatic and Auxiliary Systems (2-4) 4 hrs. Fall, Winter, Spring
Classroom and laboratory study of 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 (1-6) 3 hrs. Fall, Winter, Summer
Welding theory and practice involving steel and aluminum structural parts. Practice in completing repairs in a manner approved by the FAA, using oxyacetylene, electric arc, and shielded arc welding processes.

218 Aircraft Servicing (2-10) 5 hrs. Spring, Summer
Provides 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. Prerequisites: TRAN 113, 114, 230, 231.

230 Aircraft Carburetion and Fuel Systems (2-0) 2 hrs. Fall, Winter
Basic principles of aircraft reciprocating engine carburetion and induction systems including theory of operation and servicing of float
214

College of Applied Sciences

type and pressure type carburetors, direct fuel injection, and super-
chargers. Prerequisite: TRAN 110, 114.

231 Aircraft Fuel System Laboratory (0-6) 2 hrs. Fall, Winter
Practical laboratory work in carburetor and induction system inspec-
tions, overhaul, and installation of float and pressure carburetors, fuel
injection, components and superchargers. Prerequisite: TRAN 230 or
taking concurrently.

232 Powerplant Evaluation and Systems (2-6) 4 hrs. Fall, Winter,
Spring
Classroom and laboratory work covering ignition systems, powerplant
testing and diagnosis, and the operation of aircraft powerplants. Pre-
requisites: TRAN 114 and 115.

300 Intermediate Pilot Ground School (3-0) 3 hrs. Fall
A continuation of TRAN 200 in which advanced systems and methods
for commercial and instrumental flying are explored. This course in-
cludes the Federal Aviation Administration Commercial Pilot written
examination. Prerequisites: TRAN 200, 201 or Private Pilot License.

301 Intermediate Flight (0-4.5) 3 hrs. Fall, Winter, Spring, Summer
Intensive practice in advanced flight maneuvers and cross-country
flight. Student will master control of airplane under a variety of con-
ditions. Approximately 50 hours of flight time. Prerequisite: TRAN 203.

303 Commercial Flight (0-4.5) 3 hrs. Fall, Winter, Spring, Summer
Additional dual and solo instruction with appropriate refresher work
to develop a student's skills to commercial pilot standards. Transition to
transportation type aircraft is included. Upon completion, a student may
become eligible for certification as a commercial pilot. Approximately
50 hours flying time. Prerequisites: TRAN 301 and completed or taking
TRAN 300 concurrently.

313 Aircraft Electrical Systems and Components (2-6)
4 hrs. Fall, Winter, Spring
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, EET 100.

315 Aircraft Turbine Powerplants (3-5) 5 hrs. Fall, Winter, Spring
Reaction engine principles, gas turbine engine construction, operation,
and servicing. Jet aircraft powerplant systems and their operation.
Prerequisites: TRAN 110, 232.

319 FAA Maintenance Regulations (4-0) 4 hrs. Fall, Winter, Spring
Designed to prepare 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 Mechanics Certificate. Students electing this course must
have completed or be taking concurrently all courses required in the
two-year Aircraft Technology curriculum.

340 Airport Management (3-0) 3 hrs. Winter
An introduction to airport operation and the duties of the airport
manager. Topics studied will include the relationship between airport
and community; legislation affecting airports; planning, organizing, financing, and developing programs and services. Prerequisite: Junior standing in aviation curricula or approval of instructor.

400 Advanced Pilot Ground School (2-0) 2 hrs. Winter
A study of concepts, systems and techniques related to instrument flying and instrument flight planning. Some opportunity for practical application is provided. Prerequisite: TRAN 300 or consent of instructor.

401 Instrument Flight (0-4.5) 3 hrs. Fall, Winter, Spring, Summer
Basic instrument flying, cross-country navigation and communication, and instrument approach procedures. Successful completion will qualify the student for an instrument rating. Approximately 30 hours flight time. Prerequisites: TRAN 303, 400.

402 Multi-Engine Flight (0-1.3) 1 hr. Fall, Winter, Spring, Summer
Principles of flight in multi-engine airplanes. Provides transition from complex single-engine airplane to procedures and techniques peculiar to multi-engine operation. Approximately 10 hrs. flight time and 10 hours observing. Prerequisites: TRAN 303, 401.

403 Flight Instructor Fundamentals (0-3) 2 hrs. Fall, Winter, Spring, Summer
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 and 15 hours participation as flight instructor. Prerequisite: TRAN 401 or consent of instructor.

404 Instrument Flight Instructing (0-1.5) 1 hr. Fall, Winter, Spring, Summer
Techniques of flight instruction applied to instrument flying. Includes flight planning, enroute procedures, approaches and landings, emergencies, and critical weather analysis. Approximately 14 hrs. flight time. Prerequisites: TRAN 401, 403.
College of  
Arts and Sciences  

CORNELIUS LOEW,  
Dean  
TILMAN C. COTHRA.N,  
Associate Dean  
JAMES P. ZIETLOW,  
Associate Dean  

Departments:  
Anthropology  
Biology  
Chemistry  
Communication Arts and Sciences  
Economics  
English  
Geography  
Geology  
History  
Languages, Modern and Classical  
Linguistics  
Mathematics  
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.

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. General Education requirements.

C. Thirty hours of work in 300, 400 and 500 courses exclusive of General Education.

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, two hours.

G. Completion of a major and minor in the College of Arts and Sciences and electives to make a total of 122 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 122 hours are completed in this program the student will be eligible for a degree of Bachelor of Arts or Bachelor of Science.

A. General Education Requirements (see page 26 of this catalog).

B. Physical Education ........................................ 2-8 hrs.

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 122 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).

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. May be used as elective credit only. Prerequisites: A written outline of the student’s project, approved by a faculty supervisor, with approval from the office of the dean.
Inter-Disciplinary Programs

1. Institute of International and Area Studies
2. The Medieval Institute
3. Black Americana Studies
4. Environmental Studies
5. Foreign Studies Seminars and Institutes
6. American Studies
7. Group Majors and Minors
8. Medical Technology
9. Physicians' Assistants
10. Classical Humanities
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

The Institute regularly publishes a pre-registration listing of available core courses for the various programs. This list occasionally contains courses in addition to those included below. Students should consult the pre-registration listing for each semester or session,
506 Studies in the Non-Western World 2-3 hrs.

The content of this course varies by semester but is designed to explore some facet of the problems and prospects facing Third World regions or countries.

AFRICAN STUDIES PROGRAM

African Studies Curriculum

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 other requirements listed below will be awarded a Bachelor of Arts or Bachelor of Science degree.

1. Completion of University requirements for a B.A. or B.S. degree—122 semester hours of course work.
2. Completion of General Education requirements.
3. Completion of departmental requirements for a major in one of the following disciplines:
   - Anthropology
   - Economics
   - History
   - Geography
   - Sociology
   - 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.
5. The African Studies Program strongly recommends the study of African languages or European languages widely spoken on the continent, e.g. French. Students must demonstrate intermediate proficiency in a language meeting the above criteria or have taken the Black Americana Studies core sequence currently listed as Arts and Sciences 200, 300, 310, 320 and 500.

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 by no later than the first semester of their junior year—and preferably earlier.

African Studies Minor

Twenty semester hours (24 for students enrolled in Education curriculum) 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 3 hrs.
In addition, students enrolled in this minor must also elect at least three of the following four courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>Anthropology</td>
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<tr>
<td>335 Cultures of Africa</td>
<td>3 hrs.</td>
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<tr>
<td>Geography</td>
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<tr>
<td>386 Sub-Saharan Africa: Man, Environments, Resources</td>
<td>3</td>
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<tr>
<td>Political Science</td>
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<tr>
<td>341 African Political Systems</td>
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<td>Sociology</td>
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<td>535 Changing Social Systems: Sub-Saharan Africa</td>
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**African Studies Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>Anthropology</td>
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<tr>
<td>334 Cultures of North Africa and the Middle East</td>
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<td>335 Cultures of Africa</td>
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<td>425 Modern African Cultures</td>
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<td>500 Topics in Archeology*</td>
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<td>Arts and Sciences</td>
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<td>200 Black Presence</td>
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<td>300 Black Experience</td>
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<td>305 Black Nationalism in America</td>
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<td>310 The Black Community</td>
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<td>320 Ecology and the Black Community</td>
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<td>500 Black Humanism</td>
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<td>585 The Economics of Sub-Saharan Africa</td>
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<td>English</td>
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<td>312 World Literature: African Literature</td>
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<td>519 Non-Western Literature in Translation**</td>
<td>4</td>
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<tr>
<td>Geography</td>
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<tr>
<td>309 Studies in Regional Geography*</td>
<td>2-3</td>
</tr>
<tr>
<td>386 Sub-Saharan Africa: Man, Environments, Resources</td>
<td>3</td>
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<tr>
<td>387 The Middle East and North Africa</td>
<td>3</td>
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<td>History</td>
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<td>386 Introduction to African History and Civilization</td>
<td>3</td>
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<td>587 Ancient and Medieval Africa</td>
<td>3</td>
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<td>588 Modern Africa</td>
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<td>Liberal Arts</td>
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<td>504 Social Studies Seminar: East Africa</td>
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<td>Linguistics</td>
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<td>505 Basic Critical Languages</td>
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<td>507 Advanced Critical Languages</td>
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<tr>
<td>Political Science</td>
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<tr>
<td>341 African Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>549 Problems of Foreign Political Systems*</td>
<td>3-4</td>
</tr>
</tbody>
</table>

*Courses marked with an asterisk may be included in the student's program when they concentrate on Africa or some subdivision thereof.
Religion
307 The Islamic Tradition .................. 4
500 Historical Studies in Religion* .............. 4

Social Science
506 Studies in the Non-Western World ........... 2-3

Sociology
371 Dynamics of Contemporary Social Change* ........ 3
530 Social Forces in Developing Areas* .............. 3
534 Studies in Ethnic Relations* .................. 3
535 Changing Social Systems: Sub-Saharan Africa .... 3

ASIAN STUDIES PROGRAM

Head: David G. Dickason

Asian Studies Curriculum
Adviser: David G. Dickason

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 a Bachelor of Arts or Bachelor of Science degree.

1. Completion of University requirements for a B.A. or B.S. degree—122 semester hours of course work.

2. Completion of General Education 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 courses will be accepted toward satisfaction of the 30 semester hour Asia Studies requirement; see Linguistics 500, 505, 506, 507, 508, 509.)

5. In consultation with the Asian Studies Adviser, selection of no less than 30 semester hours of Asian Studies Core Courses. 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 his intention known to the Adviser by no later than the first semester of their junior year—and preferably earlier.

Asian Studies Minor
Adviser: David G. Dickason

Twenty semester hours (24 for students enrolled in Education cur-

*Courses marked with an asterisk may be included in the student's program when they concentrate on Africa or some subdivision thereof.
College of Arts and Sciences

ricula), 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**

**Anthropology**
- 336 Cultures of Asia ........................................ 3 hrs.
- 500 Topics in Archaeology* .................................. 3
- 545 Topics in Ethnology* ..................................... 3

**Economics**
- 584 The Economics of South Asia .............................. 3
- 587 Studies in Asian Economics ............................... 3

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

**Geography**
- 309 Studies in Regional Geography* ......................... 2-3
- 361 Population: The Crowding World* ....................... 3
- 385 The Pacific Realm ...................................... 3
- 389 Conflict Resolution in Southeast Asia .................. 3
- 390 The Indian Subcontinent in Transition .................. 3

**History**
- 380 Introduction to Asian History and Civilization ......... 3
- 381 The Modern Far East .................................... 3
- 580 Traditional China ....................................... 3
- 581 Modern China ........................................... 3
- 582 Japan's Transition from a Feudal State to a Modern Nation ........................................ 3
- 583 Modern Japan ............................................ 3
- 584 Modern Korea ............................................ 3
- 585 Southeast Asia in the Twentieth Century .................. 3

**Linguistics**
- 505 Basic Critical Languages ................................ 4
  - Chinese ................................................... 4
  - Hindi-Urdu ................................................ 4
  - Japanese .................................................. 4
  - Korean .................................................... 4
- 506 Intermediate Critical Languages ......................... 4
- 507 Advanced Critical Languages ............................. 4
- 508 Reading Critical Languages ............................... 4
- 509 Writing Critical Languages ............................... 4

**Philosophy**
- 306 Asian Thought: China .................................... 4

**Political Science**
- 342 Asian Political Systems .................................. 4

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

**Political Science**
- 345 Politics in India, Pakistan and Bangladesh .......... 3
- 346 Case Studies in East Asian Politics .......... 3
- 544 The Military and Political Systems* .......... 3
- 545 Theories of Political Development* .......... 3
- 548 Asian Communism .......... 3
- 549 Problems of Foreign Political Systems* .......... 3

**Religion**
- 302 Religion in the Indian Tradition .......... 4
- 303 Chinese Religion .......... 4
- 307 The Islamic Tradition .......... 4
- 308 Japanese Religion .......... 4
- 500 Historical Studies in Religion* .......... 4
e.g. Zen Buddhism .......... 4
e.g. Islamic Mysticism .......... 4
e.g. Hindu Devotionalism .......... 4

**Sociology**
- 371 Dynamics of Contemporary Social Change .......... 3
- 530 Social Forces in Developing Areas* .......... 3
- 534 Studies in Ethnic Relations* .......... 3
- 536 Modern Japanese Society .......... 3

## COMPARATIVE/CROSS-CULTURAL STUDIES PROGRAM

**Head:** Chester L. Hunt

**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. This curriculum is intended to accommodate those students who desire to examine that broad range of problems which requires both cross-disciplinary and cross-cultural perspectives. Students successfully completing this Curriculum and the other requirements listed below will be awarded a Bachelor of Arts or Bachelor of Science degree.

1. Completion of University requirements for a B.A. or B.S. degree—122 semester hours of course work.
2. Completion of General Education 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:

*Courses marked with an asterisk may be included in the student’s program when they concentrate on Asia or some subdivision thereof.*
a. one of the following three courses:

Anthropology
534 Peasant Societies in Cross-Cultural Perspective ... 3 hrs.
536 Cultural Evolution .................................... 3
540 Cultural Ecology ....................................... 3

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

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 by 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
220 Introduction to Anthropology: Cultural Anthropology 3 hrs.
331 Art and Culture .................................... 3
370 Language in Culture ................................ 3
520 History of Ethnological Theory ....................... 3
532 Culture and Personality ................................ 3
534 Peasant Societies in Cross-Cultural Perspective .... 3
555 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

Communication Arts and Sciences
570 Intercultural Communication ....................... 3

Economics
480 International Economics ............................. 4 hrs.
484 Comparative Economic Systems ....................... 4
580 International Trade: Theory and Policy ............... 3
588 Economic Development ................................ 4

Geography
100 World Ecological Problems and Man .................. 4
101 Issues of Mankind .................................... 2-3
105 Our Physical Environment ............................. 4
205 Our Human World .................................... 3
244 World Patterns of Economic Activity ................ 3
309 Studies in Regional Geography* ..................... 3

*Courses marked with an asterisk may be included in the student's program when concentrating comparatively on the problems of economic, social and political development in Africa, Asia, Latin America and Eastern Europe.
International Studies

361 Population: The Crowding World* ............................................. 3
540 Studies in Political Geography: Principles of Political Geography ............................................. 3
540 Studies in Political Geography: National Power ............................................. 3
543 Cultural Geography ............................................. 3
544 Studies in Economic Geography: Agriculture* ............................................. 2-3
544 Studies in Economic Geography: Manufacture* ............................................. 2-3
544 Studies in Economic Geography: Transportation* ............................................. 2-3

History
594 War in the Modern World ............................................. 3
595 History of War ............................................. 3

Linguistics
552 Sociolinguistics ............................................. 3

Political Science
542 Administration in Developing Countries ............................................. 3 hrs.
544 The Military and Political Systems ............................................. 3
545 Theories of Political Development ............................................. 3
549 Problems of Foreign Political Systems ............................................. 3-4
552 Studies in International Relations ............................................. 3
553 United Nations ............................................. 3
555 International Law ............................................. 3
556 Comparative Foreign Policy ............................................. 3
577 Studies in American Foreign Policy ............................................. 3-4
560 Comparative Political Ideology ............................................. 4
563 Theories of Revolution ............................................. 4

Religion
300 Prehistoric and Primitive Religions ............................................. 4 hrs.
311 Myth and Ritual ............................................. 4
323 The Religious Factor in Social and Cultural Change ............................................. 4

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

Sociology
530 Social Forces in Developing Areas ............................................. 3 hrs.
590 The Family as a Social Institution ............................................. 3

LATIN AMERICAN STUDIES PROGRAM

Head: Leila Bradfield
Latin American Studies Curriculum

Adviser: Leila Bradfield

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

1. Completion of University requirements for a Bachelor of Arts or Bachelor of Science degree—122 semester hours of course work.

*Courses marked with an asterisk may be included in the student's program when concentrating comparatively on the problems of economic, social and political development in Africa, Asia, Latin America and Eastern Europe.
2. Completion of General Education 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 Core and Cognate 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 by no later than the first semester of their junior year—and preferably earlier.

Latin American Studies Minor

Adviser: Leila Bradfield

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of Latin American Studies Courses are required for 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—with certain limitations—be counted toward completion of a Latin American Studies minor.

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 Latin American Program.

Latin American Studies Core Courses

Anthropology

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tr>
<td>337</td>
<td>Indian Cultures of Mexico, Central and South America</td>
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<tr>
<td>500</td>
<td>Topics in Archeology*</td>
<td>3</td>
</tr>
<tr>
<td>501</td>
<td>Rise of Civilization: Mesoamerica</td>
<td>3</td>
</tr>
<tr>
<td>545</td>
<td>Topics in Ethnology*</td>
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Economics

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<tr>
<td>589</td>
<td>The Economics of Latin America</td>
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Geography

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<th>Course</th>
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<th>Hours</th>
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<tr>
<td>309</td>
<td>Studies in Regional Geography*</td>
<td>2-3</td>
</tr>
<tr>
<td>381</td>
<td>South America</td>
<td>3</td>
</tr>
<tr>
<td>382</td>
<td>Mexico and the Caribbean</td>
<td>3</td>
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<tr>
<td>550</td>
<td>Studies in Historical Geography*</td>
<td>3</td>
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History

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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>370</td>
<td>History of Latin America</td>
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</tr>
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</table>

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

371 Contemporary Latin America ........................................ 3
571 Mexico: The Building of a Nation .................................. 3
572 The Plata Region: Argentina, Paraguay, Uruguay .......... 3

Language
323 Life and Culture of Latin America ................................ 3
528 Survey of Spanish American Literature to 1910 ............ 3
529 Survey of Spanish American Literature from 1910 to Present ................................................................. 3
560 Studies in Spanish Literatures: Spanish-American Short Story ................................................................. 3
560 Contemporary Spanish-American Novel ......................... 3

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

Sociology
371 Dynamics of Contemporary Social Change ...................... 3
531 Studies in Social Change: Latin America ....................... 3
534 Studies in Ethnic Relations* ..................................... 3

Latin American Studies Cognate Courses
Anthropology
534 Peasant Societies in Cross-Cultural Perspective ........... 3 hrs.

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

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

Sociology
530 Social Forces in Developing Areas ............................... 3

SLAVIC STUDIES PROGRAM

Head: William McGranahan

Slavic Studies Curriculum
Advisor: William McGranahan

The Slavic Studies Curriculum is designed for those undergraduate students seeking a liberal education and who anticipate careers which require a broad understanding of Slavic affairs, or for those who plan to enter graduate programs leading to advanced degrees in Slavic Studies. The Curriculum, which leads to a Bachelor of Arts or Bachelor of Science degree, consists of five parts:

1. Completion of University requirements for a B.A. or B.S. degree—122 semester hours of course work.
2. Completion of General Education requirements.
3. Completion of departmental requirements for a major in one of the following disciplines: anthropology, economics, geography, history, Russian, political science or sociology.
4. Completion of a Slavic Studies concentration consisting of no less than 30 semester hours selected from the list of Slavic Studies Core and

*Courses marked with an asterisk may be included in the student's program when they concentrate on the Slavic Area or some subdivision thereof.
Cognate Courses. (No less than 24 semester hours may be taken from the list of Core Courses.)

5. Demonstration of intermediate-level proficiency in a Slavic language.

Slavic Studies Minor
Advisor: William McGranahan

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 before courses employed to satisfy this program are taken; records of the minor are maintained and verified by the Slavic Studies Program.

Slavic Studies Core Courses

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

Economics
  380 Economics of the Soviet Union and Eastern Europe 3
  501 Studies in Economic Problems* 3
  598 Readings in Economics* 1-3

Geography
  309 Studies in Regional Geography* 3 hrs.
  384 Soviet Peoples and Landscape: Continuity & Change 3
  550 Studies in Historical Geography* 3
  598 Readings in Geography* 3

History
  340 Tsarist Russia 3
  341 The Soviet Union 3
  344 Modern Eastern Europe 3
  345 The Baltic Region 3
  470 Independent Research in History: Slavic Area 2-3
  540 Life in Tsarist Russia 3
  541 The Soviet Union in World Affairs 3
  542 Nationalities in the Soviet Union 3
  594 War in the Modern World* 3
  595 History of War* 3
  598 Independent Readings in History* 2-3

Political Science
  344 Soviet & East European Political Systems 4
  549 Problems of Foreign Political Systems* 3-4
  552 Studies in International Relations* 3-4

Sociology
  371 Dynamics of Contemporary Social Change* 3

Slavic Studies Cognate Courses

Economics
  484 Comparative Economic Systems 4
  588 Economic Development 4

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

Geography
540 Studies in Political Geography: Principles of Political Geography ........................................ 3
540 Studies in Political Geography: National Power ................................................................. 3

Language
200 Intermediate Russian .................................................. 4
201 Intermediate Russian .................................................. 4
310 Russian Civilization .................................................. 3
316 Russian Composition ............................................... 3
317 Russian Conversation ............................................... 4
328 Introduction to Russian Literature ........................................ 3
375 Russian Literature in English Translation ........................................ 3
550 Independent Study in Russian ........................................ 1-3
552 Advanced Russian Composition & Conversation ........................................ 3
560 Studies in Russian Literature ........................................ 3

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

Political Science
250 International Relations .............................................. 4
340 European Political Systems ......................................... 4
490 Political Science Honors Seminar ....................................... 3
560 Comparative Political Ideology ....................................... 4
The Medieval Institute

John R. Sommerfeldt, Director and Adviser
George H. Demetrakopoulos, Assistant Director
E. Rozanne Elder, Assistant Director

Knowledge of medieval and Renaissance 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 and Renaissance studies. In addition to an undergraduate major and minor, the Institute offers a graduate program leading to an M.A. in Medieval Studies.

Western Michigan University has library resources and faculty to provide a good academic environment for the study of the Middle Ages and Renaissance. The Institute hosts an annual Conference on Medieval Studies which has brought the University wide recognition throughout the world. Studies in Medieval Culture, a publication which includes many of the best papers presented at these conferences, also has gained an enviable reputation here and abroad. In addition, the Institute sponsors a lecture series each year on campus on medieval and Renaissance culture and civilization.

The headquarters of the Medieval Institute is in the Hillside West Building.

MAJOR PROGRAM

Students with an undergraduate major must elect thirty hours, to include the following:

1. One history course chosen from the approved list, or other history course chosen with the approval of the adviser.
2. One literature course chosen from the approved list, or other literature course chosen with the approval of the adviser.
3. One course in intellectual history, philosophy, or theology chosen from the approved list, or similar course chosen with the approval of the adviser.
4. One course in fine arts chosen from the approved list, or other fine arts course chosen with the approval of the adviser.
5. One independent research course.
6. Electives from the approved list (or others with the approval of the adviser).
7. The student must also demonstrate competence in a foreign language (normally four semesters or the equivalent).

MINOR PROGRAM

Students with an undergraduate minor must elect twenty hours, to include the following:

1. One history course chosen from the approved list, or other history course chosen with the approval of the adviser.
2. One literature course chosen from the approved list, or other literature course chosen with the approval of the adviser.

3. One course in intellectual history, philosophy, or theology chosen from the approved list, or similar course chosen with the approval of the adviser.

4. Electives from the approved list (or others with the approval of the adviser).

## APPROVED COURSES

### Art
- **220** History of Art (to the Renaissance)  
  3 hrs.
- **520** Independent Study in Art History  
  2-3 hrs.
- **583** History of Medieval Art  
  3 hrs.
- **585** History of Renaissance Art  
  3 hrs.

### Arts and Sciences
- **145** The Birth of the Modern World  
  4 hrs.

### Communication Arts and Sciences
- **526** History of Theatre (from the beginnings to the English Renaissance)  
  3 hrs.
- **598** Independent Studies in Speech  
  4 hrs.

### Economics
- **598** Readings in Economics  
  1-3 hrs.

### English
- **252** Shakespeare  
  4 hrs.
- **332** English Renaissance Literature  
  4 hrs.
- **372** Development of Modern English  
  4 hrs.
- **410** Special Topics: Norse Literature and Mythology  
  4 hrs.
- **410** Special Topics: Dante  
  4 hrs.
- **529** Medieval English Literature  
  4 hrs.
- **530** Medieval Continental Literature in English Translation  
  4 hrs.
- **531** Chaucer  
  4 hrs.
- **532** Sixteenth Century Literature  
  4 hrs.
- **543** Elizabethan and Jacobean Drama  
  4 hrs.
- **544** Milton  
  4 hrs.
- **598** Readings in English  
  1-4 hrs.

### Foreign Seminars
- **504** Foreign Studies Seminar: Social Sciences  
  1-6 hrs.
- **505** Foreign Studies Seminar: Humanities  
  1-6 hrs.

### History
- **306** Main Currents of Early Western Thought  
  3 hrs.
- **352** Early Medieval History  
  3 hrs.
- **353** Later Medieval History  
  3 hrs.
- **470** Independent Research in History  
  2-3 hrs.
- **534** Medieval France  
  3 hrs.
- **535** Medieval England  
  3 hrs.
- **552** The Medieval Church  
  3 hrs.
- **553** Life in the Middle Ages  
  3 hrs.
- **554** The Renaissance  
  3 hrs.
- **555** The Reformation  
  3 hrs.
- **587** Ancient and Medieval Africa  
  3 hrs.
- **592** Historical Literature  
  3 hrs.
- **598** Independent Reading in History  
  2-3 hrs.
Languages, Modern and Classical

**French**
- 328 Survey of French Literature (early) ..... 3
- 550 Independent Study in French ..... 1-3
- 560 Studies in French Literature (Medieval) ..... 3
- 560 Studies in French Literature (Renaissance) ..... 3

**German**
- 528 Survey of German Literature (early) ..... 3
- 550 Independent Study in German ..... 1-3
- 559 History of the German Language ..... 3

**Latin**
- 450 Greek and Roman Mythology ..... 3
- 550 Independent Study in Latin ..... 1-3
- 560 Studies in Latin Literature (Medieval) ..... 3

**Russian**
- 550 Independent Study in Russian ..... 1-3

**Spanish**
- 322 Life and Culture of Spain ..... 3
- 550 Independent Study in Spanish ..... 1-3
- 560 Studies in Spanish Literatures ..... 3

**Linguistics**
- 598 Readings in Linguistics ..... 1-4

**Music**
- 270 Music History and Literature (early) ..... 3 hrs.
- 517 Collegium Musicum ..... 1
- 598 Readings in Music ..... 2

**Philosophy**
- 300 History of Ancient Philosophy ..... 4 hrs.
- 350 Historically Oriented Studies ..... 4
- 498 Independent Study ..... 2-4
- 501 Seminar in History of Philosophy ..... 4

**Political Science**
- 360 Introduction to the History of Political Theory I ..... 3 hrs.
- 598 Studies in Political Science ..... 1-4

**Religion**
- 500 Historical Studies in Religion (Christian Theology to 1500) ..... 4
- 500 Historical Studies in Religion (Theology of the Reformation and Counter-reformation) ..... 4

**Science**
- 598 Readings in Science ..... 1-4 hrs.
Black Americana Studies

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 four undergraduate courses (Black Americana Studies 200, 300, 500 and 314, or 320 and at least 8 hours of departmental courses. A teaching minor will require at least 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 3 hrs.
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 years.

300 Black Experience 3 hrs.
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.

305 Black Nationalism in America 3 hrs.
An interdisciplinary study of Black Nationalism as an important, persistent and substantive ideology of Black America. This course analyzes and explores ideas and programs of Black leaders.

314 The Black Community 3 hrs.
An investigation of the social forms and structures within the Black community from the unique Black perspective. The course will focus on the sociological, political, economic, psychological, and physical aspects of community building by a subordinated group.

320 Ecology and the Black Community 3 hrs.
Ecology and the Black Community will be a serious investigation of the relationships between human beings (local residents) and their social and physical environment. The course will focus on the determination of the individual's status in the community by an examination of the social, political, economic and physical aspects of the environment as influenced by the social order of the American society and philosophy.
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. The 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?

An in-depth study of specific areas of Black American life and culture.

DEPARTMENTAL COURSES

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

**Art**
- 594 History of Afro-American Art 3

**Economics**
- 201 Principles of Economics 3
- 202 Principles of Economics 3
- 410 Labor Problems 3

**English**
- 223 Black American Literature 4

**History**
- 314 History of the American Negro 3
- 386 Introduction to African History and Civilization 3
- 514 Black History: Impact of Black People on American Thought and Life 3
- 587 Early African History 3
- 588 Recent African History 3

**Political Science**
- 204 Politics of Race 3
- 304 Political Perspectives of Black America 3
- 341 African Political Systems 4

**Religion**
- 304 African Religions 4
- 311 Myth and Ritual 4
- 321 The History of the Study of Religion 2-4
- 500 Historical Studies in Religion (Religion of Black America) 2-4

**Sociology**
- 200 Principles of Sociology 3
- 314 Race Relations 3
- 355 Social Structure of Black America 3
- 371 Dynamics of Contemporary Social Change 3
The Environmental Studies Program (EVS) was designed by students and faculty to respond to a growing need to arrest the deterioration of the earth's environment and to place more emphasis on the quality of life. The Program seeks to provide students with a variety of intellectual and practical experiences designed to provoke thought about man and his relationship to society and to the natural environment.

The following five practical objectives are:

1. To define, analyze and evaluate the environmental quandary;
2. To suggest a responsibility to help in the amelioration of these problems;
3. To equip students to make professional contributions in resolving environmental problems;
4. To prepare leaders for environmental education and action;
5. To develop in students the habit of critical thinking about existing social institutions and to develop the ability to devise creative solutions to problems.

The student-faculty cooperation which marked the origin of the EVS Program has continued in the development and governance of the Program. The Program is governed by an Executive Committee made up of faculty and students. The students have made important contributions to the development and evaluation of the Program and we expect this worthwhile involvement to continue.

Environmental Studies is interested in developing stimulating field trips for students in the Program. Many field trips are available through courses approved for the EVS Program. Such trips vary in length from several hours to a day or two. A few courses in which all of the work is done in the field are also available. A list of such courses may be obtained from the EVS office.

**PROGRAM OFFERINGS**

The EVS Program offers the student a choice of a

1. Bachelor's Degree in Environmental Studies;
2. Co-ordinate major with a disciplinary or program major in any College of the University;
3. Minor program; or
4. Teacher Certification in Environmental Studies for Elementary and Secondary Education.

The degree program is reserved for those students committed to a professional career in environmental areas. Students may enroll in the
degree program if they can demonstrate how the degree may assist them in qualifying for advanced training or a professional position.

The co-ordinate major is designed for students concerned about the environment who may wish to make professional contributions while working in another profession which impinges upon or relates to environmental problems.

The minor in environmental studies is designed for students wishing to better understand the full impact of mass populations, advanced technologies, and rising living standards on the resources of the world and upon our personal environments.

The certification program for teachers should make them aware of a new and dynamic teaching approach based on enlarging and integrating systems of knowledge.

**PROGRAM STRUCTURE**

A student, in developing an Environmental Studies 30-hour Co-ordinate major, 24-hour teaching minor, or a 20-hour minor, is required to take the following:

**Required Courses**

**Arts and Sciences (A-S) 109: Introduction to Environmental Studies**

This course is designed to introduce majors and minors in EVS to the wide range of knowledge affecting our environment. Introductory attention will be given the orientating concepts of ecology, evolution and culture. The environmental movement will be described and analyzed and the attention will be directed to the importance of planning for future environments. The course provides for discussion of ideas from lectures, films, readings and from students.

**Arts and Sciences (A-S) 400: Senior Seminar in Environmental Studies**

A team taught integrated seminar in which the subject material will be built around the orientating ideas of ecology, evolution and culture. Students will develop a project which demonstrates ecological relationships.

**Core Courses:**

In addition to the required courses, the student must select three core courses from the following list. (Biology 300 is highly recommended as one of these three core courses if the student does not have a background in Biology.)

**Anthropology 100: Man in Evolutionary Perspective (not required of Anthropology majors or minors)**

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.)

**Biology 300: Environmental Biology (not required of Biology majors or minors)**

A study of the relationships of living organisms, including man, to their environment and to one another. Designed for non-major students. Prerequisite—one course in Biology at the college level.
Chemistry 140: Introductory Environmental Chemistry (not required of Chemistry majors or minors)  4 hrs.

Purpose of course is to develop an appreciation of the chemical aspects of environmental problems and an acquaintanceship with the basic principles involved. This limited treatment considers elementary concepts of the nature of matter with applications of tools of chemists important in exploration of environmental problems. Laboratory may entail field trips as well as experiments which relate to environmental problems. Credit does not apply for graduation if 101, 102, or 103 are used, or for major or minor in chemistry.

General Studies 360: Explorations in Urban Environments and Ecological Studies: EVS Students may only elect 4 hours of academic credit  4-8 hrs.

Cultural and human ecologies of urban environments; a study of man in his total environment from the humanistic perspective, particularly the urban experience and its environmental implications; and exploration of the variety of alternative life styles and adjustments that are possible in the urban environment. Lectures and seminars, with a block of time (1-4 weeks) devoted to field projects in urban environments.

Geography 350: Principles of Conservation and Environmental Management (not required of Geography majors or minors)  3 hrs.

Critical evaluation of the major natural resources of the United States, particularly soils, water, forests, wildlife, and minerals; examinations 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.

Physics 102: Physics and Environments (not required of Physics majors or minors)  3 hrs.

The objective of this course is to provide the student with an understanding of some of the physical principles which underlie selected environmental problems. Topics covered include the physical aspects of air pollution, the energy problem, and radioactivity. The course consists of three lectures per week. No previous training in physics is required. This course may not be applied towards either a major or minor in physics.

The balance of the student's 30-hour co-ordinate major, 24-hour teaching minor, or 20-hour minor is selected from a list of approved elective courses. The student, aided by the EVS adviser structures his own program within the above guidelines.

Elective Courses

The following is a list of courses considered to be electives in the Environmental Studies Program. The list is divided into four sections: Humanities, Science, Social Science, and Technology.

Students in selecting their electives should choose their courses from the sections opposite their major area of interest. For example, a history major would fall within the Social Science section. Therefore, this student would choose elective courses from either the Humanities, Science, or Technology sections.
After choosing elective courses students should confer with the program advisor prior to actual registration. This is to ensure that program guidelines are met and that any program problems are properly resolved.

I. Humanities
   English 111, 410, 598
   General Studies (Humanities Area) 299, 399, 499
   Religion 333, 530

II. Science
   Agriculture 100, 110, 220, 222, 310, 320, 322, 324, 400
   Biology 103, 234, 300, 301, 502, 520, 538, 541, 542, 553, 555, 598, 599
   Chemistry 101, 140, 365, 431, 509
   General Studies (Science Area) 130, 133, 299, 330, 331, 360, 399, 499
   Geography 100, 101, 105, 204, 205, 206, 215, 225, 244, 350, 361, 500, 543, 544, 555, 556, 570, 582, 598
   Geography (Regional) 206, 330
   Geology 112, 130, 131, 300, 444, 532
   Mathematics 260, 599
   Physics 102, 120, 598
   Honors College (Honor College Students only) 100, 209, 299, 490

III. Social Science
   Anthropology 100, 220, 350, 536, 598
   Arts and Sciences 109, 399, 400
   Economics 150, 319, 545, 598
   General Studies (Social Science Area) 122, 123, 155, 161, 256, 260, 299, 331, 360, 399, 433, 456, 460, 461, 475, 499
   History 105, 300, 315, 598
   Marketing 598
   Physical Education 172, 275
   Political Science 250, 370, 506, 552, 598
   Social Work 533, 562, 563, 598
   Sociology 353, 510, 554, 598

IV. Technology
   Business: Law Area 311
   Electrical Engineering Technology 440
   Home Economics 100, 212
   Management 400, 420
   Mechanical Engineering Technology 338, 559
   Paper Science and Engineering 150, 251, 351
   Transportation Technology 128, 222, 226, 498
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 department 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

Peter Schmitt, Director
4011 Friedmann Hall

Lewis Carlson, Adviser
4013 Friedmann Hall (383-4919)

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. A 3.00 g.p.a. is generally considered a prerequisite.

Students majoring in American Studies are expected to complete:
1. At least 36 hours in five approved fields.
2. At least 18 hours in courses numbered 300 or above.
3. At least 12 hours in one participating Department.
4. An interdisciplinary course dealing with basic issues in American Culture.

A list of approved courses is available in 4011 or 4013 Friedmann Hall.

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

501 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.
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, Junior High or Dietetics curricula. Group Science minors are also available for students in Special Education. Group science programs 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).

1. For the Group Science Minor with the Elementary Education Curriculum, a minimum of one course must be completed from each of the following six groups to total at least 24 credit hours. Courses indicated with an asterisk are recommended for the Minor.

The group Science Major for the Elementary Education Curriculum requires in addition, a minimum of a second course from each of the "B" groups listed below and a total of at least 36 credit hours.

For specific descriptions of the courses consult the departmental sections of the catalog.

**Biological Science: Princ. Biol.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 100</td>
<td>Princ. Biol.</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>Biol 101</td>
<td>Animal Biol.</td>
<td>3</td>
</tr>
<tr>
<td>Biol 102</td>
<td>Plant Biol.</td>
<td>3</td>
</tr>
<tr>
<td>Biol 107*</td>
<td>Biol. Sci. for El. Ed.</td>
<td>4</td>
</tr>
</tbody>
</table>

**Biological Science:**

<table>
<thead>
<tr>
<th>Group</th>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Biol 220</td>
<td>Appl. Botany</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Biol 225</td>
<td>Plants of S.W. Michigan</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biol 234*</td>
<td>Outdoor Sci.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Biol 300</td>
<td>Envir. Biol.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Biol 403</td>
<td>Elem. Sch. Sci.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(not with G.S. 131)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biol 530</td>
<td>Envir. Educ.</td>
<td>3</td>
</tr>
</tbody>
</table>

**Earth Science:**

<table>
<thead>
<tr>
<th>Group</th>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Geog 100</td>
<td>World Ecol. Prob.</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Geog 105*</td>
<td>Our Phys. Envir.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Geol 100</td>
<td>Earth Stud.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Geol 107</td>
<td>Planet Sci.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(not with Phys. 104) (also listed as Geog 107 and Phys 107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Geol 130</td>
<td>Phys Geol.</td>
<td>4</td>
</tr>
</tbody>
</table>

*Recommended for Group Science minor.*
Physical Science:

A. Chem 103 General Chemistry .............................................. 4 hrs.
G.S. 130 Nat. Phys. World .................................................. 4
G.S. 131* Phys. Sci. for El. Ed. ........................................... 4
Phys 106 Elem. Physics ....................................................... 4

B. Chem 109 General Chemistry .............................................. 4 hrs.
Chem 140* Envir. Chemistry ................................................ 4
Phys 104* Desc. Astron. ....................................................... 4
Phys 105 Gen. Astron. .......................................................... 4

2. 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. A total of 36 hours is required.
The following courses are recommended:

12-13 hours Biological Science

Biology 100, 101, and 102 ................................................... 9 hrs.
One of the following: ......................................................... 3-4 hrs.
  Biology 210—Mammalian Anatomy ........................................ 4
  Biology 220—Appl. Botany .................................................. 4
  Biology 234—Outdoor Science .............................................. 4
  Biology 301—Ecology .......................................................... 3
  Biology 306—Genetics ....................................................... 3
  Biology 541—Invertebrate Zoology ....................................... 3

11-12 hours Earth Science

Geography 105 or 226 ......................................................... 3-4 hrs.
From the following: ......................................................... 7-8
  Physics 104—Astronomy ...................................................... 4
  Geology 130—Physical Geology ........................................... 4
  Geology 131—Earth History and Evolution ................................ 4
  Geology 300—Oceanography ................................................ 3
  Geology 301—Minerals and Rocks ........................................ 3
  Geography 225—Introduction to Meteorology and Climatology .... 4
  Geography 350—Principles of Conservation and Environmental Management 3

12 hours Physical Science

Physics 106, 110 or Gen. Studies Science 130 ....................... 4 hrs.
Chemistry 101, 102, 103 or 140 .......................................... 4
One of the following: ......................................................... 4
  Chemistry 109 General Chemistry ....................................... 4
  Physics 111 General Physics ............................................. 4
  Physics 104 or 105—Astronomy ........................................... 4

Minimum Total ................................................................. 36 hrs.

*Recommended for Group Science minor.
3. Related Course Offerings

203 Teaching of Elementary Science 3 hrs.
This course covers important subject matter of the physical and biological sciences with methods for its effective presentation in the classroom. Extension only.

308 Teaching of Physical Science 2 hrs.
Study of problems of teaching high school chemistry, physics, and physical science. The main emphasis is on effective methods of instruction. Practical methods of 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 1 hr.
A one-week course offered in cooperation with Eastern Michigan University, Central Michigan University and the Michigan Department of Natural Resources. Students may concentrate in one of four areas of study—Conservation, Game Bird Ornithology, Botany of Flowering Plants, and the Natural History of Michigan Mammals. The one-week course in Conservation is acceptable towards major or minors in Geography, Biology, and Group Science. The course may be repeated provided there is no repetition in the area of specialization.

510 Studies in Space Science 3 hrs.
The properties, structure, and evolution of stars will be emphasized in this course. Topics covered will also include: tools and methods of investigation, galaxies, cosmogony, and cosmological theories. Prerequisites: Physics 106, or Physics 110 and Physics 111, or equivalent, Astronomy 104 or equivalent.

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 planning to major or minor in Social Science should consult with William Fox (3411 Sangren Hall).

Major and minor programs should be arranged in conference with the Adviser indicated above by the fourth semester of the student's college career.

1. Requirements for the Major in Social Science
   a. At least 36 hours credit in the Social Science departments listed above. Courses counted for "General Education" or 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.*

*Elementary Education majors may satisfy this requirement by completing the specified courses in four of the five departments listed.
Group Majors and Minors

Anthropology 100 or 210 or 220 or 240
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 to 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."
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 counted for "General Education," or listed under General Studies. Students enrolled in the Elementary or Secondary Education curricula may include one course in Geography, provided such course is not specified for "science credit."
c. At least 6 hours credit in 300 to 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

Dr. Gene Mead, Director and Advisor

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 School of Medical Technology accredited by the American Society of Clinical Pathologists (ASCP), preferably one affiliated with Western Michigan University. The curriculum fulfills the minimum requirements of the ASCP 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 allowed only if the internship is preceded by the required work in Chemistry and Biology and is taken at an accredited hospital. Minors are required in both Biology and Chemistry.

The hospitals with which Western Michigan University is affiliated are: Borgess Hospital and Bronson Hospital in Kalamazoo; Blodgett Memorial Hospital, Butterworth Hospital and St. Mary's Hospital in Grand Rapids; McLaren Hospital in Flint and Flint Osteopathic Hospital; Wayne County General Hospital in Eloise; Hackley Hospital in Muskegon; Pontiac General Hospital; Munson Medical Center in Traverse City; Burns Clinic-Little Traverse Hospital in Petoskey; Detroit Memorial Hospital and Grace Hospital in Detroit; William Beaumont Hospital in Royal Oak; the Elyria Memorial Hospital, Elyria, Ohio; St. Mary's Hospital in Quincy, Illinois; St. Elizabeth Hospital Medical Center in Lafayette, Indiana; The Lutheran Hospital in Fort Wayne, Indiana; St. Vincent Hospital in Indianapolis, Indiana; and Good Samaritan Hospital in Lexington, Kentucky.

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 ....................... 122 hrs.

B. Course Requirements

1. General Education Requirements, as described on page 26 of this catalog must be met.

2. Science and Mathematics
   (Suggested course sequence)

   First Year
   Biology 100—Principles of Biology .......................... 3
   Chemistry 101 or 102—General Chemistry ............... 4
   Biology 101—Animal Biology .............................. 3
   Chemistry 120—Qualitative Analysis .................... 4
   Mathematics 100 or 120 or 122 or 200 .................. 4

   Second Year
   Biology 210—Mammalian Anatomy .......................... 4
   Chemistry 365—Introduction to Organic Chemistry .... 4
   Chemistry 222—Quantitative Analysis .................... 4
   Physics 106—Elementary Physics .......................... 4
Third Year
Biology 412—Microbiology ............................. 4
Biology 454—Animal Physiology ......................... 3
Biology 513—Pathogenic Microbiology ................... 3
Chemistry 452—Introductory Biochemistry ............... 5
4. Physical Education ...................................... 2-8 hrs.

C. Degree Requirements must be met.

435 Medical Technology Internship 15 hrs. Fall, Winter
A course in clinical laboratory methods with instruction in a hospital
School of Medical Technology approved by Western Michigan University.
This course is taken for twelve months and registration is required in
the Fall and Winter at Western Michigan University. Each hospital
selects its own internees from the group of students who have applied
for its available internships.
Physicians’ Assistants Program

John J. Josten, Program Director

This program is designed to train physicians’ assistants for the primary care physician so as to improve the distribution of health professionals especially in underserved inner-city and rural areas. The thrust of the training is to provide a skilled person who can assist physicians practicing in family medicine, internal medicine, obstetrics-gynecology, pediatrics and emergency medicine. By such assistance the physician is relieved of many tasks which do not require a physician's skill but will permit him to focus attention on tasks which do require a physician's skills and relieve him of some burdens of heavy patient loads.

The tasks performed may include history taking and physical examination to assist the physician in establishing a diagnosis, performing treatments as prescribed by the physician, providing patient care as prescribed by standing orders and attending emergencies approved by the supervising physician. These tasks are not a comprehensive list, but are mentioned to provide some perspective of the physicians' assistants functions.

The program satisfies the “Essentials of an Approved Program for the Assistant to the Primary Care Physician” which were developed by the Council on Medical Education of the American Medical Association.

In addition, recent Michigan legislation has created a commission to regulate physicians’ assistants and a national certifying examination will soon be developed by the American Medical Association. Thus far 23 states have explicitly authorized the activities of physicians’ assistants.

The program is allied with community medical facilities which are as follows:

Borgess Hospital
Bronson Methodist Hospital
Community Hospital, Battle Creek
Kalamazoo State Hospital

It is also a program of the Southwestern Michigan Area Health Center. This corporation is responsible for health education in Southwestern Michigan and its membership is as follows:

Borgess Hospital
Bronson Methodist Hospital
Michigan State University
The University of Michigan
Western Michigan University
Two major prerequisites are required for entry into the program:
- 60 hours of transferable college credit
- a minimum of one year of patient contact

For information on the program and admissions procedures write:
Program Director
Physicians' Assistants Program
c/o The Graduate College
Western Michigan University
Kalamazoo, Michigan 49001

The cut-off date for application to each class is April 15 of a given year with classes beginning in August. The program is 24 months in length and the graduates receive a Bachelor of Science Degree in Medicine. Potential applicants should be aware that admission into the program is quite competitive.

Course Structure of Physicians' Assistants Program

SEGMENT I, FALL

Biology 103, Human Biology 4 hrs. Fall
Human Biology will include the basic physical and chemical properties of life systems, their organization into cells, tissues, organs and organ systems. Organic evolution as the cause of organic similarities and diversities will be touched upon in the course. A survey of the various organ systems in man will make up about two-thirds of the course. The course will also include fifteen two-hour laboratories.

Chemistry 106, Chemistry for Physicians' Assistants 5 hrs. Fall
A simplified non-theoretical approach to practical inorganic, organic and physiological chemistry. The course serves both as a background for pharmacology and for interpreting biochemical parameters in the didactic medical courses.

Medical Science 100, Introduction to Medical Practice 1 hr. Fall
A discussion of the history of medicine and of the development of the Physician Associate concept, type A, B, and C programs. The ethics of medicine will be taught and the structure of organized medicine will be reviewed. General practice as well as specialty practices will be considered. Current activities as well as future developments will be related. Great medical milestones, the improvement of life of the population and modern hazards will also be discussed.

Medical Science 101, Medical Terminology 1 hr. Fall
The course represents medical terminology as a professional jargon which has a meaningful patterned structure. The principle objective is for students to develop the ability to analyze medical terms as they are encountered, and to arrive at general meanings without continual reference to a medical dictionary. Knowledge of many basic word elements and confidence in pronouncing and in accurate spelling of terms are additional objectives. The basic elements are presented in a progressive and orderly manner with each element frequently reemphasized as the vocabulary enlarges.

*University courses follow the University calendar; Clinical courses, in some cases, do not correspond to the usual calendar.
Medical Science 200, Medical and Surgical Emergencies 4 hrs. Fall
The course encompasses the approach to diagnosis and management of acute medical and surgical emergencies. Emphasis is placed on a rapid clinical appraisal of illness and injury and the immediate emergency procedures employed. Definite therapy will be alluded to in certain cases. Proficiency will be developed in certain critical skills, by demonstration and practice, utilizing life size training manikins and gadgetries required to accomplish this task. Clinical experience will be obtained via rotation through the Emergency Department of a teaching hospital.

SEGMENT I, WINTER

Biology 104, Functional Human Anatomy and Physiology 4 hrs. Winter
A study of fundamental principles of human anatomy and physiology. Laboratory experience in regional anatomy using prodissected material.

Biology 400, Pharmacology 4 hrs. Winter
The purpose of the course will be to emphasize general principles of pharmacology as a basis for the rational clinical use of drugs. The course will be comprehensive but pragmatic. Factors affecting drug action, such as rates of absorption, metabolism and excretion will be discussed. Mechanism of action will be covered when known. However, the main thrust will be to acquaint the student with the drugs commonly used in therapy, their side effects and toxic manifestations.

Psychology 510, Advanced General Psychology 3 hrs. Winter
The course is designed to present both modern behavior theory and applications of this theory to practical situations. Emphasis throughout will be upon human behavior (both normal and abnormal). References to animal behavior will be limited to instances where research upon humans is severely limited by ethical considerations, e.g. drugs. The basic psychological approach will be that of behavior manifestations with stress placed upon complex processes such as vicarious- and self-reinforcement, development of self-control behaviors, and a stimulus-response analysis of what have traditionally been designated as the "higher cognitive processes."

Medical Science 200, Medical and Surgical Emergencies 4 hrs. Winter
A continuation of the Medical Science 200 from Segment I, Fall.

SEGMENT IIA, SPRING

Medical Science 201,
Sterilization, Sterile Techniques and Surgical Practicum 4 hrs. Spring
The course is designed to relate practical knowledge of importance of preparation and teaching of the surgical patient, including principles of sterile technique in the OR to assist the surgeon in rendering surgery.

Medical Science 400,
Interview Techniques and History Taking 2 hrs. Spring
This part of the course is designed to teach these students the techniques of interviewing, organization of history and content of history
taking as well as the methods and organization of a complete physical examination. A complete and adequate history and physical examination form the basis for the diagnosis of the problem for which the patient presents himself to the physician. Without a thorough examination of the history and physical aspects of the patient, a proper diagnosis may not be reached and, therefore, appropriate treatment may not be given to relieve the suffering of the patient. Sophisticated, modern laboratory diagnostic tests, while extremely helpful, are of little value unless they are taken in light of an adequate history and physical examination. It is the goal of this course to teach the physicians’ assistant to perform this vital task as a member of the health care team so that information derived from history and physical examination can be effectively utilized in the care of the sick.

SEGMENT IIA, SUMMER

Biology 401, Microbiology of Infectious Disease 3 hrs. Summer

This course is intended to present methodology and techniques for handling and processing infectious specimens and for routine office identification of simple pathogenic microorganisms. While a treatment of microbiology is given from the basic science point of view, this information is limited and the stress is upon manipulation and identification.

Medical Science 400, Interview Techniques and History Taking 2 hrs. Summer

A continuation of Medical Science 400, Segment IIA, Spring.

Medical Science 300, Pathology 4 hrs. Summer

Human anatomy altered by disease processes will be revealed during sessions by means of fresh and preserved human organs, plastic imbedded materials, color photographs and a series of microscope slides for individual scrutiny.

SEGMENT IIB, FALL

Medical Science 404, Internal Medicine 2 hrs. Fall

The primary concern and responsibility of the physicians’ assistant program is to teach the student to think and work with a physician. The fundamental teaching activities and work available in the physicians’ assistant program are directed toward that goal. These efforts begin with the role in teaching the fundamental information necessary for the intelligent examination of patients. Emphasis is also placed on the principles of differential diagnosis and approach to solving the patient’s problems as well as the importance of extrapolating basic science information into the art of care of patients. This information should provide the Physician’s Assistant with the ability to integrate his activities with that of the physician in examination and diagnosis of patient’s problems.

Medical Science 405, General Surgery 2 hrs. Fall

The program in surgery for the Physician’s Assistant is organized with emphasis on the general principles involved as well as specific surgical diseases and operations. Problems peculiar to the surgical approach (wounds, infections, hemorrhage, and shock, etc.) will be considered in some detail. The highlights of common diseases and conditions and their surgical correction will be considered also.
Medical Science 403, Obstetrics and Gynecology 2 hrs. Fall
The basic aspects of obstetrics and gynecology from the viewpoint of the clinician.

Medical Science 402, Pediatrics 2 hrs. Fall
This course gives students thorough background material on childhood development from the standpoints of normal physical and emotional growth. Since the Physician's Assistant in pediatrics will be spending much of his time evaluating normal children, he must have a good knowledge of the norm himself. To give the student a survey of the disease areas commonly encountered in the pediatric practice.

Medical Science 406, Psychiatry 2 hrs. Fall
The history of Psychiatry, the development of the various neuroses and psychoses, plus the normal modalities of treatment.

Medical Science 407, Allergy 1 hr. Fall
This course will begin with the basic theoretical and proven concepts of allergy and immunology. Subsequently, emphasis will be placed on the clinical recognition of allergic symptoms, the importance of accurate etiologic diagnosis, the relationship between pathophysiologic changes, and their correction by proper therapy. Practical experience will be given in handling diagnostic procedures such as skin tests, examination of secretions, and pulmonary function tests.

Medical Science 408, Dermatology 1 hr. Fall
This course provides an introduction to the general field of Dermatology including the normal structure and function of the skin, technique of history taking and examinations, recognition of common skin diseases and basic concepts of treatment.

Medical Science 401, Physical Examination 4 hrs. Fall
A continuation of Medical Science 400, Segment IIA, Summer and IIA, Spring.

SEGMENT III, WINTER, SPRING AND SUMMER

With the exception of the Seminar course which is a continuation of Medical Science 411, the following courses are rotating clerkships in the area indicated by title. They will consist of ward rounds, patient work, new patient evaluation, patient review and workup plus patient presentations, grand rounds and clinical-pathological conferences.

Medical Science 504, Internal Medicine 5 hrs. Winter
Medical Science 505, General Surgery 5 hrs. Winter
Medical Science 503, Obstetrics-Gynecology 5 hrs. Winter
Medical Science 502, Pediatrics 5 hrs. Winter
Medical Science 506, Psychiatry 5 hrs. Winter
Medical Science 509, Physicians' Offices—Family Practice 5 hrs. Winter
Anthropology

Alan Jacobs, Chairman

Elizabeth Baldwin  Erica Loffler  Robert Jack Smith
William Garland  Reinhold Loffler  Robert Sundick
Ernestene Green  Robert Maher  Stanley West
Norman Greenberg  Winston Moore  John Willis
Barbara Lex

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, 240 and 250. (Anthropology 220 may substitute for 240, if it was taken prior to Fall 1973.) The remaining 6 hours may, in consultation with one of the Department’s Undergraduate Advisors, be drawn from appropriately related fields 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, which includes Anthropology 210, 240 (220 may substitute for 240, if taken prior to Fall 1973) and 250, and Sociology 200, 300 and 382 (582 may substitute for students entering before Fall 1971) 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, 240 (or 220, if taken prior to Fall 1973) and 250 are required. As much as 6 hours from related fields may be counted toward the minor, if deemed appropriate by one of the Department’s Undergraduate Advisors.

All major and minor programs must be approved by one of the Department’s Undergraduate Advisors.

COURSE DESCRIPTIONS

(Course descriptions in italics are approved for General Education purposes.)

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 archaeology as a subdiscipline of anthropology; the how and why of archaeology, with emphasis on methods and concepts for the study of prehistoric cultures. Case studies and examples drawn from selected areas of the world.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Terms</th>
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<tbody>
<tr>
<td>220</td>
<td>Cultural Anthropology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<td></td>
<td>A study of man's unique adaptive system, culture.</td>
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<td></td>
<td>Studied through selected cultures throughout the world. The structure and functions of a culture are considered along with its relationships to the environment, society and the individual.</td>
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<td>240</td>
<td>Introduction to Ethnology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<td></td>
<td>The study of tribal, peasant and modern world cultures in the ethnographic present. A focus on the analytic-comparative concepts and theoretical approaches basic to a systematic understanding of human groups.</td>
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<tr>
<td>250</td>
<td>Introduction to Physical Anthropology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<td></td>
<td>A survey of physical anthropology; the evolution of man and the primates; the living primates, human osteology, human genetics and population variation.</td>
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<tr>
<td>300 (341)</td>
<td>The Archeology of North America</td>
<td>3 hrs.</td>
<td>Winter</td>
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<td>The prehistoric development of man and culture in the New World north of Mexico. Prerequisite: 210 or consent of instructor.</td>
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<td>331</td>
<td>Art and Culture</td>
<td>3 hrs.</td>
<td>Fall</td>
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<td>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. Prerequisites: 220, 240 or consent of instructor.</td>
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<tr>
<td>334</td>
<td>Cultures of North Africa and the Middle East</td>
<td>3 hrs.</td>
<td>Winter</td>
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<td></td>
<td>A study of the peasant, urban, and nomad cultures from Morocco to Afghanistan, including consideration of Islamic civilization and recent ideological trends. Prerequisite: 220, 240 or consent of instructor.</td>
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<tr>
<td>335</td>
<td>Cultures of Africa</td>
<td>3 hrs.</td>
<td>Fall</td>
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<td>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, 240 or consent of instructor.</td>
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<tr>
<td>336</td>
<td>Cultures of Asia</td>
<td>3 hrs.</td>
<td>Winter</td>
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<td></td>
<td>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, 240 or consent of instructor.</td>
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<tr>
<td>337</td>
<td>Indian Cultures of Mexico, Central and South America</td>
<td>3 hrs.</td>
<td>Fall</td>
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<tr>
<td></td>
<td>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, 240 or consent of instructor.</td>
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<tr>
<td>339</td>
<td>Native Cultures of North America</td>
<td>3 hrs.</td>
<td>Winter</td>
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<tr>
<td></td>
<td>Study of the aboriginal cultures of America from the Arctic to the Rio Grande, with emphasis on contrasting patterns of regional cultures. Prerequisite: 220, 240 or consent of instructor.</td>
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</tbody>
</table>
Anthropology

350 (347) Human Evolution 3 hrs. Fall

Study of both the indirect evidence and the fossil evidence concerning human evolution, including comparisons with other primates, living and extinct, and a consideration of the present-day races of man. Prerequisite: 250 or consent of instructor.

370 (332) Language in Culture 3 hrs. Winter

A consideration of the evolution of language as a symbolic system of communication. The relations of language to cognition, social structure, cultural variation and nationalism; proxemics and other similar epilingualistic phenomena. Some consideration will be given to the ethnography of communication and related subjects. Prerequisite: Anthro. 220, 240 or Ling. 200 or consent of instructor.

425 Modern African Cultures 3 hrs. Winter

The study of African societies and cultures within a contemporary framework. After a brief survey of major cultural types, particular emphasis will be placed on current trends and conditions in the new states of Africa as reflected in the writings of influential African thinkers. This course attempts to provide the student with a working fund of information about regional and national "culture-building" which will allow an adequate understanding of African issues on the contemporary world scene.

498 Honors Study 2 hrs. Fall, Winter

A program of independent study (reading or research) to provide the honors student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the Department. May be repeated once. Permission to register must be obtained from the Department Honors Adviser.

500 (546) Topics in Archeology 3 hrs. Fall, Winter

A consideration of the prehistory of a particular geographic area (e.g. the southwestern United States, the Circumpolar) or of selected theoretical problems (e.g. artifact typology, prehistoric ecology). The topic to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 210 or consent or instructor.

501 (544) The Rise of Civilization 3 hrs. Fall, Winter

The archeological sequence in one or more of the nuclear centers of prehistoric civilization will be considered in some detail. The course may focus intensively upon one area (e.g. the Near East, or Meso-America), or it may give equal emphasis to two or more areas in a comparative framework. The specific area or areas to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 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, 240 or consent of 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, 240 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: 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, 240 or consent of instructor.

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, 240 or consent of instructor.

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

A cross-cultural study of the development of peasant groups as a cultural type. Theoretical and substantive emphasis is on the cultural antecedents of peasant societies, the conditions promoting change from folk to peasant status, and the relationships between peasant groups and urban, national societies. Prerequisite: 220, 240 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, 240 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, 220, 240 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, 240 or consent of instructor.

538 Legal Anthropology 3 hrs. Winter
A study of law through the theory and method of comparative legal dynamics. The relation of law to the whole of culture; the function of law as revealed in the comparative study of societies ranging from simple to complex. Prerequisite: 220, 240 or consent of instructor.

539 Economic Anthropology 3 hrs. Fall
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: Anth. 220 or 240; Econ. 200 and/or consent of instructor.

540 Cultural Ecology 3 hrs. Winter
A cross-cultural comparative inquiry into the general and specific ways in which the interaction of society and environment determines the forms societies take, especially in respect to demography, territoriality, and the organization of kinship, politics, law, religion and economics. Prerequisite: 210 or 220, 240 or consent of instructor.

542 Complex Cultures 3 hrs. Winter
Emphasis on anthropological approaches to cross-cultural, historical and in-depth studies of complex cultures. Selected topics: communities, including urban; the migration and adaptations of rural migrants to cities; particular sub-cultures of complex cultures; and current urban problems. Prerequisite: 220 or 240.

545 Topics in Ethnology 3 hrs. Fall, Winter
An intensive study of the cultures of an area of the world (e.g. Japan, Philippines, Caribbean, East Africa) or selected problems (e.g. kinship systems, millenarian movements). Topic will be announced each semester. (May be repeated for credit.) Prerequisite: 220, 240 or consent of instructor.

549 Anthropology of Education 3 hrs. Fall
A study of education as the process which transmits the culture of one generation of a society to the next. Particular attention is given
to education in primitive and peasant societies generally lacking formal institutions of education. Prerequisite: Soc. 200 or 600 or Anth. 220, 240 or consent of instructor.

550 (547) The Primates 3 hrs. Winter
A study of the Order Primates with emphasis on the similarities and differences in the physical features of man, the apes, the monkeys and the Lower Primates. Field studies of the behavior and social organization of monkeys and apes will be reviewed to gain insight into the early behavior and social organization of man. Prerequisite: 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, ontontology, 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 population 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.

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. 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.
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 general 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*

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<thead>
<tr>
<th>Year</th>
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<tbody>
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<td>Freshman year:</td>
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<tr>
<td>Fall</td>
<td>Winter</td>
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<tr>
<td>Biology 100</td>
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<td>Biology 101</td>
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<tr>
<td>Chemistry 101 or 102</td>
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<td>General Education electives**</td>
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<td>Mathematics 120 or 122</td>
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<tr>
<td>Physical Education</td>
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<td>General Education elective**</td>
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<td></td>
<td>14-16</td>
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<td>Sophomore year:</td>
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<td>Fall</td>
<td>Winter</td>
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<td>Biology 102</td>
<td>3</td>
<td>Biology 317</td>
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<td>Chemistry 360 or 365</td>
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<td>Mathematics 121 or 123</td>
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<td>Physics 110 or 210</td>
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<td>14-16</td>
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<td>Junior year:</td>
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<td>Fall</td>
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<tr>
<td>Biology 306</td>
<td>3</td>
<td>Biology elective(s)</td>
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<td>Biology elective</td>
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<td>General Education electives</td>
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<tr>
<td>Physics 111 or 211</td>
<td>4</td>
<td>Foreign language (for B.A. degree only)</td>
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<tr>
<td>General Education elective</td>
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<td>Foreign language (for B.A. degree only)</td>
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<td>Senior year:</td>
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<tr>
<td>Biology 301 — 3 hrs.</td>
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<td>Biology elective(s) to complete 30 hrs.</td>
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<tr>
<td>Complete General Education requirements</td>
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<td>Complete minor or second major requirements</td>
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<td>Completion of 122 credit hours</td>
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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 Education courses, to make a total of 30 hrs.

Additional work in a foreign language—total of 12 hrs.

*Students contemplating majoring in Biology should contact the Biology Information Office (Room 100, Wood Hall) as early as possible so that they can locate their Departmental Advisor.

**General Education electives should be determined in consultation with the student’s Biology Department Advisor and General Education Counselors, so that they can best reflect the student’s own interests and complement his major and minor areas.
General Counseling .................................................. Biology Staff

Transfer Students. Consult with your advisor at the Biology Department before registering for classes.

Students in Specialized Curricula. Your faculty advisor is:

- Elementary Education ......................... Dr. Beth Schultz
  Room 159, Wood Hall

- Medical Technology ................................. Dr. Gene Mead
  2050 Friedman

- Premedical or predental ...................... Dr. Gene Mead
  2050 Friedman

- Secondary Education ...................... Dr. William C. Van Deventer
  Room 157A, Wood Hall

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**

(Course descriptions in italics are approved for General Education purposes.)

100 Principles of Biology 3 hrs.

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 as 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 3 hrs.

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.

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.

103 Human Biology 4 hrs.

Human function and metabolism. Prerequisite: Must be in Physicians' Assistant Curriculum.

104 Human Anatomy and Physiology 4 hrs.

Anatomy and Physiology with emphasis on disease processes. May be repeated for credit. Prerequisite: Must be in Physicians’ Assistant Curriculum.
College of Arts and Sciences

107 Biological Science 4 hrs.
Designed to present basic biological principles, and to give the student an understanding of the operation of the world of life. Approved for general education.

111 Healthful Living 2 hrs.
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.
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.

209 Genetics, Evolution and Society 3 hrs.
The mechanisms of human inheritance in individuals, families and populations. Topics of social, medical and evolutionary importance are emphasized. (Credit does not apply toward a major in Biology.)

210 Mammalian Anatomy 4 hrs.
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.
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.
The functions of the organ systems of the human body, their regulation and control. Prerequisite: Biology 210 or equivalent.

220 Applied Botany 4 hrs.
The study of 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 or 102.

225 Plants of Southwestern Michigan 3 hrs.
A field course designed for those who desire an acquaintance with the common plants occurring in the region.

234 Outdoor Science 4 hrs.
The aspects of the living world with emphasis on the relationship of living things to their environment. Outdoor studies are part of the course. Approved for general education.

300 Environmental Biology 2 hrs.
A study of the relationships of living organisms, including man, to their environment and to one another. Designed for non-major students. Approved for General Education.
301 Ecology 3 hrs.
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 eco-system are considered. Prerequisite: At least 9 hours of biology.

306 Genetics 3 hrs.
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.
A study of the fundamental principles which underline the physiological activities of organisms. Laboratory emphasizes the experimental approach to biological problems. Prerequisites: Organic Chemistry, Biology 101 or 102 or consent of instructor.

342 Comparative Chordate Anatomy 4 hrs. Fall
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.
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.

400 Pharmacology 4 hrs.
Therapeutic management of diseases; drug chemistry. May be repeated for credit. Prerequisite: Must be in Physicians' Assistant Curriculum.

401 Microbiology of Infectious Disease 3 hrs.
Identification and therapy of infectious disease. May be repeated for credit. Prerequisite: Must be in Physicians' Assistant Curriculum.

403 Elementary School Science 4 hrs.
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.
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.
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 or organic chemistry (may be taken concurrently).

454 (554) Animal Physiology 3 hrs.
A study of cell, tissue and organ functions in the living animal with special emphasis on vertebrates. Prerequisites: Organic Chemistry or consent of instructor.

500 Selected Experiences in Biology 3 hrs.
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.
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.

503 Genetics of Eukaryotes 3 hrs.
A study of the structure, function and mutation and recombination of the genetic material in the nucleate organisms at the molecular, cell, tissue and organismal level. Prerequisite: Biology 306.

505 Human Genetics 3 hrs.
The principles of heredity in man with particular emphasis on the medical significance of biochemical and chromosomal variation.

506 Microbial Genetics 3 hrs.
A molecular approach to microbial genetics dealing primarily with bacterial and viral systems. Prerequisites: Biology 412 or Biology 306 and a knowledge of biochemistry.

507 The Biology of Addictive Drugs 3 hrs.
The principles of pharmacology as related to drug addiction and drug abuse in man. The course is designed primarily for the preparation of health educators, paramedical trainees, and addiction therapy. Prerequisites: at least a minor in biology or sociology, or consent of the instructor.

508 Recent Advances in Biology 3 hrs.
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.
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.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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| 511        | Physiology of Reproduction                       | 3 hrs.
|            | 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.
|            | This course deals with pathogenic microorganisms, infectious diseases, diagnostic tests and principles of immunology. Prerequisite: Biology 412 or equivalent. |
| 514        | Bacterial Physiology                             | 3 hrs.
|            | Lectures on bacterial cytology, metabolism, and physiology with emphasis on biochemical aspects. Prerequisites: Biology 412 and biochemistry (may be taken concurrently). |
| 516        | Experimental Microbial Physiology                | 3 hrs.
|            | An experimental approach to metabolism, physiology and genetics with emphasis on biochemical techniques. Prerequisite: Biology 514. |
| 517        | Cellular Physiology                              | 3 hrs.
|            | 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        | Integrative Physiology                           | 3 hrs.
|            | A survey of physiological events at both the cellular and organismal levels, as regulated and integrated by hormonal, neuroendocrine and other bioactive agents. Vertebrates, invertebrates, and plants will be considered as organisms whose metabolic pathways, the inter-relationship of synthesis and metabolism of lipids, sugars and proteins and their various enzyme systems are regulated by hormones, neurosecretions, as well as intracellular messengers such as 3'5' adenosine monophosphate. Some discussion of genetic, metabolic, and behavioral pathology which are related to hormones will be included. Prerequisite: Core biology program, a biochemistry or an advanced physiology course or consent of instructor. |
| 519        | Comparative Animal Physiology                    | 3 hrs.
|            | A study of the basic physiological processes as they occur in various groups of animals. Prerequisite: Biology 317 or equivalent. |
| 521        | Phycology                                        | 3 hrs.
|            | Studies in the classification, structure, physiology, ecology and economic importance of the fresh-water algae. Prerequisite: Biology 301. |
| 523        | Paleobotany                                       | 3 hrs.
<p>|            | 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. |</p>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>525</td>
<td>Biological Constituents</td>
<td>3 hrs</td>
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<td></td>
<td>The chemical elements in plants and animals, as</td>
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<td></td>
<td>well as the synthesis, characterization, and</td>
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<td>degradation products of the more important</td>
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<td></td>
<td>compounds. Prerequisites: 12 hours of biology,</td>
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<td>one year of chemistry.</td>
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<td>526</td>
<td>Mycology</td>
<td>3 hrs</td>
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<td>Studies in the classification, structure,</td>
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<td></td>
<td>physiology, development and economic importance</td>
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<td></td>
<td>of fungi. Prerequisites: Biology 301 and 306 or</td>
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<td>consent of instructor.</td>
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<td>527</td>
<td>Plant Physiology</td>
<td>3 hrs</td>
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<td></td>
<td>Advanced investigations into plant functions.</td>
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<td>Basic principles are examined more intensively.</td>
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<td>Advantage is taken of the discoveries and</td>
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<td>unifying principles of modern biochemistry.</td>
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<td>Prerequisite: Biology 317 or consent of instructor.</td>
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<tr>
<td>528</td>
<td>Biology of Non-Vascular Plants</td>
<td>3 hrs</td>
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<tr>
<td></td>
<td>The study of classification, ecology and</td>
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<td></td>
<td>reproductive cycles of algae, fungi and</td>
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<td></td>
<td>bryophytes. Culture methods of growing these</td>
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<td>plants for research occupies a part of</td>
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<td></td>
<td>laboratory work. Prerequisite: At least 12</td>
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<td>hours of biology.</td>
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<td>529</td>
<td>Biology of Vascular Plants</td>
<td>3 hrs</td>
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<td></td>
<td>A detailed study of the morphology, life cycles,</td>
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<td></td>
<td>and evolution of vascular plants. Individual</td>
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<td>research required. Prerequisite: At least 12</td>
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<td>hours of biology.</td>
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<td>530</td>
<td>Environmental Education</td>
<td>2 hrs</td>
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<td>A review of ecological principles basic to</td>
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<td></td>
<td>understanding environmental problems. A survey</td>
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<td>of environmental problems through readings,</td>
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<td>discussions, and field experiences. The goal</td>
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<td>of the survey is to define problems and</td>
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<td>consider paths to solutions. Students are</td>
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<td>expected to plan and, if possible, to initiate</td>
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<td>environmental education programs in their own</td>
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<td></td>
<td>professional areas.</td>
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<td>531</td>
<td>Experimental Animal Physiology</td>
<td>3 hrs</td>
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<td></td>
<td>Introduction to the practice of physiological</td>
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<td>research; design, execution and analyses of</td>
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<td>experimental studies upon phenomena of</td>
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<td>contemporary interest with detailed discussion</td>
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<td>of underlying physiological principles; with</td>
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<td>emphasis on modern methodologies and</td>
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<td>instrumentation. Prerequisites: Biology 317 and</td>
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<td>consent of instructor.</td>
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<td>538</td>
<td>Field Natural History</td>
<td>3 hrs</td>
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<td>A study of biological communities with</td>
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<td>particular emphasis on those accessible for</td>
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<td>use by public schools, e.g., school grounds,</td>
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<td>vacant lots, roadsides, parks and undeveloped</td>
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<td></td>
<td>areas. Primarily for teachers. Prerequisites:</td>
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<td>Biology 100 and 101 or 102 or consent of</td>
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<td>instructor.</td>
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<td>539</td>
<td>Animal Behavior</td>
<td>3 hrs</td>
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<td></td>
<td>Animal behavior with emphasis on evolution and</td>
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<td>ecology to include an introduction to the</td>
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<td>ethological point of view. Two student projects.</td>
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<td></td>
<td>Prerequisites: Biology 301 and consent of</td>
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<td></td>
<td>instructor.</td>
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<tr>
<td>540</td>
<td>Cell and Organ Culture Techniques</td>
<td>3 hrs</td>
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<tr>
<td></td>
<td>The various techniques of cell and organ culture</td>
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<td>will be utilized to establish <em>in vitro</em></td>
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<td>cultures of animal cells and to study specific</td>
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<td>cell types,</td>
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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.
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.
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.
A study of the microscopic structure of tissues and organs. Prerequisite: Biology 210 or equivalent.

