Since the printing of the 1979-81 Bulletin, a number of undergraduate level courses have been added, modified, or deleted. These courses are listed under their respective colleges and by department name and prefix.

These listings include the course number, the course title, the number of credit hours, and an indication (in parentheses) whether the course is "new," "modified," or "deleted."

In addition, one new program has been added, six have been modified, and one has been deleted. These program changes are also listed under the respective college and department.

For more complete information, consult the adviser in the appropriate department.


<table>
<thead>
<tr>
<th>School of Librarianship (LIB)</th>
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<tbody>
<tr>
<td>505 Introduction to Computer I, 2 hrs. (modified)</td>
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<tr>
<td>535 Introduction to Information Science and Technology, 3 hrs. (new)</td>
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<tr>
<td>590 Studies in Librarianship, variable hrs. (new)</td>
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<th>Home Economics (HEC)</th>
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<tr>
<td>106 Fashion Merchandise I, 3 hrs. (modified)</td>
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<td>107 Fashion Merchandise II, 3 hrs. (new)</td>
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<tr>
<td>254 Human Growth and Development, 3 hrs. (modified)</td>
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<td>260 Menswear, 3 hrs. (new)</td>
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<td>305 Experimental Clothing Techniques, 3 hrs. (modified)</td>
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<td>Agriculture (AGR)</td>
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<td>395 Field Experience in Agriculture, variable hrs. (new)</td>
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<td>Electrical Engineering (EE)</td>
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<tr>
<td>455 Digital Signal Processing, 3 hrs. (new)</td>
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<tr>
<td>501 Introduction to Power Systems, 3 hrs. (new)</td>
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<td>510 Advanced Circuits, 3 hrs. (delete)</td>
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<tr>
<td>550 Digital Signal Processing, 3 hrs. (deleted)</td>
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<td>550 Digital Signal Processing, 3 hrs. (deleted)</td>
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<tr>
<td>359 Introduction to Gravure Printing, 3 hrs. (new)</td>
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<td>406 Residential Building Construction, 3 hrs. (new)</td>
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<tr>
<td>407 Finish Carpentry and Cabinet Making, 3 hrs. (new)</td>
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<td>505 Problems in Woodworking, 2 hrs. (new)</td>
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<tr>
<td>506 Residential Building Construction, 3 hrs. (delete)</td>
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<td>507 Finish Carpentry and Cabinet Making, 3 hrs. (delete)</td>
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<tr>
<td>510 Organization and Administration of Vocational Clubs, 1 hr. (delete)</td>
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<tr>
<td>511 Field Experience in Vocational Clubs, 1 hr. (delete)</td>
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<td>513 Technical Education Methods, 3 hrs. (new)</td>
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<tr>
<td>514 Workshop in Vocational-Technical Education, variable hrs. (new)</td>
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<tr>
<td>523 Advance Drafting Practices, 2 hrs. (new)</td>
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<td>530 Research and Machine Shop Practice, 2 hrs. (new)</td>
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<td>540 Technical Education Methods, 3 hrs. (delete)</td>
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<td>541 Workshop in Vocational-Technical Education, variable hrs. (delete)</td>
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<td>547 Modern Technological Practice, variable hrs. (new)</td>
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College of Fine Arts

Art (ART)
541 Printmaking Workshop, variable hrs. (modified)
589 History of 20th Century Art, 1900-45, 3 hrs. (modified)
590 History of 20th Century Art, 1945-Present, 3 hrs. (new)
591 History of Prints, 3 hrs. (new)

Dance (DANC)
227 Character Dance, 1 hr. (modified)
588 Dance Production, 2 hrs. (modified)
589 Dance Management, 2 hrs. (new)

Music (MUS)
346 Marching Band Techniques, 2 hrs. (modified)
555 Jazz Arranging, 2 hrs. (modified)
590 Pedagogy-Vocal, variable hrs. (modified)

Fine Arts Appreciation Minor
(program deleted)

College of Health and Human Services

Physicians' Assistants Program (MDSC)
422 Pediatric Clerkship, 4 hrs. (modified)
423 Obstetrics and Gynecology Clerkship, 4 hrs. (modified)
424 Internal Medicine Clerkship, 4 hrs. (modified)
425 General Surgery Clerkship, 4 hrs. (modified)
427 Family Medicine Preceptorship, 6 hrs. (modified)
432 Pediatric Seminar, 2 hrs. (new)
433 Obstetrics and Gynecology Seminar, 2 hrs. (new)
434 Internal Medical Seminar, 2 hrs. (new)
435 Surgery Seminar, 2 hrs. (new)
437 Family Medicine Seminar, 2 hrs. (new)

School of Social Work (SWRK)
Program Revision
Bachelor of Social Work Degree (modified)

College of General Studies

General Studies (GENL)
333 American Studies, variable hrs. (new)
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 85,800 and of Kalamazoo County is 207,700.
About Western Michigan University

The provisions of this catalog are not an irrevocable contract between the student and the University. The University reserves the right to change any provision or requirement at any time within the student's attendance. The University further reserves the right to ask the student to withdraw for cause at any time.