546 General Cytology 3 hrs.
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.
A broad course that explores both scientific and popular aspects of bird study. Life history, anatomy and physiology, behavior, ecology, and evolution are considered. Identification, bird-banding, and preparation of study skins are included. Prerequisite: Consent of instructor.

548 Animal Ecology 3 hrs.
Characteristics of animal populations and their interactions with other populations, the role of animals in the functioning of ecosystems. Prerequisites: A course in ecology and a course in statistics, or consent of instructor.

549 Ecology of Southwestern Michigan 3 hrs.
Surveys and analyses of major and minor ecosystems of this region as to physical environment, composition, structure, and function. Prerequisite: A course in ecology and either systematic botany or invertebrate zoology.
550  Plant Anatomy  3 hrs.
An embryological and histological approach to the study of morphogenesis in seed bearing plants. Primary emphasis will be placed on monocots and dicots. Prerequisites: Biology 102 and 529.

551  Parasitology  3 hrs.
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.
A consideration of the organization of vegetation and casual 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.

555  Physiological Ecology  3 hrs.
A study of the physiological and behavioral adaptation and responses or organisms to external environmental factors. Prerequisites: Biology 301 and 317 and a year of chemistry or consent of instructor.

556  Immunology  3 hrs.
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  3 hrs.
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. Prerequisites: Biology 301 and consent of Consortium Screening Committee. (Available only at Tropical Research Center, Belize, British Honduras.)

558  Tropical Terrestrial Ecology  3 hrs.
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.
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
    Continuation of Biology 561.

598 Readings in Biology

599 Independent Studies in Biology
    For students who wish to carry on advanced work in special fields. Prerequisite: Consent of instructor.
Chemistry

Don C. Iffland, Chairman

Wade Adams  Paul E. Holkeboer  Michael E. McCarville
Robert H. Anderson  Thomas Houser  Robert C. Nagler
Donald C. Berndt  James A. Howell  Ralph K. Steinhaus
Donald J. Brown  Adli S. Kana'an  Jochanan Stenesh
Dean W. Cooke  Joseph M. Kanamueller  George B. Trimitsis
J. Lindsley Foote  George G. Lowry  H. Dale Warren
Robert E. Harmon

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 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 122, Mathematics 123

**Sophomore year:**
- Organic Chemistry 360, Organic Chemistry 361, Mathematics 272, Physics 210, Physics 211

**Junior year:**
- Quantitative Analysis 222, Physical Chemistry 430, Physical Chemistry 431, Physical Chemistry 436 (2 hrs.)

**Senior year:**
- Instrumental Methods 520 and Inorganic Chemistry 510 or Chemistry 550. In addition, two advanced electives from 500 level chemistry or mathematics or physics as approved by the Chemistry advisor. Reading knowledge of German or Russian is required for A.C.S. certificates.

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; 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.

To qualify as a major or minor in Chemistry from Western Michigan University the student must complete a minimum of 14 credit hours or 7 credit hours, respectively, in the Chemistry Department following the declaration of the major or minor with the departmental advisor. 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, and 430 will not be permitted to enroll in courses requiring these classes as prerequisites.

**DESCRIPTION OF COURSES**

(Course descriptions in italics are approved for General Education purposes.)

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. Prerequisite: One unit high school algebra. This course includes lecture, laboratory and quiz.

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 examination. This course includes lecture and laboratory.

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. This course includes lecture and laboratory.

105 The Scope of Chemistry  
3 hrs. Fall, Winter  
This course is designed to provide an opportunity to develop an understanding of the way chemistry functions as a science and an appreciation of its pervasive nature in modern society. Illustrations will be drawn from modern technology, medicine, agriculture and environmental concerns. Fundamental principles of atomic and molecular structure will be shown to undergird the profusion of modern materials and processes. Not applicable for a major or minor in chemistry nor as a prerequisite to other chemistry courses.
106 Chemistry for Physicians' Assistants 5 hrs.
A simplified non-theoretical approach to practical inorganic, organic and physiological chemistry. The course serves both as a background for pharmacology and for interpreting biochemical parameters in the didactic medical courses.

109 General Chemistry 4 hrs. Winter
This terminal course is designed to meet the needs of those who are required to complete one year of chemistry and is not acceptable for a chemistry major or minor or as a prerequisite for advanced 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. This course includes lecture and laboratory.

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.

140 Introductory Environmental Chemistry 4 hrs.
Purpose of course is to develop an appreciation of the chemical aspects of environmental problems and an acquaintance with the basic principles involved. This limited treatment considers elementary concepts of the nature of matter with applications of tools of chemists important in exploration of environmental problems. Laboratory may entail field trips as well as experiments which relate to environmental problems. Credit does not apply for graduation if 101, 102 or 103 are used, or for major or minor in chemistry.

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 3 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, Winter
A continuation of course 360. Prerequisite: Chem. 360.

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. This course will not serve as prerequisite for 361. Prerequisite: Chem. 120.

430 Physical Chemistry 3 hrs. Fall
Lectures on kinetic theory of gases, thermo-dynamics, phase rule, equilibria, electrochemistry, quantum theory, spectroscopy, statistical mechanics, chemical kinetics and mechanisms, transport properties, surface chemistry, macromolecules, crystal structure, etc. Prerequisites: Phy. 210, 211; Math 272, Chem 222 (or corequisite).

431 Physical Chemistry 3 hrs. Winter
A continuation of Chemistry 430. Prerequisite: Chem. 430.

436 Physical Chemistry Laboratory 1 hr. Fall, Winter
Laboratory experiments designed to emphasize and reinforce the principles covered in Chem. 430 and 431, with consideration of the limitations of physical measurements and their quantitative interpretation. Can be multiply enrolled or reenrolled for a total of 2 credit hours. Prerequisite: Chem. 430. Repeatable up to 2 credit hours.

450 Introductory Biochemistry 3 hrs. Winter
A basic course in the chemistry and metabolism of carbohydrates, lipids, proteins and nucleic acids. Not applicable to chemistry majors. Prerequisite: Chem. 365 or 361 or 363.

452 Introductory Biochemistry 5 hrs. Winter
This course consists of 450 plus laboratory. Not applicable to chemistry majors. Prerequisite: Chem. 365 or 361 or 363.

505 Chemical Literature 1 hr. Fall
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.

506 Chemical Laboratory Safety 1 hr. Winter
A study of toxic, corrosive, flammable, explosive, electrical, mechanical, thermal, and radiant energy hazards frequently encountered in chemical laboratory work. Emphasis is placed on precautionary methods to avoid damaging accidents and on emergency procedures to apply when accidents occur. Prerequisite: 24 hours of chemistry.

509 Topics in Chemistry 3 hrs.
A topic is presented in greater depth or from a perspective different from that of a typical undergraduate course. Representative topics such as pesticides and drugs, industrial chemistry, chemical pollution, etc. according to student interest and request.

510 Inorganic Chemistry 4 hrs. Winter
The course includes descriptive and theoretical inorganic chemistry as well as preparation of different types of inorganic compounds. Prerequisite or corequisite: Chem. 431.
College of Arts and Sciences

520 Instrumental Methods in Chemistry 3 hrs. Fall
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 corequisite: Chem. 431, 436.

535 Introduction to Physical Chemistry 4 hrs.
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 a graduate curriculum in chemistry. Prerequisites: 16 hours chemistry, Math 123, Physics 111 or 211.

550 General Biochemistry 3 hrs. Fall
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 and 430 or 535.

554 General Biochemistry 3 hrs. Winter

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. Fall
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 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.

580 History of Chemistry 3 hrs. Winter
This course traces the roots of chemistry from ancient technology through alchemy and medicine to the chemical revolution of Lavoisier and Dalton. In more detail it examines the nineteenth century basis of modern chemistry and the twentieth century clarification of the structural atom. Prerequisite: 16 hours of Chemistry, including 360 or 365.

590 Special Problems in Chemistry 2 hrs. Fall, Winter
Research work on a problem in chemistry in association with a faculty member. May be repeated for credit. Prerequisites: 24 hours of chemistry, with approval of the Department Chairman and a faculty director.
Communication Arts and Sciences

Charles T. Brown, Chairman

Roy Beck  William Buys  June Cottrell  Loren Crane  Richard Dieker  Daniel Fleischhacker  Albert Furbay  Russell Grandstaff  Ruth Heinig  Charles Helgesen  Deldee Herman


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 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.

The Communication Arts and Sciences Department encourages a close relationship between academic classes and extra-curricular and co-curricular experiences. Students may become involved in a variety of activities including the All-University Forum, community service projects, readers theatre, oral interpretation festivals, the Speaker's Bureau, the Forensic Judging Service, theatre productions, the Touring Theatre for Children, discussion conferences, and consultant services for campus organizations. Academic credit may be earned by participating in many of these communication activities.

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.

*Petitions for exceptions to these policies should be submitted to the departmental chairman.
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.

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 of CAS, 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**.

IN INVOLVEMENT IN FINE ARTS MINOR
The Theatre area is one of the academic units participating in the Fine Arts minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of the aesthetics and artistic processes. For full information, see p. 519.

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.

DESCRIPTION OF COURSES
(Course descriptions in italics are approved for General Education purposes.)

102 Speech for Teachers***
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.

*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.)
***Of courses CAS 102, 104 and 130, only one may be taken for credit.
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.

140 The Individual and the Mass Media 2 hrs.
Self discovery of the individual’s relationship and response to contemporary mass media messages through an experiential approach.

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.

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.

***Of courses CAS 102, 104 and 130, only one may be taken for credit.
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>232</td>
<td>Discussion.</td>
<td>3 hrs.</td>
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<td></td>
<td>Study and practice in discussion and conference.</td>
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<td></td>
<td>Skill in participation, leadership, group thinking, and evaluation are emphasized. Recommended for students whose vocational plans involve work with groups.</td>
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<tr>
<td>236</td>
<td>Social Issues and Action Laboratory</td>
<td>1 hr.</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>240</td>
<td>Broadcast Communication</td>
<td>3 hrs.</td>
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<td></td>
<td>A survey of the nature and structure of contemporary broadcasting in the United States as a mass communication process involving a publicly owned but privately operated medium.</td>
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<td>241</td>
<td>Film Communication</td>
<td>3 hrs.</td>
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<td></td>
<td>An introduction to the unique language and elements of the film medium through the study of outstanding examples of historical and contemporary experimental, documentary and feature films.</td>
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<td>247</td>
<td>Sound in Mass Communication</td>
<td>3 hrs.</td>
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<td></td>
<td>Analysis of sound as a creative element in mass communication. Studio experience in radio production, and consideration of aural messages in other mass media, such as filmtracks and recording. Prerequisite: CAS 240.</td>
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<tr>
<td>270</td>
<td>Interpersonal Communication II</td>
<td>3 hrs.</td>
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<td></td>
<td>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.</td>
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<tr>
<td>302</td>
<td>Theoretical Bases of Communication</td>
<td>3 hrs.</td>
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<tr>
<td></td>
<td>An examination of theories of perception, cognition, motivation and social psychology which relate to the process of communication.</td>
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<td>307</td>
<td>Psycho-Physical Bases of Communication</td>
<td>3 hrs.</td>
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<td></td>
<td>Examination of the physiological patterns of the cognitive, affective and psychomotor aspects of communication. The course will include classroom and laboratory experience.</td>
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<tr>
<td>311</td>
<td>Readers Theatre II</td>
<td>2 hrs.</td>
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<td></td>
<td>Selecting and arranging materials for readers theatre; directing and participating in performances. Prerequisite: Readers Theatre I.</td>
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<tr>
<td>312</td>
<td>Oral Interpretation of Drama</td>
<td>3 hrs.</td>
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<td></td>
<td>Development of skills in oral presentation of dramatic forms of literature, through class analysis and individual presentation of dramatic scenes. Prerequisite: CAS 210.</td>
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<tr>
<td>320</td>
<td>Stage Direction</td>
<td>3 hrs.</td>
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<td>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.</td>
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<tr>
<td>321</td>
<td>Play Production for High School Teachers</td>
<td>4 hrs.</td>
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<td></td>
<td>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</td>
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</table>
of play production, such as play selection, casting, rehearsal, planning scenery, costumes, make-up, etc.

325 Summer Theatre

A series of workshops providing students with opportunities to concentrate on various activities of theatre production. Study of a specific topic is integrated with practical experience in a laboratory approach. Some workshops may culminate in performances. Each workshop offered will focus on a specific aspect or problem of the topic under consideration.

a. Acting
b. Improvisation
c. Directing
d. Technical Theatre
e. Design
f. Lighting and Sound
g. Costuming
h. Makeup
i. Management

Students may enroll for one or more workshops depending on individual needs, interests, and schedules. Number of credit hours is determined by length of workshop: Two weeks—two hours, four weeks—four hours, six weeks—six hours. Length of workshops is determined by the particular focus on the topic studied. See Summer Class Schedules for offerings for specific years.

328 Stage Costume

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

The study and application of logical, emotional and ethical principles of persuasion.

334 Logical Bases of Communication

Logical methods of inquiry in the analysis and construction of messages related to contemporary problems in society.

335 Leadership

A study of the characteristics and behaviors of leaders with emphasis on the development of leadership abilities in the individual for different group situations.

346 Film Production

Production of short experimental films; scripting, planning, editing, directing and photography. Work in this course will be done within the limitations of the 8 mm format. In addition to text materials, students must provide supplies averaging about $30 per student. Prerequisite: CAS 241.

347 Television Production

Study of television as a creative medium. Exploration of the elements involved in producing television studio programs. Practical experience in production and directing of various program units. In addition to text
materials, students must provide supplies averaging about $10 per 
student. Prerequisite: CAS 240.

348 Broadcast Writing and Continuity 3 hrs.
Explores the problems and techniques of combining sound and visual 
elements in the creative preparation of broadcast formats, commercials, 
dramatic scripts, station continuity and documentaries.

349 Broadcast 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.

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.

410 Oral Interpretation of Black American Literature 3 hrs.
Theory and principles of oral interpretation as applied to analysis of 
Black American literature and the development of skills needed to 
interpret that literature, including folk tales, essays, speeches, poetry, 
and drama, growing out of the oral traditions and written by Black 
Americans. Prerequisite: CAS 210

447 Advanced Television Production 3 hrs.
Individual and group projects in the development and production of 
television programs stressing experimental techniques. Prerequisite: 
CAS 347 or permission of instructor.

448 Television Performance 2 hrs.
Exercises in television performance, stressing the special problems of 
the video performer. Prerequisite: Permission of the instructor.

470 Communication, Social Issues and Change 3 hrs.
A study and practical application of communication and rhetorical 
methodology in contemporary social problems.

OPEN TO GRADUATES AND UPPERCLASSMEN

510 Studies in Oral Interpretation: Variable Topics 3 hrs.
Projects in reading and analysis of literature to intensify the student’s 
application of the theory and principles of oral interpretation. Topics 
will vary each semester and students may repeat the course. Possible 
topics include the following:
   a. Oral Interpretation of Shakespeare
   b. Oral Interpretation of the Bible
   c. Oral Interpretation of Selected Long Literary Forms

520 Studies in Theatre: Variable Topics 3 hrs.
Selective study within a broad range of aspects of theatre. Emphasis
Communication

is upon concepts, theory and advanced skills. Possible topics will include the following:

a. Advanced Acting
b. Advanced Directing
c. Improvisational Theatre
d. Stage Lighting
e. Advanced Costuming
f. Dramatic Theory and Criticism
g. Advanced Technical Theatre

526 History of Theatre
From the beginning to the English Renaissance.  3 hrs.

527 History of Theatre
From the English Renaissance to the present day.  3 hrs.

529 Stage Design
A course for students in design, including stage lighting and stage settings. Includes laboratory practice in staging University Theatre productions.  4 hrs.

530 Studies in Rhetoric: Variable Topics
Selected areas of detailed study within the total range of rhetoric. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under 530. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the course schedule.

a. Conflict Resolution
b. Ethics and Freedom of Speech
c. Historical Bases of Rhetoric

540 Studies in Mass Communication: Variable Topics
Analysis in depth of current and continuing issues in mass communication. Topics vary from semester to semester and students may repeat the course for credit. Possible topics include the following:

a. Mass Media Law and Regulation
b. News, Politics and Mass Communication
c. Mass Communication and Children
d. International and Comparative Systems of Mass Communication
e. Teaching Mass Media in Secondary Schools

545 Television as a Creative Medium
A study of the unique qualities of the television medium, through examination and analysis of television documentary, drama, visual essay and other forms from historical and contemporary periods. The observations of critics and theorists who have attempted to describe the aesthetic values of the medium will be explored.  3 hrs.

547 Instructional Radio-Television
Application of radio and television for the communication specialist. Utilization of electronic resources for instruction, observation, research, and training. Lab Fee $10.
560 Studies in Communication Education: Variable Topics 3 hrs.
Selected studies in background, methods, materials and procedures in any one of the several speech communication 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 Communication 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 affecting desired behaviors in children's thinking, communicating and enjoyment.

562 Teaching Communication in the Secondary School 4 hrs.
This is a course in becoming a professional teacher of communication. The focus of the course is self-examination, openness, and individual initiative. Some of the major topics are an examination of self in relation to teaching, the evolving and changing philosophies of speech communication education, the world of high school teaching as it now exists, innovative procedures in teaching communication, and how to get and hold a job in speech communication.
The class is, for the most part, a laboratory-workshop, using a mixture of group work, guests, visitations, and special projects.
The student must have completed at least 15 hours of work in the CAS Department and, ideally, take the course immediately prior to student teaching.

564 Creative Dramatics for Children 4 hrs.
Study of the principles, materials and techniques of using informal drama as a classroom activity in elementary grades. Emphasizes theoretical and practical application through the planning and teaching of drama experiences.

570 Studies in Communication: Variable Topics 3 hrs.
Selected areas of study within the total range of communication. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under 570. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the course schedule.

a. Interpersonal Theories of Communication
b. Personality and Communication
c. Non-Verbal Communication
d. Attitude Change and Social Influence
e. Group Training, Theory and Practice
f. Semantics
g. Introduction to Communication Research
h. Intercultural Communication

598 Independent Studies 1-4 hrs.
A program for advanced students with an interest in pursuing independently a program of readings, research 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 advisor, with careful attention paid to achieving a proper spread.

A major in Economics who intends to do graduate work in Economics is advised to take Mathematics 122 and 123 at least, and Econometrics 509.

The Head of the Department will assist students in selecting courses suited to their needs in fulfilling the minor and major requirements.

The Honors Program of the Department of Economics is designed for the student who possesses special talents and abilities and who is particularly interested in exploiting them to the fullest extent. Students wishing to participate in this program should consult a member of the Economics Honors Committee.

PRINCIPLES AND GENERAL THEORY

(Course descriptions in italics are approved for General Education purposes.)

100 Contemporary Economic Problems 3 hrs. Fall, Winter

Focuses on several of the most important economic problems confronting our society—i.e., unemployment, environmental pollutions, inflation, poverty, balance of international payments, monopoly power, the standard of living in developing nations and other problems which the students may suggest. Utilizing a non-technical approach, an attempt is made to show what economics can contribute to the analysis and to possible solutions to these problems.
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.

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 Price Theory  3 hrs. Fall, Winter
A basic course on 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 Income Analysis and Policy  3 hrs. Fall, Winter
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. Fall, 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.

An examination of a selected area of concern not intensively covered in other courses. The focus of the course will be substantive as well as analytical. Topics may include such areas as poverty, the war industry, farm problems, misallocation of resources, welfare programs, unemployment and others. May be repeated for credit with a different topic. Prerequisites: Econ. 201 and 202.

502 Studies in Quantitative Economics  4 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  4 hrs. Winter
An introductory course to acquaint the student with the application of basic mathematical concepts to economic analysis including such topics as demand, revenue, costs, capital assets, growth models, multipliers, accelerators, maximum problems, differentials and difference equations and linear systems in economics. Prerequisites: Econ. 201 and 202, Math. 122 or consent of instructor.

505 History of Economic Thought  4 hrs. Winter
A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mer-
cantalism 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.

508 Institutional Economics

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

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

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

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 AND RESOURCE ECONOMICS

(Course descriptions in italics are approved for General Education purposes.)

313 Poverty and Economic Security

The course relates such risks as old age and disability to the general problem of income distribution and poverty in the United States. The welfare and social security systems are compared to proposed alternatives such as a negative income tax or guaranteed income.

318 The Economics of Medical Care

This course is designed to familiarize the student with the basic economic problems that exist in the field of health care. It introduces to the student some basic economic tools which are useful in analyzing these problems. The demand for medical care, the supply of health services, the role of health insurance and pricing, and output decisions are analyzed. Various policy questions are also raised, and the pros and cons of alternative policies are presented. Finally, the role of planning in the reorganization and delivery of medical care services is discussed. Prerequisites: Econ. 201 and 202, or permission of instructor.
319 Environmental Economics 3 hrs.

The study of economic aspects of environmental problems. Benefit-cost analysis is to be introduced and applied to problems in the management of air, water, and other natural resources. Environmental problems of selected industries—including transportation and electric power—economic growth, population and environmental quality are analyzed. Prerequisite: Econ. 201.

410 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. Prerequisites: 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 instructor.

515 Economics of Human Resources 3 hrs.

The economic aspects of the development, utilization and maintenance of our human resources, with primary emphasis on the labor force. Subjects included are labor markets, mobility, the economics of education—including training and retraining—and health. Prerequisites: 201 and 202.

**MONEY, CREDIT AND FINANCE**

420 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 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, intergovernmental economic relationships. Prerequisites: Econ. 201 and 202.

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 Corporations and Public Policy 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
(Course descriptions in italics are approved for General Education purposes.)

380 (586) Economics of the Soviet Union and Eastern Europe 3 hrs. Winter
A study of Soviet and East European planning practices including an examination of the development in commerce, agriculture and indus-
try in these areas. Trade among the several East bloc nations will also be covered. Prerequisite: Econ. 201.

480 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 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 480.

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.

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: 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.

589 The Economics of Latin America 3 hrs. Winter
A survey of the principal economic problems of the Latin American countries. A substantial portion of the course will be devoted to case studies of the development of particular countries. Prerequisites: Econ. 201 and 202.
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.
The English Department serves students in two principal ways: in developing each individual's power to communicate and express himself; and in enhancing every person's ability to participate in and understand the experiences of other people, real and imaginary, past and present.

Courses and programs offered by our department—in writing, English language, and literature (including film)—enable students to concentrate in English, complement their other studies, or simply explore and sample the worlds of language and literature. Although, as a department, we are engaged in training teachers and preparing students for graduate study in English, we are equally concerned with serving those students preparing for the many professions in which humane perceptions and the skills of communication are important.

**SPECIAL NOTE TO NON-MAJORS**

The English Department offers many courses suitable for students not majoring in English (including various writing courses). A number of these English courses may be used to satisfy general education requirements:

1. 105 Thought and Writing
2. 107 Good Books
3. 110 Literary Interpretation
4. 111 Contemporary Topics
5. 150 Literature and Other Arts
6. 210 Film Interpretation
7. 222 American Literature and Culture
8. 239 Contemporary Literature
9. 264 Journalism
10. 266 Writing Fiction and Poetry
11. 282 Children's Literature
12. 305 Practical Writing
13. 311 Perspectives Through Literature
14. 312 World Literature
15. 315 The English
English

Bible as Literature, and other more advanced courses, as appropriate to the interests and background of the student.

English advisors will assist any student, English major or not, to select courses in writing, English language, or literature which will be helpful in general education or career. Advisors' offices are on the sixth floor of Sprau Tower—phone 383-1684.

MAJORS AND MINORS IN ENGLISH

1. The standardized requirements for an English major (listed below) are minimal so that students may follow highly individualized courses of study. As soon as a student decides to become an English major, he or she should confer with the Associate Chairman for Undergraduate Studies or with one of the other departmental advisors, who can assist in planning the major. Major or minor slips are not required except for students electing a major or minor with writing emphasis.

2. Thirty hours are the minimum number of hours required for a major in English, and 20 hours are required for a minor. Students are urged, however, to take as many additional hours as they can. In particular, students planning to teach or attend graduate school should consider taking more than the minimum number of courses.

3. No more than four hours of "D" credit may be applied to an English major or minor.

4. Foreign Language Requirement. English majors are required to have a minimum of 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.

5. Special Note to Transfer Students. All transfer students majoring in English should consult with one of the department's undergraduate advisors about transferring credit in English courses from other colleges to Western Michigan. An early conference will enable the student to avoid duplication of courses and possible loss of transfer credit and may enable bypassing some of the department's basic requirements as listed below. It is departmental policy to accept no more than 20 hours of transferred credit toward a major and 12 hours of transferred credit toward a minor.

6. Honors Program. The English Department honors program allows especially capable students to work for Honors in English through several different means, depending on the temperament and needs of the particular student: independent study; group study in honors seminars; an "enriched" major program of at least 40 hours; special examination, research papers, or writing projects; and various combinations of these. Students who anticipate being able to meet grade point average requirements for honors of 3.0 in all university work and 3.5 in the major should consult with the department's Honors Director Dr. Shirley Scott to work out an individualized honors program.
ENGLISH MAJORS 30 hours required

BASIC REQUIREMENTS

1) 110 Literary Interpretation;
2) An English language course (271, 372, or 572);
3) Either 310 Literary History and Criticism or 340 Development of English Verse;
4) At least one 400-level course other than 410; plus electives to complete the 30 hours.

Sixteen of the 30 hours must be in 300, 400, or 500 level courses (300-500 level courses fulfilling the basic requirements may be included in this total). One of these 300, 400, or 500 level courses must be chosen from those indicated with an asterisk (*) on pp. 297-300 of this catalog (these courses emphasize literature written before 1900).

VARIATIONS FROM BASIC REQUIREMENTS, ACCORDING TO PROGRAM

General Curriculum, Liberal Arts, and other non-teaching curricula

Besides completing the basic requirements outlined above, the English major in General Curriculum or Liberal Arts should choose electives with care. Departmental advisors will assist with planning individualized programs.

Secondary Education

Requirements for the English major in secondary education vary in two respects from the basic requirements: (1) the requirement of a course in the English language must be satisfied with either 271 Structure of Modern English or 572 American Dialects; (2) at least one course in American literature is also required of English majors in secondary education (322 American Literature: Major Writers is recommended for satisfying this requirement).

The courses in the methods of teaching English (English 381, 382, 383, 385) do not count toward the English major. However, since a methods course is required for certification, English majors planning to teach in secondary schools should take at least one of these courses.

Departmental advisors will assist in selection of the electives most appropriate to the interests and teaching plans of the major in secondary education.

Elementary Education

Requirements for the English major in elementary education vary in two respects from the basic requirements: (1) the requirement of a course in the English language must be satisfied by either 271 Structure of Modern English or 572 American Dialects; (2) English 282 Children's Literature is also a required course. (Students may not count both 282 and 283 Literature for Adolescents toward the English major.)

Elementary education majors should consult with departmental advisors before registering for courses in the teaching of English (English 381, 382, 383, 385).

English major (any curriculum) with Writing Emphasis

Students in any curriculum may elect to take an English major with a writing emphasis. Twelve hours of course work in advanced writing
are required and may be selected, in consultation with an English Department advisor, from English 264, 266, 362, 364, 365, 366, 367, and 566. The English major with a writing emphasis must also satisfy the Basic Requirements, except that he may substitute English 266 for 110. (Major slips are required for the writing emphasis.)

ENGLISH MINORS  20 hours required

General Curriculum, Liberal Arts, and other non-teaching curricula

Required: 110 Literary Interpretation; at least 8 hours of course work in 300, 400, or 500 level courses; plus electives to complete the 20 hours.

For English minors in non-teaching Curricula, only one specific course is required in order that the minor program may be individualized to supplement or complement a major in virtually any other field of study—business, technology, fine arts, the sciences, social sciences, or humanities. For information on individual minor programs, see a departmental advisor.

Secondary Education

Required: 110 Literary Interpretation; either 271 Structure of Modern English or 572 American Dialects; an American literature course; at least 8 hours of course work in 300, 400, or 500 level courses; plus electives to complete the 20 hours.

The courses in the methods of teaching English (381, 382, 383, 385) do not count toward the English minor. English minors desiring to take one of these courses should consult a departmental advisor.

Elementary Education

Required: 110 Literary Interpretation; either 271 Structure of Modern English or 572 American Dialects; 282 Children's Literature; and electives to complete the 20 hours.

Students may not count both 282 and 283 Literature for Adolescents toward the English minor.

Elementary education minors should consult with a departmental advisor before registering for courses in the teaching of English (381, 382, 383, 385).

English Minor with Writing Emphasis

Students in the General, Liberal Arts, or other non-teaching curricula may elect to take an English minor with writing emphasis. Required: twelve hours of advanced writing courses (to be selected, in consultation with an English Department advisor, from English 264, 266, 362, 364, 365, 366, 367 and 566), eight hours of course work in English language and literature, also to be selected in consultation with an English department advisor. (Minor slips are required for the writing emphasis.)

DEPARTMENTAL COURSES

(Course descriptions in italics are approved for General Education purposes.)

105  Thought and Writing: Variable Topics  4 hrs.

A writing course in which the student will work closely with the instructor to develop his sense of language as a means for shaping and
ordering his experience and ideas, and to develop imagination, thought, organization, and clarity in his written work. The student has a choice of several options which vary in emphasis and approach. (For full listing of options and sections, see English Department Bulletin on Writing Courses.) May be repeated for credit. Does not count as credit toward English major or minor.

107 Good Books

An exploration of good literature, selected from all times and countries, and experienced in a variety of ways—as fantasy and adventure, as imaginative response to fundamental human experience such as death or evil, as social criticism and analysis, as revelation of character and psychology, as experience of unfamiliar customs and cultures.

A course for the general student rather than the student who plans to specialize in the study of literature. Credit towards English major or minor by permission of the department only.

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.

111 Contemporary Topics in Literature

Exploration of fiction, poetry, drama, and film related to current concerns. Topics vary from semester to semester. Typical examples are: literature and ecology; the individual and the city in American novel and film; literature and the search for identity and "life style"; myth and folklore as response to realities of human experience.

An exploratory course for the general student rather than the student who plans to specialize in the study of literature. Credit towards English major or minor by permission of the department only.

150 Literature and Other Arts

Study of literature through its relationship to other arts. The course approaches literature by relating novels, stories, poems, or plays to their representations in other media and art forms, particularly film (including TV), music and song, dramatic representation, and painting.

210 Film Interpretation

Studies in the motion picture as art form.

222 American Literature and Culture

A study of some of the recurrent themes in American life as seen in American literature.

223 Black American Literature

A survey of important black American writers and the historical development of the black image and experience in American literature and culture.

239 Contemporary Literature

Selected readings in recent literature from various countries and areas of the world. Emphasis is upon authors whose major work belongs to the period since World War II, with some attention to influential works from the earlier twentieth century.
252 Shakespeare  
A survey of Shakespeare’s art through study of selected tragedies, histories, and comedies.

264 Journalism  
Theory and practice of news gathering and news writing, copy editing, headline writing, news evaluation, page layout, and editorial writing.

265 Journalism Laboratory  
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.

266 Writing Fiction and Poetry  
Study and practice in the writing of fiction and poetry, intended to develop the student’s understanding of formal techniques and his skill in the use of these techniques.

271 (270) Structure of Modern English  
A study of the sound, word, and sentence structures (phonology, morphology, and syntax) of modern English.

282 Children’s Literature  
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  
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.

305 Practical Writing: Variable Topics  
A practical course for juniors and seniors who wish to develop their skills in writing. Emphasis is on understanding and writing forms of non-fictional prose such as, research papers and reports; commentary on the arts; autobiography and the personal essay; pre-professional writing (for students planning careers in business, social service, industry, law, or other professions). Topics vary and will be announced each year. A course for the distributive program of general education; does not count as credit towards an English major or minor. May be repeated for credit, but may be counted only once toward fulfillment of general education requirements.

310 Literary History and Criticism  
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 con-
tinuity, and an introduction to the nature and uses of formal literary criticism. Prerequisite: 110.

311 Perspectives Through Literature 4 hrs.

Exploration of an important realm of human nature and action through the special perspective provided by literature. The literary perspectives may be supplemented by materials from other arts or disciplines. Topics vary and will be announced each year. Examples: The Irrational; The Quest for the Self; Images of Progress.

A non-technical course for the general student rather than the student specializing in the study of literature; does not count as credit towards an English major or minor.

312 World Literature: Variable Topics 4 hrs.

Study of works selected from the various literatures of the world, excluding Great Britain and the U.S.A. Works will be studied in English. Cultures and areas of the world covered in the course vary from semester to semester, and students may repeat the course for credit if the topics are different. Topics to be offered include the following: A. Western World Literature. B. Asian Literature. C. African Literature.

315 The English Bible as Literature 4 hrs.

Study of selections from the Old and New Testaments and the Apocrypha. Some attention will be given to the influence of the English Bible on a few representative writers, musicians, and artists, but emphasis will be on the poetic, philosophical, and narrative elements of the Bible itself.

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 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.

344 (244) The British Novel 4 hrs.

A study of the novel as a literary form reflecting, in its development and diversity, changes in human consciousness. Emphasis will be on development of the British novel from the eighteenth to the early twentieth century. 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.

364 Feature and Article Writing 4 hrs.

Study and practice in writing feature and magazine articles; attention to contemporary techniques and styles in documentary and personal reportage. Prerequisite: A previous college-level writing course.
365 Reviewing for the Press 4 hrs.
Theory and practice in writing reviews of books, drama, films, television, concerts and exhibitions for various kinds of mass-audience publications. Prerequisite: Previous course work in journalism, creative writing, literature, or media.

366 Advanced Fiction Writing 4 hrs.
An advanced course in the writing of fiction, with emphasis on class discussion and criticism of each student's writing. Prerequisite: 266 or permission of the department.

367 Advanced Poetry Writing 4 hrs.
An advanced course in the writing of poetry, with emphasis on class discussion and criticism of each student's writing. Prerequisite: 266 or permission of the department.

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.

381 Teaching of Literature 2 hrs.
Techniques and theories of teaching literature in the secondary schools.

382 Teaching of English Language 2 hrs.
Techniques and theories of teaching the English language to native speakers in the secondary schools. Prerequisite: 270 or 271.

383 Teaching of Writing 2 hrs.
Techniques and theories of teaching writing in the secondary schools.

385 Special Topics in the Teaching of English 2 hrs.
Selective study of classroom problems and techniques in the teaching of English. Content varies, but emphasis will be on use of special materials or media in the English curriculum, new and experimental teaching methods or programs, or problems of classroom interaction. May be repeated for credit. Prerequisite, if any, will be announced by the English Department for each section.

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. May be repeated for credit as long as the topics are different. Prerequisite: 110.

441 Modern Poetry 4 hrs.
Study of twentieth-century British and American poetry, with emphasis on major poetic trends, concerns, and forms of the modern period. Prerequisite: 110.

442 Modern Drama 4 hrs.
Studies in the major styles and forms of modern drama from Ibsen to the present. Prerequisite: 110.

445 Modern Fiction 4 hrs.
Readings in representative British and American prose fiction of the twentieth century, with emphasis upon the diversity of styles and forms in modern fiction. Prerequisite: 110.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>452</td>
<td>Shakespeare Seminar</td>
<td>4 hrs.</td>
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<tr>
<td>496</td>
<td>English Honors Seminar</td>
<td>4 hrs.</td>
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<tr>
<td>499</td>
<td>English Seminar</td>
<td>4 hrs.</td>
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<tr>
<td>519</td>
<td>Non-Western Literature in Translation</td>
<td>4 hrs.</td>
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<tr>
<td>522</td>
<td>Topics in American Literary History*</td>
<td>4 hrs.</td>
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<td>529</td>
<td>Medieval English Literature*</td>
<td>4 hrs.</td>
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<td>530</td>
<td>Medieval Continental Literature in English Trans.</td>
<td>4 hrs.</td>
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<tr>
<td>531</td>
<td>Chaucer*</td>
<td>4 hrs.</td>
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<td>532</td>
<td>16th Century Literature*</td>
<td>4 hrs.</td>
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<tr>
<td>533</td>
<td>17th Century Literature*</td>
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<td>534</td>
<td>Neo-Classical Literature*</td>
<td>4 hrs.</td>
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<tr>
<td>535</td>
<td>18th Century Literature*</td>
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536 Romantic Literature*  
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. Prerequisite: 110.

537 Victorian Literature*  
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, Browning, and Arnold. Prerequisite: 110.

538 Modern Literature  
Readings in major authors of the 20th Century, with some attention to literary and intellectual backgrounds of the international modern movement. Prerequisite: 110.

539 Elizabethan and Jacobean Drama*  
Studies in the non-Shakespearian drama in England during the Elizabethan and Jacobean periods, by such dramatists as Kyd, Marlowe, Jonson, Webster, Tourneur, and Ford. Prerequisite: 110.

543 Milton  
A study of Milton's major works, with emphasis on Paradise Lost and the major poetry. Prerequisite: 110.

555 Studies in Major Writers  
Study of the works of classical, European, British, or American writers. Limited to one or two authors. Prerequisite: 110.

566 Creative Writing Workshop  
A workshop and conference course in the writing of poetry, fiction, or drama, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Prerequisite: Six hours of creative writing, graduate standing, or permission of the department.

572 American Dialects  
A study of regional, social, and stylistic variation among American dialects, with emphasis on the dialects of minority ethnic groups as structured systems.

574 Linguistics for Teachers  
An application of the concepts of linguistics to the teaching of language, literature, composition and reading in the English curriculum. Prerequisite: 270, 271 or an Introduction to Linguistics course, or permission of the department.

598 Readings in English  
Individual reading project available to advanced students by special permission from the appropriate departmental advisor (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.
CURRICULA FOR MAJORS AND MINORS

This program is designed to provide the student with an improved understanding of man's physical and cultural surroundings and the interrelationship of these. Students are prepared for the teaching of geography in either the physical or social sciences at the elementary and secondary levels. Career preparation is available in diverse fields such as planning, cartography, and environmental perception. A program is also available for those who desire to continue in graduate studies.

A core of three courses (Geography 226, 205, 203) is required of all majors and minors. A non-teaching major in Geography with specialization provides for a minimum of 30 hours of which 6 hours may be drawn from appropriately related fields in the humanities, social, and physical sciences. An internship for variable credit (Geography 412) may be arranged for in this program. For those who intend to pursue graduate work, it is recommended that courses in mathematics and foreign languages be considered as electives.

The Department will accept, toward the major or minor, credits earned at community and junior colleges which correspond to the 100-, 200-, 300-level offered by this Department. However, transfer students should meet with the undergraduate adviser as soon as possible in order to finalize their program and avoid the danger of duplication of course work. Courses taken on a Credit/No Credit basis may not be counted toward the major except with the approval of the Department Chairman. An Honors program is available for students so recommended by members of the faculty of the Department of Geography.

Students are invited to call at Room 317, Wood Hall (phone 383-1836) for information concerning the departmental major, minor, honors program, or financial assistance.

NON-TEACHING MAJORS

30 HOURS

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>226 Physical Geography</td>
<td>3 hrs</td>
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<tr>
<td>205 Our Human World</td>
<td>3 hrs</td>
</tr>
<tr>
<td>203 Geographic Inquiry</td>
<td>2 hrs</td>
</tr>
<tr>
<td>Two courses from Group I at the 200 level or above</td>
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<tr>
<td>One course from Group II</td>
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<td>One course from Group III</td>
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NON-TEACHING MINORS

20 HOURS

<table>
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<td>203 Geographic Inquiry</td>
<td>2 hrs</td>
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</table>

Remaining courses to be selected with consent of adviser.
NON-TEACHING MAJOR — WITH SPECIALIZATION

30 HOURS

The areas of specialization are: Urban and Regional Planning, The Environment, Geographic Techniques, Physical Geography, and Regional Geography.

This major is focused upon courses designed to meet a student's particular needs. An internship (Geography 412) is available for those who wish to gain practical experience. This can be done by either assisting faculty in research, or by working in an approved off-campus agency. A maximum of 6 hours of supportive work from complementary disciplines may also be taken.

226 Physical Geography .......................... 3 hrs.
205 Our Human World .......................... 3 hrs.
203 Geographic Inquiry .......................... 2 hrs.

Remaining courses must be selected with consent of adviser.

ELEMENTARY EDUCATION

MAJOR 30 HOURS

226 Physical Geography 3 hrs.
205 Our Human World 3 hrs.
203 Geographic Inquiry 2 hrs.
460 Concepts and Strategies in the Teaching of Geography 3 hrs.
311 Michigan 3 hrs.
380 Spatial Structure of the United States and Canada 3 hrs.

Remaining courses to be selected with the consent of adviser. Geography 460 may be waived and another Geography Group III course substituted if Education 507, Teaching of Social Studies in the Elementary Schools (2 hrs.) is required in another sequence.

ELEMENTARY EDUCATION

MINOR 20 HOURS

226 Physical Geography 3 hrs.
205 Our Human World 3 hrs.
203 Geographic Inquiry 2 hrs.
460 Concepts and Strategies in the Teaching of Geography 3 hrs.

Remaining courses to be selected with consent of adviser. Geography 460 may be waived and another Geography course substituted if Social Science 300, Teaching of Social Studies in Secondary Schools (3 hrs.) is required in another sequence.

SECONDARY EDUCATION

MAJOR 30 HOURS

Same requirements as elementary major.

Remaining courses to be selected with consent of adviser. Geography 460 may be waived and another Geography course substituted if Social Science 300, Teaching of Social Studies in Secondary Schools (3 hrs.) is required in another sequence.

SECONDARY EDUCATION

MINOR 20 HOURS

Same requirements as elementary minor.

Science Credit

The Geography courses 100, 105, 204, 206, 225, 226, 350, 553, 555, 560, 568, 580, and 582 are acceptable for science credit in appropriate science sequences.
GROUP I SYSTEMATIC GEOGRAPHY

(Course descriptions in italics are approved for General Education purposes.)

100 World Ecological Problems and Man 4 hrs.

(Science credit) Geographers have long been concerned with studying the interactions between man and the environment. The major focus of these investigations today is concerned with man's misuse of the environment, which has led to the present day man-made environmental crisis. This introductory course combines scientific and non-technical appraisals of processes and problems dealing with the question of environmental quality. Therefore, man will be studied in his physical as well as his social setting. Though major issues may vary for developing and developed nations, topics concerned with population pressure, pollution and urbanization will be among those considered.

101 Issues of Mankind 2-3 hrs.

A geographic approach will be used to interpret selected characteristics of man and his cultural landscape. Topics include: urban problems, world poverty and social welfare, hunger, colonialism, employment crises, ethnic and minority groups, crime, types of world elections, communication and transportation systems, religion, and other issues of contemporary concern. Each offering of this course will focus on a single theme.

105 Our Physical Environment 4 hrs.

(Science credit) A study of the physical environment of man. The course examines the seasonal and latitudinal distribution of solar energy and its effect on weather, vegetation, soils, surface and subsurface waters, and the earth's major landforms. Terrestrial energy is reviewed in relation to earth materials and earth-forming processes. Man induced energy changes are interwoven into each topic. Maps, aerial photographs and outdoor observations are utilized as primary investigative tools.

107 Planetary Science in Elementary Education 4 hrs.

In interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites) Not recommended for science majors.

204 National Park Landscapes 3 hrs.

(Science credit) Introduction to the physical and human landscapes of the national park system. Consideration of those natural and human processes which have produced the distinctive features of the national parks. Evolution of the national park concept, policies, and problems.
205 Our Human World 3 hrs.
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.

206 The Atmospheric Environment and Man 3 hrs.
(Science credit) A non-mathematical integrative approach to the atmospheric environment. Emphasis is placed on the interaction of the atmosphere with other environmental features with particular stress given to the role of the atmosphere in affecting the lives and activities of people. Inadvertent modification of the atmosphere by man, weather control, and air pollution also receive special treatment.

225 Introduction to Meteorology and Climatology 4 hrs.
(Science 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. Pre-requisite: Geography 105 or consent.

226 Physical Geography 3 hrs.
(Science credit) This course introduces the major element of man’s physical environment. Energy is the organizing concept which ties together and inter-relates the elements of weather and climate, the distribution of plants and soils, and the processes which have shaped the earth’s major landforms.

244 World Patterns of Economic Activity 3 hrs.
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.

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.

Population distribution and settlement patterns are examined geographically. Population topics include mapping and analysis, theories of population change, and types of migration. Emphasis is also placed on functions and structure of urban and rural settlements in selected world regions.

540 Studies in Political Geography 3 hrs.
Philosophy and applications of the field of political geography.
A. Principles of Political Geography. Principles and concepts are treated as they apply to the evolution of the modern state. Concepts such as the "organic state," boundaries and frontiers, the territorial sea and global relationships are treated in some detail.

B. National Power. The components of national power are analyzed according to political-geographic relationships.

543 Cultural Geography 3 hrs.
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 occupation of the earth's surface.

544 Studies in Economic Geography 2-3 hrs.
Presents world patterns of agriculture, manufacture, or transportation which link global production and consumption. In any term, the course focuses upon one of these three economic sectors.

A. Agriculture. Describes and analyzes the distribution of major crops and livestock, and their combinations in common farming operations. The spatial organization of agriculture through time is analyzed for selected areas.

B. Manufacture. Evaluates the general distribution and locational factors associated with selected industries, giving particular attention both to models of industrial location and to the empirical interrelation of economic, technological, and political elements affecting the locational decision.

C. Transportation. Emphasizes the historical evolution of transport systems in developed and developing nations, transport factors in location theory, techniques of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

553 Water Resources and Man 3 hrs.
(Science credit) Examination of water resources management with emphasis upon rational development and utilization of available supplies. Topics include supply and demand, methods of supply augmentation (desalination, inter-basin transfers), water administration and policies, and various water problems together with their solutions.

555 Contemporary Issues in Resources Management 3 hrs.
(Science credit) 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: Geography 350 or consent.

556 Studies in Land Use Planning 3 hrs.
Each of the courses listed below focuses on a major area of land-use planning. A student may receive credit for any or all of the offerings under Geography 556.

Philosophy and objectives of land-use planning; review of relevant legislation affecting utilization and conservation of land; classification
Geography

of land uses; field methods and mapping techniques required for description and analysis of land use patterns.

A. Urban Planning. Land use planning in American cities and metropolitan areas.

B. Regional Planning. Organization and plans of regional development programs.

C. Public Lands and Parks. Specific programs and policies relating to the preservation and/or development of government-controlled lands.

570 Cities and Urban Systems

Study of processes and forms of urban settlement highlighting problems relating to 1) political and geographical realities or urbanized regions, 2) factors in city growth (or decline), 3) the sizes, functions, and geographical distribution of cities, and 4) population patterns in contemporary cities. Activities are designed to provide the student with experience in the use of source materials and field techniques utilized in urban geography.

GROUP II REGIONAL GEOGRAPHY

(Course descriptions in italics are approved for General Education purposes.)

309 Studies in Regional Geography

An investigation of topics in physical and human geography of selected areas within major world regions. Regional concentration will vary from semester to semester, with the region being indicated at time of enrollment.

311 Geography of Michigan

An introduction to the physical and cultural patterns in Michigan with emphasis upon an understanding of the distribution of population, resources, and forms of economic activity. Attention is also focused upon relevant current State problems. The specific content is determined by enrollees and the instructor.

380 Spatial Structure of the United States and Canada

A study of the physical environment north of the Rio Grande followed by an analysis of the spatial structure of the area's population and economy. The basis for the regional differentiation of the USA and Canada is considered, followed by a region-by-region analysis of each of these unique integrations of physical and cultural phenomena.

381 South America

Regional study of the nations of South America with attention to the interrelationships of the physical and cultural environments. Historical background necessary for the interpretation of the present political, social, and economic conditions is included.

382 Mexico and the Caribbean

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.
308

College of Arts and Sciences

383 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.

384 Soviet Peoples and Landscape: Continuity and Change 3 hrs.

A general examination of the most important aspects of the Soviet Peoples and landscape set in a spatial framework. Topics discussed include: The physical environment, population distribution and dynamics, the Soviet strategy of economic development (both national and regional), problems of agricultural development, industrial and transport patterns, and problems of environmental deterioration.

385 The Pacific Realm 3 hrs.

Selected studies of the relationships between man and his environment in Australia, New Zealand, Melanesia, Micronesia and Polynesia.

386 Sub-Saharan Africa: Man, Environments, Resources 3 hrs.

Survey of the principal physical and political patterns of Africa south of the Sahara; followed by studies of the significant elements of the major realms and states, e.g., population distribution, patterns of subsistence and commercial agriculture, status of mineral and power resource development, transportation routes, regional development programs.

387 The 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.

389 Conflict Resolution in Southeast Asia 3 hrs.

Patterns of population growth, agrarian development, and resource use are examined in light of changing cultural and political forces, in the physical context of the Indo-Chinese Peninsula and the Malay Archipelago.

390 The Indian Subcontinent in Transition 3 hrs.

Changing patterns of population, and rural and urban economic development are examined in light of the Indian philosophical tradition and regional social and political pressures, in the physical context of the Indian subcontinent (India, Bangladesh, Pakistan, and Sri Lanka).

550 Studies in Historical Geography 3 hrs.

Studies of geographic and related features which have combined to influence the course of historical development. This course will concentrate on a particular region and/or period of time during each semester in which it is offered. Each specialization will be designated in the class schedule.
GROUP III GEOGRAPHIC METHODOLOGY AND RESEARCH

203 Geographic Inquiry 2 hrs.

The student will be introduced to geography as a field of study, of research, and occupational opportunity. Geography provides a means for analyzing the physical and cultural attributes of the environment. The student will have an opportunity to investigate social and environmental problems through data collection, analysis, interpretation, and map representation. The development of the various inquiry techniques in geography will be briefly reviewed and case studies exemplifying such development will be examined. The emphasis throughout will be on the application of inquiry models to geographic problems.

412 Professional Practice 2-5 hrs.

Provision for an advanced student to benefit by supplementary practical experiences in a particular branch of geography, either by assisting faculty engaged in research or by working in a departmentally-approved off-campus agency. Specific assignments are arranged in consultation with departmental advisers during the semester preceding that in which the student expects to enroll in 412. The student may enroll for one additional semester, but no student will be allowed more than six hours total credit for 412. Prerequisite: Junior standing and consent of Department Chairman.

460 Concepts and Strategies in the Teaching of Geography 3 hrs.

Study of objectives, tools, organization and presentation of material, methods of evaluation, and scrutiny of textual material in the field of geography.

560 Principles of Cartography 4 hrs.

(Science 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 students 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.

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. Desirable prerequisite: Geography 560 or consent.

580 Advanced Cartography 3 hrs.

(Science 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 two two-hour labs. Prerequisite: Geography 560 or consent.
582 Remote Sensing of the Environment

(Science 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

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

Lloyd J. Schmaltz, Chairman

Ronald Chase  William B. Harrison III  Richard Passero
Casper Cronk  W. David Kuenzi  W. Thomas Straw
John D. Grace

GEOLOGY MAJOR (MINIMUM 31 HOURS)

Required Courses  S.H.
Physical Geology 130  4  A minimum of a "C" is required
Earth History and Evolution 131  4  in each of the required courses.
Mineralogy 335  4
Optical Mineralogy 336  3
Structural Geology 430  3
Petrology and Petrography 440  3
Invertebrate Paleontology 533  4
Sedimentation 535  4
2 Additional hours in Geology  2

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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 as arranged by counselor; and Mathematics 122 and 123 and Introduction to Computers 106. 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 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 design a geology minor for his specific need.

Required Courses  S.H.
Physical Geology 130  4
Earth History and Evolution 131  4
One of the following options is recommended:
Mineralogy 335  4
Optical Mineralogy 336  3
Petrology and Petrography 440  3
Invertebrate Paleontology 533  4

or  22
Minerals and Rocks 301  3
Invertebrate Paleontology 533  4
3 additional hours in geology  3

18

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).
GROUP SCIENCE MINOR (Minimum 24 hours)
FOR GEOLOGY MAJORS

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.

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<th>Required Courses</th>
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<td>Chemistry</td>
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<tr>
<td>General Chemistry 101 or 102</td>
<td>4</td>
<td>Principles of Biology 100</td>
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<td>Qualitative Analysis 120</td>
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<td>General Chemistry 103</td>
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<td>Electives</td>
<td>At least 5 credit hours selected from the physical or biological sciences with approval of student's advisor.</td>
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<td>General Chemistry 109</td>
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<td>Mechanics and Heat 210</td>
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<td>Electricity and Light 211</td>
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MAJOR OR MINOR IN EARTH SCIENCE

The earth science major is designed for those students preparing to teach in elementary and secondary schools and as a broad flexible program for those who plan to work in conservation, state and federal parks and planning agencies.

TEACHING EARTH SCIENCE MAJOR AND MINOR

The teaching earth science major and minor are designed for students preparing to teach in the elementary and secondary schools. No grade below a "C" will be accepted in the required courses. All majors must complete a minimum of one semester each of college physics and college chemistry.

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<tr>
<th>Major (30 hours) Required Courses S.H.</th>
<th>Minor (21 hours) Required Courses S.H.</th>
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<tbody>
<tr>
<td>Astronomy 105</td>
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<tr>
<td>Introduction to Meteorology and Climatology 225</td>
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<td>Physical Geology 130</td>
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<td>Earth History and Evolution 131</td>
<td>Earth History and Evolution 131</td>
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<td>Oceanography 300</td>
<td>Oceanography 300</td>
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<tr>
<td>Minerals and Rocks 301</td>
<td>Minerals and Rocks 301</td>
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<td>Teaching of Earth Science 307</td>
<td>Teaching of Earth Science 307</td>
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<tr>
<td>Elementary Field Geology 339</td>
<td>Elementary Field Geology 339</td>
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<td>Electives</td>
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NON-TEACHING EARTH SCIENCE MAJOR AND MINOR

The non-teaching major and minor program is a broad flexible course of instruction for those who plan to work in conservation, state and federal parks and planning agencies. The program is interdisciplinary in nature and offers students an opportunity to select earth science and related courses from the departments of geology, agriculture, biology, geography, chemistry, physics and others. The selection of courses is done in consultation with the earth science advisor in order to construct programs which will satisfy students needs and professional objectives. A complete list of approved courses is available from the Department of Geology.

COURSE DESCRIPTIONS
(Course descriptions in italics are approved for General Education purposes.)

100 Earth Studies 4 hrs.

The earth we live on is both friend and foe. It provides for us only if we understand it. If not, it becomes a harsh environment which might permit us to only eke out a primitive existence. Geology 100 introduces students to the stuff of which the earth is made, to the processes which have created the earth as we know it and to the geological hazards which affect our environment. Included are such topics as rocks and minerals, earthquakes and the structure of the earth, water occurrences and resources, glaciers, volcanoes, oceanography, continental drift, sea floor, spreading and plate tectonics, and the origin and evolution of life.

107 Planetary Science in Elementary Education 4 hrs.

In interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites) Not recommended for science majors.

130 Physical Geology 4 hrs. Fall, Winter, Spring

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.

131 Earth History and Evolution 4 hrs. Fall, Winter, Spring

Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: Geology 130 or consent.

300 Oceanography 3 hrs. Fall, Winter, Spring

Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography. Lecture 3 hours a week.
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 130 or 112.

307 Teaching of Earth Science 2 hrs. Winter
Philosophy, objectives, and methods of teaching secondary school earth science. Designed for each science majors and minors. One hour lecture and two hours of lab. Prerequisites: 16 hours of Earth Science (including Geology 130 or 112) or consent.

312 Geology of the National Parks and Monuments 2 hrs.
A study of the origin of geologic features and the development of landscapes through geologic time in National Parks and selected Monuments. Students will be expected to read extensively in the available literature. Lecture 2 hours per week (2 credits). Optional Laboratory: Rocks, fossils, geologic maps and cross-sections of distinctive park areas will be studied (2 hours per week, 1 credit).

335 Mineralogy 4 hrs. Fall
Introduction of 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. Prerequisite: Geology 112 or 130 and General Chemistry or consent of instructor.

336 Optical Mineralogy 3 hrs. Winter
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 335.

339 Field Studies in Geology 1-6 hrs.
Field study of specific subjects in Geology. Subject offered will be announced in advance and selected from: Field mapping, stratigraphy and sedimentation, regional geology, and so forth. The required course, Geology 339, in the teaching of Earth Science Major is normally taught the two weeks of summer prior to the fall term, but may be offered at other times during the summer. Students planning to take this course should check with the Earth Science advisor in the Department of Geology.

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 131 and 440, or consent of instructor.

434 Problems in Geology 1-3 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. Fall
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.
444 Environmental Geology  
3 hrs.

It has been said that Environmental Geology is a ridiculous term because all geology is environmental. It might also be said that all our earthly environment is geological — or intimately dependent on it. Environmental geology encompasses such critical subjects as the occurrence, utilization and limitations of our natural resources (rocks, minerals and fossil fuels); the cause, effects and hopefully the predictions of earthquakes; the requirements and hazards associated with construction sites; the occurrence and availability of water resources; the problems of waste disposal and many others. The course utilizes professional and semi-professional papers and will involve case studies.

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  
1-3 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.

530 Plate Tectonics and Earth Structure  
3 hrs.

Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenents of plate tectonics. Prerequisites: GEOL 131, 301 or 335.

532 Geomorphology  
3 hrs. Fall

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 131.

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 131 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 131 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 131 and consent.
536 Glacial Geology 3 hrs. Spring
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 131 and consent of instructor.

540 Igneous and Metamorphic Petrology 4 hrs.
Advanced discussion of origins and positions of igneous and metamorphic rocks in light of recent experimental evidence and concepts of global tectonics. Prerequisites: GEOL 440 or equivalent.

543 Paleoecology 3 hrs.
Study will include the ecology, life, habits and environmental interactions of ancient organisms. Prerequisites: GEOL 533 or BIOL 541.

555 Sedimentary Petrology 4 hrs.
Thin section and hand-specimen study of sandstones, mudrocks, carbonate rocks, and chemical sediments, with emphasis on paleogeographic, tectonic, environmental, and paragenetic interpretation. Prerequisites: GEOL 335, 535 or consent.
History

Ernst A. Breisach, Chairman

George T. Beech  Scott L. Gibson  Gilbert W. Morell
Alan S. Brown  Ross Gregory  Howard A. Mowen
Walter J. Brunhummer  Robert J. Hahn  Andrew C. Nahm
Richard T. Burke  H. Nicholas Hamner  Emanuel Nodel
Lewis H. Carlson  Graham P. Hawks  Marvin T. Owinga
Albert E. Castel  Sylvia Hoffert  Dale P. Pattison
Sherwood S. Cordier  John T. Houdek  Peter Schmitt
Ronald W. Davis  Paul L. Maier  John R. Sommerfeldt
Edward O. Elsasser  A. Edythe Mange  John Yzenbaard

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.

Students planning to major in history should get a copy of the History Major Handbook from the department office (4075 Friedmann) promptly after choosing their major.

Since each major is unique, appropriate cognate courses will vary widely from student to student. Therefore history students should choose cognates according to their particular needs after consultation with their History advisers.

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 toward a History major or minor.

Courses taken on a Credit/No Credit basis may not be counted toward 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.

REQUIREMENTS FOR THE MAJOR

I. Basic Courses: The following four basic courses or their equivalents:
A. Early Western World (Hist. 100) and Modern Western World (Hist. 101)
B. United States History 210 and 211

II. Non-European Area: One course chosen from:
- 341 Soviet Union
- 349 Ancient Near East
- 370 History of Latin America
- 371 Contemporary Latin America
- 380 Introduction to Asian History and Civilization
- 381 Modern Far East
- 386 Introduction to African History and Civilization
- 389 The Modern Middle East

III. Advanced Courses: A minimum of five courses taken in at least three of the following fields:

A. North American History: (310, 312, 314, 315, 316, 375, 514, 516, 518, 519, 520, 521, 522, 523, 524, 526, 527)
D. History as a discipline, topical courses, comparative history: (300, 306, 307, 308, 309, 390, 500, 511, 592, 593, 594, 595)

IV. Colloquium:
A. Colloquium: History Teaching in High School
B. Colloquium: History as a Discipline

V. Earn an overall average of "C" or better for all courses counted toward the major and no grade lower than C in any course numbered 300 or above which is to be counted as part of the major.

REQUIREMENTS FOR THE MINOR

1. I and II above
2. Any two additional advanced history courses numbered 300 or above
3. Requirement V above

Special Provisions

The Department will consider deviations from the above stated requirements. Such deviations must be approved by the Administrative Assistant. It will be necessary for the student to demonstrate familiarity with the subject matter in question.

Honors students in history should arrange, as early as possible, a conference with the departmental Honors adviser in order to work out an appropriate program with him.

TRANSFER CREDIT

A major in History must complete at this University a minimum of four History courses counted towards the major. This requirement
might be waived with the permission of the Department, provided ac-
ceptable 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 in-
clude 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 advisor.

I. General Courses:

(Course descriptions in italics are approved
for General Education purposes.)

100 The Early Western World 4 hrs.
Throughout the centuries western man has constantly adjusted his life
style in response to the challenge of his times. In the process he has
created many government forms, social structures, interpretations of
man, ideological systems, and modes of artistic expression. The course
examines these creations and shows how the historian analyzes the
patterns of persistence and change which they reflect. Periods covered:
Ancient Greece, Ancient Rome, Middle Ages, Renaissance, Reformation.

101 The Modern Western World 4 hrs.
Throughout the centuries western man has constantly adjusted his life
style in response to the challenge of his times. In the process he has
created many government forms, social structures, interpretations of
man, ideological systems, and modes of artistic expression. The course
examines these creations and shows how the historian analyzes the
patterns of persistence and change which they reflect. Period covered:
1648 - the Present.

102 History Through Literature 3 hrs.
The written works of any age reveal the moods, tensions, interests,
outlook, and tastes of that period. This course is an introduction to
historical literature. In it the effects of wars, revolutions, depressions,
machines, and social conditions will be revealed through novels and
other writings. How men have reacted to their problems in the past will
suggest how we may deal with those of the present.
College of Arts and Sciences

103 History and Current Events 3 hrs.
The mass media supply modern man with such a wealth of information on current social, political, and economic developments that confusion often results. Nevertheless the citizen of a democratic state is expected to make well-considered choices. This course will show what history can contribute to gaining perspectives which help organize and thus understand current events.

104 America and Her Minorities 3 hrs.
This course will focus on mainstream America and her attitudes and actions toward the various ethnic minorities. It will not be a history of each concerned minority, although minority reactions to majority actions will be examined. Native Americans, Chicanos, Blacks, Chinese, Japanese, Jews and Southern and Eastern Europeans will be included. The sources to be used will be Presidential addresses and actions, Congressional debates and legislation, Supreme Court decisions, scholarly and scientific writing, and the popular arts, such as newspapers, wide-circulation magazines, best-selling novels, cartoons, films, radio, pop tunes, and advertising.

105 Man and His Environment Throughout History 3 hrs.
An examination of the relationship between man and his environment in historical perspective. The course approaches both mankind and the environment as evolving phenomena in an attempt to demonstrate the many variables involved when different types of political, social, and economic organizations interact with the many types of environments in the world, which are themselves changing constantly. Current relationships between mankind and the world environment are placed in perspective by considering past examples of environmental change and human adaptability.

145 The Birth of the Modern World 3-4 hrs.
An interdepartmental course in selected topics crucial to an understanding of the ways in which the Middle Ages and the Renaissance have made Western culture what it now is. Faculty from two or more departments will deal with the semester's topic as seen from the viewpoints of the fields of study they represent, such as art, music, history, philosophy, literature, religion, etc. Emphasis is upon showing the interrelatedness of various aspects of knowledge and the arts. Typical topics are: Ideas and Institutions of the Year 1200; Man, Woman and Marriage in Medieval and Renaissance Literature and Art.
The course may be taken for credit in whatever departments list it as an offering in the schedule of classes for a given semester. Also approved as a general education course, humanities and fine arts area.

210 United States to 1877 3 hrs.
This is an introductory course, but not the traditional narrative survey. Emphasis is placed upon basic intellectual, political, economic and social influences that have shaped American life. Selected themes that reveal continuities in the American experience are used to introduce students to problems encountered in the study of history.

211 United States Since 1877 3 hrs.
A continuation of History 210, with an emphasis upon the emergence of the United States as a world power and the consequences of this development. Again, the focus is upon selected themes such as urban-
ization, industrialization, and reform that reveal continuities in the American experience. Particular attention is given to various attempts to interpret twentieth century American development.

II. Specialized Courses

(Course descriptions in italics are approved for General Education purposes.)

300 Issues in History

This course is designed to show the usefulness of the historical approach for the understanding of the great and relevant issues confronting modern man. This course 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 so long as the topic varies. Representative topics which may be treated include the Palestinian problem, contemporary British thought, the military in modern German society, Americans and nature, and European social revolutions.

306 Main Currents of Early Western Thought

In this course we will consider the ideas and values which are the legacy of the early West to modern man. We will study ancient Near Eastern myth; the Jewish concepts of God, man and time; the Greek philosophical mind; and the early Christian religion. We will also see how these elements were combined in the Middle Ages to form something new, the "West" with its ideas of progress and order, science and faith, rationalism and mysticism.

307 Main Currents of Modern Western Thought

The nature and prospects of the history of ideas; the Renaissance and Reformation and the transition from medieval values; the scientific revolution of the 17th century; the baroque; the 18th century Enlightenment; 19th century romanticism, liberalism, nationalism, socialism and materialism; formation and leading features of the contemporary world view.

308 Myth and Reality in the American Past I

Americans have often portrayed their past in light of their ideals rather than historical realities. This course will explore the ideas and fancies of ordinary people, as well as of writers, politicians, preachers, and scholars as they defined the American Dream. Students in History 308 will examine the relationship between the earliest American Dreams and contemporary problems. History 309 will carry the story forward from 1890.

309 Myth and Reality in the American Past II

Americans have often portrayed their past in light of their ideals rather than historical realities. This course will explore the ideas and fancies of ordinary people, as well as of writers, politicians, preachers, and scholars as they defined the American Dream. Students in History 308 will examine the relationship between the earliest American Dreams and contemporary problems. History 309 will carry the story forward from 1890.

310 History of Michigan

The development of Michigan from a primitive wilderness to an indus-
trial state, with emphasis on the relation of the history of the state to that of the nation.

312 (299) Representative Americans 3 hrs.

A general survey of British history beginning with the building of modern Britain in the 16th Century and including the emergence of the empire, the birth pangs of representative government, the civil war, restoration and revolution during the 17th Century; the establishment

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 U.S. Economic History 3 hrs.

A study of American economic growth and change from colonial beginnings to the present. Major topics or themes examined include: the changing fortunes and significance of various socio-economic groups, the impact of technology and research, the growing role of government, and the causes and consequences of the revolutions in agriculture, transportation, and industry. Attention is given to the quantitative approach to the problem of generalization in economic history.

340 Tsarist Russia 3 hrs.

Rise and Fall of Novgorod-Kiev, the Emergence of Muscovy, and the Rise of Imperial Russia through the reign of Alexander III, with special emphasis upon the social evolution of the Russian peasants, the rise and decline of the nobility, the symbiotic nature of Church and State, and the emergence of a unique Russian Civilization.

341 The Soviet Union 3 hrs.

This survey course is designed to give the student a knowledge and appreciation of the various facets of the history of the Union of Soviet Socialist Republics from 1917 to the present. Aspects of the U.S.S.R. that are studied include Marxism-Leninism, the Communist Party, the government, foreign policy, planned economy, the systems of health and education; and contemporary art, literature, and music.

342 Great Britain and the British Empire 3 hrs.

A general survey of British history beginning with the building of modern Britain in the 16th Century and including the emergence of the empire, the birth pangs of representative government, the civil war, restoration and revolution during the 17th Century; the establishment
of political stability, the economic revolution, and the loss of an empire in the 18th Century; and the problems created by the French Revolution and Napoleon in the early 19th Century.

343 Great Britain and the British Commonwealth 3 hrs.
A summary of British history in recent times from the age of reform and the era of world supremacy during the reign of Victoria in the 19th Century through struggle for freedom in two world wars, emergence of the Commonwealth, the problems between the wars, socialist revolution and its consequences in the 20th century.

344 Modern Eastern Europe 3 hrs.
Life and death of the ancient Bulgarian, Serbian and Hungarian Empires, and the struggle of Balkan and South-East European nations against the Ottoman, Hapsburg, Tsarist and Soviet Empires, with special emphasis upon the periods of national independence.

345 The Baltic Region 3 hrs.
An examination of the themes and movements that formed the national life histories of Finland, Estonia, Latvia, and Lithuania, as well as the centuries-long struggle between Russia's drive toward the domination of the Baltic Area and the development of distinct national consciousness on the part of the Baltic peoples.

346 Modern Germany 3 hrs.
German history since the 18th Century raises questions of wide human concern. What is a man's country? What is treason? What makes for a good life? Why work hard at anything? How free is any man to think or to act? The search for answers has evoked further questions as to the nature of freedom, bigotry, conditioned behavior, dissent, defeat, genius, creativity, Fascism, Socialism, Communism, Democracy, militarism, and much more.

349 The Ancient Near East 3 hrs.
The cradles of civilization in ancient Mesopotamia and Egypt are explored in this course. An introduction to archaeology and early man is followed by a survey of the ancient Sumerian, Babylonian, Egyptian, Hittite, Phoenician, and Hebrew cultures, as well as the Assyrian and Persian imperialism that replaced them.

350 Ancient Greece 3 hrs.
This course surveys the origin of the ancient Greeks, their role in the Aegean civilization of Crete and Troy, the Homeric Age, and the development of the polis. Special emphasis is placed on the contrasting city-states of Athens and Sparta, as well as on the unique achievements and cultural legacy of Hellenism. The course closes with the decline of Greece, Alexander the Great, and the Hellenistic world.

351 Ancient Rome 3 hrs.
This course surveys the early Italic, Etruscan, and Greek cultures of ancient Italy prior to the founding of Rome. The rise of the Roman Republic, the conquest of the Mediterranean, and the civil wars come next into focus, with a final segment devoted to the Roman Empire, its cultural achievements, and its ultimate decline and fall.
352 Early Medieval History 3 hrs.
The genesis of modern European civilization from the fall of Rome through the twelfth century. We will study the legacy of early Christianity, classical culture, and the Germanic peoples of the West. We will also consider how these elements were synthesized in the time of Charlemagne and modified in the age of feudalism. All this will lead up to a study of the medieval reformation and the twelfth-century renaissance. Although political and economic questions will be considered, the main emphasis will be on the contributions of medieval thought, life, art, and culture to the modern world.

353 Later Medieval History 3 hrs.
The flowering, then the break-up of medieval unity. We will study the peculiar relationship between church and state in the thirteenth century, then the thought of that century which contributed so much to the modern world in the areas of science, art, religion, and university life. We will look at medieval society with an eye to its impact on modern thought, from the notion of progress to attitudes toward dissenters. We will also briefly consider how medieval attitudes changed during the crisis of the Fourteenth Century, the Renaissance, and the Reformation.

370 History of Latin America 3 hrs.
A survey is undertaken of the historical development of the Latin American region from its pre-Columbian Indian and Spanish ancestry to its contemporary expression in national entities. Attention is given to men and motives as well as to institutions and attitudes insofar as each of them determined the character of a given epoch and contributed to the pattern of overall development.

371 Contemporary Latin America 3 hrs.
There is undertaken here an analysis of contemporary Latin America, a world area of immediate and future critical import in the affairs of mankind. An effort is made to gauge the origins, depth, and intensity of the dynamic forces and impulses which are inexorably wrenching Latin America out of a tradition-encrusted mold and forming it anew.

375 Canadian History 3 hrs.
Canadian History is a survey of that country's past from the first explorations and the beginnings of the fur trade in the 16th century to the new nationalism of the 1970's. Special attention is given to the sources of Anglo-French division and Canada's changing relationship with the United States.

380 Introduction to Asian History and Civilization 3 hrs.
An examination and analysis of the natural and human environment of the early Asian peoples and the emergence of philosophical, political, economic, social, and religious thoughts and corresponding ways of life of the Asians. A study of the encounter between the East and the West, and of how Asian people responded to the challenges from the West. Primary emphasis will be placed on the Hindu, the Moslem, the Confucian, the Buddhist, and the Shinton cultural regions in Asia.

381 The Modern Far East 3 hrs.
A survey of the international relations of China, Japan, and Korea; reform and revolutionary movements in East Asia; aims and techniques
of modernization and Westernization; the rise and fall of militaristic Japan; political and social upheavals, and the emergence of communism in China; and the rise of two Koreas.

386 Introduction to African History and Civilization 3 hrs.
An overview of the major aspects of African civilization in the context of their development from pre-colonial times to the present. Emphasis upon those elements which contribute to the cultural and historical unity and uniqueness of the African experience.

389 Modern Middle East 3 hrs.
The Middle East since the collapse of the Ottoman Empire at the close of World War I. Emphasis is upon the history of the Arab-Israeli conflict, which may be seen as thematic of the clash of the major forces shaping the modern Middle East, including Arab nationalism, Zionism, and colonialism.

390 Introduction to the Study of History 2 hrs.
Human life changes constantly. The historian analyzes these changes when he studies the life expressions of past generations. How the historian works at his task of "reconstructing" the past, the problems he encounters, and the various results he produces are the topics of the course.

398 History Colloquium A—Education 1 hr.
In seven two-hour sessions students will be introduced to the work situation they can expect as historians teaching in secondary schools. Secondary teachers will speak on new and old teaching methods, trends in the history curriculum, and general professional activities of a history teacher.

399 History Colloquium B 1 hr.
Majors in history not intending to teach are introduced to general problems involved in the study of history. This will be done most often through discussion of research and writing by historians who have themselves done creative work in their field.

470 Independent Research in History 2-3 hrs.
For gifted students with special interests. The usual requirement is a 3.0 minimum overall grade point average and a 3.2 minimum grade point average in all History courses. Research and writing on some selected period or topic under the supervision of a member of the History faculty, with the approval, prior to registration, of the supervising instructor and the chairman of the Department's individualized courses.

490 Honors Seminar
Presentation of an Honors Essay by students enrolled in the Department Honors program. Such students apply to the department Honors adviser for admission to this course prior to registration time.

500 Problems in History 2-3 hrs.
This course is designed to show the usefulness of the historical approach for the understanding of the great and relevant issues confronting modern man. This course 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, Americans and nature, and European social revolutions.

510 Field Experience in History 3 hrs.

511 Introduction to Museum and Archive Work 3 hrs.

Lectures, demonstrations, readings, discussion, and work experiences in museum archive theory and technique introduce the student to the types of work curators of historical museums and archives do.

514 Black History: The Impact of Black People on American Thought and Life 3 hrs.

Intellectuals and politicians have defined the place of Black people in American history in ways that affect our understanding of the present. American writers, theologians, social scientists, and politicians have also contributed to current stereotypes. In this course, students will have an opportunity to explore "popular" interpretations of slavery, abolition, race-thinking, etc., as each has been used to explain recent events. The writings of men like Martin Delany, W. E. B. DuBois, Marcus Garvey and Malcolm X challenge widely held beliefs about the past and provide fresh perspectives on contemporary America.

516 The History of the United States Constitution 3 hrs.

The Constitution is the Supreme Law of the Land. But judges apply that law. Consequently judges exercise far more power in the United States than in any other nation. How and why did this occur? And with what results, good and bad?

518 History of United States Foreign Relations 3 hrs.

While this course traces the full scope of American foreign relations, from the American Revolution to the present, it emphasizes diplomacy of the twentieth century. The course gives attention to major diplomatic problems, but it also considers such themes as the effect of personality and politics on foreign policy, and the various "schools" of diplomatic thought.

519 America and War 3 hrs.

The United States regards itself as a "peace-loving" nation. Yet it was born of war, has survived by war, and in modern times has been almost constantly at war. A knowledge of the military history of the United States is a key to understanding all of its history, both as it has unfolded and as it is unfolding.

520 Colonial America 3 hrs.

The American colonies as part of the British empire; their founding, their political, social, and economic growth to the eve of the American Revolution.

521 The Era of the American Revolution 1763-1789 3 hrs.

The causes, development, nature, and consequences of the American Revolution. Emphasis is given to the factors which induced the British to alter existing relationships with the American colonies; and the reasons for, and the variety of American responses are examined. Efforts made by both British and American leaders to preserve the imperial
connection are studied along with the gradual development of the American movement to independence. Military and diplomatic aspects of the Revolution are examined; and an attempt is made to evaluate societal changes brought by American independence.

522 The Age of Democracy and Expansion, 1789-1848 3 hrs.
The United States is a democracy. Or is it? This course attempts to answer that question by examining the origin and development of American political institutions during a time that is much like our own—that is, a time of rapid changes and intense ideological, racial, international, sectional and personal conflict.

523 The American West 3 hrs.
A study of the exploration, conquest, and occupation of the North American continent. Among the topics included are Indian relations, the fur trade, land disposition, the cattle frontier, the mining frontier, and problems of law and order.

524 The Civil War and Reconstruction 3 hrs.
Between 1861 and 1865 over 600,000 Americans died fighting each other. Why? And with what results? The answers to these questions do not simply illuminate the past; they also tell us much about the present—a present in which many of the basic factors which produced the Civil War are still operating.

525 The Emergence of Modern America, 1877-1914 3 hrs.
This course will focus on the causes and consequences of industrialization, urbanization, progressivism, and the concurrent revolutions in agriculture, transportation, and communications. Attention will also be given to changing attitudes and values, the problems of generalization, and the anonymous American.

526 The U.S. Between World Wars (1914-40) 3 hrs.
For most Americans the twentieth century began with World War I; an examination of our response to the historical realities of the ensuing era can serve to clarify the dimensions and complexities of contemporary America. This course will emphasize the anonymous American through his political leaders, social and economic aspirations, religious devotions, international hopes and fears, and popular entertainments.

527 Contemporary America: 1940 to the Present 3 hrs.
Beginning with the background to the Second World War, this course brings American history as close to the present as possible. It follows the nation's change from detachment before the war to entanglement in the 1960's in problems all over the world. It deals with the efforts of the nation and groups within the nation to cope with the enormous political, economic, and social problems of the decades after the war. The course considers conflicting opinion on various issues, seeks to view events from both the perspective of the present and the time of their occurrence.

534 Medieval France 3 hrs.
A study of the formation of the French people and nation during the thousand years which followed the fall of the Roman Empire in the 5th century A.D. Threatening this process were the disruptive forces of provincialism and invasion by foreigners. Contributing to its success
were the growth of a unified church, a national monarchy, the expansion of a vigorous rural and urban economy, and the development of a national language and literature.

535 Medieval England
The story of the growth of the English people from scattered tribes of Anglo-Saxon invaders in the 5th century into one of the most highly organized European nations by the 15th century. Basic to this growth were the creation of a powerful kingship based on a common law and Parliament, the establishment of a vigorous national church, the prosperity of countryside and town, and the development of a national language and literature.

536 Tudor-Stuart England: The Era of the Monarchy
A study of the period when Great Britain breaks with her medieval past and becomes one of the most modern states in Western Europe after having progressed under the strong Tudor rulers, suffered under the obstinate early Stuarts, begun an empire, survived civil war and the Cromwellian republic, restored the monarchy under the later Stuarts, and plunged into the revolution which produced the Bill of Rights and representative government under a constitutional monarchy.

537 Hanoverian England: The Era of the Aristocracy
The study of Great Britain during the years when, guided by the aristocratic classes in cooperation with a limited monarchy, internal stability was established; the economic revolution and the unforeseen problems which it created were begun; her place as a major European power was guaranteed; her North American empire was lost; and the threat to her position by the French Revolution and Napoleon was met successfully.

538 Victorian England: The Era of the Middle Class
A look at the years of Victoria’s long reign as Great Britain attempted to solve the problems caused by the French and Economic Revolutions through parliamentary reform and additional democracy, resulting in the transition from a rural to an urban society; the rise of the middle class to a position of dominance; and the emergence of Britain as the greatest industrial nation and the most powerful empire in the world.

539 Contemporary Britain: The Era of the Common Man
An exploration of the history of Great Britain during the crucial years of challenge to her position as a world power, to her position as mother country, to her democratic monarchy; and consideration of the ways in which these challenges were met, two world wars successfully fought, a Commonwealth organized with all members equal among equals, and a state responsible for the welfare of all subjects of the Crown from the cradle to the grave established in the socialist revolution after World War II.

540 Life in Tsarist Russia
Westernization, emancipation of the peasants, revolutionary movements, and the spiritual evolution of the Russian people during the eighteenth and nineteenth centuries.

541 The Soviet Union in World Affairs
Consideration is given to the various factors constituting the background necessary for the appreciation of the role of the Union of Soviet
Socialist Republics in world affairs from 1917 to the present time. This includes a study of the geographical, ideological, political, economic, military, social, and human aspects of Soviet foreign policy. The nature of Soviet foreign policy as affected by the national and international events during the leadership of Lenin, Stalin, Khrushchev, and Brezhnev-Kosygin is studied.

542 Nationalities in the Soviet Union 3 hrs.
This course constitutes a study of the historical background and contemporary status of the principal ethnic groups in the Union of Soviet Socialist Republics. It deals with the implementation of the Communist Party credo of “national in form, socialist in content.” Emphasis is placed on group social and cultural identity. Consideration is given to the implementation of the official amalgamated nationality concept.

544 Modern France 3 hrs.
An examination of factors in French life in the 19th and 20th centuries fostering stability and instability, growth and stagnation, harmony and conflict, triumph and tragedy.

551 Imperial Rome (The First Century) 3 hrs.
A study in depth of Roman politics and culture from the close of the Republic through the reigns of the emperors Augustus, Tiberius, Caligula, Claudius, and Nero. Emphasis will be placed on use of original sources in shaping the history of the century 30 B.C. to 70 A.D.

552 The Medieval Church 3 hrs.
Christianity is the most obvious and perhaps, the most important element in early Western culture. In this course we are not so much interested in the Church as an institution as in the growth of Western culture in the age—from the time of Jesus to that of Luther—in which Christian values were so important in everyday life. Among the topics we will consider are the impact of the classical and Germanic cultures on the Church, the church and feudalism, church-state relations, the rise and fall of papal theocracy, scholasticism, and mysticism. The emphasis throughout will be on topics most important for the understanding of our own values and society.

553 Life in the Middle Ages 3 hrs.
This course seeks to capture the reality of everyday life for the three main groups of lay people in medieval society, peasants, nobles, and townspeople, by studying members of each of those groups from the following viewpoints: (1) the ways in which they made a living, i.e., their work, the way it was organized, as for instance in the manor or the guild, and the methods, techniques, and equipment available to them; (2) the ways in which they spent their leisure time; (3) their standard of living as measured by their food, clothing, and other material possessions; (4) the social groups of which they were members and which gave meaning to their lives such as the family, the local community, and their social class; (5) their beliefs, values, and general outlook with special emphasis on the consequences of widespread illiteracy—the course will not discuss the culture of the educated elite such as in medieval philosophy and theology; and finally (6) their normal life cycle from childhood to old age looking at decisive events such as marriage, the birth of children, and death, and giving special attention to the high
birth and death rates and low life expectancy, and their causes and consequences.

554 The Renaissance

Between 1300 and 1517 great changes in European life were brought about by the catastrophic Black Death, the activities of merchant ventured, the coming of gunpowder and diplomacy, the state as a new form of life as well as by new ideas about man, God, and the universe and by the geniuses of the brilliant Italian Renaissance (Petrarch, Giotto, Michelangelo, Leonardo da Vinci, and others).

555 The Reformation

After 1517 the Western church broke apart and with it vanished the last remainder of European unity. Luther, Calvin, and Zwingli reshaped religious thought. Regional churches appeared. The Roman Catholic Church underwent a renewal. All of that was accompanied by bitter religious wars but also by early traces of the sciences, visionary social schemes, and a feverish artistic activity.

557 Seventeenth Century Europe: Age of Grandeur and Violence

An investigation into the tensions, conflicts, and paradoxes of an age in which the shock of new forces undermined a traditional order.

558 Eighteenth Century Europe

A wide-ranging study of a creative period during which many modern institutions and values took form: social structure and economic development; domestic politics and international relations; currents in religion and the arts; the Enlightenment.

559 The French Revolution and Napoleon

Theories respecting the French and related revolutions, and the nature of revolution and of the revolutionary psychology; 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

A study of the revolutionary currents pulsating through Europe in the 19th century, of the conflicts they engendered, and the profound changes they wrought.

562 Hitler's Europe: 1914-1945

The first modern generation of Europe is associated with an era of unprecedented violence. The course is concerned with the experiences of people and the events of states that raise questions as to the dynamics of revolution, hate, idealism, propaganda, optimism, wars, economic ambitions, progress, and murder.

563 Europe Since 1945

The recovery of Europe from World War II; the movement toward European unity; the defense of Europe; and the role of Europe in the international community.

571 Mexico: The Building of a Nation

A review of the 19th century groupings toward national unity and identity, and of the 20th century eras of violent revolutionary paroxysm and post-revolutionary ordered development in the Latin American nation
which has impinged most immediately and continuously on the conscious awareness of the United States.

572 The Plata Region: Argentina, Paraguay, Uruguay 3 hrs.

The three nations herein explored offer an intriguing spectrum of the varieties of national experience to be found in the Latin American area. The range is from relatively static life and institutions throughout the period of nationhood to dynamic modernism in the same contexts. An effort is made to comprehend those factors which have contributed to and resulted in these differences.

580 Traditional China 3 hrs.

A study of the highlights of the history and culture of pre-modern China with particular attention to her international relations, reform and rebellions as well as to social, intellectual, and institutional change.

581 Modern China 3 hrs.

A study of the rise of Chinese nationalism; the revolutionary movement of the Nationalists: the Kuomintang rule; the Japanese aggression in China; the rise of communism and Mao Tse-tung; the Great Leap Forward and Cultural Revolution in Communist China.

582 Japan’s Transition from a Feudal State to a Modern Nation 3 hrs.

A study of political, economic, social, and cultural patterns and institutions of feudal Japan; the opening of Japan to the West; and the reformistic and revolutionary changes which transformed her into a modern nation.

583 Modern Japan 3 hrs.

A study of the growth of nationalism, colonialism, militarism, and imperialism in Japan; international relations of Japan; the fall and the Allied Occupation and reconstruction; Japan’s new role in the world.

584 Modern Korea 3 hrs.

A study of the decline of the Yi dynasty; Korea’s struggle against foreign encroachment; the era of Japanese colonial rule; the liberation of Korea; and the establishment 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 Ancient and Medieval Africa 3 hrs.

History of Africa from earliest times until the emergence of the slave trade as the dominant factor in African relations with the rest of the world. Examination of the question of the origin of man in Africa, the role of ancient Egypt in African civilization, the Bantu expansion, Punic and Roman Africa, the rise of Islam, the Golden Age of the Sudanic empires, and the states of the West African forest, Congo Basin, and East Africa.

588 Modern Africa 3 hrs.

Historical background of the major issues of contemporary Africa, including colonialism and neo-colonialism. Pan-Africanism, and nation-
594 War in the Modern World
Topics in modern war and current military developments. The course may be repeated for separate credit as long as the topic varies.

595 History of War
The history of war from the age of Louis XIV to the era of the World Wars. An examination of the evolution of war and the role of conflict in international relations.

598 Independent Reading in History
For the gifted student with special interests. The usual requirements are: a 2.7 minimum overall grade point average and a 3.0 minimum grade point average in all History courses. Reading on some selected period or topic under the supervision of a member of the History faculty, with the approval of the supervising instructor and the chairman of the Department's individualized courses prior to registration.
The Classical Humanities curriculum is designed to offer undergraduate students a coordinated program of studies which are an integral part of the whole liberal humanistic tradition.

The program seeks to stimulate a student’s intellect and to broaden his perspectives by presenting courses in the Classical languages and literatures and in those closely-correlated Historical-Humanistic fields which reveal the enduring influence of the earlier civilizations and culture on the Western world. These courses are fundamental to man’s timeless quest for a better life: mentally, philosophically, esthetically, politically, religiously, and socially.

Thus, for students interested in understanding the present as a result of the composite past and hence as basic to careers in areas such as law, theology, librarianship, journalism, medicine, the fine arts, foreign service or intelligence areas, this program is designed.

Program Objectives for Undergraduates:
A. In Arts and Sciences: To serve as a second major or minor for those whose primary major is in one of the following areas: 1) Anthropology, 2) Art, 3) English, 4) History, with a specialization in Ancient or Medieval History, 5) Linguistics, 6) Medieval Studies, 7) Modern Languages, 8) Music, 9) Philosophy, 10) Political Science, or 11) Religion.
B. In Education: To serve as a primary major or minor or as a second major or minor for those who are interested in teaching Classical Humanities.*

Program Design:
A. All students entering the program for a major or minor must satisfy a language requirement at the intermediate level: Latin 200-201, 8 hours (students in Education curriculum must also take Latin 324 and 557 as majors; 324 as minors). (All students may also take Greek 100-101 and receive 4 hours credit toward a major.)
B. The remaining hours of the Classical Humanities major or minor program must be taken from the two groups of courses listed below.

1. For a major, at least three of the courses must be chosen from each group to complete the 30 hours (36 for students in Education curricula).
2. For a minor, at least two of the courses must be chosen from each group to complete the 20 hours (24 for students in Education curricula).
3. Remaining hours for completion of the major or minor program must be satisfied by courses from either group. Under advisement, a student may elect those courses which he has not previously used to satisfy other requirements, e.g. in General Education or in his other major/minor curricula. He will be advised to broaden his areas of interest in the humanities scope.

*The Classical Humanities program is not yet approved as a teaching major or minor. The request for state certification is in process.
Classical Studies Core Courses

100 Basic Greek ........................................ 4 hrs.
101 Basic Greek ........................................ 4 hrs.
100 Basic Latin ......................................... 4 hrs.
101 Basic Latin ......................................... 4 hrs.
200 Intermediate Latin (Vergil) ...................... 4 hrs.
201 Intermediate Latin (Lyric Poetry) ............... 4 hrs.
324 Latin Literature (Selections from Prose and Poetry) ... 4 hrs.
350 Classical Archaeology of the Aegean World .... 3 hrs.
360 Role of Women in Ancient Greece and Rome .... 3 hrs.
375 Classical Drama in English Translation .......... 3 hrs.
450 Greek and Roman Mythology ..................... 3 hrs.
550 Independent Study ................................ 1-3 hrs.
557 Teaching of Latin ................................ 3 hrs.
560 Medieval Latin .................................... 3 hrs.

Historical-Humanistic Cognate Courses

Anthropology
210 Introduction to Archaeology ..................... 3 hrs.

Art
220 History of Art ..................................... 3 hrs.
581 History of Ancient Art ............................ 3 hrs.
596 History of Architecture .......................... 3 hrs.

English
332 English Renaissance Literature .................. 4 hrs.
410 Special Topics in Literature** ................. 4 hrs.
534 Neo-Classical Literature ........................ 4 hrs.

History
100 The Early Western World ......................... 4 hrs.
306 Main Currents of Early Western Thought ....... 3 hrs.
350 Ancient Greece .................................. 3 hrs.
351 Ancient Rome .................................... 3 hrs.
551 Imperial Rome (The First Century) ............ 3 hrs.

Linguistics
100 The Nature of Language .......................... 4 hrs.
200 Linguistic Analysis ................................ 4 hrs.

Music
270 Music History and Literature ................... 3 hrs.
347 Music in the Humanities in Secondary Schools .. 2 hrs.
351 Music Literature: Western Art Music ........... 4 hrs.
579 Operatic Literature ................................ 2 hrs.

Philosophy
301 History of Modern Philosophy ................... 4 hrs.
350 Historically Oriented Studies—Variable Topics** ... 4 hrs.

Political Science
360 Introduction to the History of Political Theory I .... 3 hrs.

Religion
301 Protohistoric Religions: Ancient Near East, Greece and Rome, Meso-America ... 4 hrs.

**Courses may be taken when topics are especially applicable to the Classical Humanities program.
Modern and Classical Languages

Roger L. Cole, Chairman

Elsa Alvarez  Elizabeth Giedeman  George F. Osmun
Mercedes Cardenas  Paule M. Hammack  Joseph Reish
Victor Coutant  Herb B. Jones  James D. Semelroth
Monique Y. Coyne  Johannes Kissel  Irene V. Storoshenko
Benjamin Ebling  Peter W. Krawutschke  Herman Teichert
Robert Felkel  William McGranahan  Lindsey Wilhite
Jeffrey Gardiner  Genevieve Orr  Richard Wyatt

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 four credits towards a Latin major by taking both Greek 100 and 101. English majors are encouraged to take as much beyond the minimum in a foreign language as they can handle.

All students (freshmen or upper classmen) who wish to continue in a language they have studied in high school must take a placement examination. It may 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. Students must register according to their placement score.

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 eight hours of University credit and no more than four hours 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 to omit the course overplaced. If he chooses to omit the course, he is eligible to receive credit. In order to qualify for this, he must check with the Departmental Advisor for his language.

Native speakers of a given language must consult with a departmental advisor before registering for courses up through the 300 level. A student planning a language major should consult with a departmental advisor as early as possible and obtain a recommendation form to insure proper planning and avoid subsequent difficulties.

The undergraduate major consists of a minimum of 30 credit hours (minimum of 20 credit hours for an undergraduate minor) beyond the 100-level (basic) courses. At least two 500-level courses must be in-
cluded. All majors and minors are to follow the course patterns listed below.

**Classical Humanities Major**
Thirty hours beyond the 100-level in Latin. Latin 200-201 required; remaining hours from the two groups of core courses (at least three courses from each group). Teaching majors (36 hours) must also include Latin 324 and 557 (or other methods course).

**Classical Humanities Minor**
Twenty hours beyond the 100-level in Latin. Latin 200-201 required; remaining hours from the two groups of core courses (at least two courses from each group). Teaching minors (24 hours) must also include Latin 324.

**French Major**
Thirty hours beyond 100-level to include 316, 317, 328, 329 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 316 and 317. Modern Language Instruction 558 may not be counted toward a minor.

**German Major**
Thirty hours beyond the 100-level to include 316, 317, 325 and at least two 500-level courses other than 558. Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558.

**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 minors must include 200, 201, 324, 550, 557 and 560.

**Latin Minor**
Twenty hours beyond the 100-level with courses selected from the 200-500-series. Teaching minors must include 200, 201, 324, 550 or 560.

**Russian Major**
Thirty hours beyond the 100-level to include 310, 316, 317, 328, 375, and at least two 500-level courses.

**Russian Minor**
Twenty hours beyond the 100-level to include 310, 316, 317 and 328.

**Spanish Major**
Thirty hours beyond the 100-level to include 322 or 323, 325, and three 500-level courses (to include 3 hrs. of 526, 527, 528, 529 or 560). Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558 and may count this course as one of the 500 courses.

**Spanish Minor**
Twenty hours beyond 100-level to include 322 or 323 and 325. Modern Language Instruction 558 may not be counted toward a minor.

Teaching certification is approved for majors or minors in both secondary and elementary education for the following languages: French, German, Latin (secondary only), Russian, and Spanish.
A language methods course is required for all teaching majors in the modern languages and Latin (557 is required for Latin Majors). Exceptions to the patterns may be granted only by Departmental per-
mission.

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 indi-
vidual language concerned.

Only courses in which a grade of "C" or better is obtained can be counted toward a major or 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 success-
fully. 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. Depart-
mental 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**

**FOREIGN LITERATURE IN ENGLISH TRANSLATION**

(Course descriptions in italics are approved for General Education purposes.)

These courses will survey literary masterpieces of other countries in English translation. They are open to any student and there is no foreign language prerequisite. The courses will be taught entirely in English by specialists in the areas.

**French 375 (575) French Literature in English Translation 3 hrs.**

A thematic and stylistic analysis of major French writers from La-
Fayette to the present, to include Stendahl, Balzac, Flaubert and Proust. This course does not apply toward a major or minor in French. No prerequisite.

**German 375 (575) German Literature in English Translation 3 hrs.**

A comparative study of literary themes and techniques of major Ger-
man writers from Hauptmann to the present, including Mann, Brecht, Kafka, and Borchert. This course does not apply toward a major or minor in German. No prerequisite.
Russian 375  Russian Literature in English Translation  3 hrs.
A survey of the development of great Russian prose in its historical
and cultural context. The course will include but not be restricted to
works by Pushkin, Gogol, Turgenev, Dostoevski, Tolstoy, Gorki, Sholok-
how, Pasternak, and Solzhenitsyn. The class will be conducted in English
and the readings will be in translation. It is open to all university stu-
dents and is required for all majoring in Russian. No prerequisite.

Spanish 375 (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. This
course does not apply toward a major or minor in Spanish. No pre-
requisite.

CLASSICS COURSES IN ENGLISH
(Course descriptions in italics are approved
for General Education purposes.)

Courses 360, 375 and 450 will use selections from Greek, and
Latin literature in English translation as the basis for content and
discussion. Each will show its literary and cultural influence on later
life. All four courses listed below will be taught entirely in English,
have no foreign language requirement, and are open to any student.

350 (Classics)  Classical Archaeology of the Aegean World  3 hrs.
A course dealing with the classic forms of art and architecture as they
developed from the Cretan civilization to the height of Greek culture and
as they were reflected in later Roman civilization. No prerequisite.

360 (Classics)  The Role of Women in Ancient Greece and Rome  3 hrs.
Observations through the reading in English of selections from Greek
and Latin prose and poetry of the status of women in ancient society,
their contributions to literature and culture, and a comparison with the
position of women in modern society. No prerequisite.

375 (575) (Classics)  Classical Drama in Translation  3 hrs.
Reading and analysis of selected plays of Aeschylus, Sophocles, Eurip-
ides, and Aristophanes as dramas and as expression of the Greek view
of life. Some attention to Roman drama. No prerequisite.

450 (568) (Classics)  Classical Greek and Roman 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. No prerequisite.

LANGUAGE TEACHING COURSES

558 Modern Language Instruction  3 hrs.
(French or German or Spanish or other language)
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 audio-

*May not be counted in the minor.
lingual 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 Classical Humanities offerings.

**CLASSICAL STUDIES**

**GREEK, LATIN AND CLASSICS COURSES IN ENGLISH**

(Course descriptions in italics are approved for General Education purposes.)

**GREEK**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Basic Greek</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>Fundamentals of classical Greek; readings emphasize Greek thought, culture, and civilization.</em></td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Basic Greek</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>Continuation of 100. Prerequisite: Greek 100 or equivalent.</em></td>
<td></td>
</tr>
</tbody>
</table>

**LATIN**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Basic Latin</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>Fundamentals of Latin; readings emphasize Roman thought, culture, and civilization.</em></td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Basic Latin</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>Continuation of 100. Prerequisite: Latin 100 or equivalent.</em></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>Vergil</td>
<td>4 hrs.</td>
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<tr>
<td></td>
<td><em>Intermediate Latin. Development in use of fundamental language skills and the understanding and appreciation of the thought and style of the Aeneid. Prerequisite: Latin 101 or two years of high school Latin.</em></td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>Lyric Poetry</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>Intermediate Latin. Readings from Latin lyric poems, with special attention to development in use of fundamental language skills, prosody, literary style and appreciation. Prerequisite: Latin 101 or two years of high school Latin.</em></td>
<td></td>
</tr>
<tr>
<td>324</td>
<td>Latin Literature</td>
<td>4 hrs.</td>
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<tr>
<td></td>
<td><em>Selections from Latin prose and poetry from the beginning of Latin Literature through the Silver Age. Prerequisite: Latin 200 or 201 or equivalent.</em></td>
<td></td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in Latin</td>
<td>1-3 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>Directed, individual study of a specific topic or genre in a Latin literary or linguistic area, e.g. biography, bucolic poetry, comedy, history, or satire. Departmental approval required for admission. Prerequisite: a minimum grade point average of 3.0 in the major.</em></td>
<td></td>
</tr>
<tr>
<td>557</td>
<td>Teaching of Latin</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td><em>For prospective teachers of Latin in the elementary or secondary</em></td>
<td></td>
</tr>
</tbody>
</table>

560 Medieval Latin 3 hrs.
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. Prerequisite: One of Latin 200, 201, 234 or equivalent or permission of instructor.

CLASSICS COURSES IN ENGLISH
(For course descriptions, see page 337)

350 (Classics) Classical Archaeology of the Aegean World 3 hrs.
360 (Classics) The Role of Women in Ancient Greece and Rome 3 hrs.
375 (575) (Classics) Classical Drama in Translation 3 hrs.
450 (568) (Classics) Classical Greek and Roman Mythology 3 hrs.

CLASSICAL HUMANITIES INTERDISCIPLINARY PROGRAM
(See page 332 for details)

FRENCH
(Course descriptions in italics are approved for General Education purposes.)

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.
The development of spoken and written expression in the French language with an emphasis on grammar review. Prerequisites: French 101, two years of high school French, or equivalent.

201 Intermediate French 4 hrs.
The continued development of spoken and written expression in the French language through readings and discussions of civilization and culture materials. 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.
Languages

Emphasis on oral aspects of the language. Prerequisite: French 201 or equivalent.

320 French Phonetics 3 hrs.
Study and practice to correct typical difficulties encountered by students of French with Anglo-American patterns of pronunciation; also to study the teaching of French patterns. Prerequisite: French 200 or equivalent. (French 320 may be taken concurrently with French 201.)

322 French Civilization 3 hrs.
A study of selected aspects of French life and culture and their historical settings. Prerequisite: French 201 or equivalent.

328 Introduction to French Prose 3 hrs.
A close examination of selected French prose works, to include the novel, the short story and the essay. Prerequisites: French 316 and 317 or permission of instructor.

329 Introduction to French Poetry and Drama 3 hrs.
A close examination of selected French poetry and dramatic literature. Prerequisites: French 316 and 317 or permission of instructor.

OPEN TO UPPERCLASSMEN

400 Elementary Reading for Graduate Proficiency 4 hrs.
Basic grammar and elementary reading for translation and research purposes. The course is for the graduate who has had little or no study in the language. Course open to advanced undergraduates upon recommendation of department chairman 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 department chairman and by “C” card.

544 Seminar in France 4 hrs.
A summer study of French language, literature, and culture concentrated at Grenoble and Paris. Designed especially for teachers and advanced college students of French, the course consists of formal study at the University of Grenoble with regularly scheduled lectures and discussions in the French language on questions relating to French history, institutions, social problems, linguistics, and teaching methods. The session at Grenoble is supplemented by an organized inspection of cultural monuments in Paris with full explanations by an instructor for all points visited. Each student submits a term paper investigating one phase of his studies of particular interest to him. Graduate or undergraduate credit.

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: French 316 and 317 or equivalent.

552 Advanced French Conversation 3 hrs.
Intensive practice with spoken French. Prerequisite: French 316 and 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. Prerequisites: French 316, 317, 328 and 329 or permission of instructor. Representative topics which may be treated in this area include:

Medieval Literature—Outstanding works from various genres of 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 Literature—Studies in the modern French theatre.

GERMAN
(Course descriptions in italics are approved for General Education purposes.)

100 Basic German 4 hrs.
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.
The development of spoken and written expression in the German Language with an emphasis on grammar review. Prerequisites: German 101, two years of high school German, or equivalent.

201 Intermediate German 4 hrs.
The continued development of spoken and written expression in the German language through readings and discussions of civilization and culture materials. 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. (German 316 may be taken concurrently with German 201.)
317 German Conversation
Emphasis upon increasing the student's command of spoken German. Prerequisite: German 201 or equivalent. (German 317 may be taken concurrently with German 201.)

322 German Life and Culture
Investigates cultural aspects necessary for an understanding of Germany. Historic, geographic, social and religious factors are treated. Prerequisites: German 316 and 317. (German 316 and 317 may be taken concurrently.)

325 Introduction to the Study of German Literature
An appreciation of German literature through reading and critical interpretation of selected works of various literary types. Prerequisites: German 316 and 317 or equivalent. (German 316 and 317 may be taken concurrently.)

OPEN TO UPPERCLASSMEN

400 Elementary Reading for Graduate Proficiency
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 department chairman and by "C" card. No oral work.

401 Intermediate Reading for Graduate Proficiency
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student's major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Open to advanced undergraduates upon recommendation of department chairman and by "C" card.

528 Survey of German Literature
A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: 316 or 317, and 325 or equivalent.

529 Survey of German Literature
A comprehensive study of German literature from German Realism to the present. Prerequisites: 316, 317, and 325 or equivalent.

550 Independent Study in German
Directed individual study of a specific topic in a German literary or linguistic area. Departmental approval is required for admission. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

552 Advanced German Composition
Intensive practice in composition and stylistics directed towards appreciation of literary and other written expression in German with work in free composition at an advanced level. Prerequisites: German 316 and 317.

553 Advanced German Conversation
Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: German 316 and 317.
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College of Arts and Sciences

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, 325 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—Primarily Kleist, Gillparzer, Hebbel, and Hauptmann.
Twentieth Century Drama—Representative selections.

GREEK
(See Classical Humanities)
(Course descriptions in italics are approved for General Education purposes.)

ITALIAN
(Course descriptions in italics are approved for General Education purposes.)

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
(See Classical Humanities)

RUSSIAN
(Course descriptions in italics are approved for General Education purposes.)

100 Basic Russian 4 hrs.
Fundamentals of Russian with audiolingual emphasis.

101 Basic Russian 4 hrs.
Continuation of Russian 100. Prerequisite: Russian 100 or equivalent.
### Languages

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>104</td>
<td>Scientific Russian</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Basic grammar and practice in translation of scientific and technical material from Russian to English. Course is intended for undergraduates who are declared majors in physical or social sciences and desire a knowledge of Russian for reading purposes only. Course is open on a non-credit basis to graduate students and interested faculty and staff.</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>Intermediate Russian</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Level two Russian. Review and furthering of oral and reading skills based upon increasingly advanced oral and written exercises. Prerequisite: Russian 101 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>Intermediate Russian</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Continuation of 200. Prerequisite: Russian 200 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>Russian Civilization</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>A study of selected aspects of Russian life and culture and their historical settings. Prerequisite: Russian 201 or its equivalent.</td>
<td></td>
</tr>
<tr>
<td>316</td>
<td>Russian Composition</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Emphasis on increasing the student's command of written Russian. Prerequisite: Russian 201 or equivalent; required for majors and minors.</td>
<td></td>
</tr>
<tr>
<td>317</td>
<td>Russian Conversation</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Emphasis on increasing the student's command of spoken Russian. Prerequisite: Russian 201 or equivalent; required for majors and minors.</td>
<td></td>
</tr>
<tr>
<td>328</td>
<td>Introduction to Russian Literature</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Selections of Russian prose and poetry representing contemporary, modern, and classical Russian writers. Prerequisite: Russian 201 or its equivalent; required for majors and minors.</td>
<td></td>
</tr>
<tr>
<td>375</td>
<td>Russian Literature in English Translation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>A survey of the development of great Russian prose in its historical and cultural context. The course will include but not be restricted to works by Pushkin, Gogol, Turgenev, Dostoevski, Tolstoy, Gorki, Sholokhov, Pasternak, and Solzhenitsyn. The class will be conducted in English and the readings will be in translation. It is open to all university students and is required for all majoring in Russian.</td>
<td></td>
</tr>
</tbody>
</table>

**OPEN TO UPPERCLASSMEN**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>550</td>
<td>Independent Study in Russian</td>
<td>1-3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Directed individual study of a specific topic in a Russian 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.</td>
<td></td>
</tr>
<tr>
<td>552</td>
<td>Advanced Russian Composition and Conversation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Practice in composition and stylistics directed towards a command of literary and other written expression in Russian combined with training in conversational Russian with an emphasis on the colloquial idiom. Prerequisites: 316, 317, and 328.</td>
<td></td>
</tr>
</tbody>
</table>
560 Studies in Russian Literature 3 hrs.
Topic varies according to genre, author, and 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: 316, 317, 328, 375. Topics treated in this area include but are not restricted to:

The Poetry of Pushkin: Emphasis on the tales and Byronic narratives.
Classic Russian Short Stories: Emphasis on the works of Turgenev, Gogol, Tolstoy, and Leskov.
Modern Russian Short Story: Emphasis on Bunin, Paustovsky, Solzhenitsyn and Fedin.

SPANISH
(Course descriptions in italics are approved for General Education purposes.)

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 4 hrs.
The development of spoken and written expression in the Spanish language with an emphasis on grammar review. Prerequisites: Spanish 101, two years of high school Spanish, or equivalent.
201 Intermediate Spanish 4 hrs.
The continued development of spoken and written expression in the Spanish language through readings and discussions of civilization and culture materials. Prerequisite: Spanish 200 or equivalent.
316 Spanish Composition 3 hrs.
Emphasis upon increasing the student's command of written Spanish. Prerequisite: Spanish 201 or equivalent. (Spanish 316 may be taken concurrently with Spanish 201.)
317 Spanish Conversation 3 hrs.
Emphasis upon increasing the student's command of spoken Spanish. Prerequisite: Spanish 201 or equivalent. (Spanish 317 may be taken concurrently with Spanish 201.)
322 Life and Culture of Spain 3 hrs.
A study of the ethnic, sociological development, music, art and folklore of Spain as a basis for comprehension of the Spanish peoples with emphasis on individualism. A background for study of Hispanic literature, history, or culture. Prerequisites: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).
323 Life and Culture of Latin America 3 hrs.
A study of Latin-American life and culture based on ethnic, historical, social, religious, and literary considerations. Prerequisites: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).

325 Introduction to the Study of Spanish Literatures 3 hrs.
An appreciation of Spanish literatures through reading and critical interpretation of selected works of various literary types. Prerequisites: Spanish 316 and 317 or equivalent. (Spanish 316 and 317 may be taken concurrently.)

526 Survey of Spanish Literature to the 18th Century 3 hrs.
A survey of Spanish literature from its origin to, and including, the seventeenth century. Prerequisites: Spanish 316, 317 and 325.

527 Survey of Spanish Literature from the 18th Century to the Present 3 hrs.
A survey of Spanish literature from the eighteenth century to the present. Prerequisites: Spanish 316, 317 and 325.

528 Survey of Spanish American Literature to 1910 3 hrs.
A survey of Spanish American literature from 1492 to, and including, the era of Modernismo (1910). Prerequisites: Spanish 316, 317, and 325.

529 Survey of Spanish American Literature from 1910 to the Present 3 hrs.
A survey of Spanish American literature from 1910 to the present. Prerequisites: Spanish 316, 317, and 325.

OPEN TO UPPERCLASSMEN

550 Independent Study in Spanish 1-3 hrs.
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission. Prerequisite: One 500-level literature course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

552 Advanced Spanish Grammar and Composition 3 hrs.
An advanced study of the intricacies and problems of Spanish grammar, syntax, and style with attention to improving written expression in Spanish at an advanced level. Prerequisite: Spanish 316, 317 and one additional 300-level course. At least 3 hours of 526, 527, 528, or 529 are recommended.

553 Advanced Spanish Conversation 3 hrs.
Intensive practice to reinforce and expand the basic oral communication skills and to develop flexible and idiomatic oral expression. Prerequisites: Spanish 316, 317, and one additional 300-level course. At least 3 hours of 526, 527, 528, or 529 are recommended.

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: 3 hours 526, 527, 528, 529 or departmental permission. 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 such as Unamuno, Ortega y Gasset, and Azorin.

Contemporary Theater—Evolution and analysis of the characteristics.

Spanish-American Short Story—Significant short stories along with the cultural and social background.

Contemporary Spanish-American Novel—The twentieth century novel along with the cultural and social background.
Linguistics 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 Linguistics Department at Western Michigan University is responsible for maintaining an undergraduate major and minor program in general linguistics, for teaching English as a second language to foreign students at the University, and for offering up to four semesters of study in a number of "critical" (neglected) languages.

The Linguistics major is intended either as a "second" major for undergraduates with a major in another department or as a "first" major for those who expect to pursue a career in linguistics. The major program requires twenty-three hours of credit in Linguistics Department courses and up to 7 hours of credit in "cognate" courses. One college year of a foreign language, or its equivalent, is required.

The Linguistics minor is intended as a supporting minor for undergraduates with a major in another related department. Its purpose is to complement and strengthen the program which the student has chosen for his major concentration. The minor program requires completion of twenty hours of credit in the five undergraduate "core" courses: 201, 321, 331, 420, 430.

Both majors and minors are required to consult with the Department advisor, 410 Sprau Tower, to receive a signed recommendation for their program. The advisor is authorized to grant a limited number of substitutions for "core" requirements. Both majors and minors are encouraged to take Ling. 100, The Nature of Language, as a lower-level General Education elective, although it does not count in the Linguistics programs.

Linguistics is suggested as a supporting major or minor for majors in Anthropology, Classical Humanities, Communication Arts and Sciences, English, French, German, Philosophy, Psychology, Russian, Sociology, Spanish, and Speech Pathology and Audiology. 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.

A Critical Language minor is available for those undergraduates who
wish to specialize in one of a limited number of neglected languages. This twenty-hour minor is open only to those persons who are not in an Education curriculum. Interested students must consult with the Critical Languages Supervisor to determine which languages are eligible and to receive a signed recommendation for their program.

PROGRAM
LINGUISTICS MAJOR AND MINOR

I. CORE COURSES IN LINGUISTICS
(20 hrs. required for both majors and minors)

Linguistics  
201 Intro. to the Study of Language .................. 4 hrs.  
321 Structure of Language I: Phonology and Morphology  4 hrs.  
331 Structure of Language II: Syntax and Semantics  4 hrs.  
420 Development of Language I: History of Language  4 hrs.  
430 Development of Language II: Dialects of Language  4 hrs.

II. ELECTIVE COURSES IN LINGUISTICS
(Majors must take at least 3 hrs.)

Linguistics  
510 Methods of Teaching English as a Second Language  3 hrs.  
540 Generative Grammar .................. 3 hrs.  
551 Psycholinguistics .................. 3 hrs.  
552 Sociolinguistics .................. 3 hrs.  
571 Languages of Asia .................. 3 hrs.  
572 Languages of Africa .................. 3 hrs.  
580 Linguistic Field Techniques .................. 3 hrs.

III. COGNATE COURSES IN OTHER DEPARTMENTS
(Majors may take up to 7 hrs.)

Anthropology  
370 Language in Culture .................. 3 hrs.  

Communication Arts and Sciences  
302 Theoretical Bases of Communication  3 hrs.  
307 Psycho-Physical Bases of Communication  3 hrs.  
570 Studies in Communication ................. Var.

English  
271 Structure of Modern English .................. 4 hrs.  
372 Development of Modern English .................. 4 hrs.  
572 American Dialects .................. 4 hrs.  
574 Linguistics for Teachers .................. 4 hrs.

Modern and Classical Languages  
320 French Phonetics .................. 3 hrs.  
558 Modern Language Instruction .................. 3 hrs.  
559 History of the German Language .................. 3 hrs.
351

Linguistics

Philosophy
330 Philosophy and Language .......................... 4 hrs.

Psychology

Speech Pathology and Audiology
202 Anatomy and Physiology of Speech .................. 3 hrs.
203 Speech and Language Development .................. 2 hrs.
204 Phonemics ........................................... 2 hrs.

COURSES

GENERAL LINGUISTICS COURSES

100 The Nature of Language ............................. 4 hrs.
A broad introduction to the nature and development of language in human society and to the interdisciplinary aspects of current studies of language and language behavior.

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.

201 (200) Introduction to the Study of Language ........ 4 hrs.
An introduction to the scientific study of human language and to the linguistic principles which govern the analysis, description, classification, and comparison of particular language structures.

321 (320) The Structure of Language I: Phonology and Morphology 4 hrs.
An introduction to the study of sound systems (phonology) and word systems (morphology) and to the principles and methods of their analysis and description. Prerequisite: One linguistically-related course.

331 (330) The Structure of Language II: Syntax and Semantics 4 hrs.
An introduction to the study of sentence systems (syntax) and meaning systems (semantics) and to the principles and methods of their analysis and description. Prerequisite: One linguistically-related course.

420 (300) The Development of Language I: History of Language 4 hrs.
An examination of the processes of language change and the principles which govern the historical and comparative study of languages. Prerequisite: One linguistically-related course.

430 (310) The Development of Language II: Dialects of Language 4 hrs.
An examination of the linguistic principles and methods involved in the study of geographical, social, and stylistic variation within languages. Prerequisite: One linguistically-related course.

500 Introduction to Linguistics .......................... 4 hrs.
An introduction to modern linguistic theory and to the application of that theory to linguistically-related disciplines.
Methods of Teaching English as a Second Language 3 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.

Generative Grammar 3 hrs.
An examination of the theories of Transformational Grammar and Generative Semantics, and a study of their origins, development, modifications, and applications.

Psycholinguistics 3 hrs.
A study of linguistic systems as they connect language and thought, and relate competence to performance, in the acquisition, production, and perception of language.

Sociolinguistics 3 hrs.
A systematic study of the linguistic correlates of social behavior and the influence of society on the nature of language.

Languages of Asia 3 hrs.
A survey of the languages of Asia—their historical relationship, geographical distribution, and systems of writing—and an intensive examination of the most relevant linguistic problems that the people of Asia are confronted with.

Languages of Africa 3 hrs.
A general survey of African languages—their relationship, classification, and geographical distribution; their national/official status in changing Africa; their influence on and by foreign languages; and the problems involved in their use in education and literature.

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.

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 a foreign language 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 most undergraduate foreign language requirements.)

Basic Critical Languages 4 hrs.
Study of a contemporary critical language at the elementary level, utilizing realistic conversations based on frequently encountered socio-
cultural situations. The writing system will be introduced at an appropriate time, depending on the nature of the individual language.

506 Intermediate Critical Languages 4 hrs.
Continuation of Ling. 505, with greater attention to making the student self-reliant in conversation and to increasing his reading and writing skills with the help of a dictionary. Prerequisite: Ling. 505.

507 Advanced Critical Languages 4 hrs.
Continuation of Ling. 506, with greater emphasis on the grammatical structure of the language and on the development of more advanced reading and writing skills. Prerequisite: Ling. 506.

508 Reading Critical Languages 4 hrs.
Intensive practice in reading literature, newspapers, and other literary materials in the critical language, including sources from the student’s major field of study. Prerequisite: Ling. 507.

509 Writing Critical Languages 4 hrs.
Intensive practice in writing a critical language to improve the student’s ability to express himself effectively and to develop an individual style of composition. Prerequisite: Ling. 507.

CRITICAL LANGUAGES

Arabic
Brazilian Portuguese
Chinese (Mandarin)
Hebrew
Hindi-Urdu
Japanese

Korean
Latvian
Polish
Serbo-Croatian
Swahili
The Mathematics Department offers a wide variety of courses and programs in both theoretical and applied areas. In addition to a traditional general Mathematics Major program in preparation for graduate study, there are Major programs which prepare students for careers in teaching, computer science, applied mathematics, and statistics. Mathematics Minors are quite flexible, allowing students to concentrate on areas of mathematics which complement their major area of study.

Major and Minor requirements in Mathematics are summarized in the following tables. Students considering a Mathematics Major or Minor should contact a Mathematics advisor as soon as possible, preferably no later than the first semester of the sophomore year. Major and Minor programs must be prepared by a departmental advisor.

### MATHEMATICS MAJOR OPTIONS

#### General Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>4</td>
</tr>
<tr>
<td>Math 330</td>
<td>3</td>
</tr>
<tr>
<td>Math 270</td>
<td>3</td>
</tr>
<tr>
<td>Math 570 or 571</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be Math 274, 340 or 342, 362, 490, 506, 520, 530, 574, 576 or 580. (At least two electives must be at 400 level or above.)

#### Teaching Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
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<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>4</td>
</tr>
<tr>
<td>Math 330</td>
<td>3</td>
</tr>
<tr>
<td>Math 570 or 571</td>
<td>3</td>
</tr>
<tr>
<td>Math 550* (552 and 595 for Elem.)</td>
<td>3-4</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be Math 270, 360 or 362, 363, 408, 490, 506, 530, 540, 570 or 580. (At least one elective must be at the 400 level or above.)

*See course description for an alternative program which includes teaching experience in public schools.
Applied Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
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<td>1</td>
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<tr>
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</tr>
<tr>
<td>Math 310</td>
<td>4</td>
</tr>
<tr>
<td>Math 270</td>
<td>3</td>
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<tr>
<td>Math 360</td>
<td>4</td>
</tr>
<tr>
<td>Math 274</td>
<td>3</td>
</tr>
<tr>
<td>Math 506</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Approved electives can be Math 408, 490, 507, 574, 575 or 576. Math 362-363 can be substituted for Math 360 and one elective.

Note: Any student considering graduate work should also elect Math 330 and Math 570.

Computer Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
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<td>Math 310</td>
<td>4</td>
</tr>
<tr>
<td>Math 506</td>
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<tr>
<td>Math 507</td>
<td>3</td>
</tr>
<tr>
<td>Math 508</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be chosen from Math 270, 274, 360 or 362, 363, 408, 490, 509, 560 and 570. (At least one elective must be at the 400 level or above.) One elective may be replaced by an approved cognate.

Statistics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 362</td>
<td>3</td>
</tr>
<tr>
<td>Math 363</td>
<td>3</td>
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<tr>
<td>Math 270</td>
<td>3</td>
</tr>
<tr>
<td>Math 506</td>
<td>3</td>
</tr>
<tr>
<td>Math 567</td>
<td>4</td>
</tr>
<tr>
<td>Math 568 or ENGT 508</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>6</td>
</tr>
</tbody>
</table>

At least one elective must be Math 310, 408, 490 or 507. One elective emphasizing statistical application can be from Management, Education, Psychology, Economics or Engineering.

For Mathematics Majors in the Statistics Option there are special combined programs with other departments available for students interested in particular fields of application. This Statistics Option is available as a major for students earning a BBA degree in the College of Business. For more information see a faculty advisor.

**MATHEMATICS MINOR OPTIONS**

**Teaching Minor: Secondary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>4</td>
</tr>
<tr>
<td>Approved elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Non-Teaching Minor**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
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<tr>
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<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Approved electives</td>
<td>6</td>
</tr>
</tbody>
</table>
Selected students may qualify for a major with Honors in Mathematics. The purpose of this Honors Program in Mathematics is to give 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 310 or 230 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, 120, 121, 122 or 123 will not be permitted to enroll in the next sequence course.

**COURSE DESCRIPTIONS**

(Course descriptions in italics are approved for General Education purposes.)

090 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 or by a placement test given in Math 100.

100 Algebra  
4 hrs.

A course in algebra at the level usually covered in senior high school. Review and practice with basic algebraic skills. Graphical properties and manipulation with polynomial, logarithmic and exponential functions. Students presenting three years or more of high school mathematics including a course in advanced algebra will not receive credit for this course unless special permission is obtained from the Department of Mathematics. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 090. Prerequisites: One year of high school algebra and one year of high school geometry, or a certificate of completion of Math 090.

101 Trigonometry  
2 hrs.

A basic introductory course in trigonometry. Topics include angles and their measurement; trigonometric functions and their graphs; triangle computations; identities; solution of equations and inequalities; inverse trig. functions. Students cannot receive full credit for both Math 101 and 121. Early in the term a placement exam will be given, and
on the basis of this exam some students may be shifted to Math 100. Prerequisite: Three years of college preparatory mathematics or Math 100.

106 Introduction to Computers 1 hr.
A standard programming language is used to acquaint students with the computer facility at WMU. Student-written computer programs are executed and related to a variety of computer applications that illustrate programming techniques and computer growth and development in contemporary society. Prerequisite: 1-1/2 years of high school 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. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 100. Prerequisite: Three years of college preparatory mathematics or Math 100.

120 Mathematics IA 4 hrs.
Substantial review of algebra with discussion of sets, relations, functions, absolute value, and inequalities. Introduction to calculus: limits, continuity, 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) or who have had no trigonometry. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 100. 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. 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 Calculus I 4 hrs.
The first of a two-semester sequence in differential and integral calculus. Functions, limits, continuity, techniques and applications of differentiation, integration, logarithmic and exponential functions. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 120. Prerequisite: At least 3-1/2 years of college preparatory mathematics including trigonometry. (It is recommended that Math 106 be taken concurrently.)

(Honors sections of Calculus I and II are offered, with some changes in content and emphasis. Interested students should contact a departmental advisor.)

123 Calculus II 4 hrs.
A continuation of Calculus I. Techniques and applications of integration, trigonometric functions, sequences and series, indeterminate forms, improper integrals. Prerequisite: Math 122 or 121 (Math 106 recommended).
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.

151 Elementary Mathematical Structures 3 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 and approval of instructor.

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. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 100. Prerequisite: Math 100, or 1 1/2 years high school algebra and 1 year high school geometry.

222 (See 272)

223 (See 274)

230 Elementary Linear Algebra 4 hrs.
Vectors and geometry in two and three dimensions, systems of linear equations, matrix algebra, linear transformations in \( \mathbb{R}^2 \) and \( \mathbb{R}^3 \), generalizations to the vector spaces \( \mathbb{R}^n \), inner products, determinants. Some emphasis on proofs. Prerequisite: Math 122 or 121 (Math 123 recommended).

260 Elementary Statistics 4 hrs.
The purpose of this course is to introduce students to the rudiments of statistics. Basic concepts, rather than detailed derivation, are stressed. Topics include: probability; discrete random variables; means and variances; binomial, hypergeometric, normal, chi-square, Student-t and F distributions; interval estimates; tests of hypotheses. Students can receive credit for only one of 260, 360, 366. Prerequisite: Math 200 or 122.

265 Probability and Statistics for Elementary Teachers 3 hrs.
The topics in this course will include the study of graphs and tables showing statistical data, the probability of finite sample spaces to include Bayes Law and the binomial distribution, mathematical expectations, and the testing of simple statistical hypotheses. Emphasis will be placed
upon experiments to verify theoretical constructs. The problems of teaching probabilistic and statistical concepts to elementary school children will be considered in detail. Prerequisite: Math 151

270 Multivariate Calculus 3 hrs.
Functions of several variables, partial differentiation, multiple integration. This course replaces Math 272 for math majors or minors. Students cannot receive credit for both Math 270 and Math 272. Prerequisite: Math 123 and 230.

272 (222) Vector and Multivariate Calculus 4 hrs.
Vector calculus, functions of several variables, partial differentiation, multiple integration. This course is not recommended for mathematics majors or minors. Students cannot receive credit for both Math 270 and Math 272. Prerequisite: Math 123.

274 (223) Differential Equations 3 hrs.
Techniques of solving differential equations. Prerequisite: Math 123.

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.

310 Finite Mathematics 4 hrs.
Logic, sets, functions, induction, combinatorics, probability, linear programming. Applications. Some emphasis on proofs. Prerequisite: Math 230.

330(333) Modern Algebra 3 hrs.
Introduction to groups, rings, integral domains, fields. Emphasis will be placed on the integers and polynomial rings over a field. Prerequisite: Math 310 or 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 230 or 222.

342 Introduction to Projective Geometry 3 hrs.
A survey of affine and projective geometry using methods of elementary linear algebra. Prerequisite: Math 230.

360 Statistical Methods 4 hrs.
This course treats both the theory and applications of statistics. The 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. Students can receive credit for only one of Math 260, 360, 366. Prerequisite: Math 223 or 270 or 272.
362 Probability 3 hrs.
Discrete probability spaces, conditional probability, discrete and continuous random variables, expectations, joint distributions, special distributions. Prerequisite: Math 123.

363 Statistics 3 hrs.
Sampling distributions, estimation, hypothesis testing, confidence intervals, linear regression, correlation, analysis of variance. Prerequisite: Math 362.

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 Math 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.

408 Linear Programming 3 hrs.
Linear inequalities, convex geometry, optimization in linear systems, zero-sum games. Applications. Prerequisites: Math 106 and 230.

490 Topics in Mathematics 3 hrs.
The content of this course varies with the semester offered and with the instructor. The course is intended to introduce the student to significant topics not ordinarily encountered and to present more variety in his undergraduate program. May be taken more than once with the approval of the student's advisor. Prerequisite: Approval 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 230, or 272, or 222.

507 Numerical Analysis 3 hrs.
Numerical methods, involving polynomial evaluation, series approximations, numerical integration, interpolation solution of linear and differential equations, linear programming, least squares and minimax approximations. Topics include: Chebyshev polynomials, Legendre polynomials, Weierstrass Theorem, Bernstein polynomials, Runge-Kutta methods, Generalized Rolle's Theorem, Taylor's Theorem, Newton's method, False Position method, economization of power series, Minimax Theorem, forward differences, central differences, Simpson's rule, Boole's rule, and predictor-corrector methods. Prerequisite: Math 506 (Math 223 or 274 recommended).
508 **Assembly Language** 3 hrs.
A study of MACRO-10, the assembly language of the PDP-10 computer. Prerequisite: Math 506.

509 **Data Structures** 3 hrs.
Introduces and compares alternatives for representing and manipulating data. Structures studied include stacks, queues, deques, linked lists, circular lists and trees as well as sequential storage. Topics include tree transversals, hash functions, Boolean functions, graphs and garbage collection. 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 330 or 333.

540 **Advanced Geometry** 3 hrs.
Topics to be selected from projective geometry, algebraic geometry, differential geometry, or non-euclidean geometry. Prerequisite: Consent of instructor.

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. This course may be taken in conjunction with TEED 300 through participating in the Cooperative Mathematics Program conducted during Winter semesters. Contact the Departmental Office for additional information. Prerequisite: Math 330 or 332.

552 **Teaching of Elementary Mathematics** 3 hrs.
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.

553 **Participation in Elementary Mathematics Teaching** 2 hrs.
Students will work cooperatively with an elementary school teacher in an elementary classroom in various aspects of helping children learn mathematics. The course will provide the prospective elementary teacher with an opportunity to work with small groups of young children and to observe them in mathematics learning. The student will be required to maintain a journal and meet weekly with a staff member supervising the course. Prerequisite: Math 552.

560 **Applied Probability** 3 hrs.
A first course in probability for upper division and graduate students interested in applications. Topics will include: probability spaces, expectation, moment generating functions, central limit theorem, special discrete and continuous distributions. Applications will include reliability
and production problems, and Markov chain methods. Not recommended for students who have taken Math 362 or 660. Prerequisite: Math 272 or 270 or 222.

562 Statistical Analysis I

The first course in the sequence 562, 662 of applied statistics which combines both theory and applications. Topics include: elementary theory of estimation and hypothesis testing; the use of the normal, chi-square, F and t distributions in statistics problems involving means and variances; simple linear, multiple, curvilinear, non-linear, and stepwise regression; simple, multiple, and partial correlation; one way and two way analysis of variance; random and fixed effects; nested designs. Prerequisite: Math 560 or 362.

567 Applied Statistics

A continuation course in statistical methods. Emphasis on regression, ANOVA and multiple comparisons, orthogonal comparisons, multiple linear regression and simple experimental design. Extensive use of available stored statistical computer programs to analyze data. Not for mathematics graduate students. Prerequisite: One course in elementary statistics.

568 Studies in Applied Statistics

Students will study statistical methodology using case study and computer techniques. Prerequisite: Math 567 or permission of instructor.

570 Advanced Calculus

Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisite: Math 310 or 332.

571 Foundations of Analysis

Fundamental concepts of real analysis, functions of one variable, topology of $\mathbb{R}^n$, Riemann-Stieltjes integral. Prerequisite: Approval of advisor.

574 Introduction to Ordinary Differential Equations

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. Prerequisites: Math 223 or 230 and 274, or consent of instructor.

575 Introduction to Partial Differential Equations

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

Complex numbers, elementary functions, differentiation of complex functions, integration, series, residue theory, conformal mappings. Graduate students should not elect both 576 and 676. Prerequisite: Math 223 or 270 or 272.
580 Number Theory 3 hrs.
Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: Math 330 or 332.

595 Seminar in Elementary Mathematics Education 1-3 hrs.
Current curriculum problems in the area of elementary mathematics education are identified and discussed. Students are 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 Chairman of Department.
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.

Appropriate courses and/or independent studies in philosophy can serve the purpose of helping to unify or “cap off” a wide variety of concentrations for those students who select the university’s “student planned curriculum”. (See page 31 of this catalog.) The Philosophy Department encourages these concentrations and members of the staff will be happy to serve as advisors to students wishing to construct concentrations that involve philosophy.

The Philosophy Department offices are located on the third floor of Friedmann Hall. Students are invited to visit the department office and the offices of faculty at any time. Office hours are posted beside each instructor’s door.

Before preregistration each term, the faculty prepares brief written descriptions of the courses to be offered. These courses are posted on the department bulletin board outside the department office and additional copies may be obtained in the 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.

HONORS PROGRAM

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

Because the Philosophy Department believes that there is no single "correct" approach to the study of Philosophy, but that, as much as possible, each student under the guidance of a faculty member should design a program in accordance with his interests, ability, and intellectual maturity, there are no required courses in philosophy. Instead, students majoring in philosophy must plan their program with a faculty advisor. Every faculty member serves as a student advisor and normally students may select any advisor they prefer. The advisor works closely with the student in planning a program of studies and helps the student make an informed and intelligent choice of courses.

The student should select his advisor as soon as he is fairly certain that he intends to major in philosophy. Normally this would not occur until after he has taken at least one, and possibly two, philosophy courses. Every major must choose and consult with an advisor no later than the completion of 12 hours of philosophy courses; no hours beyond the 12th will be credited towards a philosophy major unless the approval of an advisor has been obtained (transfer students may apply for exemptions from this rule if they wish to transfer more than 8 hours). Students are encouraged to see their advisors frequently, but consultation should occur at least once every academic year.

A major consists of a minimum of 28 hours in philosophy.

Minors: A minor consists of at least 16 hours in philosophy. Minors may choose any courses they find suitable. Minors are strongly urged to consult with advisors (preferably after completing 8 hours), but this is not required.

For further information, students should read the Philosophy Department Student Handbook or see any faculty member. The Handbook is available in the department office, 3100 Friedmann Hall.

STUDENTS NOT MAJORING OR MINORING IN PHILOSOPHY

Students not majoring or minoring in philosophy find that philosophy adds intellectual depth to their major field of study. Philosophy by its nature touches on many areas of life and thought, frequently from a perspective which students find valuable and exciting. Non-majors often consider their philosophy courses an essential element in their general intellectual growth.

In recognition of this, the department offers a wide range of courses for non-major/minors. Students interested in a general introduction to philosophy should consider Philosophy 100 or 200; students interested in a philosophical approach to a more specialized area should consider Philosophy 201, 220, or some upper-level cognate. Students interested in
a more technical appreciation of the central problems of philosophy should consider such courses as Philosophy 332 (Theory of Knowledge) and Philosophy 333 (Metaphysics). Many students will find it advisable to begin with either Philosophy 100, 200, or Philosophy 201, and then continue on the upper level.

REPEATING COURSES FOR CREDIT

Since philosophy courses may vary widely in content from year to year, a student may be occasionally justified in repeating a course for credit. Students who wish to do so must obtain permission of the instructor before they register. If the student requests, the department will have his record indicate that the course when repeated differed substantially in content from the identically numbered course previously completed.

COURSE DESCRIPTIONS

(Course descriptions in italics are approved for General Education purposes.)

INTRODUCTORY COURSES

100 Philosophizing 4 hrs.
A seminar for students who wish to improve their ability to think analytically, argue logically, and express a train of thought carefully and cogently in writing. There will be frequent writing assignments which will focus on issues raised by readings of broad philosophical interest. Class time will be about equally divided between discussion of the readings and critical analysis of the student's own writings.

200 Introduction to Philosophy 4 hrs.
An introduction to the nature of philosophy by a consideration of major types of philosophical questions, such as the principles of rational belief, the existence of God, what is the good life, the nature of knowledge, the problem of truth and verification. Selected texts from representative philosophers are used to define the questions and to present typical answers.

201 Introduction to Ethics 4 hrs.
An introduction to the philosophic study of morality. Deals with questions such as: What is the good life? Why should I be moral? What is the meaning of right and wrong?

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.

300 LEVEL COURSES

All courses at the 300-level presuppose some preparation either in philosophy or in some other field. Except for Philosophy 320 and 321,
the specific kind of preparation is not presented in the form of specified courses called "requirements" or "prerequisites". It is the student's responsibility to be ready to work with the class at the proper level. More information may be obtained from the detailed course descriptions posted outside 3100 Friedmann Hall prior to registration. If in doubt about whether you are adequately prepared, talk with the instructor.

301 History of Modern Philosophy 4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with emphasis upon Descartes, Liebniz, Locke, Berkeley, Hume, and Kant.

303 Existentialist Philosophies 4 hrs.
A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

305 Contemporary British and American Philosophy 4 hrs.
British and American philosophy since approximately the end of the 19th century. The course will consider such movements as idealism, empiricism, pragmatism, realism, positivism, analytic philosophy, and ordinary language philosophy. Among figures studied may be: Bradley, Russell, Moore, Pierce, James, Santanyana, Dewey, Whitehead, Lewis, Wittgenstein, Austin, Quine and Sellars.

306 Asian Thought: China 4 hrs.
A study of the major trends of Chinese thought, notably Confucianism and Taoism, with particular emphasis on their relevance to recent developments in China.

307 Phenomenology 4 hrs.
A systematic study of the origins and developments of the phenomenological movement. The writings of several major phenomenologists will be considered, e.g. Husserl, Heidegger, Merleau-Ponty, etc.

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.

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. Topics that might be considered include, but are not necessarily restricted to: 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 liberation; 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.

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. Pre-requisite: 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.

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, analysis of the concepts of space, time, and causality, the existence of unobservable entities, and the requirement of simplicity.

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.

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.

334 Philosophical Problems of Psychology 4 hrs.

Problems in the philosophy of mind with emphasis on recent analysis and solutions. Among the possible topics are: the definition of “mind” and its relation to “the body”, to “behavior”, and to “experience”; teleo-
logical and mechanistic explanations of behavior, including "behavior-
ism", and "functionalism"; machine-models of thinking, "thinking ma-
chines", robots, servomechanisms and the concept of a person; privacy
of one's own mind and one's knowledge of other minds; consciousness
of self and of world; free will and determinism.

350 Historically Oriented Studies—Variable Topics 4 hrs.

Topics vary from term to term. 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.

ADVANCED COURSES

470 Seminar in Philosophy—Variable Topics 2-4 hrs.

Seminars deal with selected advanced topics in philosophy. Since
content varies from semester to semester, students are advised to check
course descriptions which are available in the department office. Sugg-
estions for seminar topics from students are welcomed. Seminars may
be set up to be taken for variable credit and to last more or less than a
semester's length.

498 Independent Study 2-4 hrs.

Independent study is for those students who have attained a degree of
competence in philosophy and wish to embark upon a project to be
carried out without the usual close guidance of the instructor in the
classroom. Independent study may not be elected as a substitute for a
regularly scheduled course. Prerequisite: Permission of the instructor
with whom the student wishes to work.

598 Readings in Philosophy 2-4 hrs.

Research on some selected period or topic under supervision of a
member of the Philosophy faculty. Approval of instructor involved
must be secured in advance of registration.

COGNATES: Appropriate courses in other departments may be used
towards a philosophy major (not a minor) up to a maximum of four
hours. Consult with the department chairman.
The Physics offerings include a variety of courses suitable for students not majoring in physics but having an interest in particular topics. Some may be taken without prerequisites but a conference with the department chairman or undergraduate advisor will assure a selection appropriate to the student’s interest and experience.

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 30 credit hours in physics but differ according to the goals of the programs. The Physics Department strongly recommends that students planning to enter graduate school take a minimum of 39 hours, and in addition to the required courses listed below, the student take 330 Thermodynamics and Kinetic Theory, 541 Electricity and Magnetism II, 566 Advanced Lab. The requirements for the physics major in each program are given below.

The GCL major may select an option which provides special experience in physics instrumentation and computer control of experiments and data taking. In addition to the basic physics courses the student in this option is trained, through laboratories and courses in Mathematics, Electrical Engineering, and Physics, for using modern laboratory instrumentation. Students completing this option will receive recognition on their transcript. Details of the program are available from the Department Chairman.

The required courses are:

<table>
<thead>
<tr>
<th>GCL Physics Major</th>
<th>S.H.</th>
<th>Secondary Education S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
<td>210 Mechanics and Heat</td>
</tr>
<tr>
<td>211 Electricity and Light</td>
<td>4</td>
<td>211 Electricity and Light</td>
</tr>
<tr>
<td>212 Atomic and Nuclear Physics</td>
<td>4</td>
<td>212 Atomic and Nuclear Physics</td>
</tr>
<tr>
<td>342 Electronics</td>
<td>5</td>
<td>342 Electronics</td>
</tr>
<tr>
<td>520 Analytical Mechanics</td>
<td>3</td>
<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>3</td>
<td>308 Teaching of Physical Science</td>
</tr>
</tbody>
</table>

(308 is required by the Education Program but does not contribute credit hours toward the major.)
The remaining credit hours necessary to complete the major must be elected from the following list for each program.

### GCL Physics Major

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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</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>3</td>
</tr>
<tr>
<td>563 Introduction to Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>566 Advanced Lab</td>
<td>2-3</td>
</tr>
<tr>
<td>598 Selected Topics</td>
<td>1-4</td>
</tr>
</tbody>
</table>

### Secondary Education Physics Major

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
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<tbody>
<tr>
<td>105 Astronomy</td>
<td>4</td>
</tr>
<tr>
<td>202 Photography</td>
<td>3</td>
</tr>
<tr>
<td>Any physics course numbered above 300 except 308.</td>
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</tbody>
</table>

Suggested courses of study for a student majoring in physics under either program are:

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>Math 122</td>
<td>4</td>
</tr>
<tr>
<td>Physics 105</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Gen. Education</td>
<td>3-4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 102</td>
<td>4</td>
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<td>16-17</td>
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</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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<tr>
<td>Math 123</td>
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<td>Gen. Education</td>
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#### Third Semester

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<th>Course</th>
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<td>Math 272</td>
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<td>Physics 211</td>
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#### Fourth Semester

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<td>Physics 330</td>
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#### Fifth Semester

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<td>Math 574</td>
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<td>Physics 520</td>
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### Sixth Semester

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<td>Math 575</td>
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<td>Educ. 300</td>
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<tr>
<td>Physics 540</td>
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<td>Physics 360 or 470</td>
<td>4-3</td>
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<tr>
<td>Physics Elective</td>
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<td>Physics 308</td>
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<td>Elective</td>
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<td>Elective</td>
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### Seventh Semester

| Math 306 or 506    | 3    | Educ. 410           | 3    |
| Physics 560        | 3    | Educ. 450           | Directed Teaching |
| Physics 352        | 4    | Edu. 470            |      |
| Gen. Ed.           | 4    |                     |      |
| Elective           | 3    |                     |      |

### Eighth Semester

| Physics 561 or 563 | 3    | Physics 202         | 3 (2) |
| Gen. Ed.          | 3    | Physics 470 or 360  | 3-4   |
| Electives         | 9    | Gen. Ed.            | 4    |
|                   | 15   | Elective            |      |

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 advisor system in the department for direction regarding courses, employment opportunities, and continuing education in graduate school.