It is the policy of Western Michigan University not to discriminate on the basis of race, sex, age, color, national origin, religion or handicap in its educational programs, activities, admissions, or employment policies as required by Title IX of the 1972 Education Amendments, Executive Order 11246 and Executive Order 11375, and Section 504 of the Rehabilitation Act of 1973.

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.

Changes in administration and instruction may be made subsequent to the date of publication.

The cover art shows a silhouette of "Three Figures" which is located on the Fine Arts Plaza adjacent to Miller Auditorium. The sculpture, completed in September 1972, is the work of former Art Department member, Carole Harrison.

Cover and text format of this catalog were designed by the Office of University Publications.

Vol. 75, No. 4 June, 1979

Bulletin—Western Michigan University (USPS 078-980) is published four times annually: September, January, April and June. Second class postage paid at Kalamazoo, Michigan 49008.

Founded: 1903
President: John T. Bernhard, Ph.D., LL.D.
State Assisted, Co-educational
Colleges and Schools:
Applied Sciences
Arts and Sciences
Business
Education
Fine Arts
General Studies
Health and Human Services
School of Social Work
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, to assess the validity of the information that is presented and respond to our environment; to introduce the student to the world in which the educated and responsible citizen must live; to provide the student with a foundation for tenable values; to provide students with sufficient knowledge in a discipline, or a group of related disciplines, so they 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: 1979-80
Fall Semester—September 5 - December 22
Winter Semester—January 3 - April 19
Spring Session—April 28 - June 18
Summer Session—June 26 - August 15

Academic Year: 1980-81
Fall Semester—September 3 - December 20
Winter Semester—January 5 - April 25
Spring Session—May 4 - June 24
Summer Session—July 1 - August 21

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1979-80 Calendar

**Fall Semester, 1979**
- September 4, Tuesday
  - Final Registration
- September 5, Wednesday
  - Classes Begin
- October 5, Friday
  - Classes Dismissed 2 p.m. Friday only
    (Laboratories excepted)
- October 6, Saturday
  - Homecoming
- November 21, Wednesday
  - Thanksgiving Recess (12 noon)
- November 26, Monday
  - Classes Resume
- December 22, Saturday
  - Semester Ends

**Winter Semester, 1980**
- January 2, Wednesday
  - Final Registration
- January 3, Thursday
  - Classes Begin
- March 3, Monday
  - Semester Recess
- March 10, Monday
  - Classes Resume
- April 4, Friday
  - Recess—All Day
- April 19, Saturday
  - Semester Ends
- April 19, Saturday
  - Commencement (2 p.m.)

**Spring Session, 1980**
- April 26, Saturday
  - Final Registration
- April 28, Monday
  - Classes Begin
- May 26, Monday
  - Memorial Day Recess
- June 18, Wednesday
  - Session Ends

**Summer Session, 1980**
- June 25, Wednesday
  - Final Registration
- June 26, Thursday
  - Classes Begin
- July 4, Friday
  - Independence Day Recess
- August 15, Friday
  - Session Ends
- August 15, Friday
  - Commencement (6 p.m.)

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### 1979

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1980-81 Calendar

Fall Semester, 1980

September 2, Tuesday
Final Registration
September 3, Wednesday
Classes Begin

October 3, Friday
Classes Dismissed 2 p.m. Friday only (Laboratories excepted)
October 4, Saturday
Homecoming

November 26, Wednesday
Thanksgiving Recess (12 noon)

December 1, Monday
Classes Resume

December 20, Saturday
Semester Ends
Commencement (2 p.m.)

Winter Semester, 1981

January 3, Saturday
Final Registration
January 5, Monday
Classes Begin

March 2, Monday
Semester Recess
March 9, Monday
Classes Resume

April 17, Friday
Recess—All Day
April 25, Saturday
Semester Ends
April 25, Saturday
Commencement (2 p.m.)

Spring Session, 1981

May 2, Saturday
Final Registration
May 4, Monday
Classes Begin
May 25, Monday
Memorial Day Recess
June 24, Wednesday
Session Ends

Summer Session, 1981

June 30, Tuesday
Final Registration
July 1, Wednesday
Classes Begin
July 3, Friday
Independence Day Recess
August 21, Friday
Session Ends
August 21, Friday
Commencement (6 p.m.)
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.

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.

Faculty Senate Councils are composed of faculty members elected by the Faculty Senate for three-year terms, certain ex officio members, several members appointed by the President of the University, and student members selected by the Associated Student Government. The terms of elected members expire in April in a staggered year sequence. The Councils include: Budget and Finance Council; Campus Planning Council; Continuing Education Council; Educational Policies Council; Graduate Studies Council; Research Policies Council; and Undergraduate Studies Council. For names of members and further information, contact the Faculty Senate office. The Faculty Senate President for 1979-80 is Roger A. Bennett, and the Senate Vice President is William J. Stiefel.

Student Financial Assistance Council

Created by the WMU Board of Trustees in March, 1976, the 12-member Student Financial Assistance Council consists of students and staff appointed by the President. The Council is responsible for the development of a university-wide plan for student financial assistance, including coordination of existing programs, and policy decisions regarding modifications, termination or initiation of new programs.

The Athletic Board

The Mid-American Conference consists of ten Universities associated for the purpose of intercollegiate sports competition. The league is organized and controlled by the Presidents' Council, which appoints a commissioner to oversee league activities.

On campus, policy relating to the conduct of men's and women's intercollegiate sports is recommended to the President by the Athletic Board.

Student Services Council

The Student Services Council considers matters of policy in the areas of Student Services and student non-academic life. It recommends policy on such matters subject to the review of the Student Senate, the Executive Board of the Faculty Senate and the approval of the President of the University. Its membership consists of nine students, appointed by the Associated Student Government President with the advice and consent of the Student Senate, four faculty members, elected by the Faculty Senate and two professional-administrative staff members appointed by the Dean of Students.
Admission

Western Michigan University admission policy prohibits any discrimination on the basis of race, religion, sex, and national origin. 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 whenever 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 all other requirements are met. 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 directly from the college or university to which the courses to be taken are approved by the Director of Admissions of this University. Transfer credits will be acceptable only when they have been earned at a college which was accredited by the North Central Association of Colleges and Secondary Schools, an equivalent organization, or by the Michigan Commission on College Accreditation at the time the student was enrolled. 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 taken at this University will apply towards the student’s 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. Readmissions 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 expected to remain out at least one full 15-week semester. The Committee on Readmissions is concerned with the extent to which the dismissed student, who is applying for readmission, has resolved the causes of past academic difficulty. 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 the initial application is made, although not attending succeeding sessions, will be eligible to register for one year following. If the student does not register for the initial semester, a new re-entry application must be submitted. A person who has current admission status and has been attending classes on or off campus will retain that status as long as the student has attended classes within the last year.

Application for Admission

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 at the University until such time as admissions are closed.

1. To apply to Western by ACT/APP, an admissions system which uses
8 ADMISSIONS, REGISTRATION, ADVISING

the ACT assessment information to generate a preprinted application. Students must list Western's code number (2066) as one of their college choices when they register to take the ACT assessment. The University will evaluate the information, and, if they qualify, will tentatively accept them for admission. They will then be asked to submit a simplified ACTAPP form for official admission.

2. A prospective first-year student may secure an application from the high school counselor, principal, or the Undergraduate Admissions Office and complete those parts for which the student is responsible.

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

4. 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.

5. The student must be officially admitted before being counseled or enrolled. Therefore, all credentials must be in the Admissions Office in advance of registration.

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.

1. Complete an application for degree admission.

2. 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 and will not be accepted for admission purposes.

3. If less than thirty (30) semester hours of credit have been earned, have a copy of the high school transcript sent directly to the Admissions Office from the high school.

4. 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.

5. An official transcript for students with tentative admission must be received by 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.

6. 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 total cumulative grade-point average prior to matriculation at Western Michigan University is 2.0 or better in transferable work at each institution, as well as all institutions combined. Any additional work transferred after matriculating at Western must also be a 2.0 average for "D" grades to transfer.

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

c. Credit earned as 'credit by examination' will not transfer to WMU.

Permission to Take Classes (PTC)

This form of registration is limited to the non-traditional student whose academic background and scholastic maturity have been deemed commensurate with existing admissions criteria. This status is not intended for use by students seeking degree admission, nor can it be used to circumvent University Scholarship Policies. Academic transcripts are required of PTC applicants if requested by the Admissions Office.

The PTC student can register for any course for which the prerequisites have been met. PTC students are subject to normal scholarship standards. PTC students will, however, generally be limited to a maximum of two courses per semester or session.

PTC students may apply for admission to a degree program at any time. They will, however, be expected to meet the existing standards for admission.

American College Test Requirement for First-Year Students

The American College Test (ACT) is required of all new first-year students. The results of this test must be on file in the Admissions Office prior to enrollment. This requirement is met only after the results are received directly from the American College Testing Program. Neither high school nor ACT scores will be considered for admissions purposes if ACT reports satisfy this requirement.