Any physics major may qualify for departmental honors in physics by fulfilling the following requirements:

1. Complete the courses recommended for students planning to enter graduate school.
2. 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.

A Physics Minor consists of 20 credit hours including courses 210, 211, 212 (or 120). 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 General Curriculum minors in physics may be selected from any of the courses listed above under GCL Physics Major.
The Physics Department offers public lectures and colloquium programs for undergraduate and graduate students. The Physics Lecture is a series of talks given monthly, 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.

An exemption examination is provided, during the first week of the Winter semester, for unusually well prepared students whose curriculum requires Physics 110 or 111. Passing this examination does not give credit for the course, but it may allow for waiver of the lecture requirement; departments allowing this waiver may also simply waive the laboratory requirement for students passing the exam. Otherwise, such students can take the laboratory by itself: to do so, they should contact the Physics Department immediately after the exam is graded.

PHYSICS COURSES

(Course descriptions in italics are approved for General Education purposes.)

130 Nature of the Physical World (see General Studies)

100 Acoustics 2 hrs.

This course, designed for students with little background in science, deals with the topics of production and transmission of sound, noise, environmental noise safety standards and acoustics in architectural design. High fidelity sound reproduction using disks, tapes, and radio sources in both stereo and quadrophonic modes, and the evaluation of high fidelity components are discussed and demonstrated. This course may not be applied to either a major or minor in physics.

101 Principles of Photography 2 hrs.

This course is designed for students who may have little background in science but who want a non-laboratory explanation of the scientific principles and processes of black and white, color, instant development (Polaroid) and motion picture photography. Optics of lenses, a variety of camera mechanisms, and darkroom techniques are discussed and demonstrated. No darkroom facilities are available for students registering for the course. This course may not be applied to either a major or minor in physics.

102 Physics and the Environment 3 hrs. Fall

The objective of this course is to provide the student with an understanding of some of the physical principles which underlie selected environmental problems. Topics covered include the physical aspects of air pollution, the energy problem, and radioactivity. The course consists of three lectures per week. No previous training in physics is required. This course may not be applied towards 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, the galaxies, and the origin and

*A student cannot receive credit for both 104 and 105.
evolution of the universe. 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 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 majors in the physical sciences.

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 physical science and mathematics majors. Prerequisite: Knowledge of physics and trigonometry at the high school level. Provides 3 hrs. credit toward Secondary Education major or minor.

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. A student may not receive credit for both 106 and either 110 or 210.

107 Planetary Science in Elementary Education 4 hrs.
An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among them. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisite.) Not recommended for science majors.

110 General Physics 4 hrs. Fall, Winter, and Spring or Summer
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, and Spring or Summer
This course follows 110 and consists of studies in electricity, magnetism, light, and atomic and nuclear physics. Prerequisite: Physics 110.

120 Elementary Modern Physics 3 hrs. Winter
The objective of this course is to provide the student with an introduction to the basic concepts of atomic and nuclear physics. The emphasis is on the physical ideas involved rather than detailed mathematical calculations. Topics covered include structure of the atom, interaction of radiation with matter, radioactivity, nuclear reactions and nuclear re-

*A student cannot receive credit for both 104 and 105.
Physics

actors. This course may not be applied toward a major in physics. Prerequisites: Physics 106 or a general course in physics or consent of instructor.

198 Instrumentation in Physics 3 hrs.

This introductory course explores the use of modern instrumentation in physics; the use of computers, computer circuits, basic techniques for physical measurement are included. The course is recommended for students selecting the scientific instrumentation and computer science option in the physics major. It may be used for credit toward a major by these students. One lecture and four hours of laboratory weekly.

202 Photography 3 hrs. Fall, Winter

This is an elementary course in the theory and use of photographic materials. It is applicable toward 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 four lectures and a two-hour laboratory per week. Prerequisite: Math 123 concurrently or consent of instructor. Open to qualified freshmen. A student may not receive credit for both 110 and 210.

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. A student may not receive credit for both 111 and 211.

212 Atomic and Nuclear Physics 4 hrs. Fall

This course, with 210 and 211, completes the sequence making up the introductory course in physics with calculus. Topics include special relativity, quantum physics, and atomic and nuclear structure. Students transferring from community colleges with one year of physics will normally be expected to take this course. The course consists of three lectures per week and 10-12 three-hour laboratory periods per semester. Prerequisite: Physics 211 or consent of instructor. Students may not receive credit for both 120 and 212.

308 Teaching of Physical Science 3 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.

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 viewpoint. Postulates, empirically founded, are put forth and the conse-
quences 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. 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.
This is a course in geometrical and physical optics in which the main topics discussed are: reflection, refraction, aberrations, 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.
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 or 120, Math 272. This course and 470 are offered in alternate years.

470 Historical Developments of Concepts of Physical Science 3 hrs.
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, causality, 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 or 120, one year of College Chemistry and junior status as a science major. This course and 360 are offered in alternate years.

498 Special Problems 1-3 hrs.
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 274. (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 theorems of Stokes and Gauss are emphasized, and Maxwell's equations are developed. Prerequisites: Physics 212, Math 274 or consent of instructor.
Physics

541 Electricity and Magnetism II 3 hrs.
This course is a continuation of 540 and is an elective for majors wishing advanced work in field theory. Maxwell's equations and their applications to topics such as time-dependent fields, wave guides, and radiation will form the principal topics of the course. Prerequisite: Physics 540.

552 Applied Spectroscopy 3 hrs.
This is a combined class and laboratory course on methods of emission, spectroscopic 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 3 hrs. Fall
This course includes an introduction to quantum mechanics with selected applications, including one-dimensional potentials, the harmonic oscillator, one-electron atoms, the helium atom, atomic shell structure and atomic spectroscopy. A knowledge of elementary differential equations is assumed. Recommended for seniors. Prerequisites: Physics 212 and 520 or consent of instructor.

561 Modern Physics II 3 hrs.
Here the quantum theory covered in Physics 560 is applied to several areas of atomic and nuclear physics. The topics covered include x-rays, collision theory, general properties of nuclei, the nuclear two-body problem, nuclear reactions and nuclear models. Prerequisite: Physics 560. This course and 563 are offered in alternate years.

563 Introduction to Solid State Physics 3 hrs.
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. This course and 561 are offered in alternate years.

566 Advanced Laboratory 2-3 hrs.
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 or three three-hour laboratory periods each week. The course may be repeated for credit. Prerequisites: Physics 342 and either Physics 560 or Physics 360 (560 and 360 may be elected concurrently with 566).

598 Selected Topics 1-4 hrs.
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 instructor.
Political Science

Roy Olton, Chairman

Samuel I. Clark  George Klein  Peter G. Renstrom
Kenneth A. Dahlberg  Peter Kobrak  William A. Ritchie
Marvin Druker  Helenan S. Lewis  Chester B. Rogers
John Gorgone  Richard L. McAnaw  Ernest E. Rossi
David P. Hanson  Stephen R. Mitchell  Leo C. Stine
Alan C. Isaak  James E. Nadonly  William N. Thompson
Robert W. Kaufman  Claude S. Phillips, Jr.  Lawrence Ziring
C. I. Eugene Kim  Jack C. Plano

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 every day 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. Students who wish to major or minor in Political Science should come to the Department Office as soon as possible to complete the appropriate declaration form and to consult with a departmental adviser.

The Standard Major and Minor in Political Science. The major consists of a minimum of 30 semester hours of work in the Department. The following are required courses for majors.

- 200 National Government
- 250 International Relations
- 340, 341, 342, 343, 344 or 345 (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 consists of 20 semester hours in the Department. 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.

Students planning to use this major to meet teacher certification requirements are required to take SSCI 300-Teaching of Social Studies in the Secondary Schools (See Social Science p. 229).
The Political Science Major and Minor programs in Public Administration are designed to prepare students for entrance level positions in public and public related agencies by equipping them with a knowledge and understanding of the political, social, economic and legal environment of public agencies, by introducing them to operational and procedural problems of public agencies, and by equipping them with an understanding of selected management tools.

The Political Science major program in Public Administration requires 36 semester credit hours divided as follows: First, a core of 18 semester credit hours consisting of these Political Science courses: 200, 330, 504, 526, 530 and 534; Second, nine semester credit hours in one of three recommended competency areas: (1) budget and finance, (2) statistics, computer operations and data processing; (3) personnel administration and labor relations; and Third, complete an additional nine semester credit hours in recommended electives or concentration areas.

The Political Science minor program in Public Administration requires 20 semester credit hours including the 18 semester credit hour core of required Political Science courses: 200, 330, 504, 526, 530 and 534; and in addition one of the following Political Science courses: 332, 531, 532, 533 and 535. The Political Science minor in Public Administration is strongly recommended to those students with career interests in public agencies who major in other disciplines.

All students who elect the Public Administration program are to complete a major slip in consultation with a Public Administration Advisor in the Department of Political Science.

The Department of Political Science also cooperates with the College of Business in offering a curriculum in Public Administration designed for students planning careers 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 Business Administration: Related Majors.

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 Advisor.

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.

A Criminal Justice Concentration is available to students with particular career and/or advanced degree interests in this field. The concentration is structured within the requirements of the standard political science major and allows students completing the program to receive designation of this specialization on their Permanent Record Card. To
complete the concentration, a student must: Fulfill the requirements of the standard major. Complete 320 American Judicial Process, 522 Civil Liberties, and Sociology 312 Criminology. Complete TWO of the following political science courses: 204 Politics of Race, 300 Urban Politics, 313 Youth and Politics, 330 Public Administration, 526 Administrative Theory. Complete TWO of the following non-Departmental courses: Philosophy 313 Philosophy of Law, Business 340 Legal Environment, Sociology 512 Advanced Criminology, Sociology 514 Juvenile Delinquency, and Social Work 565 Correctional Process. Students interested in the concentration should see the Departmental Law Adviser.

COURSE DESCRIPTIONS
(Course descriptions in italics are approved for General Education purposes.)

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.

AMERICAN POLITICAL SYSTEM

200 National Government 3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions.

202 State and Local Government 4 hrs.
A study of the institutions, the problems and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

204 Politics of Race 3 hrs.
Examines the sources of racial conflict and the dominant and alternative models of American social organization. Special emphasis is placed on the psychology of racial conflict in the American political system.

300 Urban Politics in the United States 3 hrs.
A study of those factors having an impact on the governing of American cities, including social and economic conditions in the cities, the organization of local political systems, and the actions of the state and federal governments. The city will be viewed as a center of economic and social problems that necessitate political activity and as a laboratory for the advancement of general knowledge of politics. (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.

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.

313 Youth and Politics 3 hrs.

A concern with the processes through which children learn about and develop attitudes and values toward the political system of which they are members. This course should be of particular interest to students planning careers in elementary education and secondary social science.

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.

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.

531 Administration in Local and Regional Governments 3 hrs.
The administrative organization, structure, procedure and forms of local units of government are analyzed.

532 The Bureaucracy 3 hrs.
An analysis of the role of public bureaucracies in the decision process of government.

533 Public Personnel Administration 3 hrs.
This course emphasizes the development of public personnel patronage and merit systems, their structure, staffing, effectiveness and current problems related to the staffing of public agencies.

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.

535 The Politics of Governmental Budgeting and Finance 3 hrs.
A survey of the political process of governmental budgeting and finance. Budget Systems including program planning and budgeting systems are studied. The politics of taxation and other governmental revenues including intergovernmental transfers are studied for their impact on public policy choices.
FOREIGN AND COMPARATIVE POLITICAL SYSTEMS

340 West European Political Systems 4 hrs.
Considers the organization, political behavior and decision-making process of the major countries of West Europe, including Britain, France and Germany. 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.

344 Soviet and East European Political Systems 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 systems are stressed.

345 Politics in India, Pakistan, and Bangladesh 3 hrs.
Political developments within and between these South Asian neighbors are described and analyzed. Major consideration will be given to developmental dilemmas.

346 Case Studies in East Asian Politics 3 hrs.
Offered as a single country study. Either Japan, China, Korea or Indonesia will be examined utilizing developmental approaches. The particular country under study will be analyzed with general theoretical as well as specific interests in view. May be repeated.

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.

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.

548 Asian Communism 3 hrs.
An examination of Asian communism. Emphasis is on the development of Chinese communism, however, North Korea, North Vietnam and communist movements in other Asian countries are included. The course covers ideology, revolutionary tactics, strategies, and prospects. 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. Topics will vary and will be announced each semester. Courses may be repeated.

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.

562 Modern Democratic Theory 3 hrs.
The course consists of two parts. First, a consideration of traditional democratic theories, and the criticism of these theories emanating from modern elitists such as Mosca, Michels, Pareto and Ostrogorski. Second, an analysis of the attempts by contemporary economists, political scientists, and sociologists to meet these criticisms by revising democratic theory.

563 Theories of Revolution 4 hrs.
Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

564 Political Inquiry and Analysis 4 hrs.
Analysis of the application of scientific method to the study of political phenomena; problems of concept formation; law; cause and explanations; theory construction; the place of values in political inquiry.

590 Research Methodology 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.

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

370 Issues in Contemporary Politics 3 hrs.
This course is designed for the study of contemporary political problems. It is intended to provide opportunity for the study of political phenomena normally beyond the scope of regular departmental offerings. Essentially the course relates the theory and principles of political science to practical politics.

The course may be applied to the appropriate field distribution requirement. Topics will vary from semester to semester. Students may repeat the course for credit.
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 advisor, conduct research and write the Honors Paper on a topic of individual interest. 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.
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, 260, two 5 hour laboratory courses to be chosen from 350, 360, 370 and 397 Seminar in Child Psychology, 450, 460, and (b) a minimum of 7-8 hours of mathematics or 4 hours of mathematics and Philosophy 320 and Philosophy 321. Those who choose the 7-8 hours of mathematics may elect to enroll in Computer Usage (Management 102) as an alternative to the second course in mathematics.

We recommend that psychology majors elect one of the following minors: Philosophy (including four of the following courses—Philosophy 220, 320, 321, 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, Psychology 505 or Psychology 517. Psychology majors who plan to obtain a secondary school teaching certificate should consult with a Psychology advisor regarding their minor before selection of the minor.

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. Programs for minors in psychology have a considerable potential for flexibility after the completion of 150, 160, and 250. However, programs must be approved by an undergraduate advisor before enrollment in substitute courses.

PSYCHOLOGY CREDIT TRANSFERRED FROM OTHER SCHOOLS MAY 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 Paul T. Mountjoy and Hermann A. Peine.

It is essential that all majors and minors consult one of the departmental advisors early in their course work in order that flexibility and proper sequencing will occur. Advisors will not approve courses in which students have enrolled on their own initiative.

CORE COURSES

150 Psychology I: An Introduction to the Science of Behavior 3 hrs. Fall, Winter
An introduction to humanistic behaviorism; the use of the science of behavior to help people achieve their full potential as human beings. It is shown how the environment has a major influence on the way we are and how the environment can be changed so that we can become the kind of people we wish. 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 personal adjustment and the management of children's behavior at home and at school.

250 Behavior Modification: 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 research designs will be considered. Prerequisite: Psychology 150 or permission of the instructor.

260 Verbal Behavior 3 hrs. Fall, Winter
An analysis of complex human behavior with an emphasis on language and verbal behavior. Prerequisite: Psychology 250.

350 (Experimental) Analysis of Behavior I 5 hrs. Fall, Winter
A combination of reading and quiz activities and lab experiments using pigeons. Readings concern an analysis of operant and respondent behavior in terms of stimulus control. Emphasis is placed on experimental psychology in the areas of basic concepts, methodologies, discrimination, generalization, language and analysis of several controversial issues from behavioral viewpoint. The course consists of 5 quiz hours, 5 lab hours and one lecture per week. Prerequisite: Permission of the instructor.

350 (Applied) Behavior Analysis I 5 hrs. Fall, Winter
A review of the basic principles of behavior and the practical applications of these principles in an applied setting (schools for multiply handicapped or severely retarded, Kalamazoo Public Schools, etc.). The readings cover basic concepts, recent publications in the field of psychology, the analysis of several controversial issues from a behavioral viewpoint, and systems analysis. This course consists of five laboratory hours per week and one lecture hour. Prerequisite: 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.

370 Introduction to Physiological Psychology  
5 hrs. Fall, Winter
An introduction to physiology and its relationship to behavior. The acquisition of appropriate laboratory skills is emphasized. Lecture and laboratory. 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.

460 Systems and Theories in Psychology  
3 hrs. Fall, Winter
A critical examination of the assumptions, methods and problems of several major schools of Psychology: Structuralism, Functionalism, Associationism, Behaviorism, Gestalt Psychology and Psychoanalysis. Prerequisite: 450.

(Course descriptions in italics are approved for General Education purposes.)

190 Introduction to Psychology  
3 hrs.
An eclectic approach to a (Soc. and Beh.) survey of major topics in psychology including learning, motivation, emotions, intelligence, personality, mental illness and social relations. Course does not count for a major or minor in psychology.

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.

597 Performance Contracting  
3 hrs. Summer
Use of contingency contracting in group and tutorial instruction. Performance contracting will be considered for use as primary, supplemental and alternative teaching methods. Materials development and use are both emphasized. Prerequisite: Permission of the instructor.

ADVANCED COURSES

340 Psychology in Business and Industry  
3 hrs.
A survey of organizational, business and industrial psychology, including such topics as behavior within the organization, organizational climates and structures, personnel, selection and placement, performance appraisal, training, social context of human work, and psychological aspects of consumer behavior.
380 Psychological Assessment 3 hrs.
Designed to teach principles of behavioral observation and recording, evaluation of children's behavior, and evaluation of performance on standardized tests.

505 Teaching Psychology in the Secondary School 3 hrs. Fall, Winter
Class discussions, laboratory experiences and field work concerned with the teaching of psychology in high school. Prerequisites: 510, 513, 514, 516, 517, 518, 535, or permission of the instructor.

510 Advanced General Psychology 3 hrs.
Readings, lecture, and discussion designed to introduce non-majors in psychology to modern behavior theory. Emphasis will be upon human behavior, both normal and abnormal, with a significant portion of the course devoted to the higher cognitive processes. Recommended as a cognate course in Psychology. Recommended prerequisite: one prior course in psychology.

513 Animal Behavior I 3 hrs. Fall
Research in various areas of animal behavior. An individual research project is required with emphasis on laboratory research of animal learning processes. Research design, data collection, analysis and reporting are included.

514 Animal Behavior II 3 hrs. Winter
Advanced research in animal behavior (see Animal Behavior I). This course is for continuation of research initiated in Animal Behavior I and for advanced students with research of laboratory experience.

516 Conditioning and Learning 3 hrs. Fall, Winter
A study of the various approaches to response measurement, experimental methodology, and theoretical interpretations of data in the area of conditioning and learning. Prerequisite: Permission of the instructor.

517 Psychology of Learning for Teachers 3 hrs.
Designed to teach the principles of behavior and the application of these principles to teaching. Topics areas covered include the use of behavior principles in the construction of objectives, selection and preparation of instructional material, programmed instruction, incentive learning and behavior problems. Practical application is stressed.

518 Sensory and Perceptual Processes 3 hrs. Fall, Winter
A survey of sensory and perceptual phenomena with an emphasis on vision and audition. Lecture and laboratory. Prerequisite: Permission of the instructor.

535 Instrumentation in Psychology 3 hrs. Fall, Winter
A survey of problems in response measurement in experimentation. Lecture and laboratory. Prerequisite: Permission of the instructor.

540 Industrial Psychology 3 hrs. Fall, Winter
Application of psychological principles to industry. An examination of employee selection, motivation, 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.
College of Arts and Sciences

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.

595 History of Psychology 3 hrs. Fall
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.

Examples of recent offerings follow:

Psychology 397 Seminar in Child Psychology 5 hrs. Fall, Winter, Spring, Summer
This is a practicum course which introduces the student to the applied analysis of children's behavior. Techniques of behavior modification, observation, and recording are stressed. Ten hours of laboratory and two hours of lecture per week. Prerequisite: Psychology 160.

397 Current Issues in Psychology 1 hr. Fall, Winter
Lectures and discussions by various WMU faculty, guest lecturers, professionals from community mental health services, and graduate students. Topics include both basic science and professional activities. May be repeated as desired.

397 Teaching Apprentice: Student Centered Education Project 2-3 hrs. Fall, Winter
Practicum in the application of Behavior Modification techniques in educational systems. Students participate in the management, design, and initiation of courses within the Student Centered Education Project. In addition to daily classroom involvement, students are required to design and implement behavioral systems of their own throughout the semester. Prerequisite: Permission of the instructor.

397 Advanced Teaching Apprentice: Student Centered Education Project 3 hrs. Fall, Winter
An advanced practicum in the application of Behavioral educational systems. Students participate in the management and administration of policies and procedures within the Student Centered Education Project. Activities include monitoring student and Teaching Apprentice performance, writing quizzes, and the development of new educational resources within the Student Centered Education Project. Prerequisite: Permission of the instructor.

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.
A survey in depth and discussion of a research topic of current interest. Prerequisite: Permission of instructor. May be repeated for credit. Examples of recent offerings follow:

597 Conditioning of Physiological Responses 3 hrs. Fall, Winter
A seminar examining the classical and operant conditioning of autonomic nervous system responses and electrical responses of the brain. Permission of the instructor.

597 Behavior Modification in the Public Schools 3 hrs. Winter
Primarily a laboratory course involving work directly with teachers and children in a public school setting. Emphasis is placed on identification, specification, and scientific measurement of behavioral deficits and excesses. Work includes an applied experimental analysis and experience at teaching children. Prerequisite: Good background with principles of operant behavior and how they have been applied to significant human behavior. Must have 2 hr. block of time for 4 or 5 days a week between 8:30 and 3:00.

597 Individual Organism Research—Applied 3 hrs. Fall
Survey of current research in applied behavior analysis. Prerequisite: Psychology major with junior standing.

597 Individual Organism Research—Basic 3 hrs. Winter
Survey of current research in basic behavior analysis. Prerequisite: Psychology major with senior standing.

597 Seminar in Stimulus Control 3 hrs. Fall, Winter
This course is for graduate and undergraduate students who are working or have worked as research apprentices in Psych 350. The format involves weekly reading of journal articles dealing with various aspects of stimulus control in experimental psychology. Discussions involve the reading assignments, progress and modifications of the Psych 350 lab and presentations by students of current research or original experimental ideas. Material covered in the seminar is not covered in any other psychology classes. Consists of one 3 hour meeting per week.

597 Programmed Instruction 3 hrs. Summer
Seminar in principles of programming and the development of programmed Instructional material. Students must construct a teaching program in a subject area of their choice and validate the program. The last half of the seminar is taught on an individual performance contract basis. Prerequisite: Permission of the instructor.
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 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 these 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.
RELIGION

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.

Teaching Minor in the Academic Study of Religions

A teaching minor leading to state certification in the academic study of religions consists of a minimum of six courses, totalling 22 semester hours, and composed as follows:

1. Religion 200: Introduction to Religion;
2. One course in primitive religions, within the category of Historical Studies;
3. One course in the Christian, Jewish, or Islamic religions, within the category of Historical Studies;
4. One course in Morphological and Phenomenological Studies;
5. One course in any religion other than those specified above under (2) and (3), within the category of Historical Studies, or Methodological Studies;

NOTE: In exceptional cases Rel. 498, Independent Studies in Religion, or Rel. 598, Readings in Religion, may be substituted within the stipulated category for any of the courses specified above except Rel. 200, Introduction to Religion.

Students wishing to obtain the teaching minor are urged to consult with the program administrator before composing their course program.

COURSE DESCRIPTIONS

(Course descriptions in italics are approved for General Education purposes.)

200 Introduction to Religion 4 hrs.

An introduction to the study of religion intended to be universal in scope, theoretical and scientific in intent, and humanistic in orientation, of the nature and history of religion wherever it may be found, whatever its context, no matter what its forms, and attempting to raise whatever questions are necessary to illuminate its character. This will involve attention to more than one religious tradition, a discussion of the problems of definition, theory and method, an acknowledgment of the interdisciplinary aspects of much of the inquiry, and an examination of the consequences of this inquiry for problems of self-understanding in the context of western culture in general, and American society in particular.

HISTORICAL STUDIES

300 Primitive Religions 4 hrs.

The materials for this course are selected from the vast range of small-scale religious traditions preserved by contemporary primitive—
that is to say, pre-literate—peoples. The course will attempt to explore three problem areas: 1) What general patterns of religious experience and expression are most characteristic of the religions of primitive peoples? 2) What religious forms are most characteristic of the religions of primitive peoples, and what is the relationship between particular religious forms and particular patterns of cultural life? 3) What have been the results of the encounter between primitive traditions and those of the Western world?

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. Consideration is also given to such problems as the relationship between Indian religions and Indian culture and the relationship between Indian religious forms and the religious forms of other cultures. Class materials include primary texts in translation and archaeological data.

303 Chinese Religion 4 hrs.

A study of the historical continuity and overall unity in the Chinese religious tradition. 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 discussed. An attempt is made to assess the meaning of religion in Chinese culture.

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., ideas 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, the religious forms of hunters and food-gatherers, horticulturalists, agriculturalists, nomadic herdsmen. Finally an attempt is made to see what changes Westernization has made in the Africans' appropriation of their traditional religious symbols.

305 The Christian Tradition 4 hrs.

An introduction to some of the salient features of the Christian experience as expressed in thought, practice and institutional structures. In an effort to elucidate the all-pervasive influence Christianity has had on Western culture, the course focuses on such problems as the questions of the origin and identity of Christianity, the most important stages in its development, the interaction of Christian experience and current
Religion

world-views of the host cultures, and particularly the phenomenon of secularization which is examined in the light of the astronomical, biological, historical, psychological and sociological “attacks” by modernity upon Christianity.

306 The Jewish Tradition 4 hrs.
This course traces the history and development of Judaism from its roots in the Ancient Near East to the present, and its role in the shaping of Western consciousness. Particular attention is given to the periods of radical social, political and cultural change in Jewish history and hence to the critical problem of Jewish identity. An analysis of Jewish writings, customs, and institutions taken from different periods of Jewish history reveals that Jewish people have discovered and expressed their identity within a religious framework that includes myths and rituals, festivals and holy days, celebration of the past and anticipation of the future, as well as social movements and political revolutions.

307 The Islamic Tradition 4 hrs.
A study of the most important factors involved in the development of both the Islamic religious tradition and Islamic civilization. The pre-Islamic background, the life of Muhammad, the Qur'an, geographical expansion of the Muslim community, Islamic law, mysticism, sectarian developments, philosophy, and Islam in the modern era are the major topics to be examined during the term.

308 Japanese Religion 4 hrs.
A study of the historical continuity and overall unity in the Japanese religious tradition. The major organized religions of Shinto and Japanese Buddhism, and also the influence of Taoism, Confucianism, and Christianity are discussed; also taken up are the informal religious movements of “ancestor worship,” family religion, and state religion. An attempt is made to assess the meaning of religion in Japanese culture.

500 Historical Studies in Religion 2-4 hrs.
The 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 have been studied in recent years: Zen Buddhism; Buddhism in India; Hinduism; Yoga; Japanese New Religions and Revitalization; Islam in the Modern World; Islamic Thought; Christian Theology to 1500; Christian Theology Since 1500.

MORPHOLOGICAL AND PHENOMENOLOGICAL STUDIES IN RELIGION

310 Patterns in Comparative 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 (morphology) 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 utmost seriousness something that is of essential importance." In this course an attempt will be made to discover just what this important something is and how it is actualized in certain rituals. Myths and rituals will be taken from a variety of historical traditions in order to reflect the cultural milieu of the communities whose lives are governed by them. Special problems to be considered will be the relationship between myth and cult, the problem of time and myth, the logic of mythic forms, etc.

312 Religious Forms in Modern Literature 4 hrs.

A study of the correlation between various religious forms and literary forms. Particular attention will be devoted to the structural function of religious forms in modern literature. Specific forms such as the Saviour, the Divine Child, the Earth Mother, the Hero, the Androgyne, Demons, Initiation, Vocation, The Eschaton, and Cosmic and Spiritual Regeneration will be identified and exemplified in particular works of literature.

313 Religion in America 4 hrs.

An introduction to the full range of religious phenomena in today's North American culture and societies. The course attempts to isolate the specifically religious elements in concepts, values, and institutions and relate them to other elements of the socio-cultural fabric. While attention is directed to historical background, the rise, institutionalization and decline of movements, developing traditions, changing concepts, etc., the emphasis of the course is on contemporary experience and special attention is given to content analysis of the mass media, such as TV, radio, newspapers and magazines, advertising, popular music, comics, films, etc.

510 Morphological and Phenomenological Studies in Religion 2-4 hrs.

The 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 have studied in recent years: Christian Myth and Ritual; Mysticism; Millenium, Utopia and Revolution; Religion and the Occult.

METHODOLOGICAL STUDIES IN RELIGION

320 The Philosophy of Religion 4 hrs.

An examination of the place of religion in human experience with special attention to the nature of religious language, the role and structure of religious concepts, the relation between religion and theology, and the logic of religious symbols.

321 The History of the Study of Religion 4 hrs.

In calling mythology a "disease of language," and religion an error founded on dreams, a projection of society, an Oedipus complex, etc., a number of great thinkers helped to found a discipline—and to endow it with some massive problems. This course introduces students to these major thinkers and the contributions of their various fields: philology, anthropology, sociology, psychology, psychoanalysis, and theology. Special attention will be devoted to the problem of the autonomy of the discipline of religion in relation to the "parental" human sciences.
323 The Religious Factor in Social and Cultural Change 4 hrs.

In this course, religion will be looked upon as a driving force of social and cultural evolution. The historical and contemporary record shows religion capable of exhibiting profound revolutionary tendencies as, for instance, in the Peasant War in 16th century Germany or in the present South American situation. The course will be concerned with religion's capability to promote fundamental change. It will explore the following main issues: The utopian and prophetic elements in Eastern, Mid-Eastern, and Western religious traditions; comparison of contemporary religious and secular political hopes and aspirations; the correlation of political exodus utopias and religious eschatologies; the mutual reproduction of religious theory and social and political practice.

324 Psychological Elements in Religion 4 hrs.

The course is concerned with the correlation between religion and the human subject—the religious or anreligious individual. The central interest of the course is with religious propensities, feelings, impulses, passions, attitudes, motivations, values, ideas, prejudices. Critical questions such as the following will be asked: What is the function of religious faith for the nervous stability, mental health and wholesomeness of the subject? Does religion reinforce or hinder the maturation process of the individual? Is the need for religion just a derivation from the child's feeling of helplessness and of the longing it evokes for a sublime father figure?

520 Methodological Studies in Religion 2-4 hrs.

The 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 have been studied in recent years: Rationality in Religion; Marxist Philosophy of Religion; Religion, the Evolution of the Sciences and the Dynamic of Society.

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 are discussed.

Required of all students following an Elementary or Secondary Education Curriculum which includes the Academic Study of Religion 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 conciliatory manner. The Christian-Marxist Dialogue involves a study of the theological and ethical issues which separate a religious point of view, particularly a Christian one, from a Marxist's view of the world as well as the similarities of these perspectives.

331 The Religious Quest in Modern Literature 4 hrs.
Several novels and plays are read as concrete and dramatized forms of different religious options or "quests" which students are challenged to evaluate in the context of their dramatic efficacy and power. A disciplined attempt is made to recognize secularized aspects of the Judeo-Christian tradition as well as the neo-pagan religious motifs of modern literature.

332 Religion and Social Ethics 4 hrs.
This course will be a study of different styles of religious and secular social ethics and the creative ideas, problems, and attitudes toward the social world they contain. The course will discuss a variety of special contemporary socio-ethical problems: The new sexual morality, abortion, divorce, guaranteed income, thermonuclear and chemical warfare, artificial insemination, euthanasia, and drug addiction. Particular attention will be paid to how different styles of social ethics relate themselves to fundamental changes in contemporary marriage and family life as well as in the economic, political, and cultural sphere.

333 Religion and Ecological Awareness 4 hrs.
A study of our society's attitudes toward the natural environment with special attention given to the sanctions which undergird these attitudes, a consideration of the various religious responses to the environmental crisis, and an inquiry into the possibility of reappropriating a sense for the sacrality of nature through the emerging ecological awareness.

530 Constructive Studies in Religion 4 hrs.
The 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 have been studied in recent years: Political Theology; Theology of Hope; Religion in Contemporary Culture; Hegelian and Neo-Marxist Theory of Religion.

498 Independent Study 1-6 hrs.
Research on some selected problem under supervision of a member of the Religion faculty. Approval of the instructor involved and Chairman of the Department must be secured in advance of registration.

598 Readings in Religion Variable Credit
Research on some selected period or topic under supervision of a member of the Religion faculty. Approval of the instructor involved and Chairman of the Department must be secured in advance of registration.
Courses are designed to give students a better understanding of the significant factors and processes of modern life, to meet the needs of students preparing to teach in the social science field, to prepare students to do graduate work in sociology, and to provide study useful for particular applied fields, such as social work. All courses may be taken separately and taken in any order by students who have had the prerequisite courses.

A major in sociology consists of a minimum of 30 hours. Sociology 200, 300, and 382 are required. Any transfer credit in sociology without a stated equivalent must be evaluated by the Sociology Department, if it is to apply toward a sociology major or minor.

Students in secondary education may take Soc. Sci. 300 (Teaching of Social Studies in Secondary Schools) to meet the state certification requirement for a teaching methods course. This course may not be included in the hours required for a sociology major.

A sociology major with a concentration in criminal justice is available for those interested in occupations in the criminal justice field, or for students planning to take graduate work in criminology or law.

A combined major in sociology and anthropology consists of a minimum of 30 hours. Sociology 200, 300, and 382, and Anthropology 210, 240, and 250 are required. (220 may substitute for 240, if taken prior to Fall 1973.) At least 12 hours of course work in each field are required.

A minor in sociology consists of a minimum of 20 hours. Sociology 200 and 210 are required.

Sociology 500 and 580 are recommended for those planning to do graduate work in sociology.

Transfer students, or students with other questions concerning sociology majors or minors should see Helen Nelson, 2407 Sangren Hall, for academic advising.

A limited number of departmental assistantships is available for qualified undergraduate students. Information concerning applications may be obtained from Helen Nelson (2407 Sangren).

Students majoring in sociology may spend one or two semesters at the Merrill-Palmer Institute in Detroit, receiving credit toward graduation at Western.
The Center for Sociological Research, as the research arm of the department, provides facilities and services available to students as well as faculty for instructional and research purposes. The Center maintains computer and other research facilities which are used in undergraduate research course instruction. The Center has conducted studies in subjects such as: group dynamics, marital roles, race relations, voting behavior, migrancy, alcoholism, and mental health.

COURSE DESCRIPTIONS

(Course descriptions in italics are approved for General Education purposes.)

INTRODUCTORY

100 American Society 3 hrs.
An analysis of contemporary American society, including continuity and change in value systems, major institutions and their interrelationships, and other aspects of social life.

101 Ideologies and Societies 3 hrs.
The course considers ideologies which serve as modes of organizing societies, such as capitalism, socialism, democracy. The impact of these ideologies on the structure and functioning of societies is analyzed.

171 Social Impacts of Science and Technology 3 hrs.
An analysis of social consequences of major scientific and technological changes, including the actual and potential impact of advances in the physical and natural sciences.

190 Men and Women in Contemporary Society 3 hrs.
A systematic analysis of roles of men and women, with particular emphasis upon problems of adjustment and conflict in contemporary society.

200 Principles of Sociology 3 hrs.
An introduction to and survey of the discipline of sociology and its major fields of study. Selected sociological concepts, theories, and research findings will be discussed. Required for sociology majors and minors.

THEORY

300 Sociological Theory 3 hrs.
A study of major theoretical viewpoints in contemporary sociology. The course is oriented toward the understanding, application, and extension of these major perspectives. Required for sociology majors. Prerequisite: Soc. 200.

500 History of Social Thought 3 hrs.
A critical survey of the social thinking of outstanding students of society from Plato to modern social scientists. Prerequisite: 9 hours of sociology.
Sociology

SOCIAL PROBLEMS

210 Modern Social Problems 3 hrs.
The course aims to develop a theoretical framework for understanding selected social problems in American society in such areas as: inter-group conflict, race, poverty, juvenile delinquency and crime, population changes, and mass communication. Problems selected for emphasis may vary with the instructor. Required for sociology minors. Prerequisite: Soc. 200.

314 Race Relations 3 hrs.
A study of race and ethnic relations, stressing the meaning of race and ethnicity; the nature and roots of prejudice, discrimination, and other forms of inter-group conflict; and the effectiveness of various strategies for dealing with the problems. Prerequisite: Soc. 200.

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. Prerequisites: Soc. 200 and 210, or consent of instructor.

515 Social Conflict 3 hrs.
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/or economics.

SOCIAL PSYCHOLOGY

320 Introduction to Social Psychology 3 hrs.
An introduction to social psychological theory and research, covering the interaction of individuals and the relationships of individuals to groups. Includes such topics as social influence, attitudes, socialization, and personality. Prerequisite: Soc. 200.

Further analysis of selected topics in social psychology not intensively covered in other courses. Specified topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: Soc. 320.

523 Contemporary Social Movements 3 hrs.
A study of the origins, 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.*

525 Social Psychology of Education 3 hrs.
An intensive examination of the roles and the interaction of students, teachers, and administrators in the school setting. Particular attention will be given to the importance of peers, family, and social structure. Prerequisite: Soc. 320 or equivalent.

*600 Social Dynamics of Human Behavior is the introductory course in sociology at the graduate level.
COMPARATIVE SOCIOLOGY

530 (558) Social Forces in Developing Areas 3 hrs.
An examination of the social factors which influence the development of currently developing areas in Africa, Asia, and Latin America. These factors include such phenomena as urbanization, nationalism, the "population explosion," welfare institutions and practices, industrialization and the acculturation of ethnic minorities. Prerequisites: Soc 200 or 600, or Anth 220, or consent of instructor.

Analysis of social change in specific geographic or national areas designated in the course title as scheduled. Change is examined through perspectives from history, anthropology, and sociology. Currently, courses are being offered on Japan and Latin America. May be repeated for credit with a different area. Prerequisite: Soc. 200 or 600.

532 Introduction to Comparative Sociology 3 hrs.
An introduction to the history, major theoretical perspectives and methodological issues associated with cross-national and cross-cultural studies. Particular emphasis will be placed upon those studies which have been central to the development of the comparative approach in sociology. Prerequisite: 9 hours of sociology or consent of instructor.

533 (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, such as 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.

534 (559) Studies in Ethnic Relations: Designated Areas 3 hrs.
An investigation of the structure and dynamics of tribal, ethnic, and race relations in the context of current theories of racial and ethnic relations. The course will focus on one or another major geographic or cultural area (Africa, Southeast Asia, etc.) and will compare case studies drawn from different countries within this area. May be repeated for credit with a different area. Prerequisite: Soc. 200 or 600, or consent of instructor.

535 (557) Changing Social Systems—Sub-Saharan Africa 3 hrs.
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems resulting from the impact of European culture and other contemporary world influences. Prerequisite: Soc. 200 or 600, or Anthro. 220, or consent of instructor.

536 Modern Japanese Society 3 hrs.
An introduction to Japanese society, focusing upon current developments in the processes of industrialization and urbanization. Examines the impact of these processes in Japanese population, family life, village organization, urban community, class structure, and personality. Prerequisites: Soc 200 or consent of instructor.

539 Anthropology of Education 3 hrs.
This course is cross-listed and may be taken for either sociology or anthropology credit. See Anthropology 549 for course description.
Rural Sociology (TEED 220) 3 hrs.
This course may be applied to a sociology major or minor. See Teacher Education 220 for course description.

352 Introduction to Social Gerontology 3 hrs.
An exploration of the social, psychological, economic, and physical aspects of aging. Consideration will be given to institutional programming for older people in American and other societies. Prerequisite: Soc. 200 or consent of instructor.

353 The City 3 hrs.
A survey of the forms and functions of cities, past and present. Special emphasis will be given selected topics, such as the impact of industrialization, political and economic processes, urban planning, and urban problems. Prerequisite: Soc. 200.

354 Population and Society 3 hrs.
A sociological investigation into the dynamics and consequences of the world-wide "population explosion," and U.S. population problems such as family planning, the "baby boom," zero population growth, and ecological issues. Prerequisite: Soc. 200.

355 Social Structure of Black America 3 hrs.
A study of social structure and interpersonal relations in black communities, including historical and anthropological perspectives. The course will focus selectively on family, religious, educational, political, legal, and economic institutions. Emphasis will be given to the patterned consequences of white domination in the society. Prerequisite: Soc. 200.

451 Sociology of Sports 3 hrs.
An analysis of the place of sports in social and cultural life of the United States and other societies. The sociological perspective is used to interpret the nature of sports activities, individual and group effects of sports participation, and the part sex roles and cultural values play in the sports of a nation. Prerequisite: Soc. 200 or consent of instructor.

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.

556 Social Stratification 3 hrs.
An analysis of the nature, causes, and consequences of class and status differences within societies. Stress is placed upon such concepts as mobility, class, status, and differential power. Conflict and functional theories of stratification are treated. Prerequisite: Soc. 200 or 600, or consent of instructor.
CRIMINAL JUSTICE

362 (312) Criminology 3 hrs.
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, survey of problems of penology, and consideration of crime prevention. Prerequisite: Soc. 200.

462 Criminal Justice Process 3 hrs.
An analysis of the substantive and procedural criminal law as it relates to each stage of the criminal justice process. The focus will be on the sociological and legal implications of discretion and court decisions from arrest to conviction and sentencing. Prerequisite: Soc. 362 or consent of instructor.

464 Sociology of Law Enforcement 3 hrs.
A sociological analysis of the process of law enforcement as it involves municipal, state, and federal agencies. Includes analysis of the police “working personality,” social role, isolation from other social groups, vulnerability to corruption through politics and/or organized crime, and abuses of authority. The development and comparison of the police role will be traced from its roots in England to the present American position. Prerequisite: Soc. 362.

564 (514) Juvenile Delinquency and the Community 3 hrs.
A study of juvenile delinquency as a social problem. Extent, causative factors, methods of treatment, and programs of prevention and control are covered. When feasible, community resource people are invited to participate. Prerequisite: Soc. 200 or 600.

565 Correctional Process and Techniques 3 hrs.
(This course is the same as SWK 565. It may be taken for either sociology or social work credit.)
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 phenomena 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.

566 (512) Advanced Criminology 3 hrs.
A critical analysis and evaluation of selected controversial issues in modern criminology. Topics include the legal-social dichotomy of the juvenile court, recent approach to delinquency prevention, recommendations for decriminalization, the phenomena of organized crime and white-collar crime, and the feasibility of capital punishment. Prerequisite: Soc. 362 and 564.

INSTITUTIONS

371 Dynamics of Contemporary Social Change 3 hrs.
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.
373 Sociology of Health and Illness

Introduction to the concepts of health and illness in our society; ways of measuring disease; the impact of social class, race, region, and ethnicity on the perception and distribution of disease. Attention will also be paid to the social structure of the health care delivery system and of alternative systems of medical care. Prerequisite: Soc. 200 or consent of instructor.

376 Sociology of Education

A survey of contemporary educational problems from a sociological perspective. Includes 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.

471 Bureaucracy

This course examines bureaucratic and alternative forms of organization in various spheres of life—business, government, unions, schools, religious organizations, etc. Prerequisite: Soc. 200 or consent of instructor.

570 Studies in Social Institutions: Variable Topics

An examination of a selected topic in the area of social organization or institutions. The focus of the course will be substantive, but theoretical and methodological concerns will also be covered. Possible topics could include work and leisure, occupations and professions, sociology of science, mass society, macro-sociology, arts, and others. May be repeated for credit with a different topic. Prerequisite: Soc. 200 or consent of instructor.

572 Power and Society

An analysis of the bases, distribution, and uses of power in societies and in local communities. Marxist, elitist, and pluralist theories will be considered along with empirical studies of power. A major goal will be understanding the use of power by various groups in facilitating or controlling social change. Prerequisite: Soc. 200 or 600.

573 The Sociology of Political Behavior

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

A study of the social role of religious institutions and beliefs, with particular reference to the United States. 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.
575 Industrial Sociology 3 hrs.
The sociological study of industrial organizations and of the process of industrialization. The impact of technology and related factors on work organizations, the structure and operation of labor unions, and the changes occurring in industrial society are discussed. Prerequisite: Soc. 200 or 600.

576 Advanced Sociology of Education 3 hrs.
Advanced studies in sociology of education, emphasizing important theoretical and methodological issues, including in-depth examination of 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 and the society at large. Prerequisite: 12 hours of sociology or consent of instructor.

578 Sociology of Law 3 hrs.
An examination of legal organization, the legal profession, and legal norms in the United States and other western societies. Emphasis will be placed upon the relationship between the legal system and the society in which it functions. Prerequisite: Soc. 200 or 600.

RESEARCH

382 Methods of Sociological Inquiry 5 hrs.
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 formulation of hypotheses, sampling, and the collection, analysis, and interpretation of data. Laboratory sessions provide special assistance. Required for sociology majors, who are urged to take this course following Soc. 200, to develop ability to evaluate research findings in subsequent content courses. Prerequisite: Soc. 200.

385 Social Research Projects 3 hrs.
This course is designed to enhance the skills of students in applied social research. With direct supervision by the instructor, individuals or small groups of students will address themselves to research problems that have been identified in the community. Students will be encouraged to select and develop their own research topics. Prerequisite: Soc. 382 or equivalent.

580 Sociological Statistics I 3 hrs.
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.
An introduction to the basic methods of empirical research in sociology. Theory and techniques of research design, formulating and testing hypotheses, sampling, and the collection, analysis and interpretation of data are studied. Prerequisite: 9 hours of sociology.
FAMILY

390 Marriage and Family Relations

A sociological analysis of the structural and interactional aspects of marriage and family groups in contemporary society, with particular emphasis on the American middle class. Consideration is given to change and diversity in family patterns, norms, and values, and to factors contributing to family unity or disorganization. Prerequisite: Soc. 200.

590 The Family as a Social Institution

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.

592 Family Life Education and Counseling

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 AND SPECIAL STUDIES

495 Special Topics in Sociology: Variable Topics

A specialized course dealing, each time it is scheduled, with some particular aspect of sociology not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: Soc. 200.

499 Honors Seminar

Investigation of selected topics in seminar sessions by advanced undergraduates. Registration by special invitation from the department chairman.

588 Directed Individual Study

A program of independent study (reading or research) to provide the unusually qualified sociology student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. The initiative for planning the topic for investigation must come from the student. Approval is contingent upon the merit of the proposal. Two or three hours credit per semester, cumulative to six hours. Enrollment beyond the first semester may be either for the same topic or for a new topic. Prerequisite: Consent of instructor and the department chairman.
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.

The curriculum is designed to reflect standards of the American Speech and Hearing Association, which requires a master's degree in the field or its equivalent for membership and for professional certification by that national organization. This program provides the preprofessional foundation for the necessary graduate education and training. Students interested in careers as clinicians in the public schools must also fulfill the Michigan State Department of Education requirements for school clinicians. The appropriate undergraduate program for those students is the Special Education Curriculum, on page 509.

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 122 hrs.

B. Course Requirements

1. General Educational requirements as described on page 26 of this catalog must be met. 6 hrs.
2. Psychology ........................................ 6 hrs.
3. Teacher Education and Special Education ........................................ 10 hrs.
   Human Development and Learning 250 .......................... 4
   Education of Exceptional Children 530 ......................... 3
   Behavior Disorders in School-Aged Children 588 ........ 3
### 4. Speech Pathology and Audiology

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Orientation to Professional Practice 201</td>
<td>3</td>
</tr>
<tr>
<td>Anatomy and Physiology of Speech 202</td>
<td>3</td>
</tr>
<tr>
<td>Speech and Language Development 203</td>
<td>2</td>
</tr>
<tr>
<td>Phonemics 204</td>
<td>2</td>
</tr>
<tr>
<td>Bases of Speech and Hearing 300</td>
<td>3</td>
</tr>
<tr>
<td>Phonemic Disorders 351</td>
<td>2</td>
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<tr>
<td>Phonatory Disorders 352</td>
<td>2</td>
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<tr>
<td>Fluency Disorders 353</td>
<td>2</td>
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<tr>
<td>Language Disorders in Children 354</td>
<td>2</td>
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<tr>
<td>Hearing Disorders 355</td>
<td>2</td>
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<tr>
<td>Introduction to Audiometry 357</td>
<td>2</td>
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<tr>
<td>Practicum I 400</td>
<td>1</td>
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<tr>
<td>Practicum II 401</td>
<td>1</td>
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<tr>
<td>Electives in major area</td>
<td>3</td>
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#### 5. Physical Education

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<tr>
<th>Course Description</th>
<th>Credits</th>
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<td></td>
<td>2 hrs.</td>
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</table>

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.

## COURSE DESCRIPTIONS

(Course descriptions in italics are approved for General Education purposes.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term</th>
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<tbody>
<tr>
<td>200</td>
<td>Introduction to Communication Disorders</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<tr>
<td></td>
<td>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. A survey course for non-majors.</td>
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<tr>
<td>201</td>
<td>Orientation to Professional Practice</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<tr>
<td></td>
<td>This course is designed to acquaint the student with the speech and hearing profession and with basic principles and strategies for the observation and description of behaviors relevant to the study of human communication and its disorders. Successful completion of this course requires that the student demonstrate proficiency in the collection, reporting and interpretation of data related to speech, language and hearing characteristics.</td>
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<tr>
<td>202</td>
<td>Anatomy and Physiology of Speech</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<td></td>
<td>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.</td>
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<tr>
<td>203</td>
<td>Speech and Language Development</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
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<tr>
<td></td>
<td>A study of the nature and development of the normal acquisition of speech and language. Prerequisite: Sophomore standing.</td>
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</tbody>
</table>
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.

351 Phonemic Disorders 2 hrs. Fall, Winter
A detailed study of the nature of phonemic disorders; orientation to clinical management. Prerequisites: 201, 204.

352 Phonatory Disorders 2 hrs. Fall, Winter
A detailed study of the nature of phonatory disorders; orientation to clinical management. Prerequisites: 201, 202.

353 Fluency Disorders 2 hrs. Fall, Winter
A detailed study of the nature of fluency disorders; orientation to clinical management. Prerequisite: 201.

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: 201, 203.

355 Hearing Disorders 2 hrs. Fall, Winter
A study of aural pathology and the effects on hearing. Prerequisites: 201, 202, 300.

357 Introduction to Audiology 2 hrs. Fall, Winter
An introduction to the study of the measurement of hearing and to the field of audiology. Prerequisites: 201, 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.

401 Practicum in Speech Pathology and Audiology II 1 hr. Fall, Winter
Clinical experience in the management of speech, language, and/or hearing problems. Prerequisite: 400.

455 Seminar in Speech Pathology and Audiology 2 hrs.
Designed to provide an opportunity for qualified students to examine and discuss a subject area in a field of common interest. Prerequisite: 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. Prerequisites: 300, 357.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>551</td>
<td>Neuropathologies of Speech</td>
<td>2 hrs</td>
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<td>This course is concerned primarily with surveying selected communication disorders associated with neuropathologies. Prerequisites: 201, 202, 203.</td>
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<tr>
<td>552</td>
<td>Communication Problems of the Aged</td>
<td>3 hrs</td>
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<td></td>
<td>This course is designed to acquaint the student with receptive and expressive communication problems common to older adults. Emphasis will be on the clinical management of characteristic organic speech disorders and impaired auditory functions associated with aging.</td>
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<tr>
<td>554</td>
<td>Speech and Hearing Therapy in the Schools</td>
<td>2 hrs</td>
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<tr>
<td></td>
<td>Study of clinical work with speech- or hearing-disordered children in the school setting. Prerequisites: 351, 352, 353, 354, 355.</td>
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<tr>
<td>555</td>
<td>Hearing Measurement</td>
<td>2 hrs</td>
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<td></td>
<td>This course is designed to acquaint the student with principles, theories, and methods of hearing measurement which provide the basis for clinical and audiometric procedures.</td>
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<tr>
<td>556</td>
<td>Rehabilitative Audiology</td>
<td>3 hrs</td>
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<tr>
<td></td>
<td>Orientation to the clinical management of communication problems associated with auditory impairment. Prerequisites: 355, 357.</td>
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</tr>
<tr>
<td>557</td>
<td>Educational Audiology</td>
<td>3 hrs</td>
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<tr>
<td></td>
<td>This course deals with the educational, psychological and vocational needs of the hearing impaired child and the parameters that affect educational programming.</td>
<td></td>
</tr>
<tr>
<td>595</td>
<td>Oral Language Development and Dysfunction</td>
<td>2 hrs</td>
</tr>
<tr>
<td></td>
<td>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 201 or its equivalent.</td>
<td></td>
</tr>
</tbody>
</table>
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.

Students enrolled in the undergraduate social work curriculum are required to complete a major consisting of 32 hours. A minor consisting of a minimum of 15 hours is offered for students in other curricula. Offerings in the Social Work major proceed in three substantive components. The first component provides knowledge about social welfare systems and policies. The second deals with psychological and sociological theories concerned with individual, family, group organization and social systems. The third component focuses upon social work practice content.

Students planning to major in social work should, on completion of 45 semester hours (midway through their sophomore year), submit an application to the Director of Admissions of the School of Social Work, for processing into the major. Social Work 210, “Social Work Services and Professional Roles,” should be taken in the first semester of the sophomore year.

A minor of 15 to 24 hours is required to fulfill the program requirements. The minor may be a regular curriculum minor from another department or it may be an Interdisciplinary minor. Approval is required from the Social Work undergraduate counselor or the Counseling Center. A minor slip is required for these students and may be secured through a counseling appointment in the School of Social Work or the Counseling Center. Further questions concerning a Social Work major or minor may be directed to Ellie Householder in the School of Social Work or by contacting the Counseling Center.

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 122 hrs.

B. Course Requirements

1. General Education requirements 35 hrs.
2. Requirements for the undergraduate social work major 32 hrs.
   - 210 Social Work Services and Professional Roles 3
   - 300 Social Welfare as a Social Institution 3
   - 301 Social Issues and Program Analysis 3
   - 350 Individual and Family Behavior 3
   - 351 Group Community and Organizational Behavior 3
   - 400 Social Work Practice: Values and Problem Analysis 3
   - 401 Social Work Practice: Intervention and Evaluation 3
   - 410* Field Experience and Seminar I 4
   - 411* Field Experience and Seminar II 4
   - 533 Dynamics of Race and Culture 3

   Note: Following completion of SWRK 210 students must be accepted into the Social Work Curriculum to complete the major.

4. Physical Education 2 hrs.
5. Electives 29-38 hrs.

   Students are encouraged to elect additional courses in any area of their specific interest. Particularly recommended in preparation for social work practice are: Anthropology, Communication Arts and Sciences, Economics, History, Philosophy, Political Science, Psychology, Sociology. The following Social Work courses are also available as electives for undergraduate students:
   - 100 Introduction to Social Services 3
   - 464 Problem Solving in Gerontology 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 Service in the Schools 3
   - 572 Community Agency Resources 2
   - 597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1-4
   - 598 Readings in Social Work 1-4

6. Requirements for the undergraduate social work minor 15 hrs.
   - 210 Social Work Services and Professional Roles 3
   - 300 Social Welfare as a Social Institution 3
   - 301 Social Issues and Program Analysis 3

   plus

   Two of the following Social Work courses:
   - S.W. 350, 351, 464, 533, 561, 562, 563, 565, or 566 6

C. The student must satisfy the requirements for the B.A. or B.S. degree.

*Completed applications are due at least 15 weeks prior to the semester in which field work is to be taken.
100 An Introduction to Social Services 3 hrs.
A descriptive course covering knowledge content relating to operation of social service programs. It is a study of the philosophy and value base for these services.
Observation visits to field agencies, films, guest lectures and other lab and volunteer experiences may be arranged with the instructor to promote appreciation of knowledge content.

210 Social Work Services and Professional Roles 3 hrs.
An examination of the delivery of social work services at local, state and national levels. Analysis of professional social worker roles and service delivery systems. Utilization of video tape and other audio-visual media for supplementation of classroom learning. Required for social work majors and minors. (Prerequisite: Sophomore status.)

300 Social Welfare as a Social Institution 3 hrs.
Course objective is to enable the student to develop a perspective on the growth of welfare services and their relationship to welfare needs. It is a critical examination of the forces (e.g., social, economic, historical, political, and philosophical) that have led to the institutionalization of social welfare. (Prerequisite: S.W. 210 and junior status.)

301 Social Issues and Program Analysis 3 hrs.
Course objective is to develop analytical and evaluative ability on the part of the student to understand major welfare issues and other policy considerations which have bearing upon service delivery systems. The purpose is also to intensify the student's knowledge of contemporary society and an awareness of the need for new models of social welfare to adapt to changing issues with projection of future problems, programs and policies. (Prerequisites: S.W. 210, 300 and junior status.)

Provides the student with a basic understanding of human behavior, related to human developmental processes, ego psychology, learning theory, and family social and cultural dynamics. Examines socialization and its influence on human behavior. Identifies significant physical, mental, emotional, social and cultural factors which affect the development of the personality, biological and family systems. (Prerequisite: S.W. 210 and junior status.)

351 Social Work Concepts and Group, Community and Organizational Behavior 3 hrs.
Provides the student with an understanding of human behavior related to small group process, role theory, communications theory, social conflict constructs, systems concepts, formal organization and community dynamics. Examines the interplay of various forces which affect the development of social groups, communities, and organizations, and the effects of these interdependent systems on the client system. (Prerequisites: S.W. 210 and 350 and junior status.)

400 Social Work Practice: Values and Problems Analysis 3 hrs.
Taken concurrently with S.W. 410. Focuses upon problem identification, data collection and analysis and goal formulation. Examination or role and status and interrelationships of client action, service, and
target systems. The student learns to identify problems at various system levels (individual, small group, community and organization); to recognize and seek varying perceptions of a given problem; to assess the accuracy of information needed; to order and interpret information from different theoretical perspectives; to write a diagnostic statement; to determine priorities and service limits; and to formulate objectives. (Prerequisites: S.W. 210, 300, 301, 350 and 351)

401 Social Work Practice: Intervention and Evaluation 3 hrs.
A study of social work interventions, their differential use at various system levels (i.e., person, group, organization and community), and evaluation of their effectiveness. Students learn to identify and appraise interventions in reported and simulated social work situations, to select and use interventive behaviors in simulated, and to evaluate the effectiveness of their own interventive behaviors in simulated and real situations. (Prerequisites: senior status, completion of S.W. 400 and 410 and concurrent enrollment in S.W. 411.)

*410 Field Experience and Seminar I 4 hrs.
One hundred and eighty (180) clock hours in the field and in a campus-based seminar. In a social work or allied service agency, students develop a working knowledge of the agency's functions, structure and processes and its service provider role within a total community. Students apply knowledge and develop skills in problem assessment and goal formulation within the context of social work values. (Prerequisites: senior status, submission of field experience application to the Director of Field Education at least fifteen (15) weeks prior to the semester field work is to be taken; arrangement of class schedule so that the student is in a field agency in blocks of time of not less than four hours per day; concurrent enrollment in S.W. 400 and enrollment in S.W. 411 the following term.)

*411 Field Experience and Seminar II 4 hrs.
A continuation of S.W. 410. One hundred and eighty (180) clock hours in the field and in a campus based seminar. Students engage in social work interventions and practice interventive behaviors in solving problems with individuals, groups, organizations and/or a community. (Prerequisites: senior status, completion of S.W. 400 and 410 and concurrent enrollment in S.W. 401. Field experience application not required if student submitted one for 410.)

464 Problem Solving in Gerontology 3 hrs.
Application of problem solving methods and techniques in work with older adults. Attention is given to problem identification, analysis, and differential approaches to intervention. Program development and service delivery in the field of gerontology are considered. Open to social work students and students from related professional disciplines with consent of instructor.

533 Dynamics of Race and Culture for Social Work Practice 3 hrs.
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

*Completed applications for 410 and 411 are due at least 15 weeks prior to the semester field work is to be taken.
materials. Implications are drawn for planning, organization, administration and provision of programs and services. Particular emphasis is placed on racial and cultural conflict.

561 Community Development in Selected Countries 3 hrs.

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. Includes evaluation and analysis of organizational and administrative problems, involved in implementing programs.

562 Community Organization in Urban Areas 3 hrs.

Social welfare planning, and social action methods are studies 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 for social interaction and improvement of community conditions.

563 Social Work Concepts in Rehabilitation 3 hrs.

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 department with consent of instructor.

565 Correctional Process and Techniques 3 hrs.

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 phenomena 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: Soc. 312 and Soc. 514.)

566 Social Services in the Schools 3 hrs.

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.

572 Community Agency Resources 2 hrs.

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. (Not recommended for Social Work students.)

597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1-4 hrs.

The course focuses on the development of educational skills for social workers through faculty directed participation in teaching activities
in a selected social work course. Specific learning objectives and expectations for apprentices are arranged with participating faculty. This course may be taken a second time (1-4 credits, or a maximum of 8 total toward degree) by a student who wishes to increase teaching skills through applied practice in another social work area.

598 Readings in Social Work 1-4 hrs.

Offers advanced students with good scholastic records an independent program of study, arranged in consultation with the instructor. One to four hours credit per semester.
College of Business

DARRELL G. JONES,
Dean

LEO NIEMI,
Administrative Assistant

Departments:
Accountancy
Business Education and Administrative Services
General Business – Finance, Law
Management
Marketing

Institute:
Business Research and Service
OBJECTIVES OF THE COLLEGE OF BUSINESS

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 six 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. Master of Science in Accountancy for students desiring intensive preparation for a professional accounting career.
5. Master of Science in Business for students desiring intensive preparation for professional careers in Business.
6. Master of Arts in the teaching of business subject 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 (BBA Degree)

The courses and their proper sequence for the B.B.A. 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 B.B.A. 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.

Advising
For major and minor areas of concentration, see departmental advisors. For questions regarding other curriculum requirements such as General Education courses, B.B.A. Core Cognates and transfer credit equivalencies, contact Mr. Bruce MacQueen or Mr. Charles Shull, Counseling Center.

A. Minimum Hours Required for this Curriculum 122 hrs.

B. Course Requirements:

Freshman Year S.H.

1. General Education:
   (See p. 23 for listing of requirements) 5-10

2. B.B.A. Core Cognates:
   BED 142, Informational Writing** 3*
   CAS 104 Bus. and Prof. Speech
   or CAS 170 Interpersonal Communication I 3*
   PSY 150 An Intro. to the Science of Behavior
   or equivalent 3*
   MATH 116 Finite Math. with Applications 3*†

3. Physical Education 1

4. Electives (BED 140, Ind. & Bus. World;
   MGMT 102, Computer Usage; etc.) 7-12

30

*Applicable to total General Education requirement.
†Should be taken prior to, or concurrently with MGMT 200, Decision Making with Statistics 200.
**IEGM 142, Technical Communications may be substituted.
Sophomore Year

1. General Education Requirements 4
2. B.B.A. Core Cognates:
   ECON 201, 202 Principles of Economics 6*
   PSCI 200 National Government 3
3. B.B.A. Core:
   ACTY 210, 211 Principles of Accounting 6
   BED 242 Business Communication 3
   MGMT 200 Decision Making with Statistics 3
4. Physical Education 1
5. Electives (GEOG 244, Econ., Geography, SOC 200, Prin. of Soc., etc.) 4
   Total 30

Junior Year

1. General Education
   GSSC 304 Intro. to Non-Western World or other 300 or higher level approved Non-Western World Course 4
2. BBA Core Cognates:
   One Advanced (300 level or higher) course in Economics 3
3. BBA Core:
   GBUS 340 The Legal Environment 3
   GBUS 341 Business Law 3
   GBUS 320 Business Finance 3
   MGMT 300 Fundamentals of Management 3
   MKTG 370 Marketing 3
4. Major and Minor Requirements and Electives 9
   Total 31

Senior Year

1. General Education.
   One 300 or higher level course 4
2. B.B.A. Core:
   MGMT 499 Management Problems 3
3. Major and Minor Requirements and Electives 24
   Total 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.

*Applicable to total General Education Requirement.
Areas of Concentration In Business Administration

DEPARTMENT OF ACCOUNTANCY

Major Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Accounting 210, 211</td>
<td>6</td>
</tr>
<tr>
<td>Financial Accounting 310, 311, 411</td>
<td>9</td>
</tr>
<tr>
<td>Cost Accounting 322</td>
<td>3</td>
</tr>
<tr>
<td>Income Tax Accounting 324</td>
<td>3</td>
</tr>
<tr>
<td>Auditing 516</td>
<td>3</td>
</tr>
<tr>
<td>Elective in Accountancy</td>
<td>3</td>
</tr>
</tbody>
</table>

Minor Requirements:
Students preparing for positions in industry and government wishing to minor in Accountancy are required to take 15 hours. Of these 15 hours, Accounting 210, 211 and 310 are required. The remaining 6 hours will be selected with the student's professional objectives in mind.

Accountancy Electives Available for Majors and Minors:

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting Information Systems 413</td>
<td>3</td>
</tr>
<tr>
<td>Institutional Accounting 414</td>
<td>3</td>
</tr>
<tr>
<td>Topics in Accounting 420</td>
<td>3</td>
</tr>
<tr>
<td>Theory and Problems 518</td>
<td>3</td>
</tr>
<tr>
<td>Studies in International Accounting 521</td>
<td>3</td>
</tr>
<tr>
<td>Cost Accounting—Theory and Practice 522</td>
<td>3</td>
</tr>
<tr>
<td>Studies in Tax Accounting 524</td>
<td>3</td>
</tr>
</tbody>
</table>

Advisors: Report to the Department of Accountancy, 150 East Hall for assignment to an advisor.

Transfer Credits: Up to 6 hours of Elementary Accounting may be accepted from other than a four-year accredited school. All majors must take a minimum of 12 hours of accounting courses at WMU.

BUSINESS EDUCATION AND ADMINISTRATIVE SERVICES

The Department of Business Education and Administrative Services offers three undergraduate programs of study: (1) the preparation of business teachers, (2) the administrative services area including business communication and office administration, and (3) the secretarial administration area including the co-op program. To assure appropriate program planning and sequencing, students should consult with Department advisers by the beginning of the Junior year or earlier.

1. Teaching of Business Subjects Advisor: 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 Admin-
College of Business

administration curriculum, 21 semester hours of professional education courses listed on page 432 and Methods of Teaching Business Subjects. Particular attention is called to the footnote on that page.

To obtain teacher certification, it is necessary to have on file a teachable business major consisting of 30 appropriate hours and a teachable minor of 20 appropriate hours, which may also be in business.

For certification with the B.S. or B.A. degree, see the curriculum in Business Teacher Education listed on page 431.

2. Secretarial Administration

The Secretarial Administration Curriculum allows students to progress through sequential preparatory phases as they move toward the acquisition of a bachelor's degree in preparation for administrative, secretarial and office supervisory positions.

A. Secretarial Internship Phase

This work-study program concentrates on the development of skills through co-operative work experience combined with classroom experience. The latter is combined with part-time employment during the sophomore year.

First and Second Semesters S.H.

Informational Writing 142 3
Production Typing 185 3
Transcription 184 4
Integrated Office Skills 281 3
Psychology 150 or 120 3
Industrial and Bus. World 140 3
Physical Education 1
Electives and General Education Requirements* 11

Third and Fourth Semesters S.H.

Business Communication 242 3
Records Management 288 2
Coordinated Bus. Experience 282 3
Coordinated Bus. Experience 283 1
Accounting 210 3
Office Organization 386 3
Secretarial Administration 287 4
Electives and General Education Requirements* 11

31

B. Administrative Supervision Phase
(fifth, sixth, seventh, and eighth semesters)

This phase of the curriculum requires the completion of the Business Administration Curriculum requirements listed on pages 423-424.

3. Administrative Services Major

Two major options are available (additional options can be individualized to the particular professional goals of students): office administration and consumer relations.

In addition to completing the B.B.A. Core, the major comprises 24 hours of work and includes:

Office Administration Emphasis
BED 288, Records Management 2
BED 330, Office Automation 3
BED 342, Org. Communication 3
BED 556, Office Management 3
ACT 413, Acct. Inform. Systems 3
Business Electives* 10

Consumer Relations Emphasis
BED 292, Consumer Princ. & Prac. 3
BED 342, Org. Communication 3
BED 557, Topics in Adm. Serv. 3
MKTG 447, Consumer Behavior 3
GBUS 541, Law of Sales/Pers. Prop. 3
Business Electives* 9

*Chosen in consultation with advisor.
4. Administrative Services Minor

An Administrative Services minor consists of 18 hours chosen in consultation with an advisor. Suggested areas of concentration include business communication, secretarial administration, data processing, or appropriate combinations.

Note to Transfer Students:

Transfer students seeking teacher certification may use transfer courses in their majors and minors; however a minimum of 12 hours for a major and 9 for a minor must be completed in the College of Business. Students with a bachelor's degree seeking teacher certification in business education must complete a minimum of 9 hours in the Department.

FINANCE

1. Finance Majors (24 hours)

The Finance Area offers majors in five specific areas and a sixth to encompass those students desiring a general finance major.

The major optional areas and advisors are as follows:

I. Corporate Financial Management
   Advisors: Grossnickle and Balik

II. Securities and Investment Management
    Advisors: Edwards and Johnson

III. Financial Markets and Institutions
    Advisor: Pletcher

IV. Insurance
    Advisor: Burdick

V. Real Estate
    Advisor: Edwards

VI. General Finance
    Advisors: All Finance Professors

All options except Option IV require a core comprised of American Financial System 310, and Business Finance 320. The remaining six finance courses to complete the major may be selected in consultation with the appropriate advisor.

Option IV requires the previously mentioned 310 and 320 plus Risk and Insurance 321. The remaining five courses may be selected in consultation with Professor Burdick, advisor.

List of courses from which selections may be made to complete the Finance Major:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>305</td>
<td>Personal Finance</td>
</tr>
<tr>
<td>321</td>
<td>Risk and Insurance</td>
</tr>
<tr>
<td>322</td>
<td>Life and Health Insurance</td>
</tr>
<tr>
<td>323</td>
<td>Property and Liability Insurance</td>
</tr>
<tr>
<td>326</td>
<td>Investments-Fundamental Analysis</td>
</tr>
<tr>
<td>327</td>
<td>Investments-Market Analysis</td>
</tr>
<tr>
<td>328</td>
<td>Internship in Insurance</td>
</tr>
<tr>
<td>330</td>
<td>Real Estate Fundamentals</td>
</tr>
<tr>
<td>331</td>
<td>Real Estate Finance</td>
</tr>
<tr>
<td>425</td>
<td>Financial Management I</td>
</tr>
<tr>
<td>427</td>
<td>Short-term Capital</td>
</tr>
</tbody>
</table>
426 Financial Markets II
   Long Term Capital
427 Financial Markets
428 Financial Institutions
429 Mortgage Banking
499 Seminar Topics in Finance

2. Finance Minors (15 Hours)
   American Financial Systems 310, Business Finance 320, plus nine additional hours in Finance selected with the approval of the advisor from the courses listed above.

GENERAL BUSINESS

1. General Business Majors
   Advisors: Morrison, Casey, Bliss McCarty, Gossman and Batch
   In addition to the Business Administration Core, elect a logical sequence of five advanced business courses of 300* level or above, but not more than three out of those five elected courses may be from any one department or area.

2. General Business Minors
   Option 1: General Business
   Any student who has completed five courses from the Business Administration Core listed on page 424 shall be entitled to declare these courses as his 15-semester-hour General Business minor.** One advanced business course (300* level or above) 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 six areas: Accounting, Business Education and Administrative Services, Finance, Law, Management and Marketing. The requirement of a written minor slip and consent of the advisor is waived.
   Option 2: Business Law
   Any student who has completed five courses from General Business 311, 340, 341, 442, 450, 541, 542, 543, 544, or Political Science 526, may declare these courses as his Business Law Minor. The requirement of a written minor slip and consent of the advisor is waived.

MANAGEMENT

Major in Management (24 hrs.)
   A major in Management consists of the six courses listed below plus an additional six hours of advanced work. Such courses may be drawn from all Management Department offerings above 304, except 499. A student who wishes to build a special program which may include courses from other departments is required to do so in consultation with a departmental advisor and must file a major slip.

   Fundamentals of Management 300 ........................................... 3
   Management Analysis and Behavior (I) 301 .................................. 3
   Management Analysis and Behavior (II) 302 ................................ 3

*Consumer Principles and Practices 292 may be used as one of the advanced business courses.
**For a 20 semester hour Business Education teaching minor, see Business Education advisor.
Management Analysis and Organizations Design (I) 303 .. 3  
Management Analysis and Organizations Design (II) 304 .. 3  
Seminar in Management 400 3-6  
(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.

**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**
   Advisor: Cannon
   
<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</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>Consumer Behavior 477</td>
<td>3</td>
</tr>
<tr>
<td><em>Total</em></td>
<td>24</td>
</tr>
</tbody>
</table>

2. **Retailing**
   Advisor: Embertson
   
<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</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><em>Total</em></td>
<td>24</td>
</tr>
</tbody>
</table>

3. **Industrial Marketing**
   Advisor: Otteson
   
<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</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><em>Total</em></td>
<td>24</td>
</tr>
</tbody>
</table>

4. **General Marketing**
   Advisors: "A" thru "K"—Hardin  
   "L" thru "Z"—Orr  
   S.H.
   
<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td><em>Total</em></td>
<td>24</td>
</tr>
</tbody>
</table>
Any deviations from course sequence or course substitutions must have written approval from the student's major advisor.

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 advisor.

**RELATED MAJORS**

Students who complete the B.B.A. curriculum requirements listed on pages 423-424 may major in any of the following three areas and receive the B.B.A. Degree.

1. **Economics**  
   Advisor: Bowers  
   Elect 30 semester hours from the Department of Economics.

2. **Public Administration**  
   Advisor: Morrison  
   The Public Administration curriculum requires the completion of the Business Administration major and the Political Science minor listed below:*  

   **Major:** In addition to the Business Administration Core, elect at least 15 semester hours from the following:

<table>
<thead>
<tr>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 311 Ecology and the Law</td>
</tr>
<tr>
<td>GBUS 322 Real Estate Finance</td>
</tr>
<tr>
<td>ACTY 324 Income Tax Accounting</td>
</tr>
<tr>
<td>MGMT 352 Personnel Management</td>
</tr>
<tr>
<td>MKTG 372 Purchasing Management</td>
</tr>
<tr>
<td>ACTY 414 Institutional Accounting</td>
</tr>
<tr>
<td>GBUS 428 Management of Financial Institutions</td>
</tr>
<tr>
<td>GBUS 542 Law of Real Property</td>
</tr>
<tr>
<td>GBUS 544 Law of Business Organizations</td>
</tr>
<tr>
<td>MGMT 555 Electronic Data Processing</td>
</tr>
<tr>
<td>BED 556 Office Management</td>
</tr>
</tbody>
</table>

   **Minor:** (Political Science)  
   200 National Government | 3  
   202 State and Local Government | 3  
   330 Introduction to Public Administration | 3  

*Another option is available where a student may major in Political Science and minor in Business. See Political Science advisor.
Teacher Education

S.H.

530 Problems in Public Administration 3-4
526 Administrative Law and Public Regulation 3
Electives with approval of Political Science Department Chairman 3-4

3-4

20

3. Statistics

The following courses from the Department of Mathematics plus one business elective comprise the major in Statistics.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>106 Introduction to Computers</td>
<td>1</td>
</tr>
<tr>
<td>122 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>123 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>230 Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>270 Multivariate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>362 Probability</td>
<td>3</td>
</tr>
<tr>
<td>363 Statistics</td>
<td>3</td>
</tr>
<tr>
<td>506 Programming for Computers</td>
<td>3</td>
</tr>
<tr>
<td>567 Applied Statistics</td>
<td>4</td>
</tr>
<tr>
<td>568 Studies in Applied Statistics or ENGT 508</td>
<td>3</td>
</tr>
<tr>
<td>Electives (one Math and one Business course from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
</tr>
</tbody>
</table>

Electives

Select one Math course from 310 Finite Mathematics, 507 Numerical Analysis, 408 Linear Programming, 490 Topics in Mathematics and one upper-level Business course emphasizing statistical application.

Business Teacher Education Curriculum

Bachelor of Science Degree

BUSINESS EDUCATION AND ADMINISTRATIVE SERVICES

Teaching of Business

A Michigan 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

*Completion of 70 semester hours in the College of Arts and Sciences leads to a Bachelor of Arts degree; see page 20 of this catalog.
Course Requirements

1. General Education requirements as described on page 22 of this catalog must be met.

2. Core cognates
   - PSCI 200 National Government 3
   - ECON 201, 202 Principles of Economics 6*
   - PSY 150 Intro. to Science of Behavior or Equiv. 3**

3. Professional Education courses
   - TEED 250 Human Development and Learning 4
   - TEED 300 Teaching and Learning, Secondary 3***
   - DT 410 Seminar in Education 2
   - TEED 450 School and Society or AS 520 Principles of Practical Arts & Vocational Education 3
   - DT 470 Directed Teaching 9

4. Business Education Core
   - B ED 242 Business Communication 3
   - B ED 140 Industrial and Business World or elective from Marketing or Management 3
   - B ED 292 Consumer Principles and Practices 3
   - B ED 330 Office Automation 3
   - B ED 346 Teaching of Business Subjects 3-5
   - B ED 386 Office Organization 3

5. Major and minor requirements: electives
   - Student must select one area of emphasis in C below.

6. Physical Education

A. Minimum hours required for this curriculum 122

B. Course Requirements

1. General Education requirements as described on page 22 of this catalog must be met.

2. Core cognates 12
   - PSCI 200 National Government 3
   - ECON 201, 202 Principles of Economics 6*
   - PSY 150 Intro. to Science of Behavior or Equiv. 3**

3. Professional Education courses 21
   - TEED 250 Human Development and Learning 4
   - TEED 300 Teaching and Learning, Secondary 3***
   - DT 410 Seminar in Education 2
   - TEED 450 School and Society or AS 520 Principles of Practical Arts & Vocational Education 3
   - DT 470 Directed Teaching 9

4. Business Education Core 18-20
   - B ED 242 Business Communication 3
   - B ED 140 Industrial and Business World or elective from Marketing or Management 3
   - B ED 292 Consumer Principles and Practices 3
   - B ED 330 Office Automation 3
   - B ED 346 Teaching of Business Subjects 3-5
   - B ED 386 Office Organization 3

5. Major and minor requirements: electives 34-36
   - Student must select one area of emphasis in C below.

C. Areas of Emphasis

Advisor: Contact Department Office

Business Education majors must select a minimum of one teaching emphasis in addition to the Business Education Core.

1. Accounting and related business subjects (Business Education 183, 281 and Accountancy 210, 211 are required)
2. Clerical and related business subjects (Business Education 185, 281, 288 and Accountancy 210 are required)
3. Data Processing and related subjects (Accountancy 210, 211; Business Education 183, 281 and Management 555 are required)
4. General Business and related subjects (Law 340, Accountancy 210, a finance or insurance course and Marketing 370 are required)

*May be used to satisfy the General Education Behavioral and Social Science requirement.
**May be used to satisfy one of the General Education Natural Science and Math requirements.
***A Professional Education Sequence card must be presented when registering for Teaching and Learning, TEED 300. It is necessary to be enrolled in Human Development and Learning, TEED 250, before application for sequence card may be made.
5. Salesmanship, retailing, and related subjects (Marketing 270, 370, 375 are required)
6. Secretarial and related business subjects (Business Education 184, 185, 281 and 287 are required)
7. Office Education Coordinator (Business Education 185, 281, 282, Distributive Education 573 are required)
8. Other areas of emphasis may be selected with the permission of the Department Head

D. Business Education Minors Advisor: Contact Department Office

1. For students majoring in Business Education, a teachable General Business minor is available.

With the approval of the advisor, students select 20 semester hours to encompass additional areas of Business Teaching emphasis listed in this catalog.

2. For education majors not majoring in Business Education

The Business Education minor of at least 20 semester hours of course work chosen with the approval of the advisor. Students must select at least one of the teaching emphases listed in this catalog.

DESCRIPTION OF COURSES

All College Courses

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 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.
Accountancy

John T. Burke, Head
James E. Daniels
Frederick Everett
James L. Mitchell, Jr.
William C. Morris
Robert D. Neubig
Gale E. Newell
Frederick W. Schaeberle

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.

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.

301 Accounting, Taxes, and You 3 hrs.
A non-technical survey course in accounting and tax to partially fulfill the general education requirements for non-business students. The course involves a development of fundamental concepts of accounting and taxes and an application of these concepts to three interdependent roles in an individual's life. The roles are: (1) as a consumer and wage earner, (2) as an investor and entrepreneur, and (3) as an informed and responsible citizen.

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.

311 Financial Accounting II 3 hrs.
A continuation of Accounting 211, includes the following topics: Corporate capital, statements from incomplete data; financial statement analysis, and statement of application of funds. Prerequisite: 310.

322 (512) Cost Accounting 3 hrs.
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 advisor, students attain employment experience with public accounting or other business organizations. Participation is limited to available internships and selection by the faculty advisor. 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.

420 Topics In Accounting  
An examination of advanced topics in Accounting. Courses may be repeated. Prerequisite: Consent of Instructor.

516 (416) Auditing  
The theory and practice of public and internal auditing of business enterprises. Prerequisite: 311 and senior accounting major.

518 Accounting Theory and Problems  
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  
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  
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.

Business Education and Administrative Services

L. Michael Moskovis, Head

Delbert Beelick
Charles A. Blagdon
Kimon Bournazos
Bernadine Branchaw
Ronald DeYoung
Norma Greenawalt
Peggy Gossman

Earl Halvas
Richard Hatch
Ann Helgesen
Darrell G. Jones
Maureen Kiewiet
E. L. Marietta
John H. McBeth

Max O. McKitrick
William Morrison
Leo Niemi
David L. Perry
Thomas W. Null
Jean O. Phillips
James P. Zappen

The Department of Business Education and Administrative Services includes the areas of preparation for business teaching, office education coordination, administrative services, and secretarial administration. Students enrolled in the secretarial internship phase of the Secretarial Administration Curriculum learn by combining the classroom theory and the practical experience gained in business, government, and educational office settings.

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. A statement certifying the completion of the internship phase of the Business Teacher Education or the Secretarial Administration programs is available on request.

A teaching major in the Department consists of 30 semester hours; a teaching minor, which may also be within the Department, consists of 20 semester hours. The Administrative Services major consists of 24 semester hours; the Administrative Services minor consists of 18 semester hours.

140 Industrial and Business World 3 hrs. Fall, Winter, Spring

An introductory course which acquaints students with the principles and problems of business and industry. Topics include the organization
of American business and current problems and issues. Emphasis is placed on the relation of business to the various segments of society. Students participate in business simulations and games and actively become acquainted with business through a number of community resources.

142 Informational Writing 3 hrs. Fall, Winter
Development of the basic composition skills required of the competent writer in business and the professions. Through continuing directed practice in writing, the student will develop competence in the organization and presentation of facts and information in writing.

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. In addition to classwork, at least two hours of laboratory work is required each week.

181 Intermediate Shorthand 4 hrs. Fall, Winter
A continuation of 180. Emphasis on developing speed in taking dictation in shorthand and transcription procedures. Prerequisites: Business Education 180 and 182, or equivalents. Credit given to students with not more than one year of high school shorthand. In addition to classwork, at least two hours of laboratory work is required each week.

182 Beginning Typewriting 3 hrs. Fall, Winter
Emphasis is placed on the development and mastery of the keyboard and the proper techniques necessary to use the typewriter as a personal writing tool. In addition to meeting departmental standards, each student will complete a project related to his major field in which the typewriter is used as a communication tool. 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
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. In addition to classwork, at least two hours of laboratory work is required each week.

185 Production Typewriting 3 hrs. Fall, Winter
The development of superior skill in the production of typewritten materials for 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 and written 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: Business Education 142 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 office calculating machines.

281 Integrated Office Skills 3 hrs. Fall, Winter, Spring
This course is designed for students preparing for administrative services and executive secretarial occupations, and/or business teaching. It develops a working knowledge of calculating, duplicating, and machine transcription equipment, and provides an introduction to the computer terminal. Students then apply skills and knowledge in simulated office problem environments. In addition to classwork, three hours of laboratory time are recommended each week.

282 Coordinated Business Experience 3 hrs. Fall, Winter
A work-experience course for students in the Secretarial and Business Teacher Curriculum. Prerequisite: Departmental permission.

283 Coordinated Business Experience 1 hr.
A continuation of Business Education 282. Prerequisite: Departmental permission.

287 Secretarial Administration 4 hrs. Fall, Winter, Spring
This course applies an integrated systems learning approach to the activities performed by the administrative secretary. Working on an individual basis with guidance from the instructor, students complete class projects and simulations which emphasize problem solving and decision making.

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, Spring
The historical development of office automation from manual to automatic systems, computer programming in BASIC and the methods of automating 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 organization. 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 basic business subjects. 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>Wks.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Introduction to Business Education</td>
<td>1-3</td>
<td>1</td>
</tr>
<tr>
<td>II Basic Business Subjects</td>
<td>4-6</td>
<td>1</td>
</tr>
<tr>
<td>III Accounting</td>
<td>7-9</td>
<td>1</td>
</tr>
<tr>
<td>IV Typewriting</td>
<td>10-12</td>
<td>1</td>
</tr>
<tr>
<td>V Shorthand, Secretarial Subjects</td>
<td>13-15</td>
<td>1</td>
</tr>
</tbody>
</table>

All students will enroll for Unit I and at least 2 others. The course provides for those students who expect to teach Accounting, Basic Business, Typewriting and Shorthand.

Prerequisites: Open only to Business Education majors or minors; TEED 300.

347 Practicum in Teaching of Business Subjects 1 hr.
This course for prospective business teachers provides directed practice in applying concepts and techniques developed in Business Education 346. Special emphasis is placed on videotaped microteaching experiences. This course is to be taken concurrently with Business Education 346.

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 type-write.

381 Alphabetic Shorthand II 4 hrs. Winter
A continuation of Business Education 380 with emphasis on transcription. Prerequisites: Business Education 380 and 183 or equivalent.

386 Office Organization 3 hrs. Fall, Winter
This course is designed for students preparing for professional office work and/or business teaching. It includes a study of the functions of the office, the office environment, factors affecting job satisfaction, office technology, office tools and systems, principles of office organization and supervision, and types of business organization.

410 Internship 2-4 hrs.
Under the direction of a faculty advisor, qualified students may elect to engage in a variety of professional experiences. Such experiences might involve teaching-learning activities or professional administrative activities. Teaching activities might include teaching office skills, consumer economics, or basic business concepts in an educational setting within a business organization, state hospital, or adult education program; supervising simulated office laboratory experiences; or tutoring individual students. Administrative activities might include participation in a company administrative training program; work experience in data processing; or an experience in preparing correspondence manuals, pro-
cedures manuals, or forms simplification in business organizations. Sched-
uled meetings with advisor and submission of written experience reports
required. Prerequisite: Filing of a departmental permission-to-elect
form; permission of the instructor. May be repeated for a maximum
of 4 hours credit.

554 Topics in Business Communication 3 hrs.
An intensive study of a topic in business communication such as a
report writing, organizational communication, business media, business
publicity, and others. The topic will be announced in advance. May be
repeated for credit.

556 Office Management 3 hrs.
Areas of office administration from the manager's viewpoint. Par-
ticular emphasis is placed on developing, managing, and controlling
office systems, as well as the role administrative managers play in
managing human resources.

557 Topics in Administrative Services 3 hrs.
An intensive study of a selected topic in Administrative Services such
as office systems, work measurement and simplification, forms control
and design and others. The topic will be announced in advance. May be
repeated for credit.

558 Coordination Techniques in Office Education 2 hrs.
A study of the role and responsibilities of the office education coor-
dinator in the 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 pertinent research.

554 Improvement of Instruction in Secretarial Subjects 3 hrs.
A study of the latest research findings, materials, teaching procedures,
tests and measurements, and future developments in secretarial subjects.

556 Improvement of Instruction in Typewriting 3 hrs.
A study of the latest research findings, materials, teaching procedures,
tests and measurements, and future developments in typewriting.

586 Improvement of Instruction in Accounting/Computing
Programs 3 hrs.
A study of the latest research findings, materials, teaching procedures,
tests and measurements, and future developments in the accounting/com-
puting programs.

589 Organization and Teaching of Office Practice 3 hrs.
A consideration of aims and content of office-practice course with
plans and techniques for organizing and teaching the subject matter
of the course and its laboratory material.

590 Vocational Block Programs 3 hrs.
Examines purposes and philosophy of vocational block programs; con-
siders instructional development, classroom management, and program
evaluation. Required for office vocational certification. Senior standing
only.
591 Improvement of Instruction in Basic Business/Economic Education 3 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and future developments in basic business and economic education.

596 Independent Study 1-4 hrs.
A directed independent project in an area of business education or administrative services. Prerequisite: Consent of department head.

598 Readings 1-4 hrs.
A series of direct readings in the area of business education or administrative services. Prerequisite: Consent of department head.
General Business

The General Business Department includes the areas of Finance and Law.

Specialized majors may be obtained from the areas of Finance and specialized minors in Finance, 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 advisor.

FINANCE AREA

Robert Balik
William L. Burdick
Adrian C. Edwards, Area Chairman

Edwin Grossnickle
James Johnson
Dale Pletcher

305 Personal Finance 3 hrs.

Deals with various concepts inherent in personal financial management. This is a survey course designed to enable the student to better understand the considerations involved in the management of income, savings, investments, and debt planning. A lecture-discussion approach will include consideration of insurance planning, investment management, consumer and mortgage credit, real estate, tax planning, and financial planning in the area of wills and estates.

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.

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.

321 Risk and Insurance 3 hrs. Fall, Winter, Spring

A comprehensive course which considers the nature and orientation of insurance risks and their management. Major business and personal
risks are analyzed and their insurance treatment evaluated, as are the functional aspects of insurer operations. The impact of insurance on public policy is also considered.

322 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.

323 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.

326 Investments—Fundamental Analysis 3 hrs.
Concentrates on corporate securities as long-term investment media, largely from the standpoint of the individual investor. Considers markets mechanics, markets, institutions and instruments important to the investment process. Examines security appraisal techniques on the basis of the fundamental approach to investments. Prerequisite: 320 Business Finance.

327 Investments—Market Analysis 3 hrs.
Concentrates on security market operations from the viewpoint of technical analysis. Introduces the student to the various techniques of proper timing of investment opportunities. Also considers the random walk theory of security price movements. Prerequisite: 320 Business Finance.

328 Internship in Insurance 1-3 hrs.
Open only to insurance students. Under the direction of the advisor, 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.

330 Real Estate Fundamentals 3 hrs.
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.

331 Real Estate Finance 3 hrs.
Considers the field of real estate finance from the viewpoint of sources of funds, various real estate contracts, valuation techniques, appraisals of residential and income properties, and the various aspects of risk analysis in real estate. Prerequisite: 330 Real Estate Fundamentals.

425 Financial Management I—Short-Term Capital 3 hrs.
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 func-
tions; 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 Financial Management II—Long-Term Capital 3 hrs.

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 the financial aspects of corporate reorganizations and bankruptcies. Prerequisite: Business Finance 320.

427 Financial Institutions and Markets I 3 hrs.

An introduction to, and systematic treatment of, the money and capital markets. Emphasis will be placed on the institutionalization of savings; loanable funds theory of interest rate determination; the supply of loanable funds; the demand for loanable funds; and the effect of monetary and fiscal policies on the money and capital markets. Prerequisites: The American Financial System 310 and Business Finance 320.

428 Financial Institutions and Markets II 3 hrs. Winter

An advanced treatment of the money and capital markets. Emphasis will be placed on the term structure of interest rates; yield differentials; forecasting interest rate changes and financial flows; and questions of public policy. Prerequisites: The American Financial System 310 and Business Finance 320.

429 Mortgage Banking 3 hrs.

Mortgage lending in the United States with special emphasis on the function, lending policies and operations of mortgage banks. Considers interrelationships of these institutions with savings and loan associations, savings banks, insurance companies, individuals and governmental institutions in providing funds to the primary and secondary mortgage markets. Prerequisites: American Financial System 310, and Business Finance 320.

499 Senior Topics in Finance 3 hrs. Winter

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 Portfolio Analysis and Management 3 hrs.

In depth approach to the development and administration of security portfolios. Emphasizes the investment strategies followed by individuals and by portfolio managers in financial institutions. Latest portfolio strategies and techniques are studied and evaluated. Prerequisite: Investments 326 or equivalent.
521 International Finance  3 hrs. Winter, Spring
A study of contemporary problems in international finance. The course examines the international money markets, working capital considerations and capital budgeting problems as faced by the multinational corporation. Prerequisite: Finance 320 or equivalent or consent of instructor.

526 Group Insurance and Pensions  3 hrs.
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: Life and Health Insurance 322.

528 Insurance Company Management  3 hrs.
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: Property and Liability Insurance 323.

598 Readings in General Business (Finance)  1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
446
College of Business

LAW AREA

Nicholas C. Batch
James R. Bliss
James S. Casey

Thomas Gossman
F. William McCarty
William F. Morrison, Area Chairman

311 Ecology and the Law
The study of law as it relates to man's efforts to protect his environment. Included will be an examination of traditional common law principles and federal and state statutes relating to environmental protection, analysis of recent cases, and discussion of techniques for the effective use of administrative procedures of the various environmental protection agencies.

340 Legal Environment
An introduction to the legal environment in society.

341 Business Law
Continuation of Legal Environment 340 with emphasis on contracts, borrowing and banking transactions to include checks and other commercial paper, agency and employment contracts. Prerequisite: 340 Legal Environment.

442 Damage and Tort Liability
The study of business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: 340 Legal Environment.

543 Legal Problems of International Business
A study of United States, foreign and international laws which affect business corporations. Prerequisite: 340 Legal Environment.

544 Law of Business Organizations
Study of business organizations including partnerships and corporations. Prerequisite: 340 Legal Environment.

598 Readings in General Business (Law)
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
Management

Fred V. Hartenstein, Chairman

Gene S. Booker
Hugh Bradley
Thomas Brayton
Albert E. Dorr
James W. Hill

J. Michael Keenan
Alan H. Leader
Thomas A. Mason
John R. Rizzo
Carol A. Ryan

Arnold E. Schneider
Dana D. Squire
William J. Upjohn
Roger L. Wallace

102  Computer Usage  3 hrs.

An introductory, non-mathematical course designed for students who wish to learn how to use time shared computers by utilizing remote terminals. You will (1) learn the capabilities of electronic data processing equipment, (2) use the computer to assist you in problem solving by accessing stored programs, (3) learn to write elementary computer programs, and (4) study the application of computer technology to various fields.

200  Decision Making with Statistics  3 hrs.

An applications-oriented study of statistical concepts and techniques. The course focuses on the student as a user of statistics who needs a minimal understanding of mathematical theory and formula derivation. Major topics of study are statistical description, central tendency, dispersion, distributional shapes, sampling, confidence levels, probability, comparison tests, association tests, regression and time series. The objectives of the course are to develop the skill to apply these concepts in conjunction with computer usage and make appropriate decisions regarding actual business problems.

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.

Theories and techniques in the areas of production, social-environmental influences, organization structure, interpersonal relationships, control and motivation systems. Prerequisite: Econ 201 for BBA candidates.

301  Management Analysis and Behavior (I)  3 hrs.

Management analysis and behavior will be presented and practiced by the student in small task oriented groups working on real problems. Group decision making, problem solving, and business presentations are
emphasized. In addition, the student will learn the costs and benefits of assuming different group roles. Prerequisite: Management 200, 300; co-requisite: Management 302.

302 Management Analysis and Behavior (II) 3 hrs.
An extension of Management 301; must be taken with 301.

303 Management Analysis and Organizational Design (I) 3 hrs.
The students develop and experiment with their own model of an organization by assuming different roles and exercising influence in a large task oriented group working on a real problem. The course is designed to give students practice in integrating relevant variables, analyses, and data into an operating system. Prerequisite: Management 301-2; co-requisite: Management 304.

304 Management Analysis and Organizational Design (II) 3 hrs.
An extension of Management 303; must be taken with Management 303.

352 Personnel Management 3 hrs.
The personnel function in organizations including manpower needs, staffing and development; organization and individual appraisal; employee compensation and benefits; safety and health; approaches to employee problems; labor relations.

400 Topics in Management 3 hrs.
An examination of advanced topical problems in management. Prerequisite: Management 301-304, and consent of instructor. (Repeatable)

404 Business and Society 3 hrs.
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.

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: Management 200.

430 Systems Analysis 3 hrs.
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: Management 301-304 and permission of department. (Repeatable)

451 Administrative Behavior 3 hrs.
A course designed to integrate the contributions and implications of the behavioral sciences to modern business practice to promote and maintain effective human relations for the individual and the group. Extensive use of cases and conference methods is made.
458 Independent Study 3 hrs.
Independent research on specialized management topics. Prerequisite: Management 301-304, and consent of instructor. (Repeatable)

490 Honors Seminar 1-3 hrs.
A discussion of selected topics in contemporary management. Prerequisite: Consent of departmental honors committee and instructor. (Repeatable)

491 Independent Honors Studies in Management 1-3 hrs.
Opportunity for independent reading and/or research under the direction of a faculty member. Prerequisite: Consent of departmental honors committee and instructor. (Repeatable)

499 Management Problems 3 hrs.
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 1-4 hrs.
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. (Repeatable)

540 Advanced Statistics 3 hrs.
A second course in statistics complete enough to be used with limited background. Includes probability theory, t, Z, F, and binomial probability distributions, hypothesis testing with sampling theory and Type I, Type II errors, point and interval estimates, statistical inference, comparison tests (two-sample and K-sample), association tests (correlations and regression), and nonparametric tests. Prerequisite: Management 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: Economics 201 and Management 200.

554 Introduction to Management Science 3 hrs.
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: Management 200.

555 Electronic Data Processing (Topic) 3 hrs.
Computer programming in FORTRAN or COBOL. FORTRAN usually taught in the Fall semester and COBOL in the Winter semester. 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. Prerequisite: An introductory computer course or permission of instructor.
557 Inventory Management 3 hrs.
The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisite: Management 200.

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: Management 200.

598 Readings in Management 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. (Repeatable)
Marketing

Robert B. Trader, Head

Richard Buchanan
Zane Cannon
Lowell Crow
Richard E. Embertson
Frances S. Hardin
Jay Lindquist
Leonard D. Orr
Conner P. Otteson
Barbara Pletcher
Edward A. Riordan
Emil J. Sokolowski
Dale U. Varble

190 Social Dynamics of Marketing  3 hrs. Fall, Winter
An analysis of interaction between business and its environment. Special emphasis will be applied to current topics such as pollution, ecology, and consumer satisfaction. No prerequisites. Not open for Marketing major or minor credit.

270 Salesmanship  3 hrs.
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.

370 Marketing  3 hrs.
Functions, institutions, and problems of marketing examined from the viewpoint of their affect on distribution of goods. Prerequisite: Econ. 201.

372 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.
College of Business

376 Sales Administration 3 hrs. Fall, Winter, Spring
Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting; training; sales communication; territories and quotas; motivation, measuring selling effectiveness. Prerequisite: Mktg. 370.

470 Industrial Marketing 3 hrs. Fall, Winter
A course designed to analyze the problems of marketing industrial goods. Attention is given to market information, market planning, methods of distribution, pricing, and the promotional problems of industrial marketing. Prerequisite: Mktg. 370.

474 Advertising Copy and 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 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.

477 Consumer Behavior 3 hrs.
Investigate, analyze and interpret the extensive body of research information on consumer behavior considering both the theoretical and practical implications. Prerequisite: Marketing 370.

478 Quantitative Marketing Applications 3 hrs.
Provides the marketing student with a basic understanding of fundamental quantitative techniques and shows how these techniques will assist the decision maker in solving marketing problems. Prerequisites: Math 116, Management 200, Marketing 370.

479 Marketing Internship 1-6 hrs. Arranged
Cooperative internship training for the BBA degree marketing majors having completed sophomore year. Variable credit at the rate of approximately one credit per 100 hours of internship training acceptable to advisor. May be repeated for a maximum of 6 hours. Term reports required; evaluations completed by executives of firms in which training takes places. Prerequisite: Marketing major; permission of the instructor.

572 Advertising: Media, Campaigns and Strategies 3 hrs. Fall, Winter
Evaluation of media and advertising through communications research, analysis and preparation of advertising as a communication tool. Includes theory and practice of media research, media plans, schedules, and strategies. Case studies. Prerequisites: Adv. 374, 474.

573 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 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 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 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
KENNETH F. SIMON, Associate Dean
MORVIN A. WIRTZ, Associate Dean

Departments:
Blind Rehabilitation
Counseling and Personnel
Directed Teaching
Educational Leadership
Physical Education for Men
Physical Education for Women
Special Education
Teacher Education

Agencies:
Center for Educational Research
Educational Resources Center
Reading Center and Clinic
REDE Center (Research, Evaluation, Development, Experimentation)
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 in education 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 should 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. Students wishing to change their existing curriculum to a Teacher Education Program should make application to the Teacher Education Orientation and Advisement office. (Students wishing to enter Special Education must obtain approval of the Special Education Department.)

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.
CURRICULA FOR TEACHERS

The program for prospective teachers consists of three parts: (1) general education, designed to develop those understandings and competencies which make for effective living and good citizenship, (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 nine, or the State Secondary Provisional Certificate, valid for grades seven through twelve.

Students majoring in Art, Dance, Music, Physical Education and Special Education may be certified to teach this subject in all grades by completing requirements of the Elementary Provisional or Secondary Provisional certificate and the curriculum requirements of the major.

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 122 hrs.

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies, is required for Michigan certification.

2. Elementary Education Minor ......................... 24 hrs.

Requirements and approval for this required minor are available in the Teacher Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have an approved minor slip signed by an approved Elementary Education advisor.

3. Professional Education ............................... 21 hrs.

Human Development and Learning 250 ................. 4
Teaching and Learning in the Elementary School 300 3
Directed Teaching 470—9 hrs., Seminar in Education—
2 hrs., School and Society 450—3 hrs. (usually taken concurrently in one semester) 14 hrs.

4. Physical Education ................................... 2 hrs.

May 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 30 hours or group major of 36 hours are required. This requirement is in addition to the required 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:


D. The candidate must satisfy the requirements of the A.B. or B.S. Degree.

**INTEGRATED PROGRAM FOR TEACHER PREPARATION—ELEMENTARY**

Integrated one semester (15 credit hours) full-day programs (TEAM and KALAMAZOO PROJECT) for students preparing to teach in elementary schools are offered fall and winter semesters. These programs combine a portion of the student teaching experience (4 credit hours) with the following courses:

- TEED 300 Teaching and Learning .................................. 3 hrs.
- TEED 312 Teaching of Reading ....................................... 3 hrs.
- TEED 450 School and Society ......................................... 3 hrs.
- DT 472 Directed Teaching ............................................. 4 hrs.

Remaining student teaching requirements may be completed during a spring session. Please contact one of the following advisors: Burns, Jennings, Miller or Harring.

**NOTE:** Students who choose a Special Education major must be admitted to the Special Education curriculum. See requirements on page 477.

**EMPHASIS IN EARLY CHILDHOOD EDUCATION**

Advising Chairman: Sara Swickard

Students seeking certification in the elementary school may gain state approval for early childhood education (including teaching in nursery school and kindergarten) by satisfactorily completing the

*Minors only.
**Majors only.
†Students with a minor in Librarianship may substitute 3 S.H. of Library Science courses for the practical arts requirement.
Elementary Education curriculum requirements with the following additional courses and course substitutions:

- **TEED 350** The Young Child, His Family, and His Society .................................................. 3 hrs.
- **TEED 351** Reading and Related Communication Skills for Early Childhood* .......................... 4 hrs.
- **TEED 355** Learning Experiences for Young Children ......................................................... 3 hrs.
  (May substitute for TEED 300)
- **DT 470** Directed Teaching (Early Childhood)** ................................................................. 5 hrs.
- **DT 410** Seminar in Early Childhood Education ................................................................. 1 hr.
- **TEED 455** Historical, Social and Philosophical Perspectives on Education for Young Children .................................................................................................................. 3 hrs.
  (May substitute for DT 450, School and Society)

Students must see one of the advisors for admission to the program. Upon consultation with an advisor and approval of the Certification Officer, students may apply part of these credit hours to the professional sequence, as indicated above. Each student in the program will also attend a non-credit seminar, with hours to be arranged in consultation with his advisor. 

*Early consultation with an advisor is recommended.*

**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 .......................................................... 122 hrs.

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Teacher Education ................................................................. 21-26 hrs.
   See elementary, junior high and senior high curricula requirements.

3. Library Science ................................................................. 20-23 hrs.
   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

*The following companion course should also be taken by students in Early Childhood Emphasis:
   TEED 352 Reading and Related Communication Skills for Middle and Upper Grades. (May substitute for TEED 312.) 4 hrs.

**The directed teaching experience, with its accompanying seminar may count as part of the required number of directed teaching hours for certification of the elementary school teacher, and is not an additional student teaching assignment. In all, the student must complete 11 hours of student teaching and seminar for elementary certification.*
Introduction to Classification and Cataloging 530 ........ 3
School Library Experience 407 ....................... 3
Reading Interests of Young Adults 542* ............... 3
Storytelling 546** ...................................... 3
Instructional Materials, K-12 416 ....................... 3

Modern foreign language ................................. 8
Children's Literature 282 ............................... 4
(early 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 ...................................... 2 hrs.

C. Candidates for the secondary provisional certificate must elect a
   major or group major of 30 or 36 hours in subjects or subject fields
taught in the secondary school; candidates for the elementary pro-
visional certificate must elect an additional minor or group minor
of 20 or 24 hours, and also complete the Elementary Education
minor (see Elementary Curriculum).

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.

MIDDLE SCHOOL AND JUNIOR HIGH SCHOOL CURRICULUM

Bachelor of Arts or Bachelor of Science Degree
State Elementary or State Secondary Provisional Certificate

Advising Chairman: Clara Chiara

A program of undergraduate studies to prepare students to teach
in Middle and Junior High School which focuses on teaching-learning
processes and content areas which are effective for working with the
older child and the young adolescent in grades 5 through 9. (Student
has option of earning elementary (grades K-9) or secondary (grades
7-12) certification. Elementary certification is recommended.)

The program includes a two semester sequence of planned and super-
vised experiences specifically designed for teaching in the Middle or
Junior High School.

*Required only for teacher-librarian candidates in the secondary curriculum.
**Required only for teacher-librarian candidates in the elementary curriculum.
PROGRAM REQUIREMENTS MUST BE PLANNED AND APPROVED BY ADVISOR.

A. Minimum hours required for this curriculum 122 hrs.

B. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies, is required for Michigan certification.

C. Major/Minor Requirements

Elementary Certification Option

1. Two minors or group minors (20-24 hours); OR one major or group major (30-36 hours) selected from the following areas: Communication Arts and Sciences, English, Social Science, Mathematics, Science, Foreign Languages.

2. Elementary Education minor: see advisor for requirements.

Secondary Certification Option

1. One major or group major.

2. One minor or group minor.

Majors and minors must be selected from the following areas: Communication Arts and Sciences, English, Languages, Linguistics (second major only), Social Science, Mathematics, Science.

It is strongly recommended that majors and minors be chosen from related disciplines. See advisor for acceptable combinations.

D. Two semester-planned sequence (usually taken in junior year)

Fall Semester

One course from: General Studies 122, 316, OR Sociology 314, 320, 353, 514.

CAS 170 Interpersonal Communications I OR CAS 270
Interpersonal Communications II 3 hrs.

TEED 312 Teaching of Reading Elementary OR TEED 322 Teaching of Reading Secondary 3 hrs.

TEED 300 Teaching and Learning in Middle Schools 3 hrs.

TEED 398 Special Studies in Education (topical seminars) 4 hrs.

Field Experiences (no credit)

Winter Semester

TEED 398 Special Studies in Education (Psychology and Guidance of Young Adolescents) 2 hrs.

TEED 352 Reading and Related Communication Skills for Middle and Upper Grades 4 hrs.

TEED 450 School and Society 3 hrs.

TEED 507 Elementary School Social Studies (elementary option OR methods course in major or minor field—secondary option) 3 hrs.

DT 472 Directed Teaching 4 hrs.
E. Professional Education

TEED 250 Human Development and Learning (required before two semester planned sequence) ........................................ 4 hrs.
DT 471 Directed Teaching .................................................. 5 hrs.
DT 410 Seminar in Education ............................................. 2 hrs.

471 and 410 are taken concurrently during senior year. Professional Education must total 21 hours; other professional education requirements are included in two semester planned sequence.

F. Physical Education ......................................................... 2 hrs.

MUSIC EDUCATION CURRICULUM

Bachelor of Music Degree
State Secondary Provisional Certificate
(For preparation of Teachers of Vocal and Instrumental Music)

A. Minimum hours required for this curriculum .......................... 122 hrs.

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. Music, History, and Literature was allowed toward this requirement in the past.

2. Music Theory
   Basic Music 160, 161, 260, 261, 360 (or 361) .................. 16 hrs.
   Theory Elective ......................................................... 2 hrs.

3. Musical Performance
   Major Performance Medium ............................................ 24 hrs.
   Secondary Performance Media, Conducting and Ensemble ..... 14 hrs.
   (These requirements vary for instrumental, vocal and combined curricula. See Music Supplement Catalog for details.)

4. Music History/Literature ................................................ 8 hrs.
   Music History/Literature 270-271 .................................. 6 hrs.
   Music History/Literature elective .................................. 2 hrs.

5. Teacher Education ....................................................... 33 hrs.
   Human Development and Learning 250 ............................ 4 hrs.
   Teaching and Learning in Secondary School 300 ............... 3 hrs.
   Directed Teaching, Seminar in Education, and School and Society 470, 410, and 450 ............................................. 14 hrs.
   Music Methods Electives ............................................. 12 hrs.

6. Physical Education ...................................................... 2 hrs.

7. Electives ......................................................................... 4 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 122 hrs.

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Music Major
   - Basic Music 160-161 6 hrs.
   - Elem. Music Practicum 244 3 hrs.
   - Piano and Voice 10 hrs.
   - Music: Select one: 150, 151, 152; 350, 351, 352 4 hrs.
   - General Methods 240 3 hrs.
   - Graderoom Music Literature 374 3 hrs.
   - Ensemble 5 hrs.
   - Choral Conducting 330 2 hrs.
   - Music Electives 3 hrs.

3. Elementary Education Minor 24 hrs.
   Requirements and approval for this required minor are available in the Teacher Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have an approved minor slip signed by an approved Elementary Education advisor.

4. Teacher Education 21 hrs.
   - Human Development and Learning 250 4 hrs.
   - Teaching and Learning in Elementary School 300 3 hrs.

5. Physical Education 2 hrs.
   (Includes Physical Education for the Elementary Teacher 340)

6. Electives to make 122 hours

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 122 hrs.

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Elementary Education Minor 24 hrs.

   Requirements and approval for this required minor are available in the Teacher Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have an approved minor slip signed by an approved Elementary Education advisor.

3. Professional Education Sequence 16-21 hrs.

   Human Development and Learning 250 4
   Teaching and Learning 300 3
   Directed Teaching* 9 or 5
   Seminar in Education 410** 2
   School and Society 450 3


   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) 2 hrs.

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.

*Only for students enrolled in the Special Program described on following page.
**Not required of students enrolled in the Special Program.
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.

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 122 hrs.

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Professional Education

   Human Development and Learning 250 4
   Teaching and Learning in Jr. or Sr. H.S. 300 3
   Directed Teaching 470—9 hrs., Seminar in Education 410—2 hrs., School and Society—3 hrs. (usually taken concurrently in one semester) 14

3. Physical Education 2-8 hrs.

NOTE: 322 Teaching of Reading—Secondary, is recommended for all students in this curriculum.

C. The candidate for the State Secondary Provisional Certificate must present a teaching methods course in a major or minor field.

D. 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 departments may not be counted toward majors or minors (see course descriptions).
The following areas are acceptable fields for majors and/or minors in Secondary Education:


*Minors only — **Majors only — ***Minors or second majors only

NOTE: Students who choose a Special Education major must be admitted to the Special Education Curriculum. See requirements on page 509

E. The candidate must satisfy the requirements for the A.B. or B.S. degree.

NOTE: SPECIAL SECONDARY PROGRAM—Integrated Program for the Preparation of Teaching the Economically and Educationally Disadvantaged

The Teacher Education Department offers a one semester undergraduate program for preparation of teachers for the disadvantaged in secondary schools. Students complete half the directed teaching requirement by participating as student teachers in secondary schools for five half-days each week for the semester; the afternoon program consists of a block of education courses: TEED 300, Teaching and Learning; TEED 322, Teaching of Reading; TEED 450, School and Society; and DT 472, Directed Teaching. Students may elect an additional evening class. The remaining directed teaching requirement may be completed during a spring term. Students interested in this program should contact the advisor: Smith.

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 130 hrs.
   (If B.A. degree is desired, see page 25 for these requirements)

B. Course Requirements
   1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.
   2. Communication Arts and Sciences, Language, Literature, Philosophy or Religion .................................................. 4 hrs.
      Children's Literature 282 ................................................. 4
3. Science, Mathematics, Psychology  
   Structure of Arithmetic 150  
   Psychology I 150  
   7 hrs.  
   4  

4. Teacher Education  
   Human Development and Learning 250  
   Teaching of Reading 312  
   Elementary School Social Studies 507  
   Directed Teaching 471 (Regular Class)  
   13 hrs.  
   4  

5. Fine Arts (Art and Music)  
   Music for the Classroom Teacher 140  
   Art Education Workshop 150  
   7 hrs.  
   4  

6. Practical Arts  
   Arts and Crafts for Teachers 593  
   2 hrs.  
   2  

7. Emotionally Disturbed—Major*  
   Education of Exceptional Children 530  
   Practicum in Special Education 531  
   Communication Disorders 200  
   Programs and Intervention Strategies with the Socially and Emotionally Maladjusted 589  
   Behavior Disorders in School-Aged Children 588  
   Diagnostic and Prescriptive Techniques in Special Education 533  
   Curricular and Instructional Provisions for Exceptional Children 534  
   Directed Teaching (Special Education) 474  
   Seminar in Education 410  
   School and Society 450  
   36 hrs.  
   3  

8. Physical Education  
   (Must include Physical Education for the Elementary Teacher 340)  
   2 hrs.  
   2  

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  
   130 hrs.  

(B) Course Requirements  
   1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the

*A minimum grade of “C” must be earned in each course listed in the major.
College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Communication Arts and Sciences, Language, Literature, Philosophy, Religion
   Children's Literature 282 ...................................... 4
   Public Speaking I 130 .............................................. 3

3. Science, Mathematics, Psychology
   Structure of Arithmetic 150 ...................................... 4
   Psychology I 150 ..................................................... 3

4. Teacher Education
   Human Development and Learning 250 ......................... 7 hrs.
   Teaching of Reading 312 ......................................... 3
   Directed Teaching 471 (Regular Class) ......................... 4

5. Fine Arts (Art and Music)
   Music for the Classroom Teacher 140 ......................... 7 hrs.
   Art Education Workshop 150 ...................................... 3

6. Practical Arts
   Arts and Crafts for Teachers 593 ............................... 2 hrs.

7. Mentally Handicapped—Major*
   Education of Exceptional Children 530 ....................... 3
   Practicum in Special Education 531 ......................... 2
   Communication Disorders 200 ................................... 3
   Nature and Needs of the Mentally Handicapped 532 ........... 4
   Behavior Disorders in School-Aged Children 588 ............. 3
   Diagnostic and Prescriptive Techniques in Special Educa-
   tion 533 .............................................................. 4
   Curricular and Instructional Provisions for Exceptional
   Children 534 ...................................................... 4
   Directed Teaching (Special Education) 474 ................. 8
   Seminar in Education 410 ......................................... 2
   School and Society 450 ............................................. 3

8. Physical Education
   (Must include Physical Education for the Elementary
   Teacher 340) .......................................................... 2 hrs.

C. One Academic Minor in a subject or subject field taught in
   elementary school .................................................. 20 hrs.

D. Electives (Under Advisement) .................................... 3 hrs.

E. The candidate must satisfy the requirements for the B.S.
   degree or the B.A. degree.

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 130 hrs.
   (If a B.A. degree is desired, see page 25 for these require-
   ments)

*A minimum grade of "C" must be earned in each course listed in the major.
B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Communication Arts and Sciences, Language, Literature, Philosophy, 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 ......................... 11 hrs.
   - Teaching of Reading 312 ........................................... 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. Orthopedically Handicapped—Major*
   - Education of Exceptional Children 530 ....................... 3 hrs.
   - Practicum in Special Education 531 ............................. 2 hrs.
   - Behavior Disorders in School-Aged Children 588 .......... 3 hrs.
   - Nature and Needs of Crippled and Homebound Children 543 4 hrs.
   - Communication Disorders 200 ..................................... 3 hrs.
   - Diagnostic and Prescriptive Techniques in Special Education 533 4 hrs.
   - Curricular and Instructional Provisions for Exceptional Children 534 4 hrs.
   - Orthopedic and Medical Lectures 524 .......................... 4 hrs.
   - Directed Teaching (Special Educ.) 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) 2 hrs.

C. One Academic Minor in a subject or subject field taught in the elementary school ......................... 20 hrs.

D. Electives (Under Advisement) ........................................ 2 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

*A minimum grade of “C” must be earned in each course listed in the major.
### 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**

(If a B.A. degree is desired, see page 25 for these requirements.)

**B. Course Requirements**

1. **General Education Requirement:** 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. **Communication Arts and Sciences, Language, Literature, Philosophy or Religion**
   - Children's Literature 282
   - Public Speaking I 130
   - **7 hrs.**

3. **Science, Mathematics, Psychology**
   - Structure of Arithmetic 150
   - Psychology I 150
   - **4 hrs.**

4. **Teacher Education**
   - Human Development and Learning 250
   - Teaching of Reading 312
   - Directed Teaching 471 (Regular Class)
   - **11 hrs.**

5. **Fine Arts (Art and Music)**
   - Music for the Classroom Teacher 140
   - Art Education Workshop 150
   - **7 hrs.**

6. **Practical Arts**
   - Arts and Crafts for Teachers 593
   - **2 hrs.**

7. **Visually Handicapped—Major**
   - Education of Exceptional Children 530
   - Practicum in Special Education 531
   - Education of Blind and Partially Sighted 592
   - Diagnostic and Prescriptive Techniques in Special Education 533
   - Curricular and Instructional Provisions for Exceptional Children 534
   - Braille and Other Communication Methods 591
   - Methods and Techniques of Teaching Braille and Other Areas of Communication 593
   - Physiology and Function of the Eye 590
   - Principles of Orientation and Mobility for the Blind 594
   - Directed Teaching (Special Education) 474
   - Seminar in Education 410
   - School and Society 450
   - **38 hrs.**

*A minimum grade of “C” must be earned in each course listed in the major.*
Special Education

8. Physical Education ........................................... 2 hrs.
(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 ....... 20 hrs.

D. Electives (Under Advisement) ................................ 1 hr

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

SPECIAL EDUCATION CURRICULUM
SPEECH PATHOLOGY AND AUDIOLOGY

Bachelor of Science Degree
State Elementary Provisional Certificate
(For preparation of School speech and hearing clinicians)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements
1. General Education Requirement: 35 hrs. required for University General Education requirement. The additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General studies required for Michigan certification is automatically met by courses required in this curriculum.

2. Speech Pathology and Audiology—Major .................. 30 hrs.
   Orientation to Professional Practice 201 .................. 3
   Anatomy and Physiology of Speech 202 .................. 3
   Speech and Language Development 203 .................. 22
   Phonemics 204 .............................................. 2
   Bases of Speech and Hearing Science 300 .................. 3
   Phonemic Disorders 351 ................................. 2
   Phonatory Disorders 352 ................................ 2
   Fluency Disorders 353 ...................................... 2
   Language Disorders in Children 354 .................. 2
   Hearing Disorders 355 ...................................... 2
   Introduction to Audiometry 357 .......................... 11
   Practicum I 400 .............................................. 1
   Practicum II 401 ............................................. 1
   Electives in major area .................................. 3

3. Elementary Education—Minor .................................. 24 hrs.
   Students desiring teacher certification must contact Office of Orientation and Advisement, Room 2305, Sangren Hall, for an approved minor program slip.

4. Psychology .................................................. 6 hrs.

5. Teacher Education and Special Education .................. 27 hrs.
   Human Development & Learning 250 .................. 4
   Teaching and Learning (Elem.) 300 .................. 3
Education of Exceptional Children 530 .......................... 3
Behavior Problems in School-Aged Children 588 ............ 3
Directed Teaching, Seminar in Education and School
and Society 470, 410 and 450 ............................... 14

6. Physical Education ........................................... 2 hrs.
   (PEW 340 may count for 1 hour)

C. During the program the student must satisfactorily complete
   clinical requirements as specified by the Department of
   Speech Pathology and Audiology.

D. The candidate must satisfy the requirements for the B.S. degree.

CLINICS

READING CENTER AND CLINIC

Dorothy McGinnis, Director

The primary purpose of the Reading Center and Clinic is to provide
educational and clinical experiences for students enrolled at West-
ern 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 par-
ticipate in the administration of educational and clinical tests and the
procedures employed in interviewing children, parents, and school person-
nel.

University students encountering difficulty in reading or those wishing
to improve their reading skills may seek assistance in the Reading Center
and Clinic. 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.

REDE CENTER

Rodney W. Roth, Director

The College of Education, through the Research, Evaluation, Develop-
ment, Experimentation (REDE) Center, assists school systems in de-
fining problem areas, designing strategies to solve the problems and
implementing programs to solve problem areas. The REDE Center is
ready to assist school systems in any problem area such as in-service
education and evaluation services. The REDE Center also provides
teachers and administrators with evaluative feedback through appro-
priate instruments.
The Department 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, primarily from the Office of Social and Rehabilitation Services, Department of Health, Education and Welfare, the Department offers graduate programs in Orientation and Mobility and Rehabilitation Teachers of the Adult Blind. Part of the Department's function is to conduct workshops for people working in the field, provide consulting services and to initiate pertinent research.

Open to Upperclassmen

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 and eye prosthesis.

591 Braille and Other Communication Methods 2 hrs.
Provides students with a basic knowledge of the braille literary code—reading and writing, and an overview of other communication methods available to the visually impaired.

592 Education of the Visually Handicapped 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 3 hrs.
An examination, and application, of the fundamental principles underlying the acquisition of sensory information by severely visually impaired individuals.

595 Introduction to Methods of Independent Mobility for the Blind 2 hrs.
Techniques are acquired under conditions which enable the student to gain an insight into the experiences of blind individuals, as related
to travel skills. Emphasis is placed on the utilization of the remaining senses and their relevancy to interpretation of environmental information. Consent of instructor.

596 Practicum in 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. Consent of instructor.

597 Introduction to Cecutiency 2 hrs.
Exploration of ways to assess the functional use of residual vision. Methods and means of increasing the functional use of residual vision and defining its limitations. Prerequisite: BLRH 590.

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.
Counseling and Personnel

William D. Martinson, Head

Robert L. Betz
Kenneth Bullmer
William A. Carlson
Kenneth B. Engle
Paul L. Griffeth

Neil Lamper
Arthur J. Manske
Gilbert E. Mazer
Robert Oswald
Thelma Urbick

The Department of Counseling and Personnel offers work in the fields of counseling and personnel. Most of the 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 and others interested in guidance. 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 teachers and other personnel workers to: (1) basic resources available in the area of occupational, educational and personal social information, (2) theories of vocational development and their application to the process of guidance and counseling, and (3) the world of work, and especially an analysis of work's impact on American culture.

583 Guidance Workshop 2-4 hrs.
Designed for teachers and counselors who wish to study particular guidance problems and procedures in relation to their local guidance program. (C-Card required)

584 Elementary School Guidance 2 hrs.
Designed to give teachers, administrators and elementary counselors an understanding of the principles and techniques of guidance in elementary schools.
Courses within this Department are designed primarily to integrate the theory and practice of teaching in a laboratory situation. Students should confer with academic advisors in their major and minor fields as well as advisors within the Department of Directed Teaching to be sure that they have met departmental as well as University requirements for entrance into Directed Teaching. Students with irregularities in their professional work or with advanced credit in education will need to meet with advisors in the Department as early as possible.

Transfer students who are seeking University honors may wish to delay their Directed Teaching until their final semester in the University because some of the courses within the Department are graded credit/no credit.

The Department also assigns students for professional laboratory experiences as a part of the required Teacher Aide Participation Program. In addition, the Department sponsors a tutorial program.

313 Problems in Elementary Education 3 hrs.
(Used for the Cooperative Internship Program)
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.

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: TEED 250 and 300, or equivalent; and twice as many honor points as hours attempted.

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.

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.
470 Directed Teaching  
Students devote a minimum of four and one-half days per week for one semester to Directed Teaching, at which time they have experience in both the curricular and extra-curricular program of the school in which they teach. All students expecting to do Directed Teaching should enroll at the Department of Directed Teaching well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: TEED 250 and 300, or equivalent; 2.0 average in all education courses and in overall average.

471 Directed Teaching  
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 Department of Directed Teaching for Directed Teaching 471, 472 or 474 well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: 2.0 average in all education courses and in overall average.

472 Directed Teaching  
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)  
Only for students specializing in special education. Candidates must be approved by the Head of the Special Education Department.

Educational Leadership

Harold W. Boles  
James A. Davenport  
Gerald Martin  
Theodore L. Ploughman  
Rodney W. Roth

Daniel L. Stufflebeam  
William P. Viall  
Charles C. Warfield  
Donald C. Weaver

This department offers curricula in Line Administration, Staff Administration, and Program Leadership, leading to a degree of 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.
Physical Education

GENERAL (PEGN)

All undergraduate students must participate in general physical education beginning with the first semester or session of residence, until a minimum of two 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. (122 hours required for graduation)
2. Students in the marching band may count band participation towards 2 semesters of general physical education.
3. A veteran (defined as one having served one year's continuous active duty) will be exempt from the general physical education requirement.
4. A transfer student must enroll in general physical education during the first semester or session of residence at Western and thereafter each semester or session until the 2 hour requirement is completed.
5. Students are classified for physical education activities on the basis of a medical evaluation required by the University Health Service. Students classified as 'limited' in terms of physical activity should enroll in the adapted physical education program. (2 semester hours are required)
6. A member of varsity athletic teams may receive up to 2 credits in general physical education by enrolling in the appropriate course in the PEM 220-230 series.
7. Only one Dance course may be used to fulfill the general physical education graduation requirement.
8. ROTC students are enrolled in PEGN 175 Military Fitness I and PEGN 175 Military Fitness II to fulfill the general physical education requirement.

Restrictions:

1. Up to eight hours of general physical education will be accepted as credits toward graduation.
2. A freshman or sophomore student may not enroll in more than one hour of general physical education in any one semester.

COURSES IN GENERAL PHYSICAL EDUCATION

All are beginning courses unless designated intermediate—advanced. All courses are coed unless designated men only or women only.

PEGN

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>100</td>
<td>Adapted P. E.</td>
<td>1 hr.</td>
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<tr>
<td>101</td>
<td>Archery</td>
<td>1 hr.</td>
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<tr>
<td>102</td>
<td>Badminton</td>
<td>1 hr.</td>
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<td>103</td>
<td>Bait and Fly Casting</td>
<td>1 hr.</td>
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<td>104</td>
<td>Basketball (Men only)</td>
<td>1 hr.</td>
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<td>105</td>
<td>Bowling</td>
<td>1 hr.</td>
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<td>106</td>
<td>Camp Craft</td>
<td>1 hr.</td>
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<td>107</td>
<td>Canoeing</td>
<td>1 hr.</td>
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<td>120</td>
<td>Fencing</td>
<td>1 hr.</td>
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<tr>
<td>121</td>
<td>Field Hockey (Women only)</td>
<td>1 hr.</td>
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<tr>
<td>122</td>
<td>Golf</td>
<td>1 hr.</td>
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<td>123</td>
<td>Gymnastics—Apparatus</td>
<td>1 hr.</td>
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<tr>
<td>124</td>
<td>Gymnastics—Tumbling</td>
<td>1 hr.</td>
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<td>127</td>
<td>Handball</td>
<td>1 hr.</td>
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<tr>
<td>128</td>
<td>Horsemanship</td>
<td>1 hr.</td>
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<tr>
<td>129</td>
<td>Ice Hockey (Men only)</td>
<td>1 hr.</td>
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</table>
Physical Education

130 Judo 1 hr. 175 Special Activities 1 hr.
131 Karate 1 hr. 201 Archery—Intermediate (Prerequisite 101 or permission of instructor) 1 hr.
132 Lacrosse (Men only) (Women only) 1 hr. 205 Bowling—Intermediate (Prerequisite 105 or permission of instructor) 1 hr.
133 Orienteering & Back Packing 1 hr. 220 Fencing—Intermediate (Prerequisite 120 or permission of instructor) 1 hr.
134 Paddleball 1 hr. 223 Gymnastics—Apparatus—Intermediate (Prerequisite 123 or permission of instructor) 1 hr.
135 Personal PE 1 hr. 241 Sailing—Intermediate (Prerequisite 141 or permission of instructor) 1 hr.
136 Physical Fitness 1 hr. 226 Skiing—Alpine Intermediate (Prerequisite 144 or permission of instructor) 1 hr.
137 Racketball 1 hr. 223 Gymnastics—Apparatus—Intermediate (Prerequisite 123 or permission of instructor) 1 hr.
138 Recreational Games 1 hr. 226 Skiing—Alpine Intermediate (Prerequisite 144 or permission of instructor) 1 hr.
139 Relaxation 1 hr. 244 Skiing—Alpine—Intermediate (Prerequisite 142 or permission of instructor) 1 hr.
140 Riflery 1 hr. 245* Swimming—Intermediate Diving 1 hr.
141 Sailing 1 hr. 249* Swimming—Intermediate Synchronized 1 hr.
142 Skating (Ice-Figure) 1 hr. 254* Swimming—Intermediate Springboard Diving 1 hr.
143 Skiing—Cross Country 1 hr. 255* Swimming—Intermediate Synchronized Swimming 1 hr.
144 Skiing—Alpine 1 hr. 260 Tennis—Intermediate (Prerequisite 160 or permission of instructor) 1 hr.
145 Small Craft 2 hrs. 153* Swimming—Sin Diving 1 hr.
146 Soccer (Men only) (Women only) 1 hr. 157 Swimming—W.S.I. (must have current life saving certificate) 2 hrs.
147 Softball 1 hr. 158* Swimming—W.S.I. (must have current life saving certificate) 2 hrs.
148 Squash 1 hr. 159* Swimming—Water Polo 1 hr.
149 Swimming—Beginning (unable to swim in deep water) 1 hr. 249* Swimming—Intermediate (Prerequisite 142 or permission of instructor) 1 hr.
150* Swimming—Life Saving 1 hr. 255* Swimming—Intermediate Synchronized Swimming 1 hr.
151* Swimming—Scuba Diving 1 hr. 260 Tennis—Intermediate (Prerequisite 160 or permission of instructor) 1 hr.
152* Swimming—Skin Diving 1 hr. 157 Swimming—W.S.I. (must have current life saving certificate) 2 hrs.
153* Swimming—Speed 1 hr. 160 Tennis 1 hr.
154* Swimming—Springboard Diving 1 hr. 161 Track & Field 1 hr.
155* Swimming—Synchronized 1 hr. 162 Trap and Skeet 1 hr.
156* Swimming—Water Polo 1 hr. 163 Volleyball (Men only) (Women only) (Coed) 1 hr.
157 Swimming—W.S.I. (must have current life saving certificate) 2 hrs. 164 Wrestling (Men only) 1 hr.
165 Yoga 1 hr. 165* Swimming—W.S.I. (must have current life saving certificate) 2 hrs.

One of the following Dance courses may be used:

DANCE

102 Beginning Jazz 1 hr. 126 Beginning Ballet 1 hr.
122 Recreational (International) Dance 1 hr. 202 Intermediate Jazz 2 hrs.
123 Beginning Contemporary Dance 1 hr. 223 Intermediate Contemporary Dance 2 hrs.
124 Social Dance Forms 1 hr. 226 Intermediate Ballet 2 hrs.

*PEGN 249 or equivalent
Physical Education for Men

Joseph T. Hoy, Head

Donald E. Boven  George W. Hobbs  Merle J. Schlosser
Boice M. Bowman  J. Arthur Jevert  John F. Shaw
Bill M. Chambers  Jack D. Jones  Richard A. Shiels
J. Patrick Clysdale  Eldon J. Miller  Thomas C. Slaughter
Charles Comer  John T. Miller  Fred L. Stevens
Robert L. Culp  Fred C. Orlofsky  Richard Walker
George G. Dales  Richard Raklovits  Ronald J. Winter
Fred A. Decker  Harold L. Ray  Robert F. Wyman
David Diget  William H. Rowekamp  Roger M. Zabik
F. William Doolittle

VARSITY ATHLETICS

(A varsity athlete may receive PEGN credit by taking these courses)

220 Football .................................................. 1 hr. Fall
221 Cross Country ............................................. 1 hr. Fall
222 Basketball .................................................. 1 hr. Winter
223 Swimming ................................................... 1 hr. Winter
224 Wrestling ..................................................... 1 hr. Winter
225 Baseball ....................................................... 1 hr. Winter
226 Track ......................................................... 1 hr. Winter
227 Golf ........................................................ 1 hr. Winter
228 Tennis ........................................................ 1 hr. Winter
229 Gymnastics .................................................. 1 hr. Winter
230 Ice Hockey ................................................... 1 hr. Winter
231 Soccer ......................................................... 1 hr. Fall

PROFESSIONAL PREPARATION

The professional programs for men are based on the concepts of (1) balanced preparation which enables the student to later specialize at the graduate level, (2) exposure to practical experiences throughout the professional sequence, (3) many elective choices of specific courses, (4) coeducational preparation whenever possible, and (5) continual review of curricular offerings by students and faculty.

Professional students may choose preparation which enables them to (1) teach physical education in grades K-12 and/or coach; (2) direct recreation programs in industrial, municipal, voluntary, and private agencies; or (3) teach health education, K-12.

Each professional student is expected to work closely with a departmental advisor of his choice throughout his professional preparation. To enroll in the professional sequence, he should complete the departmental Personal Data Form at the beginning of his first semester on campus.

The programs for men who desire specialized professional preparation are:
Physical Education

**PATTERN I**  
GROUP MAJOR IN PHYSICAL EDUCATION AND RECREATION (36 HOURS)

**PATTERN IIA**  
GROUP MINOR IN PHYSICAL EDUCATION AND RECREATION (24 HOURS)

**PATTERN IIB**  
RECREATION MINOR (20 HOURS—NON TEACHING)

**PATTERN IIC**  
GROUP MINOR IN HEALTH EDUCATION (24 HOURS)

**PATTERN IID**  
COACHING MINOR (20 HOURS—NON TEACHING, SECOND MINOR)

The details of each of these patterns, along with descriptions of specific courses, follow.

### PROGRAMS FOR SPECIALIZING STUDENTS

**PATTERN I—GROUP MAJOR IN P.E.R. (36 hours)**

**Required Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 150</td>
<td>Foundations of Physical Ed.</td>
<td>3</td>
</tr>
<tr>
<td>190</td>
<td>Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>280</td>
<td>Foundations of Sports Injuries</td>
<td>2</td>
</tr>
<tr>
<td>290</td>
<td>Practicum II</td>
<td>1</td>
</tr>
<tr>
<td>352</td>
<td>Tests and Measurements</td>
<td>2</td>
</tr>
<tr>
<td>390</td>
<td>Teaching of Phys. Ed.</td>
<td>3</td>
</tr>
<tr>
<td>575</td>
<td>Analysis of Movement in Sport</td>
<td>2</td>
</tr>
<tr>
<td>590</td>
<td>Exercise Physiology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

Elect a minimum of one course from any three of the Groups I-IV. The remaining hours are elected, as desired, from Groups I-VI.

**Group I—Adapted Physical Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>242</td>
<td>Intro. to Habilitation of the Handicapped</td>
<td>3</td>
</tr>
<tr>
<td>320</td>
<td>Adapted P.E. Activity Series (Repeatable)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Group II—Elementary Physical Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 245</td>
<td>Introduction to Elem. School P.E.</td>
<td>2</td>
</tr>
<tr>
<td>246</td>
<td>Elementary School P.E. Curriculum</td>
<td>2</td>
</tr>
</tbody>
</table>

**Group III—Coaching Techniques Series**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 160</td>
<td>Intro. to Coaching</td>
<td>3</td>
</tr>
<tr>
<td>330</td>
<td>Fundamentals of Coaching Series (Repeatable)</td>
<td>2</td>
</tr>
<tr>
<td>561</td>
<td>Prin. and Problems of Coaching</td>
<td>2</td>
</tr>
</tbody>
</table>

**Group IV—Recreation Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 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 &amp; Materials in Recreation</td>
<td>2</td>
</tr>
</tbody>
</table>

**Group V—Health Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 342</td>
<td>or 343 School Health and Safety</td>
<td>3</td>
</tr>
<tr>
<td>514</td>
<td>Health Ed. Materials and Methods</td>
<td>2</td>
</tr>
<tr>
<td>516</td>
<td>Issues in Health Education</td>
<td>2</td>
</tr>
<tr>
<td>H.Ec. 212</td>
<td>Foods for Man</td>
<td>3</td>
</tr>
<tr>
<td>TEED 555</td>
<td>Alcohol Education</td>
<td>2</td>
</tr>
<tr>
<td>H.Ec. 220</td>
<td>Intro. to Human Sexuality</td>
<td>3</td>
</tr>
</tbody>
</table>
Group VI—Additional Electives

PEM 244 Sports Officiating ............................................. 2
260 Organ. and Admin. of Intramurals .................................. 2
430 Water Safety Instructors ............................................. 1
490 Dir. Field Exp. (Repeatable) ......................................... 2
560 Administration of P.E. ................................................. 2
580 Prev. and Treatment of Sport Injuries ............................. 3

Biology 210—Mammalian Anatomy, and Biol. 219—Human Physiology
are required in the science area. All candidates for both the Group Major
and Group Minor are expected to pass minimum standards of proficiency
in a variety of motor activities as determined by a departmental com-
mittee of students and faculty.

PATTERN IIA—GROUP MINOR IN P.E.R. (24 hours)

Required Core

PEM 150 Foundations of P.E. ............................................. 3
190 Practicum I ......................................................... 1
280 Foundations of Sports Injuries .................................... 2
290 Practicum II ......................................................... 1
352 Tests and Measurements ............................................. 2
390 Teaching of P.E. ....................................................... 3
575 Analysis of Movement In Sport ................................... 2
590 Exercise Physiology ................................................. 2

Students in this program will elect one course from any two Groups
I-V. Remaining hours are elected as desired. (Each group is identical to
the Group Major)

Biology 210—Mammalian Anatomy, is required in science area.

PATTERN IIB—RECREATION MINOR (20 hours) (Non-Teaching)

Required Core

PEM 270 Outdoor Education ............................................. 2
370 Introduction to Community Recreation ........................... 2
PEW 370 Organization and Administration of Recreation .......... 3
PEM 371 Procedures and Materials in Recreation ..................... 2
490 Directed Field Experience in Recreation ......................... 2
PEW 400 Practicum in Recreation ...................................... 3

ELECTIVES

Group I—Arts and Crafts .................................................. 3

Industrial Education
190 Ind. Arts for Elementary Teachers ................................ 3
O.T. 110 General Crafts ................................................. 3

Group II—Aquatics ......................................................... 1

Physical Education

PEGN 149 Swimming—Beginning ......................................... 1
150 Swimming—Life Saving .............................................. 1
157 Swimming—WSI ..................................................... 1

OR

PEM 430 Water Safety Instr. .............................................. 2
PEW 155 Teaching of Swimming ......................................... 3
Group III—Activity Skills ......................................................................... 3-4

Physical Education

PEM 150 Foundations of Physical Education ........................................ 3
PEGN 100 to 164 General Physical Education ......................................... 4
PEM 160 Introduction to Coaching ............................................................ 3
PEGN 138 Recreational Games ................................................................. 1
PEW 143 Introductory Games and Sports ................................................ 1

Group IV—Additional Electives ................................................................. 5-11

Biology

234 Outdoor Science for Teachers .......................................................... 3

Physical Education

PEM 244 Sports Officiating ........................................................................ 2
260 Intramural Sports .............................................................................. 2
280 Found. of Sports Injuries ................................................................ 2
PEW 101 Recreation Games .................................................................... 1
143 Introductory Games and Sports ......................................................... 1
170 Recreation and Society .................................................................... 3
271 Recreation for Exceptional Children ................................................ 3
272 Music and Drama in Recreation ......................................................... 3
461 First Aid .......................................................................................... 2
470 Recreation and Facilities ................................................................. 3

Geography

350 Conservation National Resources .................................................... 3

Librarianship

546 Storytelling ....................................................................................... 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 should see
their Departmental counselor.

PATTERN IIC—HEALTH EDUCATION GROUP MINOR (24 hours)
See page 471.

PATTERN IID—COACHING MINOR (20 hours)

This minor is a SECOND MINOR ONLY. It does NOT certify a
student to teach physical education. Based on the recommendations of a
Task Force of the American Association of Health, Physical Education,
and Recreation, the basic format is as follows:

Required Core

PEM 160 Introduction to Coaching .......................................................... 3
280 Foundations of Sports Injuries ......................................................... 2
490 Directed Field Exper. (Coaching) ...................................................... 2
561 Prin. and Prob. of Coaching ............................................................. 2
575 Analysis of Movement In Sport ......................................................... 2
590 Exercise Physiology ......................................................................... 2

S.H. 13
Group I—Coaching Techniques Courses: Student elects any six hours.

**PEM 330 Fundamentals of Coaching Series (repeatable) baseball, basketball, football, gymnastics, soccer, swimming, tennis, track, wrestling** 2

Group II—Additional Electives

**PEM 244 Sports Officiating** 2

**580 Prev. and Treatment Sprts. Injuries** 3

**H.Ec. 212 Foods for Man** 3

Other electives, requested on an individual basis from areas such as business or communication arts and science, determined by advisor and student.

Biol. 210 Mammalian Anatomy is required in science area.

**DESCRIPTION OF COURSES**

150 Foundations 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.

190 Practicum I 1 hr.

Permits the beginning student to complete 30 hours of observation in an elementary or secondary school setting. Opportunity is provided to work directly with youngsters during the second semester on campus. Prerequisite: approval of instructor. (Credit/no credit)

242 Introduction to Habilitation of the Handicapped 3 hrs.

A survey of the physical education needs of exceptional children. Basic organization and orientation to handicapped facilities. Philosophy of teaching handicapped individuals is stressed. Background in various disabilities is highlighted. Prerequisites: Biol. 210, approval of instructor.

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.

245 Introduction to Elementary School Physical Education 2 hrs.

An examination of the learning process, theory of play, and developmental movement related to elementary children. Special stress is placed on the role of physical education in an elementary school program and as a part of continuing education, preschool through college. For any student who is considering the professional H.P.E.R. program.
246 Elementary School Physical Education Curriculum 2 hrs.
An in-depth study of outstanding international elementary school programs of physical education. Special emphasis placed on use of natural and inexpensive materials. Experimentation in H.P.E.R. and conceptually-based curricular patterns form a focal part of this course. Prerequisite: PEM 245.

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. A standard first aid card is required as a prerequisite.

290 Practicum II 1 hr.
Students serve in a role similar to teacher aides in a setting different from that experienced in PEM 190. Approximately 30 hours of supervised participation is involved. Prerequisite: Approval of instructor. (Credit/no credit).

320 Adapted Physical Education Series (Repeatable) 2 hrs.
Practical adaptation of teaching techniques to physical education in working with the handicapped. Areas include individual sports, team sports, recreation and leisure skills, horseback riding, and swimming. Opportunities for laboratory work with handicapped children form a primary emphasis. Prerequisite: PEM 242.

330 Fundamentals of Coaching Series (Repeatable) 2 hrs.
Philosophy, theory, and techniques of coaching a variety of specific sports. In some cases, offensive and defensive techniques are highlighted. In others, scouting, meet and game management, or purchase and care of equipment are emphasized. Selection and preparation of competitors is vital in each sport. Course content is presented from the standpoint of the beginning coach. (Baseball, basketball, football, gymnastics, soccer, swimming, tennis, track, wrestling.) Prerequisite: PEM 160.

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.

Micro-teaching is provided in laboratory sections for elementary and secondary levels. The impact of current research on teaching techniques is stressed. Problems examined include topics such as leadership development, program planning, discipline, motor-perceptual emphases, and evaluation techniques. Practicum Experience and national test are included. Prerequisites: PEM 150; approval of instructor.

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 of instructor.

490 Directed Field Experiences (Repeatable) 2 hrs.

Laboratory field work is provided to help students understand the role of professional school personnel in a variety of school and community settings. Under supervision, field experience may be gained in areas such as recreation education, coaching, health education, athletic training, or adapted physical education. Prerequisite: Approval of instructor.

560 Administration of Physical Education 2 hrs.

Principles of supervision, financing, construction and equipping facilities for physical education programs. Discussion of standards for evaluating representative rural, village, and city programs. Scheduling, records management, and communicating techniques. Public relations and professional relationships are stressed.

561 Principles and Problems of Coaching 2 hrs.

Relationship of athletics to education is considered. Practical problems such as coaching ethics, contest management, practice organization and planning, scouting, selection and utilization of personnel, athletic financing and budget, safety responsibilities, program evaluation, training rules, and motivational techniques are discussed. Prerequisites: PEM 160; senior status.

575 Analysis of Movement in Sport 2 hrs.

The study of movement of muscles and the application of kinesiology to physical activity. Prerequisite: Biol. 210.

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 or permission of instructor (minors).

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

Ruth Ann Meyer, Chairperson

Mardell Anderson  Frances Ebert  Margie Jeanne Miner
Mary Brown        Jean Friedel        John Newton
Billye Ann Cheatum Janet Kanzler    Anna May Robertson
Harriett Creed    Opal Klammer      Norma Stafford
Ruth Davis        Margaret Large    Barbara Stephenson
Eleanor Douglass  Patricia Lemanski

The Department of Physical Education for Women offers undergraduate major curricula preparation in the areas of physical education, physical education with an elementary emphasis, aquatics recreation, and health. Physical education minors may be obtained in elementary education, secondary education, recreation, coaching, swimming, physical education for the exceptional child, and health.

Students planning to major or minor in Physical Education should get a copy of the Physical Education Handbook from the department office (No. 1, Oakland Gym) promptly after choosing their major.

In order to be assigned an advisor in the Physical Education Department, any transfer or currently enrolled student at Western who desires to pursue a curriculum in the Department of Physical Education for Women should consult with the Department Chairperson.

Proficiency tests will be offered in the physical education professional activity courses. The proficiency examination procedure is available in departmental office, Room No. 1, Oakland Gymnasium.

Note to Transfer Students:

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 Western Michigan University. It is recommended that PEW 394 (3) and/or PEW 396 (3) be included in the hours taken at Western Michigan University.

Students majoring in Physical Education, Physical Education/Elementary Emphasis, Aquatics, and Recreation are expected to attend the Spring session at the end of their first year of residence.

Majors

The majors of Physical Education, Physical Education/Elementary Emphasis and Aquatics require the following:

General Education Requirement: 35 hours required for University General Education requirement. An additional 5 hours in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.
PHYSICAL EDUCATION
Bachelor of Science Degree
State Elementary and Secondary Provisional Certificate
Advising Chairperson: Jean Friedel

The Physical Education major prepares a student to enter a professional career as a teacher of physical education on the elementary or secondary level, emphasizing the secondary level. The curriculum provides experience and knowledge in the broad field of physical education including dance, aquatics, individual sports, team sports and coaching and advanced techniques in at least one area.

Majors are to have directed teaching experience on both the elementary and secondary levels and are to complete the education sequence as required by the Department of Teacher Education. The student will complete a minimum of 15 clock hours of observing and working with young people on both the elementary and secondary level prior to student teaching. These experiences are included in PEW 394 and PEW 396.

Hours required for this curriculum ........................................127 hrs.

1. Required Cognates ......................................................... 12 hrs.
   Biology 107 ................................................................. 4*
   Biology 210 ................................................................. 4*
   Biology 219 ................................................................. 4*

2. Required Professional Courses ........................................... 40 hrs.
   Please, note in course descriptions when courses are offered and the suggested sequence of course work.

   Academic ................................................................. 21 hrs.
   PEW 190 Intro. to Health, Physical Ed. & Recreation ............. 2
   PEM 280 First Aid & Athletics Training (PEW 461) ................. 2
   PEW 294 Analysis of Movement ......................................... 2
   PEW 295 Cultural Bases of Physical Education ....................... 2
   PEW 390 Scientific Bases of Human Activity ........................ 2
   PEW 391 Psychology of Motor Development ............................ 2
   PEW 392 Measurement & Evaluation .................................... 3
   PEW 394 Teaching Physical Ed. in the Elementary School ........ 3
   PEW 396 Teaching Physical Ed. in the Secondary School .......... 3

   Activity ................................................................. 3 hrs.
   DAN 135 Movement Activities in Education .......................... 1
   PEW 143 Introduction to Games and Sports ........................... 1
   PEW 265 Officiating Series ............................................. 1

   Area I: Dance: Select three courses from the following: .......... 3 hrs.
   DAN 102 Beginning Jazz ................................................. 1
   OR
   DAN 223 Intermediate Contemporary Dance ............................ 2
   DAN 122 Recreational Dance ............................................ 1
   DAN 123 Beginning Contemporary Dance ................................ 1
   DAN 124 Social Dance Forms ........................................... 1

*Applicable to total General Education requirement.
### Area II: Swimming
Select two courses at your own swimming level. 2 hrs.
- **PEGN 2** swimming courses from general program

### Area III: Team Sports
Proficiency in all. Maximum credit hours toward major = 4
- **PEW 130** Soccer, Speedball, Speed-a-way 1
- **PEW 131** Field Hockey and Flag Football 1
- **PEW 142** Volleyball 1
- **PEW 146** Basketball 1
- **PEW 148** Softball 1

### Area IV: Individual Sports
Maximum credit hours toward major = 5
- **PEW 141** Beginning Gymnastics (Pre-req. 120 or perm. of instr.) 1
- **PEW 144** Track and Field 1
- **PEGN 101** Archery 1
- **PEGN 102** Badminton Select at least three of the four courses 1
- **PEGN 122** Golf 1
- **PEW 140** Tennis 1

### Area V: Coaching and Advanced Techniques
Select one from the 260 series: 2 hrs.
- Basketball
- Gymnastics
- Speed Swim
- Track and Field
- Field Hockey
- Softball
- Tennis
- Volleyball

Teaching Assistant: Assist in the teaching of one general activity course prior to student teaching. No credit.

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**PHYSICAL EDUCATION/ELEMENTARY EMPHASIS**

**Bachelor of Science Degree**
State Elementary and Secondary Provisional Certificate

Advising Chairperson: Margie J. Miner

The Elementary Physical Education Major prepares the graduate to enter a professional career as a teacher of physical education on both the elementary and secondary levels. This course of study concentrates upon the developmental tasks of the elementary school child with unique activities which provide for the child's optimum growth. Required courses emphasize the elementary physical education program with a wide range of electives allowing the student flexibility to choose according to her individual needs and interests.

Majors are to have directed teaching experience on both the elementary and secondary levels and are to complete the education sequence as required by the Department of Teacher Education. The student will complete a minimum of 15 clock hours of observing and working with young people on both the elementary and secondary level prior to student teaching. These experiences are included in PEW 394 and PEW 396.
Physical Education

Hours required for this curriculum .................................................. 127 hrs.

1. Required Cognates ...................................................................... 16 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 107</td>
<td>4*</td>
</tr>
<tr>
<td>Biology 210</td>
<td>4*</td>
</tr>
<tr>
<td>Biology 219</td>
<td>4*</td>
</tr>
<tr>
<td>TEED 230</td>
<td>4*</td>
</tr>
</tbody>
</table>

2. Required Professional Courses ............................................... 40 hrs.

Please note in course descriptions when courses are offered and the suggested sequence of course work.

Academic Courses ......................................................................... 25-26 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 150 First Aid</td>
<td>1-2</td>
</tr>
<tr>
<td>PEW 190 Introduction to Health, Physical Ed. &amp; Recreation</td>
<td>2</td>
</tr>
<tr>
<td>PEW 276 Education for Outdoor Living</td>
<td>2</td>
</tr>
<tr>
<td>PEW 294 Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEW 295 Cultural Bases of Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>PEW 296 P.E. for Physical &amp; Learning Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>PEW 390 Scientific Bases of Human Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEW 391 Psychology of Motor Development</td>
<td>2</td>
</tr>
<tr>
<td>PEW 392 Measurement &amp; Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PEW 394 Teaching P.E. in the Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>PEW 396 Teaching P.E. in the Secondary School</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Activity Courses ......................................................... 7 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 120 Stunts, Tumbling, Trampoline</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEW 141 Beginning Gymnastics (with perm. of instructor)</td>
<td>1</td>
</tr>
<tr>
<td>DAN 122 Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEW 130 Soccer, Speedball, Speed-a-way</td>
<td>1</td>
</tr>
<tr>
<td>PEW 143 Introduction to Games &amp; Sports</td>
<td>1</td>
</tr>
<tr>
<td>PEW 144 Track and Field</td>
<td>1</td>
</tr>
<tr>
<td>DAN 204 Teaching Dance in Elementary School</td>
<td>2</td>
</tr>
</tbody>
</table>

Electives ...................................................................................... 8 hrs.

Elect from the following courses and/or other PEW/PEGN courses with permission of advisor.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 142 Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 146 Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 148 Softball</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEW 140 Tennis</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEGN 102 Badminton</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 105 Bowling</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 106 Camp Craft</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 139 Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEGN 165 Yoga</td>
<td>1</td>
</tr>
<tr>
<td>PEGN Swimming—at own level</td>
<td>1</td>
</tr>
</tbody>
</table>

*Applicable to total General Education requirement.
College of Education

PEW 174 Recreational Leadership of Arts & Crafts 2
OR
IE 190 Industrial Arts for Elementary Teacher 3
TEED 355 Learning Exp. Young Children 3

Teaching Assistant: Assist in the teaching of one general activity course prior to student teaching. No credit.

AQUATICS EDUCATION
Bachelor of Science Degree
State Secondary Provisional Certificate
Advising Chairperson: Barbara Stephenson

The graduate in Aquatics Education will be qualified to conduct a total swimming program in a large high school or recreational setting, including the coaching of swimming and synchronized teams as well as teaching all levels of swimming.

Majors are to have directed teaching experience at the secondary level and are to complete the education sequence as required by the Department of Teacher Education.

Hours required for this Curriculum ........................................... 127 hrs.

1. Required Cognates ............................................................... 12 hrs.
   Biology 107 4*
   Biology 210 4*
   Biology 219 4*

2. Required Professional Courses ........................................... 35 hrs.
   Please, note in course description when courses are offered and the suggested sequence of course work.

   Academic Courses ............................................................. 20 hrs.
   PEW 155 Introduction to Aquatic Instruction 3
   PEW 250 Teaching & Coach. Tech. for Speed Swim. & Div. 3
   PEW 252 Teaching & Coach. Tech. for Synchronized Swim. 2
   PEW 253 Show Production 1
   PEW 294 Analysis of Movement 2
   PEW 350 Swimming for the Exceptional Child 3
   PEW 390 Scientific Bases of Human Activity 2
   PEW 392 Measurement & Evaluation 2
   PEM 280 (PEW 461) First Aid & Athletic Training 2

   Activity Courses ............................................................ 9 hrs.
   DAN 123 Beginning Contemporary Dance 1
   PEW 137 Small Craft 2
   PEW 120 Stunts Tumbling, Trampoline 1
   OR
   PEW 141 Gymnastics (with perm. of instructor) 1
   PEGN 151 Swimming—Scuba Diving 1
   PEGN 152 Swimming—Skin Diving 1

*Applicable to total General Education requirement.
Physical Education

PEGN 153 Swimming—Speed Swimming 1
PEGN 154 Swimming—Beg. Springboard Diving 1
OR
PEGN 254 Swimming—Intermediate Springboard Diving 1
PEGN 155 Swimming—Beginning Synchronized 1
OR
PEGN 255 Swimming—Intermediate Synchronized 1

Electives
PEGN 157 Swimming—Water Safety Instructors 2
PEW 160 Theory of Coaching 2
PEGN 254 Swimming—Intermediate Springboard Diving 1
PEGN 255 Swimming—Intermediate Synchronized 1
PEW 265 Officiating Synchronized Swimming 1
PEW 265 Officiating Speed Swimming and Diving 1
PEW 391 Psychology of Motor Development 2
PEW 400 Practicum 1-2

Participation
Aqua Sprites—1 year, no credit
Speed Swimming Team or Diving Team—1 season, no credit
Teaching Assistant—1 semester, no credit

RECREATION
Bachelor of Arts Degree

The Recreation Major is designed to prepare students to assume leadership and/or administrative roles in public, agency or private recreation organizations. The 20 hours of electives within this course of study allows the student great flexibility in preparing for a specific phase of recreation.

Hours Required for this curriculum ........................................ 122 hrs.

General Education Courses ............................................. 35 hrs.

1. Required Professional Courses ...................................... 16 hrs.

Please, note in course descriptions when courses are offered and the suggested sequence of course work.

PEW 150 First Aid 1-2
PEW 170 Introduction to Recreation 3
PEW 274 Recreational Leadership 2
PEW 370 Organization & Administration of Recreation 3
PEW 400 Practicum (Prereq. 150, 170 & 274) 3
PEW 470 Facilities and Areas for Recreation 3

2. Elective Courses .................................................... 20 hrs.

Group I—Not more than two courses
OT 110 General Crafts 3
PEW 174 Recreational Leadership of Arts & Crafts 2
IE 190 Industrial Arts for Elementary Teachers 3
College of Education

Group II—not more than two courses
MUS 140 Music for the Classroom Teacher 4
MUS 290 Recreational Music 2
LIB 546 Storytelling 3
CAS 564 Creative Drama for Children 4

Group III—not more than two courses
PEW 172 Camp Leadership 3
PEM 270 Outdoor Education 2
OR
PEW 276 Education for Outdoor Living 2

Group IV—not more than three courses
PEW 100 Health for Modern Man 4
SOC 210 Modern Social Problems 3
PEW 368 Administration and Organization of Intramural Sports 2
PEM 370 Community Recreation 2
PEM 371 Procedures & Materials in Recreation 2
PEW 516 Issues in Health Education 1-3
SW 572 Community Agency Resources 2
SW 562 Community Organization in Urban Areas 2

Group V—not more than two courses
CAS 130 Public Speaking 3
PEW 155 Teaching of Swimming 3
PEW 350 Teaching of Swim. for the Ex. Child only 3
OT 225 Growth, Development and Aging one 3
TE 250 Human Development and Learning only 4
PEW 300 Seminar 1-4
SOC 352 Introduction to Social Gerontology 3
PEW 399 Field Experience 1-3
PEW 572 Recreation for the Aging 2

Group VI—not more than six courses
PEW or PEGN Activity Courses including those dance classes allowed for General Physical Education credit and PEW 265 Officiating

HEALTH EDUCATION
Bachelor of Science Degree
Advising Chairperson: Margaret S. Large

Hours Required for this Major 36 hrs.

The health education major is a program to prepare health educators who can influence the psychological, sociological, and biological development of individuals and groups to effectively meet the health needs of society.

The major is designed so graduates may enter first level positions in both schools and community agencies and qualify for graduate work.

Students planning to major in health should obtain a copy of the “Health Major Handbook” from the department advisor promptly after choosing their major.

Course Requirements

1. General Education 35 hours required
Physical Education

2. Physical Education ................................................. 2 hrs.

3. Recommended: Students who wish to substitute other courses should consult the advisor in advance:
   Required Cognates ................................................. 10 hrs.
   - PSY 120 Introduction to Psychology 3
   - SOC 200 Principles of Sociology 3
   - BIO 107 Biological Science 4

4. Required Courses .................................................. 28 hrs.
   - PEW 100 Health for Modern Man 4
   - PEW 275 Community Health 3
   - PEW 342 Elementary School Health and Safety Education 3
   - OR
   - PEW 343 Secondary School Health and Safety Education 3
   - PEW 410 Public Health II 3
   - PEW 412 Administration in Health Education 3
   - BIO 205* The Human Body in Health and Disease 4
   - BUS 288 Records Management 2
   - EDUC 399 Field Experience 2
   - PEGR 514 Methods and Materials in Health Education 2
   - PEGR 516 Issues in Health Education 2

5. Electives ............................................................. 8 hrs.
   Courses must be selected with the consent of advisor
   Suggested Courses
   - BIO 412 Microbiology 4
   - BUS 292 Consumer Principles and Practices 3
   - HEC 212 Foods for Man 3
   - HEC 220 Introduction to Human Sexuality 3
   - PEW 150/280 First Aid/Foundations of Sports Injuries 1-2
   - PEW 400 Practicum 1-3
   - PEW 516 Issues in Health Education 2
   - PSY (300-400 level) 3
   - SOC 352 Introduction to Social Gerontology 3
   - SOC 373 Sociology of Health and Illness 3
   - TEED 340 General Safety Education 3
   - TEED 350 The Young Child, His Family and His Society 3
   - TEED 555 Alcohol Education 2
   - GS 316 Mass Media and Mass Manipulation 4

MINORS

PHYSICAL EDUCATION/ELEMENTARY EMPHASIS

1. Cognates ............................................................. 4 hrs.
   - Biology 107
   - Biology 210
   - TEED 230

*Bio 210: Mammalian Anatomy or Bio 219: Human Physiology may be used as substitutes for Bio. 205.
### 2. Required Professional Courses

#### Academic

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>PEW 276</td>
<td>Education for Outdoor Living</td>
<td>2</td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEW 296</td>
<td>P. E. for Physical &amp; Learning Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>PEW 394</td>
<td>Teaching P. E. in the Elementary School</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Activity

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEW 120</td>
<td>Stunts, Tumbling, Trampoline</td>
<td>1</td>
</tr>
<tr>
<td>OR PEW 141</td>
<td>Beginning Gymnastics (Perm. of Instructor)</td>
<td>1</td>
</tr>
<tr>
<td>PEW 143</td>
<td>Introduction to Games &amp; Sports</td>
<td>1</td>
</tr>
<tr>
<td>PEW 144</td>
<td>Track &amp; Field</td>
<td>1</td>
</tr>
<tr>
<td>DAN 122</td>
<td>Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>DAN 204</td>
<td>Teaching Dance in the Elementary School</td>
<td>2</td>
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</table>

#### Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGN 102</td>
<td>Badminton</td>
<td>1</td>
</tr>
<tr>
<td>OR PEW 140</td>
<td>Tennis</td>
<td>1</td>
</tr>
<tr>
<td>PEW 130</td>
<td>Soccer, Speedball, Speed-a-way</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 135</td>
<td>Personal Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 139</td>
<td>Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>OR PEGN 165</td>
<td>Yoga</td>
<td>1</td>
</tr>
<tr>
<td>PEW 142</td>
<td>Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 146</td>
<td>Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 148</td>
<td>Softball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 150</td>
<td>First Aid</td>
<td>1-2</td>
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</table>

#### SECONDARY EDUCATION MINOR

1. **Cognates**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 107</td>
<td></td>
<td>4**</td>
</tr>
<tr>
<td>Biology 210</td>
<td></td>
<td>4**</td>
</tr>
<tr>
<td>Biology 219</td>
<td></td>
<td>4**</td>
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</tbody>
</table>

2. **Required Professional Courses**

#### Academic

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEW 190</td>
<td>Introduction to Health, Physical Ed.</td>
<td>2</td>
</tr>
<tr>
<td>&amp; Recreation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Human Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEW 390</td>
<td>Scientific Basis of Human Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEW 392</td>
<td>Measurement &amp; Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PEW 396</td>
<td>Teaching of Physical Education in Secondary School</td>
<td>3</td>
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</table>

(Recommended to be taken Junior year)

#### Activity

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td>10 hrs.</td>
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</table>

#### Required

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEW 143</td>
<td>Introduction to Games &amp; Sports</td>
<td>1</td>
</tr>
<tr>
<td>PEW 265</td>
<td>Elect one officiating course</td>
<td>1</td>
</tr>
</tbody>
</table>

**Applicable to total General Education requirement.**
Dance: Elect 2 semester hours from the following:  
DAN 102 Beginning Jazz  
OR  
DAN 123 Beginning Contemporary Dance  
DAN 122 Recreational Dance  
OR  
DAN 124 Social Dance Forms  

Individual Sports: Elect 4 semester hours from the following:  
PEGN 101 Archery  
PEGN 102 Badminton  
PEGN 122 Golf  
PEW 140 Tennis  
PEW 120 Stunts, Tumbling, Trampoline  
PEW 141 Beginning Gym.  
(Prereq. PEW 120 or permission of instructor)  
PEW 144 Track & Field  

Team Sports: Elect 2 semester hours from the following:  
PEW 130 Soccer, Speedball, Speed-a-way  
PEW 131 Field Hockey & Flag Football  
PEW 142 Volleyball  
PEW 146 Basketball  
PEW 148 Softball  

RECREATION MINOR  

1. Hours Required for Minor ............................................. 22 hrs.  
   Required Professional Courses ......................................... 12 hrs.  
   PEW 150 First Aid .................................................. 1  
   PEW 170 Introduction to Recreation ................................ 3  
   PEW 274 Recreational Leadership ................................ 2  
   PEW 370 Organization and Administration of Recreation ........ 3  
   PEW 400 Practicum (Prereq: 150, 170 and 274) .............. 3  
   Electives ........................................................................ 10 hrs.  
   Select at least ten hours from no more than two groups.  

Group I—not more than two courses  
OT 110 General Crafts ................................................... 3  
PEW 174 Recreational Leadership of Arts and Crafts ........... 2  
IE 190 Industrial Arts for Elementary Teachers ............... 3  

Group II—not more than two courses  
MUS 140 Music for the Classroom Teacher ......................... 4  
MUS 290 Recreational Music ............................................ 2  
LIB 546 Storytelling ..................................................... 3  
CAS 564 Creative Drama for Children ............................... 4  

Group III—not more than two courses  
PEW 172 Camp Leadership ............................................... 3  
PEM 270 Outdoor Education ............................................. 2  
PEW 276 Education for Outdoor Living ............................. 2
Group IV—not more than three courses
PEW 100 Health for Modern Man 4
PEW 368 Administration and Organization of Intramural Sports 2
SOC 210 Modern Social Problems 3
PEM 370 Community Recreation 2
PEM 371 Procedures and Materials in Recreation 2
PEW 516 Issues in Health Education 1-3
SW 562 Community Organization in Urban Areas 2
SW 572 Community Agency Resources 2

Group V—not more than two courses
CAS 130 Public Speaking 3
PEW 155 Teaching of Swimming 3
OT 225 Growth, Development and Aging 3
MGT 250 Small Business Administration 3
TEED 250 Human Development and Learning 4
PEW 300 Seminar 1-3
PEW 350 Teaching of Swimming for the Exceptional Child 3
SOC 352 Introduction to Social Gerontology 3
PEW 399 Field Experience 1-3
PEW 470 Recreational Facilities and Areas 3
PEW 572 Recreation for the Aging 2

Group VI—not more than six courses
PEW or PEGN Activity courses including those dance classes allowed for General Physical Education credit and
PEW 265 Officiating 6

PHYSICAL EDUCATION MAJOR — COACHING MINOR

Designed to qualify the physical education major to coach interscholastic and intercollegiate athletic teams. The coaching minor will provide instruction in the sports which are currently emphasized by the Michigan Interscholastic Sports Program: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics, and golf.

Hours Required for this Minor .......................... 21 hrs.

Required Courses ........................................ 8-10 hrs.
PEW 160 Theory of Coaching .......................... 2
PEW 220 Intercollegiate Team Participation .......... 1
PEW 461 (PEM 280) First Aid and Athletic Training 2
PEW 368 Admin. and Organ. of Intramural Sports 2
PEW 400 Practicum ...................................... 1-3

Professional Electives ................................. 8 hrs.
PEW 260 Advanced Techniques and Coaching Series—
Prerequisites: Must have had first level course(s) or permission of instructors. Elect
8 hours (must include at least one team
sport and include at least one individual sport.

<table>
<thead>
<tr>
<th>Team</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball . 2 hrs.</td>
<td>Gymnastics . .2 hrs.</td>
</tr>
<tr>
<td>Field Hockey . 2</td>
<td>Tennis . .2</td>
</tr>
<tr>
<td>Softball . .2</td>
<td>Track and Field .2</td>
</tr>
<tr>
<td>Volleyball . .2</td>
<td>(PEW 250) Speed Swim/Div. .2 (1)</td>
</tr>
</tbody>
</table>

PEW 265 Officiating—Select one of the following officiating courses to complete the 9 hrs. of Professional Electives.
Basketball . 1 hr. Speed Swimming . 1 hr.
Field Hockey . 1 Volleyball . .1
Gymnastics . 1

General Electives .................................................. 3-4 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 146</td>
<td>Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 148</td>
<td>Softball</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 153</td>
<td>Swimming — Speed</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 154</td>
<td>Swimming — Springboard Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 157</td>
<td>Swimming — WSI</td>
<td>1</td>
</tr>
<tr>
<td>PEW 260</td>
<td>Additional Coaching Series</td>
<td>2</td>
</tr>
<tr>
<td>PEW 250</td>
<td>Speed Swimming and Diving</td>
<td></td>
</tr>
<tr>
<td>PEW 265</td>
<td>Additional Officiating Course — 1</td>
<td></td>
</tr>
<tr>
<td>PEW 391</td>
<td>Psychology of Motor Development — 2</td>
<td></td>
</tr>
<tr>
<td>PEM 561</td>
<td>Principles and Problems of Coaching — 2</td>
<td></td>
</tr>
<tr>
<td>PEW 580</td>
<td>Prevention and Treatment of Sports Injuries — 2</td>
<td></td>
</tr>
</tbody>
</table>

**COACHING MINOR**

This minor is a SECOND MINOR ONLY. It does NOT certify a student to teach physical education. The coaching minor will provide instruction in the sports which are currently emphasized by the Michigan Interscholastic Sports Programs: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics and golf.

**COACHING MINOR — NON-MAJOR**

**Hours Required for this Minor** .................................. 21 hrs.

**Required Courses** .................................................. 10-12

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 160</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEW 220</td>
<td>Intercollegiate Team Participation</td>
<td>1</td>
</tr>
<tr>
<td>PEW 461</td>
<td>(PEM 280) First Aid and Athletic Training</td>
<td>2</td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEW 388</td>
<td>Admin. and Organ. of Intramural Sports</td>
<td>2</td>
</tr>
<tr>
<td>PEW 400</td>
<td>Practicum</td>
<td>1-3</td>
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</tbody>
</table>

**Professional Electives** ......................................... 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PEW 260</td>
<td>Advanced Techniques and Coaching Series —</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisites: Must have had first level</td>
<td></td>
</tr>
</tbody>
</table>
course(s) or permission of instructors. Elect 6 hours (must be one team sport and one individual sport).

<table>
<thead>
<tr>
<th>Team</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>Gymnastics</td>
</tr>
<tr>
<td>2 hrs.</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>Tennis</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Softball</td>
<td>Track and Field</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Volleyball</td>
<td>PEW 250 Speed Swim/Div.</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

PEW 265 Officiating—Select one of the following officiating courses to complete the 7 hrs. of Professional Electives.

<table>
<thead>
<tr>
<th>Team</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>Speed Swimming</td>
</tr>
<tr>
<td>1 hr.</td>
<td>1 hr.</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>Volleyball</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
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<tr>
<td>Gymnastics</td>
<td></td>
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General Electives 3-4 hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PEW 131 Field Hockey and Flag Football</td>
<td>1</td>
</tr>
<tr>
<td>PEW 141 Gymnastics (Permission of Instructor)</td>
<td>1</td>
</tr>
<tr>
<td>PEW 142 Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 144 Track and Field</td>
<td>1</td>
</tr>
<tr>
<td>PEW 146 Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEW 148 Softball</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 153 Swimming — Speed</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 154 Swimming — Springboard</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 157 Swimming — WSI Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 160 Tennis</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 260 Tennis — Intermediate</td>
<td>1</td>
</tr>
<tr>
<td>PEW 260 Additional Coaching Series</td>
<td>2</td>
</tr>
<tr>
<td>PEW 250 Speed Swimming and Diving</td>
<td>2</td>
</tr>
<tr>
<td>PEW 265 Additional Officiating Courses</td>
<td>1</td>
</tr>
<tr>
<td>PEW 390 Scientific Bases of Human Activity</td>
<td>2</td>
</tr>
<tr>
<td>PEW 391 Psychology of Motor Development</td>
<td>2</td>
</tr>
<tr>
<td>PEM 561 Principles and Problems of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEM 580 Prevention and Treatment of Sports Injuries</td>
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</table>

SWIMMING

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PEW 260 Additional Coaching Series</td>
<td>2</td>
</tr>
<tr>
<td>PEW 250 Speed Swimming and Diving</td>
<td>2</td>
</tr>
<tr>
<td>PEW 265 Additional Officiating Courses</td>
<td>1</td>
</tr>
<tr>
<td>PEM 561 Principles and Problems of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEM 580 Prevention and Treatment of Sports Injuries</td>
<td>2</td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PEM 561 Principles and Problems of Coaching</td>
<td>2</td>
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SWIMMING

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 580 Prevention and Treatment of Sports Injuries</td>
<td>2</td>
</tr>
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</table>

*Applicable to total General Education requirement.
### SWIMMING MINOR

#### 3. Required Professional Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 155</td>
<td>Introduction to Aquatic Instruction</td>
<td>3</td>
</tr>
<tr>
<td>PEW 250</td>
<td>Teaching and Coach. Tech. for Sp. Swim &amp; Diving</td>
<td>3</td>
</tr>
<tr>
<td>PEW 252</td>
<td>Teaching and Coach. Tech. for Synchronized Swim</td>
<td>2</td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEW 350</td>
<td>Swimming for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Activity</strong></td>
<td><strong>4 hrs.</strong></td>
</tr>
<tr>
<td>DAN 123</td>
<td>Beginning Contemporary Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 153</td>
<td>Swimming—Speed</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 154</td>
<td>Swimming—Springboard Diving</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
<td></td>
</tr>
<tr>
<td>PEGN 254</td>
<td>Swimming—Int. Springboard Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 155</td>
<td>Swimming—Synchronized</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
<td></td>
</tr>
<tr>
<td>PEGN 255</td>
<td>Swimming—Int. Synchronized</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Electives</strong></td>
<td><strong>4 hrs.</strong></td>
</tr>
<tr>
<td>PEGN 151</td>
<td>Swimming—Scuba Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 152</td>
<td>Swimming—Skin Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEW 160</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEW 353</td>
<td>Show Production</td>
<td>1</td>
</tr>
<tr>
<td>PEW 265</td>
<td>Officiating Speed Swim. &amp; Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEW 265</td>
<td>Officiating Synchronized Swimming</td>
<td>1</td>
</tr>
<tr>
<td>PEW 391</td>
<td>Psychology of Motor Development</td>
<td>2</td>
</tr>
<tr>
<td>PEM 280</td>
<td>(PEW 461) First Aid &amp; Athletic Training</td>
<td>2</td>
</tr>
</tbody>
</table>

Participation is required in Aqua Sprites—one year, speed swimming/diving team—one season, and teaching assistant—one semester.

### 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 all courses listed in section 3 for Physical Education Majors and Special Education Majors.

#### Hours Required for this Minor

**21 hrs.**

1. **General Education Requirement:** 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. **Required Cognates**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 107</td>
<td></td>
<td>4*</td>
</tr>
<tr>
<td>Biology 210</td>
<td></td>
<td>4*</td>
</tr>
</tbody>
</table>

*Applicable to total General Education requirement.
3. Required Courses .............................................. 16 hrs.
PEW 144 Track and Field .................................... 1
PEW 296 Physical Education for the Exceptional Child ... 3

Physical Education Majors
SE 502 Educational Provisions for the Learning Disabled .......... 3

OR
SE 530 Education for the Exceptional Child ..................... 3
SE 588 Behavior Disorders in School Aged Children ............. 3

Special Education Majors
PEW 120 Stunts, Tumbling, Trampoline ..................... 1
OR
PEW 141 Beginning Gymnastics (Perm. of Inst.) ............. 1
DAN 135 Movement Activities in Education ................... 1
PEW 143 Introduction to Games and Sports .................. 1
PEW 394 Teaching Physical Ed. in the Elementary School ......... 3

4. Electives .................................................... 5 hrs.
PEW 350 Swimming for the Exceptional Child ................... 3
PEW 400 Practicum ........................................... 1-3
PEW or PEGN Additional activity courses ..................... 1-3

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 and Sociology. The Health Education group minor consists of 24 hours. The program is designed to offer courses in multidisciplinary areas and to meet state certification standards.

Cognates—Students should elect Biology 107—4 semester hours (Biological Science) as part of the distribution program in general education.

Required Courses .............................................. 11-12hrs.
PEW 100 Health for Modern Man ................................ 4
PEW 342 Elementary School Health & Safety Ed. ............. 3
OR
PEW 343 Secondary School Health & Safety Ed. ............ 3
PEW 275 Community Health ................................... 3
OR
PEW 514 Health Education Materials and Methods .......... 2
PEW 516 Issues in Health Education .......................... 2

Elective Courses .............................................. 12-13 hrs.
1. Basic Sciences ............................................ 4
   Biology 205 Human Body in Health & Disease .............. 4
### Physical Education

**Biology 210** Mammalian Anatomy ........................................ 4  
**Biology 219** Human Physiology ........................................... 4  
**GSSC 133** Issues in Social Biology .................................... 4

### 2. Behavioral Sciences .................................................. 6 hrs.

**PSY 150** Behavioral Modification ...................................... 3  
**PSY 190** General Psychology ........................................... 3  
**SOC 200** Principles of Sociology ...................................... 3  
**CAS 170** Interpersonal Communication ................................. 3  
**SW 210** Social Work Services & Prof. Roles ......................... 3  
**TEED 350** The Young Child, His Family & His Society .............. 3

### 3. Health Education Aspects of Man and His Environment .......... 3-6

**HEC 212** Foods for Man .................................................. 3  
**HEC 220** Introduction to Human Sexuality ............................ 3  
**PEW 150/461** First Aid/Foundations of Sports Injuries 1-2  
**PEW 516** Issues in Health Education .................................. 2-4  
**TEED 340** Safety Education ............................................. 3  
**TEED 555** Alcohol Education ............................................ 2

### 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.*

### PHYSICAL EDUCATION

#### PROFESSIONAL ACTIVITY COURSES

**PEW**

- **120** Stunts, Tumbling, Trampoline .................................. 1 hr. Fall, Winter
- **130** Soccer, Speedball Speed-a-way .................................. 1 hr. Spring
- **131** Field Hockey and Flag Football ................................. 1 hr. Fall
- **137** Small Craft ..................................................... 2 hrs. Fall, Spring
- **140** Tennis ............................................................ 1 hr. Spring
- **141** Gymnastics (Prereq. 120 or permission of instructor) ....... 1 hr. Fall, Winter
  - 1 hr. Fall, Spring

**142** Volleyball .......................................................... 1 hr. Fall, Winter
**143** Introduction to Games & Sports .................................. 1 hr. Fall, Winter, Spring
**144** Track and Field .................................................... 1 hr. Spring
**146** Basketball ........................................................... 1 hr. Winter, Spring
**148** Softball ............................................................... 1 hr. Spring

### PHYSICAL EDUCATION ACADEMIC COURSES

*(Course descriptions in italics are open to all students.)*

**100** Health for Modern Man (An Introduction to Health) ......... 4 hrs. Fall, Winter

*The focus of this introductory health course is to assist students in achieving an awareness of optimal physical, mental and social health in*
a changing environment. Guest lecturers from the community will present some of the topics considered important to the health of modern man. This course is open to all students, and is the first course in the Health Education program.

150 First Aid 1-2 hrs. Fall, Winter, Spring
The standard course in first aid techniques leading to Red Cross certification. (Variable Credit)

155 Introduction to Aquatic Instruction 3 hrs. Winter
Administration and organization of aquatic programs. Teaching methods and materials, including experience teaching different age levels. Prerequisites: PEGN 155, PEGN 157.

160 Theory of Coaching 2 hrs. Winter
The philosophy, principles, administration, organization, guidelines, and motivating techniques of coaching.

170 Introduction to Recreation 3 hrs. Fall
An introduction to the field of recreation including current trends, job descriptions in various settings, programming, evaluation.

172 Camp Leadership 3 hrs. Spring
The investigation of the responsibilities of the counselor in the camp. Exploration of the aims and values of the total camp program are emphasized.

174 Recreational Leadership of Arts and Crafts 2 hrs. Fall (odd years)
This course includes inexpensive arts and crafts suitable for large and small groups. Emphasis will be on the planning, preparation, organization and direction of craft program for children and adults.

190 (132 & 190) Introduction to Health, Physical Education and Recreation 2 hrs. Fall
An exploration of the profession in light of the vastness of the total field. The future physical educator will view herself in the cognitive and psychomotor domain, relating the two in the practical application.

220 Intercollegiate Team Participation 1 hr. Fall, Winter, Spring
Students will participate as a student assistant, i.e. attend all practices, scheduled events, score, chart, do other pertinent duties the coach directs. Students that have been members of an intercollegiate team will be waived and substitute an elective for this requirement. Coaching minors or permission of instructor.

250 Teaching and Coaching Techniques for Speed Swimming and Diving 3 hrs. Fall
Progressions for competitive swimming, diving, and water polo and meet procedures. Prerequisites: PEW 155, PEGN 153, PEGN 154 or 254.

252 Teaching and Coaching Techniques for Synchronized Swimming 2 hrs. Winter
Progressions for synchronized figures, choreography, and club organization. Prerequisites: PEW 155, PEGN 155 or 255.
Physical Education

253 Show Production  1 hr. Winter
Advanced choreography and swim show management. Prerequisite: PEW 252.

260 Coaching and Advanced Technique Series  2 hrs. Fall, Winter
Coaching and advanced skills, selection of a team, preparation, judging and conducting competitive events. Prerequisites: Must have had first level course(s) or permission of instructor.
Offered on even years: gymnastics and volleyball—Winter; track and field and softball—Fall. Offered on odd years: field hockey and tennis—Fall; basketball—Winter.

265 (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. Prerequisites: Must have had the first level activity or permission of instructor.
Courses offered as follows: Fall semester—Field hockey, softball and synchronized swimming—(odd years). Winter semester—Basketball, volleyball and speed swimming—(even years).

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.

274 Recreational Leadership  2 hrs. Winter
A course studying the skills, knowledge and techniques necessary to conduct social recreational programs for all ages. Creative and effective leadership stressed through observations, participation and the teaching of activities.

275 Community Health  3 hrs. Winter
This course deals with the historical development of the principles of organized public health activities and their application to present day life. Introduces the student to the scope of public health programs.

276 Education for Outdoor Living  2 hrs. Fall (odd years)
A course in the philosophy, methods and materials of outdoor education emphasizing outdoor education activities for children and youth.

294 Analysis of Movement  2 hrs. Fall, Winter, Spring
The study of the movement of muscles and the application of kinesiology to physical activity. Prerequisite: Biology 210.

295 (190) Cultural Bases of Physical Education  2 hrs. Winter
The application of history, principles, and philosophy of H.P.E.R. to the current movements and trends in the profession. Prerequisite: PEW 190.

296 Physical Education for the Exceptional Child  3 hrs. Winter
The activities and games used in corrective adaptive and development programs for children with mental or physical handicaps and those with learning disabilities. An emphasis will also be placed on activities for children with perceptual handicaps and on activities to augment academic learning.
College of Education

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 Chairperson of Department of Physical Education for Women.

340 Physical Education for the Elementary Classroom Teacher 1 hr. Fall, Winter, Spring, Summer
This course is structured for the future elementary classroom teacher and/or special education teacher. It provides experience in the participation and teaching of appropriate elementary physical education movement activities in the areas of basic skills, stunts and tumbling, simple games and sports, rhythms, and classroom correlated activities. For juniors and seniors. Should be taken before the directed teaching experience. This course not for physical education majors or minors. See PEW 394.

342 Elementary School Health and Safety Education 3 hrs. Fall, Winter
This course is directed toward prospective elementary school teachers. It is designed to provide knowledge and experiences related to the total school health program.

343 Secondary School Health and Safety Education 3 hrs. Fall, Winter
This course is directed toward prospective secondary school teachers. Through the media of knowledge and experiences the total school health program is brought into focus as an integral part of the secondary school program.

350 Swimming for the Exceptional Child 3 hrs. Fall
The study of various handicaps, values, of swimming and teaching techniques for the exceptional child. Includes practical experiences with handicapped children. Prerequisites: PEW 155, PEGN 157 or permission of instructor.

356 Therapeutic Needs and Programs for the Exceptional Child 3 hrs. Fall
The evaluation, interpretation and planning of therapeutic and rehabilitation programs for the handicapped child. Emphasis is placed on programs for the orthopedically handicapped, the cerebral palsied, the epileptic, the blind and such conditions as multiple sclerosis, muscular dystrophy, rheumatic fever and cardiac disorders.

368 Administration and Organization of Intramural Sports 2 hrs. Winter (odd years)
The problems, policies, finances, eligibility, awards, officiating, publicity and procedures related to the intramural program.

370 Organization and Administration of Recreation 3 hrs. Fall (even years)
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.
507

Physical Education

390 Scientific Bases of Human Activity 2 hrs. Fall, Winter
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, and therapeutic aspects of exercise and fitness. Prerequisites: Biology 219, PEW 190 or permission of instructor.

391 Psychology of Motor Development 2 hrs. Fall, Winter
Investigate theory and problems related to motor skill development of the psychomotor domain. Attention will be given to the areas of perceptual learning, transfer of training and psychology of sports. Direct application will be given through class lectures and laboratory experiments. Prerequisites: Biology 219 or permission of instructor.

392 Measurement and Evaluation 2-3 hrs. Fall, Winter
The elements of test construction, item analysis, administration of a test and elementary statistics. (Variable credit)

394 (290) Teaching Physical Education in the Elementary School 3 hrs. Fall, Winter
Concepts and practices that actuate the sequential development of an elementary physical education program are examined. Methods of instruction, program planning, and evaluation are explored. Each student must reserve one half day each week for a participation experience in an elementary school. Prerequisites: PEW 120, 143, 144; DAN 204.

396 (292) Teaching Physical Education in the Secondary School 3 hrs. Fall, Winter
A study of the total secondary school program in physical education including curriculum, organization and public relations. Emphasis in the course is on current teaching methods. A minimum of 15 hours of participation with secondary school students is required for which the student should save at least two blocks of time weekly. Prerequisites: PEW 190, 120 or 141, 1 dance course, 2 individual sports and 2 team sports.

400 Practicum 1-3 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 Chairperson of the Department of Physical Education for Women.

410 Health Education: Public Health II 3 hrs. Fall
This course will analyze the relationships of public health programs, preventive medicine, and health education; techniques of group motivation and dynamics; the role of the health educator in group procedures and community organization; indigenous health problems, their pathology, treatment and control; principles of epidemiology; and public health aspects of chronic and acute disease; and special health care programs.

412 Health Education: Administration in Health Education 3 hrs. Winter
The purpose of this course is to introduce the student to leadership roles and administrative skills as they relate to health education.
461 First Aid and Athletic Training 2 hrs.
The knowledge and skill in meeting emergencies. The use of massage, strappings, and training room techniques. Prerequisites: Biology 107 or 101 and 210.

470 Recreational Facilities and Areas 3 hrs. Fall (odd years)
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.

491 Introduction to Research 3 hrs.
The techniques fundamental to an individual approach to research and problem solving.

493 Testing and Developmental Programs for the Exceptional Child 3 hrs. Winter
A study of the developmental programs of various leaders in the field, and the adaptation of these theories to practical situations in the local community. The various methods of assessing the exceptional child will be discussed and practiced. Students will be involved with testing children, establishing programs for children and assessing the results of the program.

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. Prerequisites: PEW 342, 343, or permission of instructor.

516 Issues in Health Education 1-3 hrs.
The focus will be placed on current health issues. May be designed to deal with one issue or several.

545 Philosophies of Physical Education 2 hrs.
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, personnel problems and public relations.

572 Recreation for the Aging 2 hrs.
An overview of aging especially as it relates to leisure pursuits and organized recreation. Includes observation, participation and leadership of recreational activities or programs for retirees, nursing homes, senior citizens housing units and clubs. Suggested prerequisite: Course in Gerontology.

598 Readings in Health, Physical Education, 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.
Special Education

Joseph J. Eisenbach, Head

Lawrence L. Ashbaugh Robert Howell R. Hunt Riegel
Alonzo Hannaford Elizabeth Lawrence Donald F. Sellin
Donna Henderson Abraham Nicolaou Isadore Turansky
Robert Howell Robert J. Westley

The Department of Special Education offers undergraduate and graduate programs for the preparation of teachers, administrators and clinical service personnel in the areas of visually impaired, emotionally disturbed, crippled and homebound, and mentally handicapped. Students in undergraduate 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 officially admitted to, and enrolled in, undergraduate curricula in Special Education, are expected to consult with departmental advisors early in their college career. Questions regarding enrollment procedures in Special Education, course substitutions, or practicum placements, should be referred to the student's advisor.

SPECIAL EDUCATION

474 Directed Teaching in Special Education 4-8 hrs.
See p. 473.

502 Educational Provisions for the Learning Disabled 3 hrs.
This course is specifically designed for prospective teachers who are interested in identifying and instructing learning disabled children and youth in a regular classroom setting. Emphasis will be placed on (1) identifying the exceptional pupil; (2) developing an educational profile which reveals the learner's strength and weaknesses; (3) identifying and describing methods and materials utilized in teaching the learning disabled individual. Open to all students except majors in Special Education curricula. Prerequisites: TEED 250, 312, junior standing and consent of Department.

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. Credit not applicable toward a graduate degree in Special Education.
533 Diagnostic and Prescriptive Techniques in Special Education 4hrs.

A thorough study of educational diagnostic instruments and techniques will precede the student's utilization of these measures in evaluating exceptional children and youth. Lectures, taped and filmed interviews, and live demonstrations are utilized.

530 Education of Exceptional Children 3hrs.

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. Prerequisite: Junior standing and consent of Department.

531 Practicum in Special Education 2hrs.

Students enrolled in this course will be assigned to special classes in public or residential schools serving exceptional children and 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. Prerequisite: TEED 250 and consent of Department.


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 and consent of Department.

533 Diagnostic and Prescriptive Techniques in Special Education 4hrs.

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 4hrs.

Critical issues in determining curricular expectations for atypical 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 1hr.

A course especially designed for selected undergraduate majors in Special Education curricula. Emphasis will be placed on theoretical
Special Education 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 and consent of Department.

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 dissonance 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 consent of Department.

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.
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 21 hours in professional education courses. A “C” average or better must be earned in required professional courses.

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 or the combined spring and summer sessions of their senior year. Students with irregularities in their professional work or with advanced credit in education should confer with the Teacher Education orientation and advisement office at the earliest possible date. Those majoring in certain fields requiring continuous study throughout the senior year may, upon application to the Department of Directed Teaching, be permitted to take 450 during the other semester of that year.

INTEGRATED CREATIVE ARTS MINOR

The interdepartmental minor, offered for elementary school teachers, emphasizes the integration of all the arts into the core of the elementary
school curriculum, and the development of teacher behaviors in stimulating creative processes in problem-solving. Those who select the minor must be admitted through a personal conference with Dr. Mary Cain. The minor consists of 24 semester hours, distributed as follows:

- Teach. Ed. 230—The Nature of Creativity ........................................... 4 hrs.
- Dance 341—Creative Movement in the Elementary School ................... 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
- Teach. Ed. 430—Creativity in the Elem. School .................................. 4

Students enrolled in the minor must take Teacher Education 430 (Creativity in the Elementary School) after they have taken all other courses in this group.

**TEACHER EDUCATION (TEED) COURSES**

**100 Introduction to Education** 2 hrs.
This course is designed to provide an early introduction to the profession of teaching and to the educational services present in communities of the state and nation. Field trips, observations, audio-visual materials, resource persons, tests and personal inventories are used to acquaint students with the purposes and functions of education in American society, and to help students make intelligent choices of areas of specialization within the profession. Course meets three hours a week for two hours credit.

**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.

**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.

**220 Rural Sociology** 3 hrs.
A study of life in the rural environment—local, regional and world wide, 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.
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.

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.

250 Human Development and Learning 4 hrs.
This course traces the development of human beings from conception to maturity. Consideration is given to those factors which facilitate or inhibit normal progress in the areas of physical, emotional, social and intellectual development. Attention is also given to the development of the self-concept for the purpose of helping students to become more aware of themselves and of their relationships with others. Students are required to observe and/or participate with children and/or youth during the semester enrolled. The method, purpose and location of such experiences shall be determined by the instructor.

300 Teaching and Learning (Elementary) 3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; non-instructional duties of the teacher in school and community. Prerequisite: TEED 250.

301 Teaching and Learning (Secondary) 3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; non-instructional duties of the teacher in school and community. Prerequisite: TEED 250.

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.

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.

340 General Safety Education 3 hrs.
A survey course. The philosophy and psychology of accident prevention in the areas of public, home, industrial, and school safety will be studied. Emphasis will be on safe human behavior. The course is intended for elementary, middle, and high school teachers.

350 The Young Child, His Family and His Society 3 hrs.
A study of the effects of family, peer group, and society on the development of young children. Emphasis will be placed on family styles and child-rearing practices, and their effects on learning and other behavior. Family constellations, the learning of sex-roles, the effects of divorce, and similar phenomena will be studied. Consideration will be given to the effect of cultural and sub-cultural differences on early childhood development, and students will look at the contemporary American scene as it affects young children. Prerequisite: TEED 250.

351 Reading and Related Communication Skills for Early Childhood 4 hrs.
A study of the young child's verbal and non-verbal language, and how he records and interprets language. An awareness of the relationship of experience to language development, and of the many approaches to reading. Emphasis will be placed on an examination and evaluation of current reading programs for young children, as well as on experiences in selecting books, story-telling, writing for and with children, and the production of a wide variety of audio-visual materials to be used with children.

352 Reading and Related Communication Skills for Middle and Upper Grades 4 hrs.
A study of the multi-ethnic language of this age group, and of how these youngsters record and interpret language. Emphasis will be placed on an examination and evaluation of reading programs in current use, on skills for teaching reading, and on individualized learning. Grouping for learning, skills for reading in the content fields, testing, and remedial techniques will be stressed. Emphasis will be placed on book selection, story-telling, creative writing, and the production of a wide variety of audio-visual materials to be used in selected classrooms.

355 Learning Experiences for Young Children 3 hrs.
This course is designed to help students become skillful in diagnosing learning needs, and in designing, practicing, and evaluating learning experiences for young children. Emphasis will be placed on the importance of play to young children's learning. Students will receive practice in producing stimulating experiences, environments, and materials for young children's concept development.

398 Special Studies in Education 1-6 hrs.
With variable topics and variable credit, this course is designed for undergraduates who, by virtue of their special interest or concerns, find it desirable to pursue in greater depth topics of problems related to children's educational development. The course will be offered under the following conditions: (1) that a written outline of the offering be approved by the Department Chairman, and (2) that prior arrangement be made with a faculty member or faculty members. The course offers
variable credit from one through six semester hours. Students may repeat the course, so long as topics differ. Each offering of 398, Special Studies in Education, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 398 may be applied toward meeting professional program requirements.

408 Supervision in Rural Area Schools 1-2 hrs.
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.
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. Prerequisite: TEED 201.

416 Later Elementary Education 3 hrs.
A study of the characteristics and needs of pupils in the later-elementary grades and of the materials and methods of instruction.

430 Creativity in the Elementary School 4 hrs.
A synthesis of the principles developed in the Integrated Creative Arts minor, as applied to teaching and learning at the Elementary school level. Emphasis is placed on the integration of creative processes in elementary school curriculum and instruction on the teacher as problem-solver, and on the creation of structures which accommodate individualization of instruction and creative problem-solving in children. Team-taught by faculty members from the Departments of Art, Communication Arts and Sciences, Dance, Music, and Teacher Education.

442 Fundamentals of Driver Education 2 hrs.
Fundamentals, principles, practices, objectives, and subject matter content of high school Driver Education and Traffic Safety. Methods of teaching in the classroom. First of four required courses to certify Driver Education teachers. Prerequisites: Junior level and valid driver's license.

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.

455 Historical, Social, and Philosophical Perspectives on Education for Young Children 3 hrs.
A review of the history and philosophy of early childhood education in its social setting, with an application to today's programs for young children. Students will visit, appraise, and critically evaluate a variety of programs for young children. Experiences will be provided in designing and evaluating programs in the light of philosophy and specific objectives. Ways of administering and financing programs for young children will be considered.
502 Curriculum Workshop 1-6 hrs.

Opportunity provided for teachers, supervisors and administrators in selected school systems to develop programs of curriculum improvement. This may include short-term offerings to resolve a particular curricular problem, as well as long-range curriculum studies. 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. Each offering of 502, Curriculum Workshop, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 502 may be applied towards a Master's degree.

506 Adult Education 2-3 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.

507 Teaching of Social Studies in the Elementary Schools 3 hrs.

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.

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.

509 Social Studies for Culturally Different Children 3 hrs.

Designed to help elementary teachers understand the role of social studies in a pluralistic society and the factors which tend to inhibit cooperation and communication across social class and racial barriers. Planning social studies experiences and ways of working with culturally different children in a classroom situation will be emphasized. Registration limited only to people in Career Opportunities in Grand Rapids.

510 The Elementary Curriculum 2 hrs.

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.

511 Developmental Reading Theory and Application 3 hrs.

Emphasizes the application of reading theory in the teaching of reading skills to elementary and secondary students. Intensive study of the theory and practice of individualized reading, language experience approaches, and basal reading materials will be made. Will focus on the actual use of materials with pupils to provide practical experiences in teaching on an individual and small group basis. Efficiency of reading
518

**College of Education**

procedures will be studied through actual use with pupils. Prerequisite: TEED 312 or 322 and permission of instructor.

514 **Nursery-Kindergarten Education** 2 hrs.

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.

515 **Seminar in Teaching of Social Studies** 3 hrs.

Consists of two parts: perspectives and implementation. Under perspectives, a staff of social scientists will share with the participants their thinking concerning significant ideas and concepts from their disciplines that further amplify topics covered. Opportunities will be provided for the participants to implement social studies methods and skills in actual classroom and other situations. Registration limited only to people in Career Opportunities Program in Grand Rapids.

525 **Rural Life** 2 hrs.

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. Prerequisite: TEED 220.

527 **Instructional Planning in Accountability Context** 1-3 hrs.

The purpose of the course is to assist the student in developing an understanding of models of accountability in education; in writing educational goals and performance objectives; in using various assessment procedures to determine the needs of the learner and the extent to which objectives have been achieved; and in determining appropriateness of instructional procedures for specified educational goals.

530 **Introduction to Career Education** 3 hrs.

This course is designed to acquaint teachers with the concepts of career education. Course work is centered on ways and means to incorporate career education into the existing curriculum structure at all levels of instruction.

535 **Introduction to Teaching the Disadvantaged** 3 hrs.

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. Prerequisite: 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.
548 Audiovisual Media I 3 hrs.
An introduction to audiovisual media as effective means for achieving educational objectives in presentational, interactive, and individualized modes of instruction. Emphasizes evaluation, selection, production, and classroom use of commercially available and locally produced instructional materials. Students are expected to participate in laboratory experiences in which they produce materials such as mounted and laminated pictures and displays, overhead projection transparencies, audio tapes and photographic slides, and to demonstrate proficiency in the operation of audiovisual equipment. In addition to texts, each student should plan to spend $15 or more for supplies and have the use of a simple camera. Limited to 30 students.

549 Audiovisual Media II 3 hrs.
A continuation of TEED 548, in which teachers and media specialists consolidate basic audiovisual skills and deal in depth with more advanced processes and techniques. Laboratory experiences may include production of complex transparencies, photographic slides, filmstrips, and prints, super 8 films, audio and video tapes, duplicated materials, and more sophisticated charts, posters, and displays. A systematic production planning process is emphasized, with consideration given to evaluating effectiveness of media and to requirements for operating a school building level media center. In addition to texts, each student should expect to spend $15 or more for supplies and should have the use of a versatile camera. Limited to 15 students. Prerequisite: TEED 548 or equivalent experience.

550 Photography Workshop 1-3 hrs.
Intended to sharpen visual perception while improving technical skills, this laboratory course emphasizes photography as a creative and expressive medium of visual communication. Each student is expected to produce new photographs each week and to submit one or more mounted enlargements for group critique at each class meeting. Each student must have the use of appropriate equipment and should expect to spend $25 or more for supplies. Although no prerequisite is required, it is helpful to have had some experience with basic darkroom processes. May be repeated up to a total of six credits. Limited to 15 students.

552 Comparative Education 3 hrs.
Provides an analysis of selected educational systems throughout the world. The goals, organizational structure, curricula, and methods of education are examined in relation to the salient features of each culture, and in comparison to the American educational system.

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.

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

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

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.

588 Evaluation in Education

Designed to develop skills, techniques, attitudes and understandings involved in the measurement and evaluation on individual learning and development as well as in the appraisal of the total school program. Emphasis is placed on the construction, use and interpretation of formal and informal evaluation devices, and upon the development of a philosophy of evaluation as an integral part of learning.

597 Reading and Related Language Experiences

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

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.
College of Fine Arts

ROBERT HOLMES, Dean

Departments:
Art
Dance
Music
The College of Fine Arts offers a variety of curricula and subjects in the principal interest areas of the visual and performing arts.

In Art, major concentration is possible in painting, sculpture, photography, graphic design, printmaking, ceramics, textile design, jewelry, art history, and multi-media art. Each program is designed to prepare students for graduate or professional work. One may also elect an Art major with certification to teach Art at the elementary and secondary levels.

In Dance, two degrees are offered: a Bachelor of Science program which prepares students to teach dance in the public schools, K-12; and a Bachelor of Arts in applied dance. In the latter program, one may choose among four areas of concentration: contemporary, ballet, jazz, or theatre.

In Music, programs are available in applied music, composition, music education, music history, music therapy, and theory, which provides certification in both the elementary and secondary school levels.

Students are encouraged to inquire about curricular combinations not listed specifically in the catalog such as arts management and other inter-departmental programs.

In the belief that arts understanding, involvement, and appreciation are an important part of a liberal education, the College of Fine Arts offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciational curricular and co-curricular activities, such as general art and art history courses, dance, and many musical ensembles.
Art

Charles E. Meyer, Head

T. D. Argyropoulos  Marc F. Hansen  Mary Joanne Mohr
John M. Carney  Harry S. Hefner  Helmi Moulton
Joseph V. DeLuca  Alfred Hinton  Mary Eleanore Neu
Elizabeth H. Dull  Robert P. Johnston  Allegra Ockler
Gerald C. Dumlao  Richard J. Keaveny  Barbara Resenhouse
Robert H. Engstrom  Donald E. King  Curtis A. Rhodes
Joseph A. Frattallone  Dwayne M. Lowder  Louis B. M. Rizzolo
Reginald Gammon  Paul S. Mergen  Paul A. Robbert
Gordon J. Grinwis  John M. Metheany

PROGRAMS:

The Department of Art offers programs leading to the following degrees:

1. Bachelor of Fine Arts with a major in one of the areas of the department.
2. Bachelor of Arts in the Art curriculum of the College of Fine Arts with a major in Art.
3. Bachelor of Science in the Art curriculum of the College of Fine Arts with a major in Art teaching.

The Department of Art also offers a program satisfying the minor requirement of other curricula and courses for students in other areas.

Admission in Art Courses

Classroom space for some art courses is reserved by preregistering at the department’s office before the enrollment material is sent to registration.

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.

Transfer credit is granted for all courses taken at accredited institutions either for specific WMU equivalent courses or as general credit.

Advising

Art majors should see the departmental advisor 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, but are required to see an advisor when deciding on the minor.

Grading

Art majors receiving a grade of D or E in a required course must repeat the course.

Exhibition Requirement

An exhibition of each Bachelor of Fine Arts major’s work is included
in Art 413 and the department may retain one work of art from each student for its collection.

1. The Art Curriculum

The Art curriculum is composed of the General Education requirements of the University and the Art major requirements of the B.A., B.S., or B.F.A. degrees.

2. Bachelor of Fine Arts Degree 74 credit hrs. in Art

This degree is designed for qualified students who intend to become professional artists or pursue graduate study in art. Art majors must make a special application to a departmental committee for admission to BFA candidacy in a specific major area after completing 30 hours in art and one semester residency in the department. Applications will be considered at the end of each semester.

Major areas: Art History, Ceramics, Graphic Design, Jewelry, Multimedia Art, Painting, Photography, Printmaking, Sculpture, Textile Design, Art Education. (Art Education majors must complete the requirements of one of the studio majors in addition to the certification requirements of the College of Education.)

The requirements of the Art curriculum of the College of Fine Arts have to be satisfied. Seventy-four hours in Art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

- 16 hours in the basic program (110, 111, 114, 115, 120, 121)
- 15 hours in Art History including 220, 221
- 6 hours in Advanced Drawing (210, 310)
- 2 hours in the Art Seminar (525)
- 15 hours in the major area (example: Painting 240, 340, 440, 540)
- 18 hours in other art courses determined in consultation with the major advisor
- 2 hours in Graduation Presentation (413). Approval of this by a reviewing committee is necessary for the granting of the BFA degree.

3. Bachelor of Arts Degree/Art Major 52 credit hrs. in Art

This program is designed for the Liberal Arts-oriented students who want to major in the visual arts. It provides maximum flexibility in terms of electives in art and non-art courses. (Professionally oriented art students may start in this program and apply for admission to the B.F.A. after completing 30 hours in Art.)

The requirements of the Art curriculum of the College of Fine Arts have to be satisfied. Fifty-two hours in Art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

- 16 hours in the basic program (110, 111, 114, 115, 120, 121)
- 9 hours in Art History including 220, 221
- 6 hours in Advanced Drawing (210, 310)
- 2 hours in the Art Seminar (525)
- 19 hours in Art electives, including 9 hours in one of the department's ten areas of concentration.

4. Bachelor of Science Degree/Art Major 61 credit hrs.

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. 439) must be satisfied. Sixty-one credit hours in art satisfy the major and minor requirements of this curriculum and are distributed as follows:

16 hours in the basic program (110, 111, 114, 115, 120, 121)
9 hours composed of: drawing (210); art history (220, 221)
12 hours in art education (252, 352, 452, 552)
12 hours in one area of concentration as defined in the B.F.A. program, except art history
12 hours in elective art courses, determined in consultation with the departmental advisor

One semester of directed teaching in art, preferably in both elementary and secondary situations. All art certification students must have a permit to student teach from the art education advisor before doing directed teaching.

5. 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:

16 hours in the basic program (110, 111, 114, 115, 120, 121)
8 hours in art electives

All minors must be approved by the Art advisors.

6. Art History Minor
This program is designed for liberal arts students who wish courses in art history and satisfies the minor requirements of the Liberal Arts and General curricula. The eighteen credit hours are distributed as follows:

6 hours of Art History 220 and 221
12 hours of electives chosen from the remaining art history courses in the department, in consultation with the Art History adviser.

7. Art Courses for Non-Art Majors or Minors

Elementary Education majors are required to take Art 150 (or a substitute such as Art 120, 130, 140) except for those students in the Integrated Creative Arts minor who are required to take Art 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 120, Art 130, 140, and Art History 220 and 221 as well as selected 500 level art history courses, are open with no prerequisites to non-art majors and can satisfy the humanities requirements of General Education.

7. Basic Program—Courses required of all majors and minors in art as prerequisites to other advanced courses.

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8. Fine Arts Minor
The Department of Art is one of the academic units participating in the Fine Arts minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes. For full information, see p. 526.
ART DEPARTMENT COURSE OFFERINGS

(Course descriptions in italics are approved for General Education purposes.)

110 Drawing 3 hrs.

111 Drawing 3 hrs.
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 3 hrs.
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 3 hrs.
Continuation of Design 114 with emphasis on color theory and the mechanics of color organization. Prerequisite: Art 114.

120 Art Survey 2 hrs.
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.
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) 3 hrs.
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. It is designed primarily for the General Degree or Education student who wishes to have some experience in art.

140 Studio Experiences—(2-D) 3 hrs.
A course designed for the non-art student as an enriching experience in two dimensional media; to include painting, drawing and other graphic media. May not be elected by majors or minors in art or art education.

150 Art Education Workshop 3 hrs.
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.
Individual involvement in the creative process related to human growth and development by means of exploration with many art media. Pre-
requisite: 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 3 hrs.
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 3 hrs.
Development of projects utilizing design theory. Prerequisite: Art 115.

215  Three Dimensional Design 3 hrs.
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.
An historical survey of art from pre-historic ages to the Renaissance.

221  History of Art 3 hrs.
An historical survey of art from the Renaissance through the contemporary period.

230  Ceramics 3 hrs.
A course devoted to a survey of pottery process including hand-building, technical information and a limited experience with the potter's wheel. Prerequisite: Basic Program.

231  Sculpture 3 hrs.
Introduction to sculptural concepts and techniques in clay, plaster and wood. Prerequisite: Basic Program, Art 210 or 210 concurrently.

232  Craft Design 3 hrs.
A course stressing creativity in the design of products through the use of varied materials. Prerequisite: Basic Program.

234  Textile Design 3 hrs.
An introductory survey of textiles to include weaving, spinning, stitchery, hooking, macrame, silk screen printing, tie-dye and batik. Prerequisite: Basic Program.

235  Multi-Media Art 3 hrs.
Various forms of art that deviate from conventional media, such as light, kinetic and performance art. Prerequisite: Permission of instructor.

237  Studio Equipment 3 hrs.
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 3 hrs.
A survey of jewelry processes to include cutting, soldering, casting, stonecutting, and the use of appropriate equipment. Prerequisite: Basic Program.

239  Metalsmithing 3 hrs.
Instruction in forming copper, brass, and sterling with hammer tech-
College of Fine Arts

Watercolor Painting 3 hrs.
A survey of the application, techniques, and limitations of the watercolor painting medium. Prerequisite: Basic Program.

Graphic Design 3 hrs.
An introduction to problem solving for visual communication through typographic images. The fundamentals of calligraphy, typography, and typographic design are investigated in experimental and practical projects. Incorporates research in the communicative potential of color and structure. Prerequisite: Basic Program.

Photography 3 hrs.
Introductory course covering the function of the camera, exposure meter, lenses, b/w films, processing and printing. Emphasis is placed upon perceptive imagery and development of a technical proficiency. Prerequisite: Basic Program.

Inter-Related Arts Process: Art, Dance, and Music 3 hrs.
Art, dance, and music will be dealt with as the expressive means at the core of the creative and educative process. The student will be exposed to the craftsmanship of each art form, the experiences of creating in each art form, and the experience of synthesizing art forms so that each form contributes to the aesthetic value of the final product.

Craft Design 3 hrs.
A continuation of Craft Design 232. Prerequisite: Art 232.

Textiles 3 hrs.
Advanced work in textile design allowing for specialization with a material or technique surveyed in 234. Prerequisite: Art 234.

Multi-Media Art 3 hrs.
Continuation of 235. Prerequisite: Permission of Instructor.

Jewelry and Metalwork 3 hrs.
Advanced work in the jewelry processes. Prerequisite: Art 238.

Metalsmithing 3 hrs.
Continuation of 239, broadening the design and technical experience. Prerequisite: Art 239.

Painting II 3 hrs.
Continuation of Art 240. Prerequisites: Art 240, 310 or 310 concurrently.

Printmaking 3 hrs.
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.

Watercolor 3 hrs.
Advanced problems in watercolor techniques to include composition. Prerequisite: Art 242.
345 Graphic Design 3 hrs.
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, promotions, magazine and newspaper advertising. Includes thematic development, graphic planning, comprehensive and finished art production. Prerequisite: Art 245.

348 Photography 3 hrs.
Introduction to the view camera, color processing/printing, and various studio lighting techniques involved in product photography. Emphasis is placed upon exploring the potential of color photography and the development of individual imagery. Prerequisites: Art 248 and ownership of a 35mm slr or 21/4 x 21/4 camera.

352 Preparation for Art Teaching (Elementary) 3 hrs.
A teaching laboratory course designed to familiarize the elementary art teacher with teaching philosophies, methods and creative teaching procedures using varied media, and materials. Emphasis is placed upon qualitative art programming in the elementary school. Prerequisites: Art 252 and art major status.

410 Advanced Drawing 3 hrs.
Continuation of Art 310. Prerequisite: Art 310.

413 Graduating Presentation 2 hrs.
Preparation and presentation of graduating exhibition, portfolio and oral examination or written thesis, with the assistance of the student's major advisor. Evaluation by a departmental reviewing committee. Prerequisite: Senior standing, B.F.A. candidacy.

430 Ceramics 3 hrs.
Continuation of 330 with some experience in stacking and firing procedures. Prerequisite: Art 330.

431 Sculpture 3 hrs.
Continuation of 331. Emphasis on welding and sheet metal techniques. Prerequisites: Art 331, 310.

434 Textiles 3 hrs.
Continuation of 334. Prerequisite: Art 334.

435 Multi-media Art 3 hrs.
Continuation of 335. Prerequisite: Permission of instructor.

438 Jewelry 3 hrs.
Advanced work in the jewelry processes. Prerequisite: Art 338.

439 Metalsmithing 3 hrs.
Continuation of 339 with emphasis on developing awareness and strength in personal direction. Prerequisite: Art 339.

440 Painting III 3 hrs.
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.
Continuation of printmaking 341. Prerequisites: Art 310, 341.

442 Watercolor 3 hrs.
Watercolor problems with the introduction of mixed media. Prerequisite: Art 342.

445 Graphic Design 3 hrs.
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 design processes and papers. Prerequisite: Art 345.

448 Photography 3 hrs.
Investigations into the application of photography as visual communication for industrial, architectural, journalistic, illustrative, documentary, and experimental purposes. Prerequisite: Art 348.

452 Preparation for Art Teaching (Secondary) 3 hrs.
A teaching laboratory course specifically designed to familiarize the middle and high school art teacher with philosophies, methods and creative teaching procedures using varied media and materials. Emphasis is placed upon qualitative art programming in the secondary school. Prerequisites: Art 352 and Art major status.

500 Independent Studies 1-6 hrs.
An opportunity for qualified undergraduates to elect an area of special interest and pursue it in depth. Prerequisite: Permission of instructor. Repeatable for credit.

510 Drawing 3 hrs.
Continuation of Art 410. Prerequisite: Art 410. Repeatable for credit.

520 Independent Study in Art History 2-3 hrs.
Problems in art history from ancient times to the present selected by the individual student in consultation with the instructor. Prerequisites: Art 220, 221 and a 500 level course in the area of interest; permission of instructor. Repeatable for credit.

521 Topics in Art History: Variable Topics 3 hrs.
Investigation of changing topics in Art History in class or seminar sessions by advanced students. Course title varies from term to term. Prerequisites: Art 220, 221 for majors. None for other students. Repeatable for credit under a different title.

525 Seminar in Art 2 hrs.
Investigation and discussion of contemporary philosophies of art and their relationship to each student's work. Prerequisite: Junior Art Major. Credit/No Credit only.

529 Advanced Ceramics 3 hrs.
Advanced work in ceramics including glaze calculation. Prerequisite: Art 430.
Art

530 Ceramics
Advanced work in ceramics on an independent basis. Prerequisite: Art 529. Repeatable for credit.

531 Sculpture
Continuation of Sculpture 431. Emphasis on bronze and aluminum casting and related techniques. Prerequisite: Art 431. Repeatable for credit.

534 Textiles
Continuation of 434 with advanced work in textile design. Prerequisite: Art 434. Repeatable for credit.

535 Multi-media Art
Continuation of 435. Prerequisite: Permission of instructor. Repeatable for credit.

538 Jewelry
Continuation of 438; advanced work in jewelry processes. Prerequisite: Art 438. Repeatable for credit.

539 Metalsmithing
Continuation of 439. Prerequisite: Art 439. Repeatable for credit.

540 Painting IV
Continuation of Painting III. Prerequisites: Art 410, 440. Repeatable for credit.

541 Printmaking
A continuation of printmaking, 441. Prerequisites: Art 410, 441. Repeatable for credit.

542 Watercolor
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: Art 442. Repeatable for credit.

545 Graphic Design
Continuation of Art 445. Prerequisite: Art 445. Repeatable for credit.

548 Photography
Professional development through research in advanced projects. Prerequisite: Art 448. Repeatable for credit.

552 Preparation for Art Teaching
A course dealing with: the current problems and issues on the social scene which affect teaching and learning in the visual arts at all levels of the public school; the creative person, product, process, and press (environment); phenomena of perceptual learning; the actual construction of an operant art curriculum for the elementary, middle, and high school programs. Prerequisites: Art 452, and art major status.

553 Independent Studies in Art Education
An arranged elective course in which the student investigates and researches a problem, a project, or trends in art education. Prerequisite: Permission of instructor.
560  Arts Education for the Elementary Teacher  3 hrs.
A studio course for the elementary classroom teacher to provide experiences in qualitative elementary art and integrated arts programming in the elementary public school. (Repeatable for credit.)

581  History of Ancient Art  3 hrs.
Selected topics from the art and architecture of ancient Egypt, the ancient Near East, the Aegean proto-Greek, Classical and Hellenistic Greece, Etruria, and Rome to the Early Christian period. Prerequisite: Art 200 for Art majors and minors, none for other students.

583  History of Medieval Art  3 hrs.
Discussion of art and architecture from the decline of the Roman Empire through the Gothic Period (3rd-13th Centuries). Prerequisites: Art 220 for Art majors and minors; none for other students.

585  History of Renaissance Art  3 hrs.
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, Brueghel and Durer. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

586  History of Baroque Art  3 hrs.
Art of the late 16th, 17th and early 18th centuries. Major artists and architects discussed are: Caravaggio, the Carracci, Rembrandt, Rubens, Poussin, Velasquez, Bernini, Borromini, and Neumann. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

588  History of 19th Century Art  3 hrs.
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 other students.

589  History of 20th Century Art  3 hrs.
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.

590  History of Prints  3 hrs.
Major developments in printmaking, including origins of woodcut and engraving. Renaissance and Baroque master etchers and engravers (Durer, Rembrandt). Lithography in the 19th century (Delacroix, Daumier, Toulouse-Lautrec). 20th century printmaking. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

593  History of American Art  3 hrs.
Art in the United States from the Colonial Period to the present. Topics discussed are: Colonial portraiture and Copley; the evolution of 19th
and 20th century painting, sculpture with emphasis on the work of Stuart, Cole, Bingham, Homer, Eakins, Ryder, Saint-Gaudens, Zorach, Marin, Pollock, and recent developments. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

594 History of Afro-American Art
Painting and sculpture in the United States by Americans of African ancestry from the Colonial period to the present. Includes examination of the African art background and the continuation of African art traditions and skills in America. Prerequisites: Art 220 and 221 for art majors; none for other students; Junior standing required.

596 Survey of World Architecture
A general introduction to the development of architectural styles including European, Asian, and Pre-Columbian. Considers the evolution of styles and their cross-cultural relationships.

597 History of Modern Architecture
Major developments in architecture since c. 1750 with emphasis on late 19th and 20th century developments in domestic and commercial architecture and city planning in the West and in Asia. Especial consideration given the works and influences of Wright, Le Corbusier, and Mies van der Rohe.
Dance

Elisabeth L. Hetherington, Chairman

Helen Brown  Clara Gamble  Janet Stillwell
Wendy Cornish  Luretta McCray

Degrees: Bachelor of Arts or Bachelor of Science with major in Dance

Two majors and two minors are offered in the Department of Dance. They are:

1. Major in Dance
   a. Major for students planning to teach Dance
   b. Major for students not planning to teach Dance

2. Minors in Dance
   a. Minor for students planning to teach Dance
   b. Minor for students not planning to teach Dance

Introductory courses are offered for non-major/minors. Some of these function to partly fulfill graduation requirements in Physical Education.

Advising:

Upon admission to the University, major and minor dance students should complete a declaration form of their major or minor from the secretary in the Department of Dance and be assigned a personal departmental advisor. Each semester, advisors will meet with students to prepare them for their next semester’s registration. Each student should complete his major slip with his advisor during his junior year and secure a graduation audit statement before registration for the final semester.

Participation Requirement:

Each major and minor dance student participates in University Dancers activities and performance auditions each semester on campus after declaration of his major. Explicit details are outlined under appropriate majors and minors.

Jury:

Teaching Major in Dance: During the sophomore year the student must pass a performance and oral jury and prior to student teaching will pass a performance, oral and teaching jury.

Non-teaching Major in Dance: During the sophomore year the student must pass an oral and performance jury and during the junior year must pass an oral, performance and choreographic jury.

Minors: Teaching minors must pass an oral and teaching jury prior to student teaching. Non-teaching dance minors have no jury requirement.

Extra-University Study:

Students are encouraged to study with professional concert dancers whenever possible and to afford themselves the opportunity for study with artists-in-residence on Western’s campus for which a limited number of scholarships are available.
Teaching Major in Dance

A student must complete all general education requirements as outlined in this catalog. Within these requirements dance majors should select Biology 107, Biology 210 and Teacher Education 230.

Requirements in the Department of Teacher Education shall be completed for this degree as described under Secondary Curriculum in the College of Education.

Teaching Major in Dance

Required courses in technique:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>123 Beginning Contemporary Dance</td>
<td>1</td>
</tr>
<tr>
<td>223 Intermediate Contemporary Dance</td>
<td>2</td>
</tr>
<tr>
<td>523 Advanced Contemporary Dance</td>
<td>3</td>
</tr>
<tr>
<td>102 Beginning Jazz</td>
<td>1</td>
</tr>
<tr>
<td>126 Beginning Ballet</td>
<td>1</td>
</tr>
<tr>
<td>228 Improvisation in Dance</td>
<td>1</td>
</tr>
<tr>
<td>122 Recreational Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

Required courses in theory:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Foundations of Dance Education</td>
<td>2</td>
</tr>
<tr>
<td>182 Beginning Choreography</td>
<td>3</td>
</tr>
<tr>
<td>282 Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>PEW 294 Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>204 Teaching of Dance in the</td>
<td>2</td>
</tr>
<tr>
<td>Elementary School</td>
<td></td>
</tr>
<tr>
<td>342 Teaching of Dance in the</td>
<td>3</td>
</tr>
<tr>
<td>Secondary School</td>
<td></td>
</tr>
<tr>
<td>PEW 392 Measurement and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>500 Dance History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>582 Advanced Choreography</td>
<td>2</td>
</tr>
</tbody>
</table>

Nine hours elected from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 Dance Notation</td>
<td>3</td>
</tr>
<tr>
<td>202 Intermediate Jazz</td>
<td>2</td>
</tr>
<tr>
<td>226 Intermediate Ballet</td>
<td>2</td>
</tr>
<tr>
<td>300 Seminar in Dance</td>
<td>1</td>
</tr>
<tr>
<td>302 Jazz Workshop</td>
<td>1-6</td>
</tr>
<tr>
<td>325 Specialized Dance Styles</td>
<td>1-3</td>
</tr>
<tr>
<td>326 Ballet Workshop</td>
<td>1-3</td>
</tr>
<tr>
<td>328 Stage Dance Forms</td>
<td>1-3</td>
</tr>
<tr>
<td>400 Practicum in Dance</td>
<td>1-3</td>
</tr>
<tr>
<td>423 Repertory</td>
<td>1-3</td>
</tr>
<tr>
<td>482 Dance Thesis</td>
<td>1-3</td>
</tr>
<tr>
<td>528 Musical Theatre Workshop</td>
<td>3</td>
</tr>
<tr>
<td>548 Dance and the Related Arts</td>
<td>3</td>
</tr>
<tr>
<td>588 Staged Productions</td>
<td>3</td>
</tr>
</tbody>
</table>
1. Core

Technique Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>123 Beginning Contemporary Dance</td>
<td>1 Waived by competency</td>
</tr>
<tr>
<td>223 Intermediate Contemporary Dance</td>
<td>2 Prerequisite 123 or competency</td>
</tr>
<tr>
<td>523 Advanced Contemporary Dance</td>
<td>3 Prerequisite 223 or competency or permission of instructor</td>
</tr>
<tr>
<td>228 Improvisation in Dance</td>
<td>1-2-3</td>
</tr>
<tr>
<td>102 Beginning Jazz</td>
<td>1</td>
</tr>
<tr>
<td>126 Beginning Ballet</td>
<td>1</td>
</tr>
<tr>
<td>323 Performance</td>
<td>2 Approval of Department Chairman</td>
</tr>
</tbody>
</table>

Non-credit requirement: Participation in University Dancers activities and performance auditions each semester on campus after declaration of major.

Initial jury—During the sophomore year, the student must pass a performance and an oral jury.

Final jury—The Student must pass a performance, an oral, and a teaching jury prior to student teaching.

Non-teaching Dance Major (refer to p. 20 in this catalog regarding certification)

A student must complete all General Education requirements as outlined in this catalog. Within these requirements it is suggested that he enroll in Teacher Education 230.

Theory Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>182 Beginning Choreography</td>
<td>3 Prerequisite 123</td>
</tr>
<tr>
<td>582 Advanced Choreography</td>
<td>2 Prerequisite 182</td>
</tr>
<tr>
<td>282 Dance Accompaniment</td>
<td>2 Prerequisite 123</td>
</tr>
<tr>
<td>500 Dance History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>548 Dance and the Related Arts</td>
<td>3</td>
</tr>
<tr>
<td>588 Staged Productions</td>
<td>3</td>
</tr>
<tr>
<td>482 Dance Theses (attendance at seminar, DANC 300 included)</td>
<td>2-3 Minimum 2 hours Permission of Chairman</td>
</tr>
</tbody>
</table>

10-11 hours

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College of Fine Arts

GPE 123 or 124 Gymnastics
120 Fencing
139 Relaxation
142 Ice Skating
155 Synchronized Swimming
165 Yoga
175 Special Activities 1-3 Maximum of 3

40-41 hrs.
2. Areas of Concentration: Select one of the following four programs in Contemporary Dance, Ballet, Jazz or Theatre:

**Contemporary Dance:**
- 200 Dance Notation
- 423 Repertory

**Hrs.:**
- 3 Prerequisite 223
- 2 Prerequisite 223
- 5

**Ballet:**
- 122 Recreational Dance
- 226 Intermediate Ballet
- 325 Specialized Dance Styles (character dance)
- 326 Ballet Workshop

**Hrs.:**
- 1
- 2 Prerequisite 126 or competency
- 1 Prerequisite 126 or competency and 122
- 1 Prerequisite 226
- 5

**Jazz:**
- 202 Intermediate Jazz
- 302 Jazz Workshop
- 325 Specialized Dance Styles
- 423 Repertory

**Hrs.:**
- 2 Prerequisite 102
- 1 Prerequisite 202
- 1
- 2 Prerequisite 223
- 6

**Theatre:**
- 122 Recreational Dance
- 328 Stage Dance Forms
- 528 Musical Theatre Workshop

**Hrs.:**
- 1
- 2 Prerequisite 122
- 3 Prerequisite 182
- 6

3. Electives: 5 to 7 hours from the following list:

- 122 Recreational Dance
- 200 Dance Notation
- 202 Intermediate Jazz
- 226 Intermediate Ballet
- 290 Kinesiology for the Dancer
- 300 Seminar in Dance
- 302 Jazz Workshop
- 323 Performance (2 hrs. required—may be repeated to 8 hours)
- 325 Specialized Dance Styles (repeated to 6 hours)
- 326 Ballet Workshop
- 328 Stage Dance Forms
- 400 Practicum (repeat to 3 hours)
- 423 Repertory
- 490 Tour Company (repeat to 8 hours)
- 498 Readings in Dance
- 499 Non-reading Independent Study in Dance

**Hrs.:**
- 1
- 3 Prerequisite 223
- 2 Prerequisite 102
- 2 Prerequisite 126 or competency
- 3 Prerequisite Biology 210
- 1
- 1 Prerequisite 202
- 1-8 Approval of Department Chairman
- 1-6
- 1 Prerequisite 226
- 2 Prerequisite 122
- 1-3 Approval of Department Chairman
- 2 Prerequisite 223
- 1-8 By audition only
- 1-3
- 1-3 Approval of Department Chairman
College of Fine Arts

528 Musical Theatre Workshop 3 Prerequisite 182
598 Readings in Dance 1-3 Approval of Department Chairman
599 Non-reading independent study 1-3 Approval of Department Chairman in Dance

Initial Jury—during the sophomore year, the student must pass an oral jury and performance jury.
Final Jury—during the junior year, the student must pass an oral performance and choreographic jury.
University Dancers activities—tryouts, auditions, and performance (studio or concert) each year on campus after declaration of major.

Minors in Dance

Teaching Minor in Dance

Students must meet all general education requirements as outlined in this catalog. Within these requirements it is suggested that dance majors select Biology 107, 210 and Teacher Education 230.
A student within this minor should be an education major within another subject area.

Required courses in technique:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Prerequisite/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>123 Beginning Contemporary Dance</td>
<td>1</td>
<td>Waived by competency</td>
</tr>
<tr>
<td>223 Intermediate Contemporary Dance</td>
<td>2</td>
<td>Prerequisite 123 or competency</td>
</tr>
<tr>
<td>523 Advanced Contemporary Dance</td>
<td>3</td>
<td>Prerequisite 223</td>
</tr>
<tr>
<td>102 Beginning Jazz</td>
<td>1</td>
<td>Prerequisite 123 or permission of instructor</td>
</tr>
<tr>
<td>228 Improvisation in Dance</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>122 Recreational Dance</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Total 9 hours

Required courses in theory:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Prerequisite/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Foundations of Dance Education</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>182 Beginning Choreography</td>
<td>3</td>
<td>Prerequisite 123</td>
</tr>
<tr>
<td>282 Dance Accompaniment</td>
<td>2</td>
<td>Prerequisite 123</td>
</tr>
<tr>
<td>PEW 294 Analysis of Movement</td>
<td>3</td>
<td>Prerequisite Biology 210</td>
</tr>
<tr>
<td>Either 204 Teaching of Dance in the Elementary School</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>or 342 Teaching of Dance in the Secondary School</td>
<td>3</td>
<td>Prerequisite 102, 122, 223</td>
</tr>
<tr>
<td>PEW 392 Measurement and Evaluation</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Total 14-15 hours

Electives to total 24 hours.

Non-credit requirement: participation in University Dancers activities—tryouts, auditions and performance (studio evening or concert) for two semesters.

Jury—the student must pass an oral and teaching jury prior to student teaching.

Non-Teaching Dance Minor

Each student must meet all General Education requirements as out-
lined on page 26 of this catalog. Within these requirements it is suggested he enroll in Teacher Education 230, Nature of Creativity.

**Technique Required:**

- 123 Beginning Contemporary Dance
- 223 Intermediate Contemporary Dance
- 228 Improvisation in Dance
- 523 Advanced Contemporary Dance

Total: 24 hours

- 1 Waived by competency
- 2 Prerequisite 123
- 1 Prerequisite 123 or permission of instructor
- 3 Prerequisite 223

Elect four hours from concentration listed under non-teaching Major in Dance.

**University Dancers:** Non-credit requirement. Participation in University Dancers activities: tryouts, auditions, and performance (studio evening or concert) for two semesters.

**Fine Arts Minor**

The Department of Dance is one of the academic units participating in the Fine Arts minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes. For full information, see p. 526.

**COURSE DESCRIPTIONS**

**100 Foundations of Dance Education**

Investigation of selected topics relative to the prospective dance educator. 2 hrs.

**102 Jazz—Beginning**

A study and exploration of jazz technique and the basic elements of composition. The emphasis is placed on movement which requires the use of bent knees, isolated body parts and strong rhythmic awareness. The creation and development of movement sequences is encouraged. 1 hr.

**122 Recreational Dance**

Investigation of folk, square and social forms of dance, with a concentration on overlapping dance skills. 1 hr.

**123 Beginning Contemporary Dance**

An introduction to the art of contemporary dance primarily concerned with the development of technique. 1 hr.
124 Social Dance Forms  
Attention is given to efficient body mechanics, rhythmic structure, and basic dance steps. A study of traditional ballroom dance steps, mixers and the dance styles of today.

126 Beginning Ballet  
Integration of the physical, intellectual and aesthetic values of dance through the investigation and practice of the techniques of classical ballet.

135 Movement activities in Education  
A study of movement activities and methods applicable to various types of educational experiences and age levels.

182 Beginning Choreography  
The study of an experimentation in compositional principles of dance.

200 Dance Notation  
Study of Labanotation—a practical system of recording human movement for purposes of analysis and reading. The course includes reading (interpretation), theory, and practice.

202 Intermediate Jazz  
The creation and exploration of movement composition and technique of the jazz style above the beginning level emphasizing the aspect of performance and the development of ensemble awareness. At least one choreographed composition is required. Prerequisite: DANC 102.

204 Teaching of Dance in the Elementary School  
Concerned with methods and techniques of teaching dance to elementary age children. Laboratory experience provides an opportunity for practical application. Should not be elected by students taking DANC 341.

223 Intermediate Contemporary Dance  
A second level exploration of contemporary dance techniques. Prerequisite: DANC 123 or permission of instructor.

226 Intermediate Ballet  
Study and practice to develop skill, grace, precision and facility in the artistic style and distinct character of ballet. Prerequisite: DANC 126 or consent of instructor.

228 Improvisation in Dance  
The extemporaneous exploration of motion through neuro-muscular logic. Interaction resulting from such stimuli as sound, space, force, props and ideas, provides a deeper understanding of the temporal and spatial relationships of the self to others through motion. Prerequisite: DANC 123 or permission of instructor.

282 Dance Accompaniment  
The study of the visual and rhythmic analysis of the composition of dance movement, the creation of new instruments and the exploration of new ways to use them for accompanying movement. The culmination of the course is an original musical composition for dance.

300 Seminar in Dance  
To be attended by students enrolled in DANC 482 or elected for one hour credit. The content of the seminar varies to provide an opportunity
for qualified students to examine and discuss areas of common interest within the discipline.

302 Jazz Workshop 1 hr.
A workshop experience which provides students an opportunity to create and perform jazz compositions on the advanced level in different jazz styles. The culmination of the course is a major work. The course is team taught. Prerequisites: 102, 202 or consent of instructor.

323 Performance 1-8 hrs.
An experience in student-choreographed or faculty-choreographed concert material. Registration to occur after performance has been completed.

325 Specialized Dance Styles 1-6 hrs.
A study of dance styles not included as a separate course. Also offered with a visiting instructor or artist-in-residence. Includes a style which would otherwise not be available.

326 Ballet Workshop 1 hr.
Exploration and practice of theatrical dance whose choreographic virtuosity is distinguished by the variety, intricacy and expressiveness of movement which is uniquely ballet. Prerequisites: DANC 126 and 226 or consent of instructor.

328 Stage Dance Forms 2 hrs.
Investigation and practice of dance as it has been and is being used for theatre presentation such as in vaudeville, plays, musical comedies. Prerequisite: DANC 122.

341 Creative Movement for the Elementary School 4 hrs.
This course is open to students in the Integrated Creative Arts Minor and explores the principles, materials and techniques of creative movement for elementary school children. A concentrated study is made of how children discover movement and explore problem-solving within their own physical abilities. Lecture, participation, observation and laboratory experience are provided.

342 Teaching of Dance in the Secondary School 3 hrs.
An investigation into procedures for presentation of information related to the dance forms most commonly taught at the secondary school level.

344 Dance for the Exceptional Child 2 hrs.
Study of movement possibilities and their use in dance therapy. Emphasis on methods, techniques, and practical laboratory experience.

400 Practicum 1-4 hrs.
An individual approach to a practical field experience in dance. Through reading and practice the student will have an opportunity to explore a topic or problem of interest in the dance areas. Enrollment by written permission of the chairman of the Dance Department.

423 Repertory 2 hrs.
A study of, and experience in, previously choreographed dances with an intensive analysis of style, structure and form.


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482 Dance Thesis 1-3 hrs.
An individual's development of a written or choreographed dance work. Prerequisite: Permission of advisor.

490 Tour Company 1-8 hrs.
This course is designed to provide qualified students an opportunity to gain experience in the various activities of a touring dance company. The Company is a major performing ensemble which provides master classes, lecture/demonstrations and mini concerts for the campus and community. Because of the nature of these activities, members must show a proficiency in the areas of performance, improvisational skills—ability to adapt, rearrange and invent meaningful material. Membership involves a series of auditions and is open to members of the University Dancers only.

500 Dance History & Philosophy 3 hrs.
The history of Dance through the philosophies of man from primitive cultures to the contemporary concert dancer.

523 Advanced Contemporary Dance 3 hrs.
The advanced study of contemporary dance technique designed for the dance student seeking the greatest proficiency and versatility in this dance form.

528 Musical Theatre Workshop 3 hrs.
Designed for students from dance, music and theatre orientations who wish to learn the concepts, methods, techniques, organizational, and communicational approaches useful in creating effective production of musical theatre. An understanding of the integration of dance, music and theatre elements is provided through lectures, discussions, demonstrations and student-directed scenes from musical theatre pieces. Course is team taught by faculty members from the departments of Dance, Music, and the theatre area of Communication Arts and Sciences. Prerequisites: DANC 182 and 328 or permission of instructor.

548 Dance and the Related Arts 3 hrs.
Related study of cross-sections of art discipline at various points in the historical development of man. Assumes prior knowledge of historical and philosophical development of at least one of the disciplines.

582 Advanced Choreography 2 hrs.
A non-literal approach to design in dance through the study of varied use of time, space and force in solo and group choreography. Prerequisite: DANC 182 or permission of instructor.

588 Staged Productions 3 hrs.
Study of the production aspects of dance and related types of performance situations. Aspects of management including budget, publicity and programming as well as technical aspects of scenery, lighting, sound, costuming and make-up is considered.

598 Readings in Dance 1-3 hrs.
Graduate students may enroll in this course after consultation with graduate advisor.

599 Non-Reading Independent Study in Dance 1-3 hrs.
Graduate students may enroll in this course after consultation with graduate advisor.
In America today the responsibility to carry on a vital tradition of the musical profession falls increasingly upon the university. The music faculty of Western Michigan University seeks to fulfill this responsibility through creative performance, composition, scholarship, and community service. Above all, we strive in our teaching to produce students who share the excitement of music as a living art, who possess the wisdom to appreciate and the courage to defend the highest artistic ideals, who will bring the finest in music to their fellow men with skill and dedication.

The Department of Music offers courses of study which lead to the Bachelor of Music, the Bachelor of Science, and the Bachelor of Arts degrees. The Bachelor of Music degree is highly professional, offering the student an opportunity to elect a major in Applied Music, Composition, Music Education, Music History, Music Theory, and Music Therapy. The Bachelor of Science degree is in elementary education and carries a major in music studies. The Bachelor of Arts degree affords the student the opportunity to major in music and minor in some non-music area of study.

Three majors carry certification upon completion of degree requirements: the Bachelor of Music with a major in Music Therapy carries certification as a Registered Music Therapist upon completion of a six-month internship; the Bachelor of Music with a major in Music Education carries certification to teach music in the public schools, grades K-12; and the Bachelor of Science carries certification to teach in the elementary classroom and/or to teach as a music specialist in the elementary classroom, grades K-6.

A music minor program is offered through the Department of Music for students who have a background in music and who wish to extend their formal education in that field of study. Two programs of study lead to a music minor, one for the elementary education student (24 hours), and one for the student who is not seeking teaching certification (18 hours). Those students seeking a music minor must secure a minor slip from the Student Advisor in the Department of Music in order that the declaration of the minor be official. Official declaration of the music
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minor must be made prior to registration for the final eight hours of music course-work which will apply to that minor. The student who does not read music will be required to complete MUS 164 Fundamentals of Music before commencing course-work leading to the music minor.

The Department of Music is one of the academic units participating in the Fine Arts minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes. For full information, see p. 545.

Specific requirements for majors and minors in music are found in the Music Supplement which may be obtained from the Department of Music Office.

Enrollment in a music curriculum is contingent upon admission to the University and approval of the Department of Music, obtained through the music audition and testing program. The student may proceed by making application to the University at which time he will be notified about the audition and testing program in the Department of Music, or he may request an opportunity to audition and be tested prior to making application to the University by obtaining an Audition Request Form from the Department of Music. The student is urged to commence application procedures early in his senior year, or in his final year at a community college.

Music credit from another institution is normally acceptable provided course substance is equivalent to a similar course required in the student's curriculum at Western and the student has earned a grade of C or better in that course. No credit hours exceeding the number granted for parallel work at Western will be accepted for transfer from another institution. All music credit to be transferred is tentative and is conditioned upon the successful completion of one semester's work at Western. Three areas—applied music, theory, and piano proficiency for non-piano majors, are, by nature, skills courses which require competency at one level before the student is ready for the next level of course in a sequence. This competency can only be determined by demonstration and/or examination which precludes the automatic transfer of credit in these areas.

Further information regarding admission and transfer of credits to a music curriculum may be obtained by contacting the Music Student Advisor in the Department of Music.

The Department of Music is a member of the National Association of Schools of Music. The requirements for entrance and for graduation are in accordance with the published regulations of the NASM and the National Council for Accreditation of Teacher Education.

DEPARTMENTAL COURSES

(Course descriptions in italics are approved for General Education purposes.)

Ensembles

105 Campus Choir  (Director: J. Frey)  1 hr.
A choral ensemble which emphasizes the recreational aspects of ensemble singing. A minimal schedule of informal performances is maintained on-campus and in the community. Membership is open to all students without audition. Credit/No Credit only.
106 Men’s Glee Club

An ensemble of male vocalists which develops general musicianship and provides training in ensemble singing. Performances are presented on-campus and in the community. Membership is open to all male students without audition.

*107 Women’s Chorus (Director: W. Hahnenberg) 1 hr.

An ensemble of female vocalists which develops general musicianship and provides training in choral singing. Performances are presented on-campus and in the community. Membership by audition.

*108 Collegiate Singers (Director: M. Ivey) 1 hr.

A choral ensemble which develops general musicianship and provides training in choral singing. Performances are presented on-campus and in the community. Membership by audition.

109 Marching Band (Director: C. Bjerregaard) 1 hr.

The University Marching Band is the major performing ensemble for Fall football activities. Positions are open to all students who play wind or percussion instruments. Music Education: Instrumental majors who play a wind or percussion instrument are required to take this course during two Fall semesters. (Credit in Marching Band may be substituted for P.E. credit.) Membership is by audition.

110 Symphonic Band (Director: C. Bjerregaard) 1 hr.

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 (Director: H. Butler) 1 hr.

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 joins with other campus organizations in joint programs. Instruments are available for the use of students. Membership is by audition.

*112 University Chorale (Director: M. Ivey) 1 hr.

An advanced choral ensemble which maintains a very active performance schedule on-campus and in the community, as well as throughout Michigan and surrounding states. Membership by audition.

113 University Singers (Director: J. Frey) 1 hr.

University Singers is open to all students who wish to obtain a knowledge of choral music. The Singers present concerts on campus and for organizations in the area.

114 Wind Ensemble (Director: C. Bjerregaard) 1 hr.

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.

Open to all men with musical ability who have had experience in sing-

*Grand Chorus—A large ensemble which performs choral/orchestral compositions. Participation is required of members of the University Chorale, Collegiate Singers, and Women’s Chorus, but membership is open to other singers with the consent of the conductor.
ing. 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 Chorus 1 hr.
Membership in the Women’s Chorus is open to all women of the University. The Chorus seeks to provide and develop artistic training in ensemble singing. The Women’s Chorus takes an active part in the musical life of the campus and community.

117 Special Music Ensemble 1 hr.
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.

118 Campus Chorale (Director: W. Appel) 1 hr.
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 is by audition.

119 Varsity Vagabonds (Director: E. Carter) 1 hr.
A mixed vocal ensemble which specializes in popular and folk music. Activities include quartets, dance routines, and instrumental groups. A very active performance schedule is maintained on-campus and in the community, as well as in Michigan and out-of-state. Membership by audition.

210 Jazz Lab Band (Director: R. Davidson) 1 hr.
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 (Coach: P. Rappeport) 1 hr.
A laboratory experience in accompanying solo music. This course may serve as a substitute for two semesters of the Public School Music—Keyboard majors’ eight semester large ensemble requirement. Students will be assigned three to four hours of studio accompanying per week. This course may be repeated for credit not to exceed a total of two semester hours.

212 Contemporary Music Ensemble 1 hr.
A performing organization which is committed to the performance of music and mixed media works in the avant garde style. The ensemble is open to vocalists and instrumentalists on an audition basis.

219 Vocal Chamber Ensemble 1 hr.
Small vocal ensemble(s) which emphasize research and limited performance of specialized repertoire of one or various periods of music. Admission by permission of the instructor.

317 Opera Workshop (Director: W. Appel) 1 hr.
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 is by personal interview with the instructor.

517 Collegium Musicum (Director: J. Boucher) 1 hr.
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.

Applied Music
Private lessons (applied music) in organ, piano, voice and all orchestral and band instruments are offered to all university students to the extent that instructor time and practice facilities are available. Priority in applied music study is given first to music majors, second to music minors, and third to students wishing to take the study on an elective basis. All students who take private lessons must always register for applied music by reporting to the Music Office to be placed on the reserve list, after which that course must be requested by the students through the standard pre-registration or final registration procedures. Students are required to make arrangements for a lesson time with the private teacher in the first days of classes each term. Every student should have a lesson during the first week of the term. Final examinations are required of all students in applied music. Examinations will be heard and graded by a panel of members of the music faculty.

100 Applied Music 1-2 hrs.
This level of applied music indicates private music study at a fundamental level. Neither audition nor examination is required for admission to this level of study. Credit earned may be applied to a Bachelor of Music degree only by special arrangement through the Department of Music.

200 Applied Music 1-2 hrs.
This level of applied music indicates "lower division" standing for music students who have been approved for this level through auditions or jury examinations. A maximum of two credits per semester may be earned at this level.

300 Applied Music 1-3 hrs.
This level of applied music indicates "upper division" standing in applied music and is used to designate junior and senior level applied music. A maximum of three credits per semester may be earned at this level.

Music Classes

101 Music Convocation No Credit
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.
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.
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121 Piano Class
A continuation of 120.

122 Voice Class
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.

126 Beginning Guitar Class
This course is intended for teachers who wish to acquire the basic skills necessary to use guitar for accompaniment of singing in the classroom. In addition to learning the basic chord patterns and various types of strums, the course includes techniques of teaching and leading songs. The student will be required to own, purchase, or have access to a non-amplified guitar.

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. For music majors only.

132 Oboe Class*
Fundamentals of oboe pedagogy, performance and reed-making. For music majors only.

133 Clarinet Class*
Fundamentals of clarinet pedagogy and performance. For music majors only.

*For music majors only.
134 Bassoon Class*  
Fundamentals of bassoon, pedagogy, performance, reed-making and instrument maintenance. For music majors only.

135 Saxophone Class*  
Fundamentals of saxophone pedagogy and performance. For music majors only.

136 Trumpet Class*  
Fundamentals of trumpet pedagogy and performance. For music majors only.

137 French Horn Class*  
Fundamentals of French horn pedagogy and performance. For music majors only.

138 Trombone Class*  
Fundamentals of trombone pedagogy and performance. For music majors only.

139 Tuba Class*  
Fundamentals of tuba pedagogy and performance. For music majors only.

140 Music for the Classroom Teacher  
4 hrs.  
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 uses 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  
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.  
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.

150 Music Appreciation: Live Music  
4 hrs.  
An introduction to music and music literature in conjunction with attendance at music concerts and recitals on campus. Classroom discussion and readings will guide the student through a variety of listening experiences that will stimulate his perception and enjoyment of music on a visual as well as aural level. This approach will also insure a wide sampling of musical styles and media while encouraging the student to become more aware of his musical surroundings. A schedule of the musical events required for the semester will be issued during the first week of the semester.

*For music majors only.
151 Music Appreciation: Pop and Jazz 4 hrs.

The music of America's greatest popular song composers together with important foreign influences such as the Beatles. Composers will include Gershwin, Rogers, Porter, Kern, Bernstein, Bacharach, Simon, and Dylan. Many songs will be performed in class and their cultural as well as musical attitudes examined. Jazz and its sociological implications will be explored through reading, discussion, and listening to the outstanding jazz artists. Stress will be placed on those artists who have influenced the art form most (e.g., Louis Armstrong, Dizzy Gillespie, Charlie Parker, Lester Young, Art Tatum, Thelonius Monk, and Ornette Coleman).

152 Music Appreciation: Rock and Electronic Music 4 hrs.

A study of rock and electronic music from a cultural and musical point of view. Essentials of rock harmony, melody, rhythm, and instrumentation will be presented. The following will also be dealt with: The Moog synthesizer—its use in rock, electronic, and commercial music; demonstration of the techniques of sound alteration using components of the synthesizer; recording studio techniques, tape editing and recording; live demonstrations of rock and electronic music. Throughout the course an attempt will be made to deal with the esthetic principles behind rock and electronic styles and to relate these to the student's own experience. Parallel cultural developments in the allied arts will also be studied.

160 Basic Music 3 hrs.

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.

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.

162 Aural Comprehension 1 hr.

Training in the basic skills of music reading and ear training. Students must also be enrolled in 160.

163 Aural Comprehension 1 hr.

A continuation of 162. Prerequisite: 162.

164 Fundamentals of Music 3 hrs.

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.

165 Fundamentals of Music 3 hrs.

A continuation of 164. Prerequisite: 164.

190 Accompanying 1 hr.

Supervised experience in accompanying vocal and instrumental music, both solo and ensemble.
191 Accompanying
A continuation of 190. Prerequisite: 190.

220 Advanced Piano Class
A continuation of 120-121. Prerequisite: 120-121 or consent of instructor.

221 Advanced Piano Class
A continuation of 220.

227 Violin Class
A specialized course for the string major presenting the techniques and materials of violin. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string majors.

228 Cello Class
A specialized course for the string major presenting the techniques and materials of cello. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string majors.

229 String Bass Class
A specialized course for the string major presenting the techniques and materials of string bass. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string major.

230 English, Italian and Latin Diction
A phonetic approach to the pronunciation of these languages designed for singers and choral directors. The performance of the language utilizes the vocal literature of major composers in the respective fields of vocal literature.

231 French Diction
A phonetic approach to the pronunciation of French designed for singers. The performance of the language utilizes the song literature of major composers of the French chanson.

232 German Diction
A phonetic approach to the pronunciation of German designed for singers. The performance of the language utilizes the song literature of major composers of German lieder.

240 General Music Methods
A study and survey of sequential musical experiences in general music classes in grades K-8. The course will include education objectives, philosophical concepts, instructional methods and materials and various innovative approaches used in the general music class. Administration and implementation of the class will be examined. The course is especially designed to acquaint the student with various teaching techniques. Each student will have an opportunity to participate in general music classes in area schools one-half day a week. Prerequisite: 160-161.

244 Elementary Music Practicum
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.

260 Basic Music: Analysis of Basic Forms 2 hrs.
An analytical study of music in the smaller forms. Prerequisite: 161 with a grade of C or better.

261 Basic Music: Contemporary Techniques 2 hrs.
Recent compositional techniques including total serialization, aleatoric procedures, musique concrete, electronic and computer music. Written assignments. Prerequisite: 161 with a grade of C or better.

262 Composition 2 hrs.
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.
A continuation of 262.

266 Musical Acoustics 2 hrs.
A course specifically for the music student. Study includes overtone series, frequency, tone quality, wave length, air columns, noise, and temperaments. Prerequisite: 161.

270 Music History and Literature 3 hrs.
A survey of the growth of music from the earliest times through the Medieval, Renaissance, and Baroque periods.

271 Music History and Literature 3 hrs.
A survey of the growth of music from the Classical period to the present time.

279 Instruments of the Band and Orchestra 2 hrs.
Students survey the string, woodwind, brass and percussion instruments commonly used in the band and orchestra. The major aim of the course is to make the student aware of the unique sound which characterizes each instrument and how that sound is produced. In developing his perception and discrimination in this regard, the student investigates such things as the acoustical properties of the instruments, the correct formation of the embouchure for the brasses and woodwinds, the techniques of bowing string instruments, and the physical attributes required to perform successfully on certain instruments. All will learn the proper techniques for playing various percussion instruments commonly used in the classroom and be given the opportunity to explore one or more of the brasses and woodwinds.

280 Field Experience in Music Education 1 hr.
Class meetings will be devoted to establishing a philosophy of music education as it exists in the total education program in the public schools. Criteria for recognizing qualities of successful music teachers will be established. Observation and participation in public school classrooms and rehearsals shall be an integral part of this course. This course will be ten weeks in length.
281 Field Experience in Music Therapy 1 hr.
Class meetings will be devoted to the study of the history and development of music therapy, the function of music in a total therapeutic program, and of disability areas using music. Participation in music on hospital wards and with exceptional children shall be an integral part of this course. The course will be ten weeks in length.

290 Recreational Music 2 hrs.
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.
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.
An introduction to string instrument maintenance and repair, the 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.

320 Advanced Piano Class 1 hr.
A continuation of 220-221. Prerequisite: 221.

321 Advanced Piano Class 1 hr.
A continuation of 320. Prerequisite: 320.

330 Choral Conducting and Literature 2 hrs.
The fundamentals of choral conducting are presented, including patterns and rehearsal techniques. The study and selection of literature appropriate to various levels of junior and senior high school choirs is included. Each student will be sent into the local schools during the part of the course in order to work with younger students.

331 Instrumental Conducting and Literature 2 hrs.
Beginning homogeneous and heterogeneous methods will be used with students acting as conductor-teachers and playing secondary instruments. Literature appropriate to various levels of junior and senior high school bands and orchestras will serve as materials for conducting with students performing on major instruments. Each student will have the opportunity to rehearse with the Symphonic Band at least once, and will be sent into local schools during part of the course to work with younger students.

332 Choral Conducting 2 hrs.
A continuation of 330 with added emphasis on rehearsal and choral conducting techniques, choral literature (selection, conducting), voice classification and selection. Prerequisite: 330.

340 Teaching Vocal Music in the Schools 2 hrs.
Extensive involvement with actual teaching of vocal music in public schools is the central part of this course. In addition, the student will
be exposed to various philosophies of vocal music. The student will be acquainted with such administrative duties as scheduling, budget, fund-raising, equipment purchase, and public relations. Technical problems such as the changing voice and voice testing will be discussed. Matters relating to job seeking and professional growth will also be covered.

342 Organization and Administration of Church Choral Groups 1 hr.
A course designed for vocal teachers who may be involved in the directing of church choirs. A short history and philosophy of church music and an extensive survey of church music literature. Prerequisite: 240 for music majors; otherwise, no prerequisite.

344 Teaching Wind/Percussion Instruments in the Schools 2 hrs.
Extensive involvement with actual teaching of band music in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of instrumental music. The student will be acquainted with such administrative duties as budget, fund-raising, equipment purchase and inventory, instrument maintenance and repair (including actual experience with repair), and public relations. Job seeking and professional growth will also be discussed.

345 Teaching String Instruments in the Schools 2 hrs.
Extensive involvement with actual teaching of string music in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of instrumental music. The student will be acquainted with such administrative duties as budget, fund-raising, equipment purchase and inventory, instrument maintenance and repair (including actual experience with repair), and public relations. Job seeking and professional growth will also be discussed.

346 Marching Band Techniques 2 hrs.
The student will be exposed to and required to work with the planning and charting of halftime shows. This experience will include arranging and methods of working with students in learning a show. One requirement of the course will be the planning and execution of at least one show with a local high school band. The student will also learn techniques appropriate to street parades.

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.

350 American Music 4 hrs.
A survey of the diverse styles of the music of the United States from the Pilgrims to the present. The development of popular music and jazz will be explored as well as that of church, band, and concert music. Folk song and regional styles will be observed as social-musical statements. Cultural change in this country's history will be viewed from the perspective of its musical heritage. Ability to read music is not required.

351 Western Art Music 4 hrs.
A survey of Western European composers and musical styles from the Middle Ages to the present. Forms such as the Lied, mass, motet, concerto, sonata, and symphony as used by the well-known composers of tradi-
tional "art" music will be listened to and discussed. Acquaintance will also be made with musical scales, modes, harmonies, and rhythms as well as with a great variety of musical instruments. Examples from art, architecture, and literature will be compared with music to illustrate corresponding tendencies within the main style epochs (e.g., Renaissance, Classic, Romantic). Ability to read music is not required.

352 Non-Western Music  
A study of the traditional music of China, Japan, Southeast Asia, India and the Arabic countries, as well as of the non-literate cultures around the world, such as American Indian, Australian Aborigine, African, and Micronesian. One or several cultures will be selected for close study and a particular attempt will be made to understand the customs and attitudes of a people through their music.

360 Style Analysis of Instrumental Music  
An analytical study of instrumental music with an emphasis on the larger forms such as the sonata, symphony, quartet, concerto, etc. Prerequisite: 260 with a grade of C or better. May be repeated for credit.

361 Style Analysis of Vocal Music  
An analytical study of vocal music with an emphasis on lieder, opera, oratorio, etc. Prerequisite: 260 with a grade of C or better. May be repeated for credit.

362 Composition  
A study of the techniques of twentieth century composition with original work in vocal and instrumental forms. Prerequisite: 263.

363 Composition  
A continuation of 362.

364 Electronic Composition I  
An introductory course in electronic music including a study of the studio techniques since 1950, applications of studio technique to sound production, and the operation of the synthesizer as a performance instrument. Prerequisite: 263.

365 Electronic Composition II  
A continuation of 364 with emphasis on studio oriented acoustics and the functions of sound generating and modifying instruments. Prerequisite: 364.

366 Instrumental Arranging  
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 Analysis of 20th Century Music  
An analytical study of major works of the 20th century. Prerequisite: 261 with a grade of C or better. May be repeated for credit.

368 Survey-Review of Basic Music  
A course required of transfer students who have satisfactorily completed their music theory (equivalent to Basic Music 160, 161, 260, and
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.

373 Creating Music in the Classroom 4 hrs.
Students create a variety of sounds at many levels. They compose, arrange, conduct, perform and evaluate. The course is taught by three music educators each of whom provides a unique focus. Experiences center around techniques which can be used to help students of all ages realize their creative musical potential.

374 Graderoom Music Literature 3 hrs.
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.

375 20th Century Music Literature 2 hrs.
A survey of 20th Century literature through listening. Some study of the chronological evolution of modern structure and harmony. Special emphasis on the atonal concepts and electronic media.

380 Psychology of Music 2 hrs.
Physical, psychological and physiological aspects of sound and systems of tonal relationships. The effects of music on the individual and the consideration of music as a form of communication; the nature and measurement of musicality; the nature of musical memory; the underlying bases for musical taste and for aesthetic experience in music with emphasis on cultural influences. Prerequisite: Psychology I.

382 Influence of Music on Behavior 3 hrs.
A study of the relationship between music and personality and of the function of music in personality adjustment and development. The study of research methods shall be pursued through analysis and evaluation of published studies, and skills essential to research shall be developed. Prerequisite: Psychology I.

384 Music in Special Education 4 hrs.
Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmic, and creative activities in classes for mentally and physically handicapped. The student learns functional use of piano and informal instruments. Values of musical activities for all exceptionalities are emphasized. For Special Education majors only. Substitutes for MUS 140.

460 Counterpoint 2 hrs.
A study of the contrapuntal techniques of the 18th, 19th and 20th Centuries. Written assignments are closely correlated with the contrapuntal styles of significant composers. Prerequisite: 261 with a grade of C or better.

461 Counterpoint 2 hrs.
A continuation of 460. Prerequisite: 460.
462 Composition
Original work in composition with emphasis on chamber music and orchestral music. Prerequisite: 363.

463 Composition
A continuation of 462.

464 Electronic Composition III
Students will develop and submit an outline of a compositional project which can be realized in the electronic music studio. Prerequisite: 365.

465 Electronic Composition IV
A continuation of 464. Prerequisite: 464.

466 Seminar in Music Theory
Research projects in music theory. Research methods and analytic discipline are stressed. Study will be focused in an area of the student's need or interest.

467 Seminar in Music Theory
A continuation of 466. Prerequisite: 466.

468 Orchestration
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
A continuation of 468.

470 Classroom Procedures in Theory
Literature and methodology for the teaching of Theory with analysis of several representative texts. Observation and participation in the basic music courses are an integral part of the course.

471 Classroom Procedures in Theory
A continuation of 470. Prerequisite: 470.

480 Music Therapy Methods and Materials
Survey of materials available for use in music therapy programs and methods of adapting such materials to institutional use. Study of publications and techniques developed specifically for use in music therapy programs. Prerequisite: Music therapy major.

490 Undergraduate Workshop in Special Problems
Designed for students interested in some special field or music not formally listed for instruction. All special problems must be approved by the Chairman of the Music Department, but may be under the direct guidance of any member of the Music faculty. This course may be elected as many as three times.

501 Master Class
The study of literature, performance practices, and techniques for a specified musical medium (instrument or voice). Individual performance assignments will be made appropriate to each student's level of accomplishment. Class meetings may vary from small groups of students with common performance levels to meetings of the entire class for the
College of Fine Arts

purpose of dealing with materials and techniques common to all performers. The class may be repeated for credit.

516 Music Theatre Practicum

A production experience in music theatre. Each semester culminates in an opera or musical comedy production. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. May be repeated for credit.

517 Collegium Musicum

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 no more than two hours of this course for graduation. Membership by audition.

518 Improvisation

A course in the fundamentals of instrumental improvisation. Assignments will be made in such areas as improvisation in the early music tradition, improvisation on given melodic, harmonic, and/or rhythmic materials, as well as "free" improvisations. Prerequisite: Music 161 or 165.

519 Vocal Chamber Ensemble

Small vocal ensemble(s) which emphasize research and limited performance of specialized repertoire of one or various periods of music. Admissions by permission of the instructor.

530 Advanced Choral Conducting

Supervised experience in conducting vocal ensembles. The complete preparation of choral music will be stressed. The student may be called upon to prepare an ensemble for public performance. Prerequisite: 330.

531 Advanced Instrumental Conducting

Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: 331.

540 Elementary School Music

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

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

Topics to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Educa-
tion 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.
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.

545 Music Theatre Productions 2 hrs.
A course in the techniques of acting, singing, dancing and producing of musical theatre. Students will be divided into small groups, each group having been assigned to produce scene(s) or act(s) from the standard musical theatre repertory. Assignments in these groups will include choreographing, blocking action, directing the music, performing, stagecraft, and other activities essential to the production. Prerequisite: Junior standing.

562 Advanced Composition 2 hrs.
A study of Twentieth Century techniques in composition with original work in vocal and instrumental forms. Prerequisite: 460.

563 Advanced Composition 2 hrs.
A continuation of 562.

569 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: 161 with a grade of C or better.

570 Introduction to Musicology 3 hrs.
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.
A continuation of 570.

572 Baroque Music (1600-1750) 3 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: 270-271.
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: 270-271.

574 Romantic Music (1800-1910) 3 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: 270-271.

575 Musicology and Research 2 hrs.
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 2 hrs.
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.

581 Choral Music Literature 3 hrs.
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

590 Studies in Pedagogy 1-4 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.

593 Piano Technology 1 hr.
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.
Readings in Music

Graduate students may enroll in this course after consultation with the graduate adviser.

Advisers:
- Art: T. D. Argyropoulos—1429 Sangren Hall
- Dance: Janet Stillwell—2 Walwood Union
- English: Tom Small—621 Sprau Tower
- Humanities: Ted Marvin—2093 Friedmann Hall (Coordinator)

FINE ARTS MINOR

The Fine Arts minor program is available for students who want to increase their appreciation of the arts and develop some understanding of the working and creative attitudes of artists in various areas. This program allows flexibility in the choice of courses and can be adjusted, with the counsel of the program advisers, to focus on each student’s individual interests.

Six departments from the Colleges of Fine Arts, Arts and Sciences, and General Studies sponsor the Fine Arts minor: Art, Dance, English, Humanities, Music, and the Theater area of Communication Arts and Sciences.

Each student’s program should include:
1. A minimum of 24 credit hours chosen from the list of recommended courses, or other courses suggested by one of the program advisers.
2. Courses from at least three of the participating departments.
3. At least one course focusing on appreciation, one providing practical experience in an art, and one dealing with inter-relationships between arts.
4. No more than three courses from any one department.

Courses fulfilling the requirements of this minor cannot also count toward General Education credit.

Students interested in this minor are urged to contact one of the six advisers as early as possible. A minor slip is required.

Music: Don Para—102 C Maybee Hall
Theater (CAS): David Karsten—214 Sprau Tower

Recommended Courses:
- Art: 120, 130, 140, 220, 221, 305
- Dance: 102, 123, 228, 300, 500, 548
- English: 110, 150, 210, 266, 340, 344
- Humanities (General Studies): 102, 200, 201, 202, 203, 204, 206, 207, 208, 209, 300, 301
- Music: 150, 164, 165, 350, 351, 352, 373
- Communications Arts and Sciences (Theater Area): 220, 222, 224, 228, 320, 328, 520
- Philosophy: 312

Certain other courses from these departments may be included in the minor with the approval of one of the advisers.
College of General Studies

NORMAN C. GREENBERG, Dean

OLLIN J. DRENNAN, Associate Dean

Academic Areas:
Humanities
Science
Social Science
The College of General Studies offers students the choice of entering programs in which they can learn to integrate the perspectives and develop the skills necessary to fulfill the role of broadly prepared, flexible, and perceptive persons. Its courses are concerned primarily with the integration of knowledge, the interrelationships among the various disciplines, and the interdependence of the various ways of knowing and learning. While the conventional departments may also advance these "interdisciplinary" concerns, this College makes such concerns the major focus of its programs.

GOALS OF THE COLLEGE OF GENERAL STUDIES

1. The goals of the College of General Studies will be compatible with the goals of the University.

2. The most comprehensive goal of the College of General Studies is to assist students in developing the ability to think critically and to engage successfully in intellectual pursuits. The General Studies program seeks to engender the disposition to seek knowledge and the habit of bringing knowledge of all kinds to bear on decision making.

3. The College of General Studies will assist students in developing confidence in their ability to make judgments while acquiring a willingness to reconsider their judgments in the light of new insights, information, and patterns of values.

4. The College of General Studies will acknowledge positively more than one mode of inquiry and encourage exploration of cross- and/or trans-disciplinary interests and programs of study.

5. The College of General Studies will develop and maintain a coherent program which assists students in developing a responsible awareness of themselves as human beings and of their social and physical environments.

Within the framework of these goals the faculty of the College has developed Integrated Programs to provide a closely knit means for students to satisfy the general education requirement. In addition, individual courses have been developed by the faculty to provide opportunity, within the General Education Distribution Program, for students to experience the transdisciplinary approach to knowledge and thought.

A student in an Integrated Program should discover it to be a unique and concise way of satisfying the general education requirement. Series of integrated courses have been developed around thematic material which in the course of study would provide the student with broad and recognizable perspectives regarding the integration of knowledge. It is hoped that the student would therefore perceive ways which will assist him in integrating and applying the information he receives in more specific disciplines.

*All General Studies courses have been approved for General Education purposes.*

Additional information concerning each of the Programs or any of the specific courses described below can be obtained from the office of the Dean of the College of General Studies.
Integrated Programs

The Integrated Programs developed within the College of General Studies are designed to satisfy a number of minimal goals. Each Program will include in its beginning course, designed for first semester freshmen, a consideration of the various benefits that may be derived from attending a college or university and a consideration of expectations that are unrealistic with reference to colleges as they must exist. An integral part of such beginning courses will be an exploration of ways in which the remainder of the student's general education requirement may be satisfied to form a coherent program within the thematic development of the particular Integrated Program and the personal goals and interests of the student. So far the following Programs have been developed to give to students options with a broad diversity in theme and structure.

PROGRAM A: The Getting It Together Program (GIT)

David DeShon, Coordinator

The program title, "Getting It Together" refers to the problem of making sense of the great variety of human knowledge and experience. Students at Western soon realize that this is a problem for they are quickly exposed to courses which range from "hard science" to "broad generalities." The GIT faculty believe that the fully functioning person learns to live effectively with both—not rejecting the one over the other. The faculty wants students who care about what it means to be here, and who desire to make the most of what the University has to offer. They will counsel and advise students interested in the program on how to use the University toward these ends.

The courses in the program are built upon the quest for a unity of knowledge and experience. To do this it is necessary to see the self as always in a context. Consequently, some of the courses emphasize a "self perspective," some a "context perspective," and others attempt to look at the reciprocal effect of these when viewed together. By elaborating this simple idea through several courses, one can come to better interpret the University and life in general. This is a simple idea, but it has many facets. It is what ties the whole program together.

The program requires the completion of any four courses from the following list. Doing this will satisfy the breadth requirement of the General Education Requirement. Additional courses from the program may be taken at the student's option to complete the entire Requirement of 35 hours. It is recommended that IN PURSUIT OF AWARENESS be taken first and PERSONAL WORLD VIEWS last, but this is not mandatory. Students who make it known to the program coordinator that they intend to complete the program will be given first chance to enroll in classes.

155 In Pursuit of Awareness 4 hrs.

It is assumed that people want to make a difference for having lived at all, to be noticed, to be taken into account. This course links that wish into awareness in action—a critical consciousness is useful for effectively
making a difference. Models of alert insight are available and are offered. Opportunities are provided for the students to check out the usefulness of these models in terms of their own goals and expectations.

222 The Status of Women  
(See description, p. 544.)

255 Self-Images and Images of Social Reality  
(See description, p. 552.)

256 Beyond Survival  
(See description, p. 552.)

315 Human Communication  
(See description, p. 547.)

331 The Many Faces of Nature  
(See description, p. 544.)

355 Post-Freudian Thought  
(See description, p. 552.)

424 Science, Mysticism and Creative Mythology  
(See description, p. 545.)

430 Science as a Cultural Process: The Copernican Revolution  
(See description, p. 550.)

431 Science as a Cultural Process: The Darwinian Revolution  
(See description, p. 550.)

455 Personal World Views  
(See description, p. 553.)

456 Aspects of Evolution  
(See description, p. 553.)

457 The Frankfurt School  
(See description, p. 553.)

PROGRAM B: World Explorations Program

Ted Bank, Charles Houston, Coordinators

An integrated program of courses designed to acquaint students with the drama and the discoveries occurring at today's frontiers of knowledge, and to involve students in active exploration of the world around them. Courses may be selected from the following list. Credit hours are variable, depending upon the number of courses elected. A student may elect as many courses as desired, but no course can be taken for credit more than once.

Ideally a student will enter the Program by electing one or more introductory courses in PART 1, usually in the freshman or sophomore year. In subsequent semesters, the student will select courses from PARTS 2 to 5. It is strongly recommended that the student complete PART 3 Field Experiences prior to electing any of the Summer Institutes and Expeditions in PART 4. The Summarizing Interdisciplinary
Studies in PART 5 are designed to serve as "capstone" courses which will complete a student's Program.

PART 1. Entry Course

160 Man the Explorer 3-5 hrs.
The focus is upon the quest and human drama in exploration, the on-going research that occurs at the frontiers of knowledge in various disciplines. Multi-media lectures, demonstrations and opportunities for independent study.

161 The Circle of Human Experience 4-6 hrs.
Begins with a brief survey of the principal social-economic-political features of contemporary American society; then focuses upon the environmental factors, major threads in American history, and the influences upon American society from other cultures through time and space.

162 Mainstreams of World Cultures 4-6 hrs.
An examination through time and space of selected world cultures at high points of accomplishment in developing arts and philosophies of life.

PART 2. Introductory Field Experiences

260 World Exploration 4 hrs.
Course content is partly determined by the students; focus is upon recent findings at the frontiers of research in many fields, and particularly upon the active involvement of the students in exploring the world around them. Multi-media lectures, seminars, and student-planned expeditions to nearby areas of special interest.

Introduction to Field Study Methods*

PART 3. Field Experiences in Great Lakes Regional Studies
(Usually offered only Spring and/or Summer Sessions.)

360 Explorations in Urban Environments and Ecological Studies 4-8 hrs.
Cultural and human ecologies of urban environments; a study of man in his total environment from the humanistic perspective, particularly the urban experience and its environmental implications; an exploration of the variety of alternative life styles and adjustments that are possible in the urban environment. Lectures and seminars, with a block of time (1-4 weeks) devoted to field projects in urban environments.

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.

In the WORLD EXPLORATION PROGRAM credit will be allowed if 399 is taken with 360.

*This course is under preparation and will not be offered in 1974-75.
Explorations in Natural Environments and Ecological Studies*

PART 4. Summer Institutes and Expeditions
(Requires commitment of an entire school term off campus.)

Urban Area Work-Study**
Outward Bound Experience**
Summer Study Abroad**

PART 5. Capstone Courses

460 Field Experience in Environmental and Ecological Studies
4-6 hrs.
Cultural and natural environments in ecological perspective; a hard look at past, present and future options open to man in his use and misuse of planet earth, together with an exploration into the relatively new frontiers of inner and outer space. Lectures, seminars and field trips.

424 Science, Mysticism and Creative Mythology
(See description, p. 545.)

499 Independent Study in General Studies
(See description, p. 545.)

Frontiers of Modern Exploration*
Great Explorations*

PROGRAM C: The Twentieth Century Experience
Howard Dooley, Coordinator

The 20th Century has been an age of high drama and recurrent crisis, of seismic change in the ways men live and in the myths they live by. Humankind's most triumphant achievements stand side by side in our time with a roster of the most disgusting crimes. While each succeeding generation places itself at the apex of history, this astonishing century seems peculiarly to merit such a position. It is a watershed period within which the human condition is being irrevocably, if unpredictably, transformed.

The Twentieth Century Experience is an integrated program of three parts planned to be taken in sequence. It aims to examine our immediate past, difficult present, and perhaps uncertain future. Interdisciplinary methods provide the most direct way of grasping our "Promethean Epoch" by drawing together the complementary insights and discoveries of the humanities, social sciences and natural sciences within the framework of contemporary world history. The Twentieth Century Experience, then, is intended as a learning experience in depth, one in which stress is laid on the ways in which things tie together, on exploration of the total process, and on the development of both a global and historical perspective about our time.

*This course is under preparation and will not be offered in 1974-75.
**This field experience is under preparation and will not be offered in 1974-75.
PART 1. Entry Course Sequence

165 The Twentieth Century Experience. I: From the Victorian to the Aspirin Age (1890-1933) 4 hrs.

This course presents an interdisciplinary survey of the Western and non-Western worlds at the beginning of the twentieth century. Victorian manners and morals, the birth of modern art, the first movies, the emergence of Freudian psychoanalysis, the quantum theory and relativity, the last great surge of imperialism, World War I, the Russian and Chinese Revolution, the origins of Fascism, the Roaring Twenties, and the Great Depression—all these and more constitute one of the most eventful periods in mankind's history.

166 The Twentieth Century Experience. II: From the Third Reich to the Third Millenium (1933-2000) 4 hrs.

This course presents an interdisciplinary survey of the recent past, contemporary situation, and future prospects of the Western and non-Western worlds. The Great Depression, the rise and fall of Nazi Germany, World War II, the Cold War, nuclear weapons, the Arab-Israeli conflict, Vietnam, Existentialism, Behaviorism, the pop culture explosion, New Wave Cinema, the energy crisis, Futurology—all these and more constitute one of the most chaotic yet creative periods in mankind's history: our own time.

PART 2. Two Courses (minimum) Relevant to the 20th Century (min. 8 hrs.)

The courses making up PART 2 are to be selected by the student from the General Studies contribution to the Distribution Program (for example: 402 Towards 2000: Utopian Visions and Futurism). A range of these courses will be offered each semester by the staff of the program itself, with first chance to enroll given to students enrolled in the Program. Other General Education courses may be taken to satisfy the requirement with the advice and consent of the program staff that such courses are relevant to the 20th century experience.

PART 3. A Capstone Course

465 Seminar in the Twentieth Century Experience 4 hrs.

The student will have the opportunity to identify, define and research a specific problem or topic of his choice centering on the 20th century, and to present the fruits of this labor for group discussion. Program staff will provide continuous assistance at all stages of the inquiry.

PROGRAM D: The Non-Western World Studies Program

Visho Sharma, Coordinator

It is increasingly being accepted that national and cultural boundaries are artificial and irrelevant limitations on the scope of learning. The student obtains a better grasp of his own culture if he is enabled to compare it with others, to see it as only one aspect of the unfolding human record. Non-Western civilizations have produced a magnificent corpus of aesthetic creation, philosophical thought and social organization. To ignore it is to deprive ourselves of the benefit of a sizeable
portion of human achievement. Such achievements of the mind and hand of man are part of the heritage of every civilized person and have influenced the Western world more than is commonly acknowledged, but they are nevertheless ignored to all intents and purposes in formal education. Thus the essential purpose of this program is not to enlarge the fraction of the world that the student knows about but to redress the glaring neglect of some of the varieties of human experience that must be taken into account in general education. By participating in this program, the student will be able to understand in depth cultures which have developed essentially apart from the stream of the Greco-Judaic-Christian tradition; he will be enabled to pursue a systematic study of the Non-Western world.

The Non-Western World Studies Program is comprised of a minimum of 16 credit hours and three parts. A student taking the whole Program will complete PART 1, the introductory course; PART 2, at least one of the follow-up courses of regional studies listed below; and PART 3, at least one of the "capstone" courses of topical study.

The introductory course will fulfill Western's Non-Western World requirement in General Education. If the student completes the entire program the distribution portion of the General Education Requirement will be satisfied. To accomplish this the student must consult with the Coordinator of the Program.

PART 1. Entry Course

304 Introduction to the Non-Western World 4 hrs.
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.

PART 2. Regional Studies  (min. 4 hrs.)

371 Non-Western Societies in the Modern World: East Asia 4 hrs.
An analysis of the distinctive "style" of the civilizations of East Asia. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.

372 Non-Western Societies in the Modern World: Southeast Asia 4 hrs.
An analysis of the distinctive "style" of the civilizations of Southeast Asia. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.

373 Non-Western Societies in the Modern World: South Asia 4 hrs.
An analysis of the distinctive "style" of the civilizations of South Asia. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.
374 Non-Western Societies in the Modern World: The Middle East and North Africa 4 hrs.

An analysis of the distinctive “style” of the civilizations of The Middle East and North Africa. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.

375 Non-Western Societies in the Modern World: Sub-Saharan Africa 4 hrs.

An analysis of the distinctive “style” of the civilizations of Sub-Saharan Africa. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the interrelationship between technology, social structure, and ideology.

PART 3. Topical Studies (min. 4 hrs.)

470 Non-Western World Through Literature 4 hrs.

An introduction to life and thought in the Non-Western world as depicted through its literature. This course is designed to throw light on the ideals and aspirations forming the basis of the traditional world-view, the complexes of social problems arising from the clash of the old and new, and the agonizing change from self-enclosed systems to open, multi-group societies.

471 Minorities in the Non-Western World 4 hrs.

An analysis of social and cultural dynamics of minority communities and the determinants and consequences of inter-community relations in pluralistic societies with special reference to points of tension and possibilities of harmony in the fluid context of changing social systems.

472 Science and Technology in the Non-Western World 4 hrs.

This course will examine the role science and technology has played in the culture of the Non-Western world, with particular reference to India, the Middle East, and China.

PROGRAM E: Environments of Man: Patterns of Change

Robert Poel, Coordinator

The integrated general education program, Environments of Man: Patterns of Change will combine the views of science, social science, and the humanities in an exploration of the responses man has made and will be required to make to his environments of nature, of society, of culture, and of self. The primary thrust of the program is an examination of diversity and change in human environments in an effort to understand present patterns and alternatives for the future.

The entire program consists of a minimum of 24 credit hours up to a maximum of 35 credit hours, the entire general education requirement. The program consists of three distinct parts which are designed to be completed in sequence.
PART 1. Entry Course

Both GINT 175 and 176 are required for completion of the Environments of Man: Patterns of Change Integrated Program

175 Environments of Man—I 4 hrs.
An integrated course primarily for first-semester freshmen, team taught by faculty from different academic fields. The course deals with man's natural, social, and personal environments. It is designed to acquaint students with the methods of inquiry used in different disciplines and the broad issues which man currently is facing and will face in the future. In this course each student will be introduced to the rest of the integrated program and will be aided in planning his general education program.

176 Environments of Man—II 4 hrs.
A continuation of GINT 175. Also team-taught, this course focuses on issues involving man's relation to his environments. Prerequisite: GINT 175 or consent of the coordinator.

PART 2. Related Courses

Part 2 consists of from 12 to 24 credit hours of discrete courses or programs approved for general education credit and selected by the student in consultation with a faculty member from PART 1. The second Part is designed cooperatively by the student and a faculty advisor to examine some of the issues more fully, to develop specific inquiry skills, and to seek answers to these questions. PART 2 will be considered complete if it includes:

a. a minimum of 12 hours of credit
b. an introduction to the Non-Western World
c. a minimum of 4 credit hours at the 300-400 level
d. a spread of intellectual approaches and skills used in the different academic divisions of knowledge
e. course selection in consultation with a faculty advisor from PART 1

PART 3. A Capstone Course

475 The Environments of Man Seminar 4 hrs.
A seminar offered during a student's junior or senior year. It is designed for individual and group investigation into patterns of change—past, present, and future—and the alternative responses man may have to it. This final capstone experience would allow for maximum opportunity for individual effort and independent study under faculty supervision. The SEMINAR has three requirements:

a. substantive research on a topic of interest to the student in which he has developed knowledge and presentation of the results to the class
b. regular attendance and constructive reaction to the reports of others
c. an attempt by the class as a whole to synthesize the individual reports into consistent and defensible answers to the general questions: What is likely to happen? and How should we respond?
PROGRAM F: Technology in Culture Program

Roger Bennett, Coordinator

The Technology in Culture Program is designed to help the student learn more about the important role of technology in our culture, to see the many facets of the interactions between various aspects of technology and the other segments of our culture, to develop an awareness of everyone's responsibilities for the problems brought about by these interactions, and to acquire some skills to use in meeting these responsibilities. The Program is divided into four Parts.

PART 1. Entry Course

180 Technology in Culture: Past and Present 4 hrs.
An introductory course which gives a brief historical study of the technology from the 17th Century to the present, defining technology and its various aspects, relating technology to other segments of our culture and defining some of the advantages of modern technology as well as some of the problems that now face us. As a part of this first course each student will be introduced to the other parts of the program and will be aided in planning his general education program in technology. This course is for freshmen, preferably in their first semester.

PART 2. Related Courses

PART 2 consists of three BLOCKS, each containing several courses. All students in the Program are required to elect at least three courses from these BLOCKS in order to provide them with experiences in all three areas.

BLOCK I. Environment and Technology

133 Issues in Social Biology
(See description on p. 550.)

330 Radiation, Society, and Man
(See description on p. 550.)

Geography 100 World Ecological Problems and Man* 4 hrs.

Physics 102 Physics and the Environment* 3 hrs.

Geology 444 Environmental Geology* 3 hrs.

338 Thermal Pollution 3 hrs.
A course for students in environmental studies that considers the concepts of thermodynamics as related to energy resources and thermal pollution. Students will learn to evaluate critically current literature for the soundness of its statements in matters of thermal pollution.

Transportation in the United States**

*See Departmental listing.
**This course is under preparation and will not be offered in 1974-75.
BLOCK II. Man and Technology

410 Art and Technology 4 hrs.
An inquiry into the contemporary visual and musical arts as they relate to technology.

English 105 Thought and Language: Option D:
  Writing and Popular Scientific Literature 4 hrs.

English 311 Perspectives Through Literature 4 hrs.
  Option C: Images of Progress
  Communication Agencies*
  Technology and American Music*

BLOCK III. Society and Technology

Military Science 100 Contemporary Problems in National Defense*
Business Education 140 Industrial and Business World*
Sociology 171 Social Impacts of Science and Technology*
Engineering Technology 378 Development of American Technology*
The Social Responsibility of Business**

PART 3.

472 Science and Technology in the Non-Western World
(See description on p. 539.)

PART 4. Capstone Course

480 Technology in Culture: Present and Future 4 hrs.
A course that attempts to summarize and unite the knowledge and concepts of the other parts of the program, and examine some prospects of the future, in an effort to better equip students to leave college and join our technological society.

PROGRAM G: The Inquiry Program

Dale Porter, Coordinator

One of the traditional aims of liberal education is to develop habits of independent inquiry, so that people may continue learning with greater depth and purpose after their formal education is completed. Such habits include asking useful questions, mobilizing resources, and designing systematic investigations. It is difficult to develop independence when subject matter and its significance are pre-determined by the teacher. But it is equally difficult to begin independent study without previous training and the support of others.

INQUIRY is an integrated sequence of courses that prepares students for self-directed learning both during and after their university career. The two basic courses train students to ask effective questions, mobilize

*See Departmental listing.
**This course is under preparation and will not be offered in 1974-75.
sources of information, and design study projects of high academic cali-
ber. As with other General Studies programs, an interdisciplinary ap-
proach is emphasized.

INQUIRY enables students to engage in independent study projects
of their own design; to plan General Education programs around a topic
of personal interest; and to pursue a Student Planned Curriculum as
provided by University policy.

A specially designed Center for Self-Instructional Inquiry provides a
training workshop for those entering the program, a meeting place for
on-going group projects, and research facilities for students and faculty
developing new materials and projects.

Courses offered in the program:

195 Methods of Inquiry 4 hrs.
An introduction to independent study techniques, with emphasis on
asking questions and locating sources of information. Students will
design an independent study project and do some preliminary investiga-
tion in their field of interest.

196 Frames of Reference 4 hrs.
This course widens a student's original topic by relating it to the
concepts and methods of a variety of disciplines. Study projects will
be designed as integrated programs of General Education. This course
is designed as part of a two-course sequence with GINT 195.

197 Inquiry Seminar 2-4 hrs.
For students engaged in Inquiry projects designed in GINT 195 or
GINT 196. Faculty guidance and support in an informal structure.
This seminar is repeatable for credit.

PROGRAM STRUCTURE

Students should normally take 195 and 196 as a two-semester sequence.
The Inquiry Seminar 197 may be taken concurrently with 196 and re-
peated for credit after taking 196. A normal sequence would be as
follows:

First Semester: GINT 195 (4 credits)
Second Semester: GINT 196 (4 credits) plus 197 (2-4 credits)
Third Semester: GINT 197 (2-4 credits) plus General Educa-
tion electives related to the field of
inquiry.
Distribution Program Courses

GENERAL

100 Ways of Knowing 4 hrs.
Students will investigate the differences and similarities among the ways of knowing in the sciences, the social sciences, and the humanities. Students will explore types of evidence, laws of logic, inferential processes and the application of these as tools of critical inquiry, to contemporary issues and problems, particularly those operating among fact, attitude, value, and action.

101 Yesterday, Today, and Tomorrow 4 hrs.
A readings-discussion course which will examine the trends and movements of the immediate past that continue to shape the present and conditionally affect the future. Students will be asked to do a considerable amount of writing in order to examine their own past and present experiences, toward the objective of envisioning a desirable and workable future.

222 The Status of Women 4 hrs.
This course is designed as a general exploration of the content and the effect (including affect) of the traditional definition of “woman.” Attention is given to such sources as law, religion, literature and art, mass media, psychology, biology, and social conventions, and to the social processes which transmit and reinforce sex role behavior.

299 Independent Study in General Studies 1-8 hrs.
Various extra-classroom activities, including independent reading or research under the direction of a faculty member or projects associated with field experience or travel of recognized educational value. Prior arrangement with a faculty member and prior approval of a General Studies Area Chairman and/or the office of the Dean of the College. May be repeated for credit.

304 Introduction to the Non-Western World 4 hrs.
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.

331 The Many Faces of Nature 4 hrs.
A lecture-discussion course designed to explore the dominant Western attitudes toward nature as they have been expressed during the past 2600 years and as they are manifested in the cultural patterns of today. The extent to which homocentrism and egocentrism, emanating from both the Classical Greek tradition and the Judeo-Christian tradition, have shaped these attitudes will be central to this investigation.

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,
Distribution Program Courses

approved by a faculty supervisor, and approval from the office of the Dean. Elective credit only.

499 Independent Study in General Studies 1-8 hrs.
Various extra-classroom activities, including independent reading or research under the direction of a faculty member or projects associated with field experience or travel of recognized educational value. Prior arrangement with a faculty member and prior approval of a General Studies Area Chairman and/or the office of the Dean of the College. May be repeated for credit.

INTEGRATED

(These courses serve as Entry Courses or Capstone Courses in Integrated Programs as well as in the Distribution Program)

155 In Pursuit of Awareness
(See description on p. 533.)

260 World Exploration
(See description on p. 535.)

424 Science, Mysticism and Creative Mythology 4 hrs.
A comparative study of Oriental and Occidental mythologies with respect to their mystical, cosmological, sociological and psychological functions. Investigations center upon altered states of consciousness, changes in scientific views of life, the relevance of archetypal processes to cultural forms, parapsychology and an introduction to general systems theory.

HUMANITIES AREA

Phillip D Adams, Chairman

Harold O. Bahlke  Doug DiBianco  Robert Larson
Lynwood H. Bartley  Herman Doezema  F. Theodore Marvin
Pearl Baskerville  Howard Dooley  Milo M. Meadows, Jr.
Joseph M. Condic  James M. Ferreira  Harvey Overton
Beverly P. David  Reginald Gammon  Dale H. Porter
Audrey Davidson  Michael Geis  Stephen Schicker
Doug Davies  Arnold Gerstein  Rolf Sigford
Richard DePeaux  Richard Joyce  Bonnie Sigren

102 Direct Encounter with the Arts 4 hrs.
A course which adopts a sensory approach to the Humanities by introducing the student to his cultural world, and by guiding him through first-hand experiences in a number of art areas: cinema, photography, theater, sculpture, music, poetry, dance, and architecture. Based on these experiences, the student will discuss the individual and/or group reaction to the experience with individual instructors, write a journal or response paper, and participate in seminar-workshops. There will be a course change in lieu of textbooks.
200 The Arts in the Twentieth Century 4 hrs.

This course is a comprehensive examination of the arts of modern Western culture—architecture, dance, film, literary arts, music, painting, and sculpture—demonstrating their relationship to the major intellectual and social currents of the twentieth century. The stress in the course is on helping the students discover meaningful ways to respond to the arts by stimulating them to develop their own powers of observation and critical response through the materials and activities of the course.

201 The Popular Arts 4 hrs.

This course focuses upon one or more of the popular arts of contemporary Western culture, demonstrating significant relationships to several of the major intellectual currents of the twentieth century. Stress will be laid on the merits of the popular arts as aesthetic and as social products, and the student will be called upon to make use of a new consciousness of this portion of his surroundings.

202 Alternate Visions in Western Arts 4 hrs.

This course is intended to introduce the student to a sampling of non-Western and alternate cultural influences on modern Western art and culture. Beginning from a common position in the here-and-now, the course will trace several of these outside influences on at least three modern Western art forms.

203 Uses of the Past in the Present 4 hrs.

A comparison of themes, structures, symbols, and techniques which appear in the arts of the past and have reappeared on a more or less regular basis throughout history up to and including the present. The course will deal with at least three of the following arts: literature, painting, music, sculpture, dance, theater, architecture, and film.

204 Practicum 4 hrs.

This course is not designed to serve as an introduction to the practice of any art; rather, it is intended to serve the non-specialist by stimulating his interest in himself and in the world around him, by involving the students intimately in the process of aesthetic creation, and by exposing them to practitioners in three of the following areas: dramatics, film, graphics, music, new media, three-dimensional forms, visual arts, and writing. The Practicum is united thematically so that the three individual experiments in the arts will have a common foundation.

205 The Arts and Cultures of Africa 4 hrs.

An introduction to African cultures through a study of the most significant concepts and arts which reflect the uniqueness of Africa. The course will focus on the student's knowledge of the relation of these arts and cultures to himself.

206 Religious Arts of Asia 4 hrs.

An introduction to the uniqueness of Indian, Chinese, and Japanese cultures through a study of significant religious precepts and their corresponding artistic representations.

207 Secular Arts of Asia 4 hrs.

An introduction to the secular arts of India, China, and Japan which reflect distinctive cultural, aesthetic, and ideological patterns not directly related to the major organized religions.
208 The Arts and Culture of India  4 hrs.
An historical introduction to the evolution of Indian thought and art utilizing those modes of artistic expression which reflect the unique South Asian World View.

209 The Arts and Culture of Black America  4 hrs.
An introduction to the Afro-American culture through a study of the significant concepts and arts which reflect Black America. The course will focus on the student's knowledge of himself in relation to an increasing awareness of the arts of this subculture.

300 Man's Search for Meaning  4 hrs.
A unified study of the Humanities in the Western tradition, from classical times to the Renaissance, at moments of high cultural achievement.

301 Man's Search for Meaning  4 hrs.
A unified study of the Humanities in the Western tradition, from the Renaissance through modern times, at moments of high cultural achievement.

302 American Culture  4 hrs.
A study of significant issues in American life focusing on the relationship of the individual to society as seen from the perspectives of literature, the arts, and social and political theory.

303 African Cultures  4 hrs.
An exploration of the unique adaptations made by African societies to their particular environments through a study of the cultural values manifested in their religious, philosophic, social, political and artistic systems.

305 Buddhism and Culture  4 hrs.
A study of Buddhist values, whose presence in diverse Asian cultures has resulted in reshaping those cultures as well as being modified by them.

315 Human Communication  4 hrs.
An investigation of the processes by which man uses symbol systems, centrally concerned with both personal and cultural communication behavior. The course is intended to increase understanding of and sensitivity to communication processes and their limitations through increasing the student's consciousness of his own communication behavior and through exposing him to the ideas of various communication specialists.

316 Mass Media: Messages and Manipulation  4 hrs.
An examination of mass communication in general and of a variety of mass media in particular. Students will consider the processes, effects, and functions of mass media through considering relevant scholarship from such diverse fields as sociology, history, psychology, anthropology, art, and literature, and the student's personal response to these will be analyzed.

400 The Twenties  4 hrs.
A study of one of the most creative and explosive decades in modern times. The growth of jazz and modern art, Prohibition, the New Woman,
the Klan, the Red Scare, the movies—all this and more serve as a pre-
scription for our own times.

401 Creating History
An attempt to discover and create new ways of describing historical
change, based on a perspective of history as creative process, and using
insights from science, philosophy, and the creative arts.

402 Towards 2000: Utopian Visions and Futurism
A discussion course which introduces the student to the classic litera-
ture of utopias and contemporary futurology, covering utopias of escape
and reconstruction from Plato to Skinner, the anti-utopias of Huxley
and Orwell, and futurist views of the world of 21st century.

403 How it Really Happened
An investigation of the problem of historical truth, through literature,
ant, and electronic media. Comparison and evaluation of different per-
ceptions of the same historical events.

404 America Since World War II
A study of the critical issues in American culture since the Second
World War as embodied in the art, literature, and social movements of
the last three decades. The Beat Generation, the Black Revolution,
Abstract Expressionism, Pop and Conceptual Art, and the impact of
existentialism on traditional values will be examined to determine how
they can expand our understanding of the present.

405 Common Metaphors in the Arts
An exploration of the hypothesis that works of art present a recurring
body of philosophical assumptions about the nature of human life, rang-
ing on a spectrum from optimism through pessimism, and including at-
titudes such as celebration, acceptance, dissection, rebellion, and despair.

406 The Arts and National Character
Nations and tribal societies have clearly defined characteristics, often
transcending or engendering artistic styles, which enable us to speak of
phenomena such as “the Italian spirit,” “the Russian temperament,” “the
typically American,” “the Japanese character,” or “the African mind.”
Several cultures will be examined in an attempt to define such cultural
dispositions. Various artistic products will be discussed with the major
focus on the art of music.

407 The Creating Audience
A study which will examine the perspectives of individual artists in re-
lationship to their art and the audience. This course proposes to analyze
the artistic process from the context of individual involvement both as
artist and audience, culminating in a discussion of active and passive
audience participation in the creative process in the works of such men
as John Cage and Robert Rauschenberg.

408 Marx, Mao and the Chinese Tradition
A study of Chinese organic thought, as expressed in art and philosophy,
and its Western interpretations. The course focuses upon the way this
mode of thought and its interpretations relate to the development of
Mao’s domestic and foreign affairs.
409 Makers of Modern Architecture 4 hrs.

This non-specialized, non-technical, inter-disciplinary course will provide the general student with an opportunity to consider the questions: what is architecture (particularly modern architecture)? Who creates it? How is it created? Why is it important?

410 Art and Technology 4 hrs.

An inquiry into the contemporary visual and musical arts as they relate to technology.

411 Woman: Past, Present and Future 4 hrs.

This course will concern itself with the subject of "women" as a legitimate field for scholarly inquiry in order to establish the facts and explore the myths of woman's role in Western Culture. The approach will be interdisciplinary: historical for background, biological to explore facts versus myths, artistic models, literary tradition, changing social forces and the contemporary world of female consciousness.

412 Southern Thought and Culture 4 hrs.

An examination of the uniqueness of the South as a civilization and as a reflection of American Society as a whole. Topics will range from religious revivalism and slavery in the Old South to fundamentalist and segregationist practices in the New South, while also discussing outstanding Southern writers, including Faulkner, Warren, Caldwell, Page, and Glasgow.

413 Modern African Artists 4 hrs.

A cooperative inquiry into the arts of modern Africa and the various relationships which exist between these arts and the social, political, and philosophical contexts of modern African cultures. The course will be concerned with what can be called "modern African culture," a distinctively African philosophy or world-view, relationships between the arts of traditional Africa and contemporary Africa, and how modern African artists view themselves in relation to their societies.

SCIENCE AREA

Carl J. Engels, Chairman

Shirley Bach Ronald Flaspholer Michael D. Swords
Roger Bennett David Hargreave Joanne Ursprung
Ollin J. Drennan Phillip T. Larsen Ronald R. Young
Franklin G. Fisk Robert H. Poel

107 Planetary Science in Elementary Education 4 hrs.

An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites) Not recommended for science majors.
130 The Nature of the Physical World
This course offers students the opportunity to increase their aware-
ness of, and curiosity about some of the fundamental laws of nature
found in the physical sciences: astronomy, chemistry, and physics. It
also develops an understanding of what science is, how it relates to
modern technology, and how both relate to people and to societal
problems.

131 Physical Science in Elementary Education
This course is designed to introduce students to some of the broad con-
cepts of physical science and to the methods of inquiry that have been
useful in developing these concepts. Student experiences are designed
to further understanding of the inter-relationships between the physical
sciences and society, as well as those between the physical sciences and
elementary general education, and will be taught in laboratory groups no
larger than thirty.

132 Aims and Achievements of Science
This course is designed as a broad philosophical and historical view
about science in general. It examines the aims or goals of science and
compares these to the achievements of the scientific enterprise, as well
as demonstrating the inter-relationships between science and other aspects
of our culture.

133 Issues in Social Biology
This course involves a study of some recent advances in biology and
medicine, their social and ethical implications, and the public policy
problems raised by such questions as organ transplantation, drugs, con-
trolling population size, genetic engineering, controlling environmental
factors affecting health and disease, and the ethical and moral concerns
implicit in these.

330 Radiation, Society, and Man
This course is designed as an introduction to basic ideas of ionizing-
radiation and radiation sources and how the use of ionizing-radiation
affects society and the individual. The course will use lectures, discus-
sions, laboratory work, independent, and small-group study.

430 Science as a Cultural Process: The Copernican Revolution
A lecture-discussion course designed to explore the interplay between
the growth of scientific ideas and the cultural horizons from which they
came. Attention will be directed towards the question, “what is the nature
and shape of the universe and man’s relationship to it?” by focusing
upon the Copernican Revolution in astronomy and its ultimate impact
on post-Renaissance Europe.

431 Science as a Cultural Process: The Darwinian Revolution
A lecture-discussion course designed to explore the interplay between
the growth of scientific ideas and the cultural horizons from which they
came. Pre-Darwinian responses will be investigated together with the
Darwinian Revolution in the life sciences, the opposition to it, and the
far-reaching influence of Darwin’s ideas during the past one hundred
years.

432 Thoughts and Scientific Thinkers
This course has, as its purpose, the examination of the thinking of
prominent scientists. While other courses may investigate “scientific
thought” and contrast it with “artistic thought” or “creative thought” and the like, that is not the goal of this course. Rather, the intention is to determine the mode of thinking of particular scientists, whatever that mode may be.

433 Science, Technology, and Society 4 hrs.
This course will consist primarily of seminars and discussions centering on scientific and technological impacts upon contemporary society, viewed from a variety of perspectives. One objective will be to assist the student in acquiring knowledge about current scientific and technological problems.

SOCIAL SCIENCE AREA

Nita Hardie, Chairperson

120 Understanding Man 4 hrs.
The course is an inquiry into man’s search for meaning in life and an evaluation of some of the answers that social scientists have put forward as explanations of man’s nature and his behavior.

121 Dimensions of Human Behavior 4 hrs.
A series of learning experiences designed to explore the social, psychological, and cultural dimensions of human behavior, using both individual and group approaches to learning. The emphasis is upon the dilemmas and strengths of a person which stem from processes which impose restraints upon social behavior.

122 Dynamics of Race and Culture 4 hrs.
An analysis of the origins, development, and consequences of “Race” as a significant concept in the contemporary world. Subject matter will emphasize the reciprocity of environment, culture, social forces, and the individual.

123 Man and Society 4 hrs.
A study of the biological and social aspects of human diversity. Discussions of the structure of society and its institutions will give special attention to such contemporary topics in the American scene as values, political and economic systems, ethnic relations, environmental quality.

220 Background of the Contemporary World 4 hrs.
An inquiry into the “roots” of our contemporary world. The course examines, against a background of rapid technological and social change, key movements, ideologies, institutions, events, and personalities of the
20th century, emphasizes the complex links among these factors, and supplies a coherent framework for further study of current world affairs.

221 Minority Groups and Human Rights 4 hrs.
A general study of the multi-national society in the United States dealing with racial-ethnic groups, designated as minorities, such as the American Indian, the Mexican-American, the Oriental, and the Black American. The course will focus on the cultural and biological process of human differentiation, formation of minority-majority populations, social forces and institutions, and contemporary minority cultures and their viewpoints.

223 American Ethnic Groups 4 hrs.
Attention will focus primarily upon ethnic groups in the urban setting. Particular emphasis is placed on mainstream American beliefs and values expressing ethnic stereotypes, such as “Melting Pot versus Salad Bowl,” “the American Dream,” and “ethnic backlash.” The course deals with the experiences of ethnic groups not usually treated in race relations classes.

224 Americans Called Indians 4 hrs.
A study of the results of European encroachments in the New World on native peoples, focusing on those in the geographic area of the United States. Cultural myths and fallacies about native Americans will be explored and the perpetuation of common stereotypes in theology, popular literature, politics, and in the social sciences will be examined.

225 Alternate Life Styles 4 hrs.
The focus of this course will be upon the interpersonal relationships that do not follow the traditional life style patterns (i.e., coupling, marriage, nuclear family). Psychological and sociological frameworks will be used to examine several alternate life styles, such as communes, “group marriage,” and women’s collectives.

225 Self-Images and Images of Social Reality 4 hrs.
An inquiry into the nature of self-images, their social origin and growth and the nature of one’s perceptions of the political, social and economic world. The aim of the course is to bring about an understanding of the factors which influence perceptions and an increased knowledge of the form and quality of self-images of the social world.

225 Beyond Survival 4 hrs.
As Rene Dubos has suggested, the real issue is not “Will man survive?” but rather “What can be the quality of life available to the survivors?” This question will form the substance of the content of this course.

225 Post-Freudian Thought 4 hrs.
A course designed to help the student gain a knowledge of man’s life as a quest. Selected post-Freudian thinkers, each of whom is concerned with the hidden motivational factors in man’s life, are studied in order to shed light on man’s search for meaning and productivity.

421 Protest Movements and Counter Culture 4 hrs.
A workshop study of contemporary (especially American) socio-cultural conflict and change. Because of the controversial and complex nature of the topics, the seminar will focus upon the investigation of selected protest movements and counter cultures.
422 Technology and Culture

A workshop of contemporary technology, ranging from "the pill" to the computer, and the impact of modern technology on key aspects of culture. Instead of just talking and reading about these developments, the emphasis will be upon experiencing first-hand these processes and then reflecting upon them.

423 Role Portrayal in the Mass Media

An analysis of the content of various types of the mass media, emphasizing sex-role and ethnic-role portrayals in television, popular magazines, films, and popular song lyrics. It is important that the students enrolling in the course have access to television.

455 Personal World Views

The world view of the student and some basic perspectives on the construction of world views in general are the chief concerns of this course. The origins, patterns and possible resolutions of existential crises arising from world views in conflict are investigated in terms of secularization and sacralization, belief and alienation and anxiety, and courage. These themes are approached through the perennial experiences of laughter, play, hope, damnation, and order.

456 Aspects of Evolution

In this course different aspects of cosmic, organic, social and cultural evolution are to be explored. The course will face the plurality of scientific approaches to evolution in the hope of achieving a fruitful exchange and possibly a critical synthesis between materialists and the upholders of a spiritual interpretation, between determinists and finalists. The whole course will concentrate on the cardinal question: Is man totally enmeshed in the causal structure of biological and cosmic development or does freedom operate in the central process of evolution?

457 The Frankfurt School

In this course the critical theory of societal process of the Frankfurt School will be explored as it has been developed by Horkheimer, Adorno, Marcuse, Fromm, Habermas and others. The course will concentrate on the following central issues of the Frankfurt School: the authoritarian personality, the totally administered society, escape from freedom, the connection of utopias and ideologies, the critical function of philosophy and art, the great refusal, and possibilities of personal, social and cultural liberation, peace, the future.
The Graduate College

GEORGE G. MALLINSON, Dean

RICHARD T. BURKE, Associate Dean

SID DYKSTRA, Associate Dean

School of Librarianship
The Graduate College offers a wide variety of programs leading to the master's, specialist and doctoral degrees.

The University has fifty-nine master's degree programs. Master of Arts degrees are awarded in twenty-three programs in the following general categories within the College of Education: Educational Leadership, Counseling-Personnel, Special Education, Blind Rehabilitation, Audiovisual Media, Teaching the Economically and Educationally Disadvantaged, Teaching of Reading, Teaching in the Community College, and Curricula in Teaching. Twenty-three other educational programs at Western also lead to the Master of Arts degree: Anthropology, Art, Biology, Chemistry, Communication Arts and Sciences, Earth Science, Economics, English, Geography, Geology, History, Home Economics, International and Area Studies, Modern and Classical Languages, Mathematics, Medieval Studies, Physics, Political Science, Psychology, School Psychology, Sociology, and Speech Pathology and Audiology.


In 1960 programs leading to the Specialist in Education degree were introduced. Upon completion of a sixth-year program, this degree is offered in Educational Leadership, Counseling-Personnel, Special Education, and School Psychology. In addition, the University offers Specialist in Arts degrees in Business Education, English, History, International and Area Studies, Librarianship, Mathematics, and Science Education.

Doctoral programs were initiated in 1966 and were fully accredited by the North Central Association in 1971. Four of these programs, those in Chemistry, Mathematics, Science Education, and Sociology, lead to the Doctor of Philosophy degree. A program leading to the Doctor of Education degree is offered by the Departments of Educational Leadership and Counseling-Personnel.

Please refer to The Graduate College Bulletin for further information on these programs.
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, 416, 510, 512, 530, and 542 or 546. 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 education; (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:**

<table>
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<tr>
<th>Course Requirement</th>
<th>Hours</th>
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<tr>
<td>Total hours required for this curriculum</td>
<td>122 hrs.</td>
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<tr>
<td>1. General Education requirements</td>
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<td>2. Humanities</td>
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<tr>
<td>Modern Language</td>
<td>8</td>
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<td>English electives</td>
<td>8</td>
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<tr>
<td>Communication Arts &amp; Sciences 130</td>
<td>3</td>
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<td>Elective</td>
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<td>3. Sciences</td>
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<td>Electives</td>
<td>3</td>
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</tbody>
</table>
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
   Introduction to Classification and Cataloging 530 3
   Reading Interests of Young Adults 542 or
   Storytelling 546 or Teacher Ed. 548 2-3

6. Physical Education

7. Electives and Departmental Requirements for Subject Major

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 be able to explore areas of interest, to observe
   various activities performed in selected libraries, and to discuss current
   issues with notable librarians.

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 credit-no credit
   basis. Must be completed before Directed Teaching.

416 Instructional Materials, K-12* 3 hrs. Fall, Winter
   Identification and characteristics of media which support classroom in-
   struction in the elementary and secondary schools. Introduction to broad
   range of print and non-print materials and the process of evaluation in
   the light of instructional needs.

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: 1½ yrs. h.s.
   algebra or Math 100.
510 Building Library Collections 3 hrs. Fall, Winter


512 Reference Service 3 hrs. Fall, Winter

Introduction to a variety of materials which can serve as sources of reference and bibliographic information. Critical examination and evaluation of reference materials is a basic emphasis. Attention is given to organization and methods of reference services in libraries.

530 Introduction to Classification and Cataloging 3 hrs. Fall, Winter

Introduction to basic cataloging and classifying principles and procedures. Includes theoretical study and practical application of descriptive cataloging, rules for determining main and secondary entries, subject cataloging, and classifying according to the Dewey Decimal Classification scheme. Processing non-book materials and the development, use and maintenance of library catalogs are included. Laboratory experience is required.

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.

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 advisor.

*Open to students in other departments.
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. The Division is emphasizing the development of a degree program known as General University Studies for adult students at community colleges who are unable to study on campus. That program is described below.

Correspondence courses may be taken for credit and applied toward an undergraduate degree subject to limitations defined by the university or the 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, 777 Riverview Drive 49022; Grand Rapids, 105 Division Avenue, North 49502; Greater Muskegon, 3312 Glade, Muskegon Heights 49444. Individuals interested in further information should contact the Division Office in Walwood Union Building or the Center nearest them.

General University Studies

The General University Studies Curriculum is being planned primarily for the part-time student. The specific requirements will vary depending upon the Area of Concentration of the student. All student programs must be planned by the student upon the advice of the advisor for the particular Area which the student wishes to emphasize. The Curriculum is supervised by the Division of Continuing Education.

Interested students should contact one of the offices listed above.

General requirements for a degree in the General University Studies Curriculum include:

1. 122 semester hours of college level credit of which at least 60 must be taken in an institution offering a 4 year college degree program.

2. Completion of a planned Area of Concentration involving at least 45 semester hours of credit.
Areas which have been approved or are under consideration:

- Environmental Studies
- Health Studies
- American Studies
- Social Science Studies
- Technical and Scientific Studies

3. Completion of the General Education requirements of 35 semester hours of work. This work does not have to be exclusive of work included in the Area of Concentration.

Students completing this curriculum may earn either a BA or BS degree depending upon the subject matter content of their Area of Concentration.

Much of the work required of students in this curriculum may be completed by study on a part-time basis through the Division of Continuing Education.
Faculty

WESTERN MICHIGAN UNIVERSITY

LIST OF FACULTY—1974-1975

Abedin, Syed Z., 1970, Assistant Professor of Social Science
B.A., M.A., Aligarh Muslim (India); M.A., Pennsylvania

Adams, David W., 1956, Professor of Teacher Education
B.A., Ohio Wesleyan; M.A., Ed.D., New York

Adams, Margaret, 1973, Instructor in Sociology
B.A., M.A., Michigan State

Adams, Phillip D., 1964, Associate Professor and Area Chairman of Humanities
B.A., Western Michigan; M.A., Ph.D., Ohio; F.R.S.A.

Adams, Wade J., 1973, Assistant Professor of Chemistry
B.S., Western Michigan; M.S., Ph.D., Michigan

Alavi, Yousef, 1958, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Albert, Elaine A., 1965, Assistant Professor of English
B.A., Western College for Women; M.A., Middlebury

Allen, Francis W., 1953, Associate Professor, Library
B.S., Colby; B.A.L.S., M.A.L.S., Michigan

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., The University of Chicago

Alvarez, Elsa, 1964, Associate Professor of Spanish
M.A., Iowa; Ph.D., Havana; Ph.D., Michigan State

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 College; Certificate in Occupational Therapy, Texas Women's; M.A., Western Michigan

Anderson, Robert H., 1957, Associate Professor of Chemistry
B.A., Baker; M.A., Ph.D., Columbia

Andrews, Frances E., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Michigan State

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 (Pennsylvania); M.Mus., Indiana

Apple, Loyal E., 1966, Lecturer in Blind Rehabilitation
B.A., William Jewell

Argyropoulos, Triantafilos, 1964, Associate Professor of Art
B.S., M.F.A., Michigan
Faculty

Armstrong, James W., 1969, Assistant Professor of Teacher Education
B.S., Northwestern; Ed.D., Indiana

Ashbaugh, Lawrence L., 1969, Associate Professor of Special Education
B.S., Clarion State; M.Ed., Ed.D., Pennsylvania State

Asher, Eston J., Jr., 1954, Director of Institutional Research and
Professor of Psychology
B.S., Kentucky; M.S., Ph.D., Purdue

Atkins, Michael B., 1971, Assistant Professor of Industrial Education
B.S., M.S., East Texas State; Ed.D., Texas A & M

Averitt, R. Douglas, 1970, Instructor in History
B.S., M.A., Memphis State

Avery, Reginald S., 1973, Assistant Professor of Social Work
B.S., North Carolina A & T State University; M.S.W., George Williams

Bach, Shirley, 1964, Associate Professor of Natural Science and
Research Associate in Chemistry
B.S., Queens College; Ph.D., Wisconsin

Baechtold, Marguerite, 1967, Associate Professor of Librarianship
B.A., Montclair; B.S.L.S., Columbia; Ed.S., Western Michigan

Bahlke, Harold O., 1962, Professor of Humanities
B.Ed., Wisconsin State; M.A., Ph.D., Minnesota

Bailey, Frederick S., 1958, Assistant Professor of Teacher Education
B.S., M.A., Western Michigan; Ph.D., Michigan State

Bailey, Keith D., 1955, Assistant Professor of Directed Teaching
B.S., M.A., Western Michigan

Bailey, Thomas C., 1970, Assistant Professor of English
B.A., Oberlin; M.A., Missouri

Baker, Don R., 1972, Instructor in Music
B.A., Adrian; M.Ed., Indiana University of Pennsylvania

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

Balkin, Alfred, 1971, Associate Professor of Music
B.A., M.A., Indiana; M.A., Ed.D., Columbia

Ballard, Robert M., 1972, Assistant Professor of Librarianship
B.A., Morehouse; M.S.L.S., Atlanta; M.A., Eastern Michigan;
Ph.D., Michigan

Bank, Theodore Paul II, 1967, Associate Professor of Social Science
B.S., M.S., Michigan

Barbiers, Arthur R., Jr., 1968, Adjunct Assistant Professor of Biology
B.S., M.A., Bowling Green State

Barstow, Robert H., 1965, Associate Professor of Social Work
B.A., Western Michigan; M.S.W., Michigan

Bartley, Lynwood H., 1963, Assistant Professor of Humanities
B.S., Eastern Michigan; M.A., Western Michigan

Baskerville, Pearl L., 1971, Adjunct Assistant Professor of General Studies
B.A., William Penn; M.A., Western Michigan
Faculty

Batch, Nicholas C., 1972, Assistant Professor of General Business
A.B., Michigan; M.B.A., Western Michigan; J.D., Wayne State

Bate, Harold L., 1964, Professor of Speech Pathology and Audiology
B.A., Butler; M.A., Florida; Ph.D., Wisconsin

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, Professor of History
B.A., Michigan State College; Ph.D., Johns Hopkins

Beelick, Delbert B., 1970, Assistant Professor of Business Education and Administrative Services

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, Associate Professor of Directed Teaching
B.S., M.S., Ed.D., Michigan State

Bennett, Roger A., 1965, Associate Professor of Natural Science
B.S.E., (E.E.) Michigan; M.S., Western Michigan; P.E.

Bennett, William S., Jr., 1968, Professor of Sociology
B.A., Denison; M.A., Ph.D., Missouri

Bergel, Gary P., 1971, Instructor in Humanities
B.S., M.A., Wisconsin

Berkey, Ada E., 1947, Associate Professor, 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

Bernhard, John T., 1974, President, and Professor of Political Science
B.S., Utah State; M.A., Ph.D., University of California at Los Angeles

Bernstein, Eugene M., 1968, Professor of Physics
B.S., M.A., Ph.D., Duke University

Betz, Robert L., 1961, 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 University

Birch, William G., Sr., 1971, Adjunct Professor of Biology
B.M., M.D., Northwestern
Faculty

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

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, Professor and Chairman, Department of Blind Rehabilitation
B.E., Northern Illinois; M.A., Chicago

Blefko, Robert L., 1968, Associate Professor of Mathematics
B.A., Kutztown State College of Pennsylvania;
M.A., Ph.D., Pennsylvania State

Bliss, James R., 1968, Associate Professor of General Business
B.A., Nebraska Wesleyan; J.D., Michigan

Blocksmas, Ralph, 1970, Adjunct Professor of Speech Pathology and Audiology
B.A., Calvin; M.D., Michigan

Bluman, Dean E., 1970, Associate Professor and Chairman, Department of Mechanical Engineering Technology
B.A., Hiram; B.S.M.E., Carnegie Institute of Technology;
M.S., Michigan State; Ph.D., West Virginia; P.E.

Bodine, Gerald L., 1957, Assistant Professor of Teacher Education
B.S., Wisconsin State (Milwaukee); M.A., Northwestern

Boley, Alexander, 1966, Assistant Professor, Library
Doctor of Political Science, Elisabeth University Pécs (Hungary);
M.S., Western Michigan

Boettcher, Richard E., 1969, Professor of Social Work
B.A., Augustana; M.S.W., Washington; Ph.D., Minnesota

Boles, Harold W., 1961, Professor of Educational Leadership
B.S., Indiana State; M.A., Ph.D., Ohio State

Booher, 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

Bornstein, Sandra L., 1972, Instructor in Occupational Therapy
B.S., Wayne State

Borr, Earl, 1957, Associate Professor of Teacher Education
B.S., M.A., Western Michigan

Bosco, James J., 1965, 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, Associate Professor of Engineering and Technology
B.S.I.E., Wayne State; M.B.A., Western Michigan
Bouma, Donald H., 1960, Professor of Sociology
B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Bournazos, Kimon, 1965, Professor of Business Education
and Administrative Services
B.S., M.S., Ph.D., Michigan State

Bourziel, Esther M., 1966, Assistant Professor of Directed Teaching
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., M.A., Western Michigan

Bowman, Harold E., 1974, Adjunct Professor, Medical Technology Program
B.S., M.O., Indiana University

Boyd, David, 1973, Adjunct Assistant Professor of Accountancy
B.B.A., Notre Dame; M.B.A., Detroit; C.P.A., Michigan

Bradfield, Leila A., 1970, Assistant Professor of Sociology
B.S., M.S., Ph.D., Cornell University

Bradley, George E., 1951, Professor of Physics
B.A., Miami; M.S., Ph.D., Michigan

Brail, Frederick R., 1958, Associate Professor of Teacher Education
B.S., Central Michigan; M.A., Ohio State

Braithwaite, Lloyd, 1968, Associate Professor of Sociology and Social Work
B.A., M.Crim., D.Crim., California (Berkeley)

Branchaw, Bernadine P., 1971, Assistant Professor of Business Education
and Administrative Services
B.A., College of St. Francis; M.S., Ed.D., Northern Illinois

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 and Director, Counseling Center
B.S., M.A., Western Michigan

Breisach, Ernst A., 1957, Professor and Chairman, Department of History
Matura, Realgymnasium Knittelfeld and Vienna VII; Ph.D., Vienna;
Dr. rer. oec., Hochschule fuer Welthandel

Breisach, Herma E., 1967, Assistant Professor, Library
Matura, Oberschule fuer Maedchen, Vienna IV;
M.L.S., Western Michigan; Ph.D., Vienna

Brennan, Margaret Jane, 1965, Professor of Home Economics
B.S., Western Michigan; M.A., Columbia; Ed.D., Pennsylvania State
Faculty

Brenton, Beatrice, 1969, Assistant Professor of Teacher Education
B.S., Stout State; M.A., Ph.D., Michigan State

Brewer, Richard, 1959, Professor of Biology
B.A., Southern Illinois; M.S., Ph.D., Illinois

Brewer, Robert N., 1970, Instructor in Social Science
B.S., Utah

Brightman, Jerome B., 1972, Assistant Professor of Management
B.A., Clark; M.B.A., American; D.B.A., George Washington

Brink, Lawrence J., 1940, Associate Professor, 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 and 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 Dance
B.S., M.A., Northwestern

Brown, Mary C., 1965, Assistant Professor of Women's Physical Education
B.A., Albion; M.S., Syracuse

Brown, Michael R., 1973, Assistant Professor of English
B.A., Scranton; M.Ed., Temple; Ph.D., Michigan

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 Pittsburg; 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

Bryant, Flora B., 1973, Assistant Professor of Social Work
B.S., M.S.W., Indiana University

Buchanan, Richard W., 1972, Assistant Professor of Marketing
B.S., Illinois; M.B.A., Washington University

Buckley, Joseph T., 1970, Associate Professor of Mathematics
B.S., Boston College; Ph.D., Indiana

Buckner, Michael J., 1968, Assistant Professor, Library
B.S., M.S., Michigan State; M.L.S., Western Michigan

Buelke, John A., 1949, Professor of Teacher Education
B.S., Wisconsin State (Oshkosh); M.A., Northwestern; Ed.D., Cincinnati

Bullmer, Kenneth, 1970, Assistant Professor of Counseling and Personnel
B.S.B.A., Washington; M.A., Michigan; Ed.D., Indiana

Bullock, Donald P., 1963, 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
Faculty

Burian, William A., 1969, 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, Associate Dean, The Graduate College and
Associate Professor of History
B.A., M.A., Boston; Ph.D., Northwestern

Burkle, Garry Lee, 1971, Instructor in Geography
B.S., M.S., Illinois State

Burns, James W., 1968, Associate Professor of Teacher Education
B.S., Central Connecticut; M.Ed., Ed.D., Pennsylvania State

Burns, Mary E., 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, Professor of Music
American Conservatory of Music; Eastman School of Music;
B.M., M.M., Indiana

Butler, Mary, 1973, Adjunct Assistant Professor of Music
B.M., M.M., Indiana

Butterworth, James M., 1971, Assistant Professor of Humanities
B.A., North Park; M.F.A., Minnesota

Buys, William E., 1964, Professor of Communication Arts and Sciences
B.A., Albion; Ph.M., 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

Cain, Mary A., 1962, 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.,
University of South Africa

Cannon, Zane, 1965, Assistant Professor of Marketing
B.S., M.A., Western Michigan

Caplinger, James L., 1974, Adjunct Professor of Social Work
B.A., J.D., Ohio State

Capozzi, Captain Roy M., 1973, Assistant Professor of Military Science
B.A., Canisius; M.S., Western Michigan

Cardenas, Mercedes R., 1966, Associate Professor of Spanish
B.A., M.A., Michigan State; Ed.D., Havana; Ph.D., Michigan State

Carley, David D., 1964, Associate Professor of Physics
B.A., Western Michigan; M.S., Michigan; Ph.D., Florida

Carlson, Bernardine P., 1953, Assistant Professor of English
B.A., M.A., Western Michigan; Ed.D., 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, William A., 1966, Professor of Counseling and Personnel

Carney, John M., 1966, Associate Professor of Art

Carroll, Hardy, 1970, Assistant Professor of Librarianship
B.A., Guilford; B.D., Hartford Theological Seminary;
M.S.L.S., Drexel

Carroll, Timothy, 1973, Visiting Assistant Professor of Mathematics
B.S., Michigan; M.A., Ph.D., Western Michigan

Carter, Elwyn F., 1945, Professor of Music
B.A., Alma; M.A., Ed.D., Columbia

Carter, Kathleen, 1973, Instructor in Communication Arts and Sciences
B.A., M.A., Western Michigan

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

Cha, Ellen, 1966, Assistant Professor, Library
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., 1971, Adjunct Assistant Professor of Biology
B.S., National Taiwan; M.A., California; Ph.D., Illinois

Chang, Do Young, 1971, Associate Professor of Social Science
B.A., Michigan; M.A., Ph.D., Michigan

Chapel, Joe R., 1965, Associate Professor, Reading Center
and Clinic and Teacher Education
B.A., Western Michigan; M.A., Michigan State

Chaplin, David, 1972, Professor and Chairman, Department of Sociology
B.A., Amherst; M.A., Ph.D., Princeton

Chartrand, Gary, 1964, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Chase, Ronald B., 1973, Associate Professor of Geology
B.A., DePauw; M.S., Ph.D., Montana

Cheatum, Billye Ann, 1967, Associate Professor of Women's Physical
Education
B.S., Oklahoma College for Women; M.S., Smith;
Ph.D., Texas Women's University

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 Directed Teaching
B.A., Michigan; M.A., Western Michigan

Clark, Michael J., 1971, Assistant Professor of Speech Pathology
and Audiology
B.A., Oberlin; M.A., Ph.D., Michigan
Faculty

Clark, Samuel I., 1948, Director of Honors College and Professor of Political Science
B.A., Ph.D., Chicago

Clarke, A. Bruce, 1967, Professor and Chairman, Department of Mathematics
B.A., Saskatchewan; M.S., Ph.D., Brown

Clysdale, J. Patrick, 1958, Associate Professor of Men's Physical Education and Assistant Director of Athletics
B.S., M.A., Western Michigan

Cohen, Martin, 1960, Assistant Professor of Librarianship
B.A., Harvard College; B.S., Simmons; M.A., Boston Teachers College

Cole, Roger L., 1959, Professor and Chairman, Department of Modern and Classical Languages
B.A., M.A., Ph.D., Michigan

Collins, Carol I., 1967, Assistant Professor of Music
B.A., Michigan State; M.A., Western Michigan

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, Assistant Professor of Men's Physical Education
B.S., Bowling Green State; M.A., Western Michigan

Condic, Joseph M., 1966, Assistant Professor of Humanities
B.A., St. Joseph's; M.A., Chicago

Cooke, Dean W., 1966, Professor of Chemistry
B.S., Ph.D., Ohio State

Cooley, John, 1968, Associate Professor of English
B.A., M.A., Syracuse; Ph.D., Massachusetts

Cooney, Seamus, 1971, Associate Professor of English
B.A., University College (Dublin); M.A., Indiana; Ph.D., California (Berkeley)

Copps, John A., 1959, Professor of Economics
B.S., Ph.D., Wisconsin

Cordier, Mary, 1967, Assistant Professor of Teacher Education
B.A., Northern Iowa; M.A., Michigan State; Ed.S., Western Michigan

Cordier, Sherwood S., 1956, Professor of History
B.A., Juniata; M.A., Yale; Ph.D., Minnesota

Cornish, Wendy L., 1967, Assistant Professor of Dance
B.S., Michigan; M.A., Western Michigan

Cothran, Tilman C., 1972, Associate Dean, College of Arts and Sciences and Professor of Sociology
B.A., A.M. & N.,; M.A., Indiana; Ph.D., Chicago

Cottrell, June, 1970, Assistant Professor of 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
Faculty

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., 1969, Instructor in French
B.A., M.A., Western Michigan

Crane, Loren D., 1965, Associate Professor of Communication Arts and Sciences
B.A., Brigham Young; M.A., Ph.D., Ohio State

Creed, Harriett K., 1967, Assistant Professor of Women's Physical Education
B.S., Chattanooga; M.S., Tennessee

Cronk, Casper, 1973, Assistant Professor of Geology
B.A., Harvard; Ph.D., Ohio State

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

Curtis-Smith, Curtis, 1968, Assistant Professor of Music
B.M., M.M., Northwestern

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B.A., Calvin; M.D., Michigan

Helsley, Gerald M., 1973, Instructor in Transportation Technology
B.S., M.S., Western Michigan

Helweg, Arthur W., 1972, Assistant Professor of Social Science
B.A., Miami; M.A., Michigan State

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B.A., M.A., Idaho; Ed.D., Northern Colorado

Henderson, Jon M., 1964, Associate Professor of Art
B.F.A., M.F.A., Kansas

Hendriksen, Daniel P., 1966, Associate Professor of Linguistics
B.A., Calvin; M.A. (Edu.), M.A. (Linguistics); Ph.D., Michigan

Herman, Deldee M., 1947, Associate Professor of Communication Arts and Sciences
B.A., Western Michigan; M.A., Michigan

Herman, John E., 1966, Associate Professor of Physics
B.S.E., M.S.E., M.S., Ph.D., Michigan

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B.A., M.A., Film and Television College of Academy of Arts (Prague); M.F.A., Ohio

Hesla, Steven K., 1972, Instructor in Music
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Faculty

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B.S.E.E., M.S.E.E., Ph.D., (E.E), Illinois

Hetherington, Elisabeth, 1963, Professor and Chairman, Department of Dance
B.S., Miami; M.A., Ohio State; Ed.D., University of Northern Colorado

Heuschele, Daniel A., 1972, Adjunct Assistant Professor of Accountancy
B.A., Alma; M.B.A., Michigan; C.P.A., Michigan

Hill, James W., 1970, Associate Professor of Management
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Hinton, Alfred F., 1970, Assistant Professor of Art
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Hirsch, Christian R., Jr., 1973, Assistant Professor of Mathematics
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B.A., Florida; M.S., Ph.D., Florida State

Ho, Alfred K., 1967, Professor of Economics
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Ho, Marjorie K., 1967, Associate Professor, Library
B.A., Sarah Lawrence; M.L.S., U.C.L.A.

Hobbs, George W., 1965, Associate Professor of Men's Physical Education
B.A., Michigan State; M.A., Michigan

Hokenstad, Merl C., Jr., 1968, Professor and Director, School of Social Work
B.A., Augustana College; M.S.W., Columbia; Ph.D., Brandeis

Holaday, Clayton A., 1956, Professor of English
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Holleboer, Paul E., 1955, Professor of Chemistry and Coordinator of Science Education Ph.D. Program
B.A., Hope; M.S., Ph.D., Purdue

Holland, David, 1970, Associate Professor of Home Economics
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Holmes, Robert, 1966, Dean, College of Fine Arts and Professor of Music
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Hoover, Alfred E., 1973, Assistant Professor of Chemistry
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B.S., M.A., Ph.D., Ohio State

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B.A., Kent; Ph.D., Ohio State

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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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B.S., Western Michigan; M.A., Michigan; Ed.D., Indiana; P.E.

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Inselberg, Edgar, 1966, Associate Professor of Biology  
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Israel, Lawrence J., 1973, Coordinator of Faculty and Curriculum Development and Associate Professor of Social Science B.A., Colorado; M.S., Montana; Ph.D., George Peabody

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Josten, John J., 1968, Associate Professor of Biology
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Joyce, Richard E., 1970, Assistant Professor of Humanities
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Junker, Louis J., 1961, Professor of Economics
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Karsten, David, 1967, Associate Professor of Communication Arts and
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Keenan, J. Michael, 1962, Professor of Management
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B.A., M.A., Western Michigan

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B.S., Wayne State; B.S., O.T. Certificate, Eastern Michigan;
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Kissel, Johannes A., 1968, Assistant Professor of German
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Faculty

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B.A., St. Olaf; M.A., Western Michigan

Klammer, Waldemar E., 1956, Associate Professor of Industrial Education
B.A., Mankato State; M.S., Stout State

Klein, George, 1958, Professor of Political Science
B.A., M.A., Ph.D., Illinois

Klein, Patricia, 1967, Assistant Professor of Social Science
B.A., M.A., Illinois

Klein, Roy S., 1967, Associate Professor of Engineering and Technology
B.S.M.E., Drexel Institute of Technology; M.S.M.E., Newark College of Engineering

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Kline, James E., 1963, Associate Professor of Paper Science and Engineering
B.S., M.S., Western Michigan

Kobrak, Peter, 1973, Assistant Professor of Political Science
B.A., Oberlin; M.S., Wisconsin; M.A., Yale; Ph.D., Johns Hopkins

Kohrmann, George E., 1951, Professor of Industrial Education
B.S., M.A., Ed.D., Missouri

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B.S., Western Michigan

Koronakos, Chris, 1960, Professor of Psychology
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Kotecki, Robert G., 1962, Assistant Professor of Directed Teaching
B.A., Western Michigan; M.A., Michigan

Kramer, Philip H., 1970, Professor of Social Work
B.A., Brooklyn; M.S.W., Columbia; Ph.D., Brandeis

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B.S., Western Michigan; B.S.M.E., Michigan; M.S.A.E., Chrysler Institute

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Kuenzi, W. David, 1964, Professor of Geology
B.S., Washington State; M.S., Ph.D., Montana

Kukolich, Stephen I., 1965, Professor of Paper Science and Engineering
B.S., Grinnel College; M.S., Ph.D., (Lawrence) Institute of Paper Chemistry
Faculty

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B.S., Massachusetts Institute of Technology;
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B.M., M.M., Arizona

Kyriazis, John P., 1969, Instructor in History
B.A., M.A., Colorado

Kyser, Daniel A., 1947, Professor of Music
B.S.M., Oberlin; M.M.E., Michigan

Laing, Robert A., 1970, Assistant Professor of Mathematics
B.S., Indiana University of Pennsylvania;
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Lamb, Wray, 1973, Instructor in Home Economics
B.A., Lake Forest College

Lambe, Cameron W., 1962, Professor 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

Landgrebe, John C., 1974, Adjunct Associate Professor, Medical Technology Program
B.S., Kentucky; M.A., South Dakota; Ph.D., Kentucky

Landis, Joseph B., 1969, Assistant Professor of Sociology
B.A., Wooster, Ph.D., Yale

Langston, John D., 1974, Adjunct Professor, Medical Technology Program
B.A., Oberlin; M.D., Jefferson Medical College

Large, Margaret S., 1949, Professor of Women's Physical Education
B.A., Toronto; M.A., Wayne State; Ph.D., Michigan

Large, Wilda F., 1964, Associate Professor of Social Science,
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B.A., M.A., Ed.S., Western Michigan

Larsen, Phillip T., 1970, Associate Professor of Natural Science
B.A., Rutgers; M.Ed., Ed.D., Pennsylvania State

Larson, Robert M., 1973, Lecturer in Humanities
B.M., B.A., St. Olaf College; M.M., Ph.D., Northwestern University

LaRue, Robert, 1964, Associate Professor of English
B.A., Occidental College; M.F.A., Oregon

Lawrence, Elizabeth Ann, 1972, Associate Professor of Special Education
B.S., State University (Buffalo); M.A., Columbia; Ph.D., Syracuse

Lawrence, Jean McVay, 1959, Associate Professor of Biology
B.A., Yankton; M.A., Wellesley; Ph.D., Northwestern

Lawson, E. Thomas, 1961, Professor 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

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B.B.A., M.B.A., A.B.D., Missouri (Kansas City)

Lee, Hung Peng, 1970, Assistant Professor of Social Science
B.A., National Northeastern (Peiping); M.A., New York
Leja, Stanislaw, 1957, Professor of Mathematics
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Lemanski, Patricia A., 1966, Assistant Professor of Women’s Physical Education
B.S., Illinois State Normal; M.A., Colorado State

Lennon, Elizabeth M., 1968, Assistant Professor of Blind Rehabilitation
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Leonardelli, D.B., 1951, Director of In-Service Education, Division of Continuing Education and Assistant Professor of Education
B.A., Northern Michigan; M.S., Michigan

Lewis, Alice E., 1956, Associate Professor of Occupational Therapy
B.A., Mount Holyoke; M.A., Southern California;
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Lewis, David M., 1962, Professor of Sociology
B.A., M.A., Maryland; Ph.D., Michigan State

Lewis, Helenan S., 1963, Associate Professor of Political Science
B.A., M.A., Ph.D., Michigan State

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B.A., M.A., Ph.D., Syracuse

Libeke, John H., 1974, Adjunct Professor, Medical Technology Program
B.A., Albion; B.S., M.D., Wayne State

Lick, Don Raymond, 1965, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Lindbeck, John R., 1957, Professor of Industrial Education
B.S., M.A., Ph.D., Minnesota

Lindenmeyer, Carl R., 1969, Assistant Professor of Engineering and Technology
B.S.I.E., Northwestern; M.S., Western Michigan

Linder, Herman W., 1970, Assistant Professor of Transportation Technology
B.S., M.Ed., Illinois (Urbana)

Lindquist, Jay D., 1973, Assistant Professor of Marketing
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Lindstrom, Carl A., 1959, Associate Professor of Directed Teaching
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Livingston, William, 1964, Assistant Professor of Communication Arts and Sciences
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Lloyd, Bruce A., 1967, Professor of Teacher Education
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Lobstein, Otto E., 1974, Adjunct Professor, Medical Technology Program
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B.A., Valparaiso; M.D., University of Michigan Medical School
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

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Loffler, Reinhold L., 1967, Assistant Professor of Anthropology
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Long, Michael S., 1973, Assistant Professor of Social Work
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B.A., M.A., North Carolina

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B.A., Indiana; M.A., Western Michigan; Ph.D., Michigan State

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B.A., Keuka; B.S.L.S., Western Reserve;
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B.S., M.S., Ph.D., Wisconsin

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Malmstrom, Jean, 1948, Professor of English
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Maloney, Harold J., 1968, Lecturer in Blind Rehabilitation
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Malott, Richard W., 1966, Associate Professor of Psychology
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McCabe, William M., 1970, Associate Professor of Electrical Engineering Technology
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Faculty

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B.S., Kentucky  
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Resinger, Harold E., 1974, Adjunct Professor, Medical Technology Program
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  B.A., Valparaiso; B.S.L.S., Western Reserve; M.A., Washington University
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  B.S., M.A., Ed.D., Washington State
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  B.S., M.S., Illinois
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  B.S., Northern Iowa; M.A., Iowa; Ph.D., Michigan
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Smidchens, Uldis, 1968, Associate Professor of Teacher Education
B.A., Ball State; M.A., Wisconsin; Ph.D., Michigan

Smith, Carol P., 1965, Associate Professor of Teacher Education
B.S., Bowling Green State; M.A., Ph.D., Michigan State

Smith, Charles A., 1935, Associate Professor of English
B.A., Western Michigan; M.A., Michigan
Faculty

Smith, David J., 1973, Instructor in English
B.A., Virginia; M.A., Southern Illinois

Smith, Doris A., 1973, Assistant Professor of Occupational Therapy
B.S., Iowa; Certificate in Occupational Therapy, Iowa; M.Ed., Temple

Smith, Dorothy, 1963, Assistant Professor, Reading Center and Clinic
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B.S., Northwestern; M.A., Western Michigan

Smith, Herbert L., 1963, Associate Professor of Sociology
B.S., M.A., Houston; Ph.D., Wisconsin

Smith, Isabelle L., 1968, Assistant Professor of Home Economics
B.S., Wayne State; M.A., Western Michigan

Smith, Kathleen M., 1966, Associate Professor of English
B.A., Mount St. Mary; M.A., Boston; Ph.D., Fordham

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B.A., Andrews; M.S.W., Michigan State

Smith, Robert Jack, 1963, Professor of Anthropology
B.A., M.A., Yale; Ph.D., Pennsylvania

Smith, Robert L., 1964, Professor of Communication Arts and Sciences
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B.A., M.A., Bowling Green State; Ph.D., Michigan State

Smith, William K., 1967, Assistant Professor of Librarianship

Snapper, Arthur G., 1971, Associate Professor of Psychology
B.A., Harvard; M.A., Ph.D., Columbia

Soga, Michitoshi, 1968, Associate Professor of Physics
B.S., M.S., Gakushuin; Ph.D., Tokyo

Sokolowski, Emil J., 1951, Associate Professor of Marketing
B.S., Detroit Institute of Technology; M.A., Michigan

Sommerfeldt, John R., 1959, Professor of History and Director,
The Medieval Institute
B.A., M.A., Ph.D., Michigan

Sonnad, Subhash R., 1963, Assistant Professor of Sociology
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Sorenson, Virginia, 1965, Associate Professor of Directed Teaching,
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Spaniolo, Charles V., 1965, Associate Professor, Counseling Center
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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

Spradling, Marjory, 1959, Assistant Professor of Biology
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Stafford, Norma Mae, 1967, Associate Professor of Women's
Physical Education
B.S., M.A., Michigan State
Stallman, Robert L., 1966, Associate Professor of English
B.A., M.A., New Mexico; Ph.D., Oregon

Stech, Ernest L., 1970, Assistant Professor of Communication Arts and Sciences
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Stegman, George K., 1962, Associate Professor of Engineering and Technology
B.S., M.S., Stout State; Ed.D., Wayne State

Steinhaus, Nancy, 1973, Instructor in Home Economics
B.S., Ohio; M.S., Purdue

Steinhaus, Ralph K., 1968, Associate 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, Assistant Professor of Women's Physical Education
B.S., Western Michigan; M.S., Southern California

Stephenson, Janine, 1973, Lecturer in Psychology
B.A., M.A., Western Michigan

Stevens, Fred L., 1946, Associate Professor of Men's Physical Education
B.S., M.A., Western Michigan

Stewart, Mary Lou, 1959, Associate Professor of Teacher Education
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Stieffel, William J., III, 1964, Associate Professor of Mechanical Engineering Technology
B.S.C., Drexel Institute of Technology; M.S.C.E., Lehigh

Stillwell, Janet E., 1967, Associate Professor of Dance
B.A., M.A., Michigan

Stillwell, LeVern, 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

Stoline, Michael R., 1967, Associate Professor of Mathematics
B.A., M.A., Ph.D., University of Iowa

Stoltman, Joseph P., 1971, Assistant Professor of Geography
B.A., Central Washington State; M.A.T., Chicago; Ed.D., Georgia

Storoschenko, Irene, 1964, Assistant Professor of Russian
Diploma, Kiev State; M.A.T., Indiana

Stott, Jon, 1968, Associate Professor of English
B.A., M.A., British Columbia; Ph.D., Toronto

Stott, Phillip B., 1971, Adjunct Professor of Biology
B.S., Dickinson; M.D., Pennsylvania
Straw, W. Thomas, 1968, Associate Professor and Acting Chairman, Department of Geology
B.S., M.A., Ph.D., Indiana

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

Strunck, Theodore P., 1972, Lecturer in Accountancy
B.S., Illinois; M.A., Wayne State; C.P.A., Illinois

Stuewer, Carl A., 1971, Assistant Professor of Agriculture
B.S., Michigan State; M.S., Connecticut

Stufflebeam, Daniel L., 1973, Professor of Educational Leadership
B.M.F., State University of Iowa; M.S., Ph.D., Purdue

Sud, Gian Chand, 1966, Associate Professor of Biology
B.S., M.S., Panjab; Ph.D., Wisconsin

Sundick, Robert I., 1969, Assistant Professor of Anthropology
B.A., State University of New York (Buffalo); M.A., Ph.D., Toronto

Suterko, Stanley, 1961, Associate Professor 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

Swinsick, Richard, 1973, Assistant Professor of Music
B.M., M.A., Western Michigan

Swords, Michael D., 1972, Assistant Professor of Natural Science
B.S., Notre Dame; M.S., Iowa State; Ph.D., Case Western Reserve

Syndergaard, Larry E., 1968, Assistant Professor of English
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Taylor, Betty, 1947, Professor and Acting Chairman, Department of Home Economics
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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
B.A., M.A., Western Michigan

Teichert, Herman Uwe, 1972, Assistant Professor of German
B.S., M.Ed., Kent State; Ed.D., Georgia

Tessin, Melvin J., 1974, Adjunct Associate Professor of Marketing
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Thomas, Darrell B., 1968, Assistant Professor of Home Economics
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B.Sc., London; Ph.D., Columbia
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B.S., New York State; M.A., Ed.D., Columbia

Vorce, M. Barrett, 1969, Director, Grand Rapids Regional Center and Associate Professor of Teacher Education
B.A., Michigan; M.A., Michigan State

Vuicich, George, 1968, Professor of Geography
B.A., M.A., Ph.D., University of Iowa

Wagenfeld, Morton O., 1966, Associate Professor of Sociology
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Wait, Robert F., 1971, Assistant Professor of Sociology
B.S., M.A., Indiana

Walizer, Michael H., 1970, Assistant Professor of Sociology
B.S., Ed.M., State University of New York (Buffalo); Ph.D., Florida State

Walker, Clifford, 1972, Instructor in Social Science
B.S., M.A., Western Michigan

Walker, Jess Morgan, 1965, Associate Professor of Teacher Education
B.S., M.A., Utah; Ph.D., Michigan State
Walker, Lewis, 1964, Professor of Sociology
B.A., Wilberforce; M.A., Ph.D., Ohio State

Walker, Richard H., 1974, Adjunct Professor, Medical Technology Program
B.S., M.D., Emory University

Walker, Richard, 1973, Department of Men's Physical Education Program
B.S., M.D., Emory University

Wallace, Roger L., 1966, Associate Professor and Chairman, Department of Management
B.B.A., M.B.A., Western Michigan; Ph.D., Michigan State

Walton, Eleanor, 1965, Associate Professor of Communication Arts and Sciences
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Walberg, Franklin, 1965, Assistant Professor of Directed Teaching
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Warfield, Charles C., 1972, Associate Professor of Educational Leadership
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B.A., Rice Institute; M.S., Idaho; Ph.D., Oregon State

Washington, Earl M., 1970, Instructor in Communication Arts and Sciences
B.A., M.A., Western Michigan

Watson, Archie E., 1970, Assistant Professor of Teacher Education
B.A., M.A., Michigan State

Way, Harold E., 1971, Assistant Professor, Library
B.S., South Dakota State; M.L.S., Western Michigan

Weaver, Constance, 1965, Associate Professor of English
B.A., M.A., Indiana; Ph.D., Michigan State

Weaver, Donald C., 1961, Professor of Educational Leadership
B.A., Central; M.A., Ed.D., Michigan

Webb, Gene E., 1969, Associate Professor of Social Work
B.A., Antioch; M.S.W., State University of New York at Buffalo

Weeks, William R., 1953, Associate Professor of Mechanical Engineering Technology
B.S., Wayne State; M.A., Western Michigan

Weessies, Marvin J., 1970, Assistant Professor of Blind Rehabilitation
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Welke, William R., 1967, Professor of Accountancy

Wend, Jared S., 1955, Associate Professor of Economics
B.A., Middlebury; M.A., Ph.D., Michigan

West, Stanley A., 1970, Assistant Professor of Anthropology
B.S., Syracuse; Ph.D., Syracuse

Westerman, Jane L., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Marion College

Westley, Robert J., 1964, Associate Professor of Special Education
B.A., M.A., Wayne State

Westphal, Dale L., 1962, Associate Professor of Philosophy
B.A., Gustavus Adolphus; M.A., Minnesota
Faculty

Wetnight, Robert B., 1951, Vice President for Finance and Professor of Accountancy
Ph.B., M.B.A., Toledo; C.P.A., Ohio

Whaley, Robert L., 1966, Associate Professor of Music
B.M., Kansas; M.M., Iowa

Whitaker, Rebecca J., 1972, Instructor, Library
B.S., M.L.S., Indiana

White, Arthur T., 1969, Associate Professor of Mathematics
B.A., Oberlin; M.S., Ph.D., Michigan State

White, Beverlee A., 1966, Assistant Professor, Counseling Center
B.S., Idaho; M.A., Western Michigan

White, Bob E., 1973, Lecturer, Department of Engineering and Technology and Associate Director, Grand Rapids Division of Continuing Education
B.S.I.E., Western Michigan

Wichers, William A., 1951, Professor of Engineering and Technology
B.A., Hope; Certificate, Boeing School of Aeronautics;
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Widerberg, Lloyd C., 1964, Assistant Professor of Blind Rehabilitation
B.S., (Ed.), Northern Illinois State Teachers; M.A., Western Michigan

Wiener, Paul L., 1970, Assistant Professor of Sociology
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B.Ed., Western Illinois; M.S., Ed.M., Illinois; Ed.D., Indiana

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B.A., Michigan; M.A., Western Michigan

Wilhite, Lindsey, 1965, Assistant Professor of French
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Williams, Edith C., 1971, Assistant Professor, Counseling Center
B.S., Detroit; M.A., Ed.D., Wayne State

Williams, Kenneth L., 1973, Assistant Professor of Mathematics
B.A., Michigan State; M.A., Western Michigan; Ph.D., Michigan State

Williams, Lawrence A., 1968, Assistant Professor of Distributive Education
B.S., M.B.A., Western Michigan

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Williams, Dick R., 1969, Assistant Professor of Social Science
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Williams, Thomas K., 1973, Associate Professor of Counseling and Personnel, and Director, Specialty Program in Alcohol and Drug Addiction
B.S. (Educ.), B.S., (Rel.), M.A., Andrews; Ed.D., Western Michigan

Willis, Clyde R., 1965, Professor of Speech Pathology and Audiology
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Willis, John P., 1969, Assistant Professor of Anthropology
  B.A., M.A., Chicago

Winslow, Mildred, 1963, Assistant Professor of Teacher Education
  B.A., Cornell; B.S.L.S., Illinois

Winter, Ronald J., 1969, Assistant Professor of Men's Physical Education
  B.S., M.A., Michigan State

Wirtz, Morvin A., 1967, Associate Dean, College of Education
  and Professor of Special Education
  B.S., M.A., Wisconsin; Ed.D., Illinois

Wiseman, Donald, 1966, Associate Professor of General Business
  B.A., Hiram; M.B.A., Ph.D., Michigan

Wolf, Franklin K., 1970, Associate Professor of Engineering and
  Technology
  B.S., Iowa State; M.S., Wisconsin; Ph.D., Iowa State

Wolf, Thomas R., 1974, Assistant Professor of Military Science
  B.A., Western Michigan; M.A., Ball State University

Wood, George Seth, Jr., 1972, Lecturer in Directed Teaching
  B.A., Vermont; M.A., Western Michigan

Wood, Jack S., 1963, Associate Professor of Biology
  B.S., Maine; M.S., Ph.D., Michigan State

Wood, Kathryn, 1973, Adjunct Clinical Instructor in Speech
  Pathology and Audiology
  B.S., Western Michigan; M.Ed., Pennsylvania State

Woodliff, Charles M., 1967, Director and Professor, Division of
  Instructional Communications
  B.A., Wisconsin State; M.A., Syracuse; Ed.D., Montana

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  B.S., M.A.T., Indiana

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  and Technology
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Woodworth, Shirley C., 1971, Instructor in Communication Arts
  and Sciences
  B.A., M.A., Western Michigan

Work, Joseph T., 1963, Associate Professor of Music
  B.M., M.M., Eastman School of Music; D.M.A., Michigan

Wright, Alden, 1970, Associate Professor of Mathematics
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Wyatt, Richard E., 1972, Assistant Professor of French
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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

Yinger, Karen, 1971, Instructor in Social Science
  B.A., Baldwin-Wallace; M.A., Indiana

York, Zack L., 1940, Professor of Communication Arts and Sciences
  B.A., Western Michigan; M.S., Ph.D., Wisconsin
Faculty

Yost, Lewis M., 1968, Assistant Professor of Applied Sciences
B.S., Western Michigan; M.A., Michigan

Young, Iris M., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Michigan State

Young, Ronald M., 1973, Assistant Professor of Science
B.S., M.S., Utah State; Ph.D., Purdue

Young, Wilfred C., 1972, Instructor in Social Science and Black Americana Studies
B.A., M.A., North Carolina Central

Yunghans, Charles E., 1962, Assistant Professor of Electrical Engineering Technology
B.S.E.E., Valparaiso; M.S., Western

Yzenbaard, John, 1962, Associate Professor in 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., P.E.D., Indiana

Zastrow, Joyce R., 1962, Associate Professor of Music
B.A., Valparaiso; M.M., Indiana; D.M.A., Illinois

Zelder, Raymond E., 1964, Professor of Economics
B.A., Harvard; M.A., Ph.D., Chicago

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Zender, Bryce, 1969, Assistant Professor of Social Science
B.A., Heidelberg; M.A.T., Ph.D., Michigan State

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B.S., DePaul; M.S., Ph.D., Illinois Institute of Technology

Zinn, David C., 1965, Assistant Professor of Economics
B.A., Calvin; M.A., Western Michigan

Ziring, Lawrence, 1967, Professor of Political Science
B.S., M.I.A., Ph.D., Columbia

Zupko, Ramon, 1971, Associate Professor of Music
B.S., M.S., Juilliard School of Music
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Miller Auditorium, Manager ......... Gordon Smith
University Student Center, Director Rodger Pruis, B.A.
Married Student Apartments, Manager Robert Sprick, B.S.
Physical Plant, Director ............... Robert H. Williams, B.S.
Department of Public Safety, Director C. Keith Sheeler, M.A.
Security Coordinator .................. V. Lemar Curran
Safety Coordinator .................... Robert S. Wirbel, B.S.
Employee Relations and
Personnel, Director ..................... Stanley W. Kelley, M.B.A.

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Sports Information, Director ............ John W. Beatty, B.A.
Alumni Affairs and Development, Director Frank H. Bentz, M.A.
Alumni Relations, Director .............. Rick Markoff, M.Ed.
Annual Fund, Director ................. Larry Kuenes, M.B.A.
Senior Development Officer ............. Timothy Reilley, M.A.
EMERITI

Rachel Acree, M.A.  Associate Professor of Home Economics  1929-1960
Ethel G. Adams, M.A.  Professor of Music  1946-1973
Sam B. Adams, M.A.  Associate Professor of Music  1946-1973
Agnes E. Anderson, M.S.  Assistant Professor of Business Education  1943-1965
Thelma Anton, M.A.  Associate Professor of English  1946-1966
Hugh G. Archer, M.A.  Associate Professor of Teacher Education  1939-1972
Laverne Argabright, M.A.  Associate Professor of Biology  1917-1951
Maude Arthur, M.A.  Associate Professor of Education  1929-1959
Grover C. Batoo, M.A.  Professor of Mathematics  1922-1946
Harriette V. Bartoo, Ph.D.  Professor of Biology  1948-1972
Edith C. Beals, M.A.  Assistant Professor of Teacher Education  1944-1971
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
Donald J. Black, Ed.D.  Assistant Professor of Engineering and Technology  1952-1970
Jane A. Blackburn, M.A.  Assistant Professor of Education  1921-1951
Ruth Boot, M.S.  Associate Professor of Teacher Education  1950-1970
Ruth L. Bosma, M.A.  Assistant Professor, Campus School  1953-1968
Mary Bottje, M.A.  Associate Professor of Physical Education for Women  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, M.A.  Assistant Professor of Education  1930-1949
William H. Cain, M.A.  Professor of Mathematics  1920-1955
Theodore L. Carlson, Ph.D.  Professor of Economics  1947-1974
Edith E. Clark, A.B.L.S.  Periodicals Librarian  1927-1964
Isabel Crane, M.A.  Assistant Professor of Counseling  1923-1960
Lewis D. Crawford, M.A.  Associate Professor of Counseling  1922-1962
Golda Crisman, M.A.  Assistant Professor of Teacher Education  1947-1970
Jacob P. Dewitt, M.S.  Associate Professor of Physics  1957-1971
Cora Ebert, M.A.  Assistant Professor of Education  1930-1955
George O. England, M.A.  Associate Professor of Speech Pathology and Audiology  1954-1972
Manley M. Ellis, Ph.D.  Professor of Education  1922-1960
Dale L. Faunce, Ed.D.  Professor of Counseling and Personnel  1956-1973
Margaret E. Feather, B.A.  Counselor Emeritus, Financial Aids and Scholarships  1925-1974
Wendall B. Fidler, Ed.M.  Associate Professor of Distributive Education  1951-1971
Orie I. Frederick, Ph.D.  Professor of Education  1941-1972
Anne V. Fuller, M.A.  Associate Professor of Biology  1947-1967
Edward A. Gabel, M.A.  Associate Professor of Physical Education for Men  1948-1972
Lorena M. Gary, M.A.  Associate Professor of English  1925-1962
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  1923-1969
Grace I. Gish, M.A.  Associate Professor of Education  1929-1962
Clarence Hackeny, M.A.  Associate Professor of Mathematics  1936-1973
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
Frank J. Hinds, M.A.  Professor of Biology  1935-1970
Elizabeth Householder, M.A.  Social Director, University Student Center  1937-1940 and 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
Leonard C. Kercher, Ph.D., LL.D.  Professor of Sociology  1928-1972
Edna F. Kirby, M.A.  Assistant Professor of Business Education  1938-1965
George A. Kirby, M.A.  Associate Professor of Accounting  1936-1966
Ruth Kirby, M.A.  Associate Professor of Teacher Education  1945-1968
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
Robert Limpus, Ph. D.  Professor of Humanities  1947-1973
Carl V. Lindeman, M.S.  Assistant Professor of Education  1928-1963
M. Dezena Loutzenhiser, M.A.  Associate Professor of English  1923-1957
Phoebe Lumaree, M.S.  Assistant Librarian  1923-1961
Vern E. Mabie, M.A.  Director of Placement  1930-1932; 1948-1970
C.B. MacDonald, M.A.  Comptroller  1923-1962
Margaret B. Macmillan, Ph.D.  Professor of History  1920-1934; 1944-1969
Walter R. Marburger, M.S.  Professor of Physics  1925-1963
Helen E. Master, M.A.  Associate Professor of English  1921-1962
Holon Matthews, Ph.D.  Professor of Music  1948-1973
Eloise McCorkle, M.A.  Assistant Professor of Education  1926-1965
Emeline J. McCowen, M.A.  Associate Professor, Campus School  1947-1969
Dorothy McCuskey, Ph.D.  Professor Emeritus of Educational Leadership  1957-1973
Florence E. McLouth, M.A.  Assistant Professor of Education  1921-1947
Lillian H. Meyer, Ph.D.  Head and Professor, Department of Chemistry  1942-1968
Robert Miller, Ph.D.  Associate Professor of Physics  1956-1972
Emeriti

Evelyn A. Monroe, B.S. Assistant to the Director, Career Planning and Placement 1954-1972
Lois B. Monroe, M.A. Assistant Professor of Spanish 1925-1961
Louise C. Myers, M.A. Assistant Professor of Education 1925-1961
Leonard Newton
Frances E. Noble, Ph.D. Professor of French 1931-1973
Hilda Oster, M.A. Assistant Professor of Teacher Education 1946-1972
Lauri Osterberg, M.A. Assistant Professor of Chemistry 1948-1962
Hazel I. Paden, M.A. Assistant Professor of Art 1929-1960
J. Kimbark Peterson, M.A. Associate Professor of Mathematics 1947-1973
Effie B. Phillips, M.A. Assistant Professor of Education 1925-1949
John H. Plough, M.A. Assistant Professor of Industrial Education 1941-1956
Gayle Pond, R.N. Director of Nursing Service 1946-1966
Myrtle M. Powers, M.S. Assistant Professor of Biology 1941-1972
Lilija Puze, M.A.L.S. Assistant Professor, Library 1956-1973
Don O. Pullin, M.A. Associate Professor of Industrial Education 1926-1958
Paul L. Randall, B.S.L.S. Assistant Professor, Library 1925-1967
Glen C. Rice M.A. Associate Professor of Counseling 1943-1965
William McKinley Robinson, Ph.D. Professor of Rural Life and Education 1927-1960
Olga S. Roekle, B.A. University Budget Officer 1931-1973
Candace Roell, Ph.D. Professor of Physical Education for Women 1956-1973
Frederick J. Rogers, Ph.D. Professor of English 1946-1971
Katharine D. Rogers, M.A. Assistant Professor of English 1946-1966
Paul Rood, Ph.D. Professor of Physics 1916-1964
Hermann E. Rothfuss, Ph.D. Professor of German 1944-1970
Gladys L. Rowe, M.A. Associate Professor of Home Economics 1950-1967
Hazel M. DeMeyer Rupp, B.S.L.S. Associate Professor, Library 1946-1971
Robert R. Russel, Ph.D. Professor of History 1922-1960
Hazel E. Saye, A.B.L.S. Assistant Professor, Library 1939-1965
William A. Schreiber, M.A. Assistant Professor of Engineering and Technology 1953-1971
Esther D. Schroeder, M.A. Professor of Education 1946-1968
Donald N. Scott, M.A. Director, University Student Center and Residence Halls 1943-1969
Maurice F. Seay, Ph.D., LL.D. Professor of Educational Leadership 1967-1972
Laura V. Shaw, M.A. Associate Professor of Industrial Education 1910-1948
Ethel Shimmel, M.A., Associate Professor, Campus School 1923-1966
Russell H. Seibert, Ph.D. Vice President for Academic Affairs and Professor of History 1936-1973
Lydia Siedschlag, M.A. Professor of Art 1921-1958
Bess Baker Skillman, M.A. Assistant Professor of Education 1924-1947
J. Towner Smith, M.A. Dean of Men 1928-1966
M. Elibzabeth Smutz, M.A. Professor of Art 1947-1972
Emeriti

Carl B. Snow, M.A.  Associate Professor of Teacher Education  1946-1972
Dorothea Sage Snyder, M.A.  Associate Professor of Music  1925-1962
Raymond F. Sorensen, M.S.  Associate Professor of Physical Education for Men  1950-1973
Marion A. Spalding, M.A.  Assistant Professor of Physical Education  1916-1960
Marion R. Spear, M.A.  Associate Professor of Occupational Therapy  1944-1958
Opal Stamm, M.A.  Assistant Professor of Home Economics  1934-1963
Charles R. Starring, M.A.  Professor of History  1928-1969
Mathilde Steckelberg, M.A.  Professor of Language  1927-1961
Edwin B. Steen, Ph.D.  Professor of Biology  1941-1972
Elaine L. Stevenson, M.A.  Assistant Professor of Art  1917-1960
Bess L. Stinson, M.A.  Associate Professor, Campus School  1929-1960
Katharine M. Stokes, Ph.D.  Director of Libraries  1948-1967
Cyril L. Stout, Ph.D.  Professor of Geography  1947-1968
Louise F. Struble, M.A.  Assistant Professor of Education  1923-1952
Julius Stulberg, M.A.  Professor of Music  1945-1972
Clella Stufft, M.A.  Assistant Professor of Education  1924-1950
Jane Thomas, M.A.  Assistant Professor of Occupational Therapy  1944-1954; 1958-1971
Eulalia Toms, M.A.  Assistant Professor of Teacher Education  1947-1970
Adrian Trimpe, M.A.  Head and Associate Professor, Department of Distributive Education  1947-1972
Frank L. VanVoorhees, M.A.  Associate Professor of Political Science  1963-1973
Jean Vis, M.A.  Assistant Professor of Education  1927-1955
Marjorie Vivian, M.A.L.S.  Professor Emeritus, University Libraries  1966-1973
Louise J. Walker, M.A.  Associate Professor of English  1924-1961
Ernest Weber, M.A.  Assistant Professor, Campus School  1923-1960
William V. Weber, Ph.D.  Professor of Political Science  1937-1966
Ethis B. West, M.A.  Assistant Professor of Communication Arts and Sciences  1960-1971
Roy J. Wietz, M.A.  Associate Professor of Physical Education for Men  1942-1970
Ruth VanHorn Zuckerman, M.A.  Associate Professor of English  1922-1964
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