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 overall evaluation process, no other achievement or aptitude tests will substitute for the ACT requirement.

The English Competence of Students From Non-English Speaking Backgrounds

Prospective students whose native language is not English will be required to demonstrate proficiency in the English language prior to enrollment in an academic program at Western Michigan University. The University strongly prefers that students take the ACT English Language Proficiency (MLSEP) and will not accept SAT scores or TOEFL scores. Exceptions to these standard tests will require special approval. In the event examination results are not available prior to the time the prospective student reports for orientation and enrollment, the student will be required to sit for the University prescribed English proficiency examination.

To be eligible for unqualified full-time enrollment in an academic program, a minimum total score of 550 must be achieved in the TOEFL examination. For the MTELP a minimum score of 80% is required. Within certain limits a prospective student who has achieved less than the minimum score required for unqualified enrollment may be allowed to register for courses on a restricted basis, which will include a course of study designed to improve the student's ability to use the English language. Limits and restrictions of such qualified enrollment will be established and applied by the Office of International Student Services.

Notification of Admission

Western Michigan University operates on a "rolling admission" notification system. 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 Undergraduate Admissions is located in the Administration Building and is open Monday through Friday.

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 placement. Entering first-year students 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. Students eligible 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. This program gives individuals the chance to validate and receive credit for college-level knowledge that they already possess. CLEP offers two types of tests—General Examinations and Subject Examinations. To ascertain the policies of Western Michigan University on accepting credit through either of these Examinations students should contact the Admissions Office, the College Advising Offices, or Testing Services.

Academic Advising
The faculty and administration of Western Michigan University feel that academic advising is a necessary part of an undergraduate education. The University has committed to this essential service many faculty and staff and strongly urges all students to make full use of the available resources in order to receive the best possible education.

All students should consult with their curriculum advisors who will help them plan their degree programs. Curriculum advisors offer academic advising which consists of: General Education requirements, specific curriculum requirements, career opportunities, etc. In addition, they offer academic counseling, that is, exploration of alternatives and other educational possibilities. This is a useful and productive means of attempting to match a student’s interests and abilities with an academic program. Curriculum advisors will make referrals to other advising facilities and to departmental advisors where and when it is appropriate. It should be emphasized that it is the student’s responsibility to arrange to meet with curriculum and/or departmental advisors.

A listing of curriculum advisors may be found in the Schedule of Classes which is published for each semester and session. Students not certain of their curricula or advisors should contact the Advising Office of the College to which they have been admitted. (See list below.) Students should refer to their Admission Certificates to find out to which Curriculum and College they have been admitted.

A. Academic Advising for Freshmen Students
Newly admitted Freshmen students will receive a written invitation to one of the Orientation Sessions. During the Orientation Session students will have the opportunity to meet with their curriculum advisors at which time they will receive academic information and assistance in requesting classes for their first semester. Students are strongly urged to attend one of the Orientation Sessions because of the comprehensive advising which is available as well as important campus information which is discussed.

Students unable to attend one of the Orientation Sessions will have to make individual appointments with advisors prior to submitting their requests for classes. These appointments are on a limited basis, especially during the period of Request for Classes.

B. Academic Advising for Transfer Students
Newly admitted transfer students will be invited to one of the Advising-Registration Conferences scheduled especially for transfer students. Invitations to these conferences, usually scheduled prior to the Fall and Winter semesters, will be sent along with the Admission Certificates, or shortly thereafter. At these conferences students will be advised as to how transfer courses apply to programs at Western. In addition students will receive curriculum and major/minor advising. It is important that transfer students bring their most recent Credit Evaluations to these conferences. Transfer students are urged to take advantage of these conferences for comprehensive advising.

Transfer students unable to attend one of the Advising-Registration Conferences will have to make individual appointments with advisors. However, these are available on a limited basis during the period of Request for Classes. Students should be aware that the advising will be less comprehensive and may involve appointments with more than one advisor.

Students admitted for Spring or Summer Sessions should make individual appointments with curriculum and major/minor advisors.

College Advising Offices
College of Applied Sciences, 2038 IET Bldg., 383-0545
College of Arts & Sciences, 2060 Friedmann Hall, 383-6122
College of Business, 250 North Hall, 383-3982
College of Education, 2305 Sangren Hall, 383-1989
College of Fine Arts, Room 104 Maybee Hall, 383-0913
College of General Studies, 2090 Friedmann Hall, 383-0941
College of Health & Human Services, B-124 Henry Hall, 383-8116
Honors College, D-1 Hillside West, 383-1787
Undecided Curriculum, Counseling Center, 2510 Student Services, 383-1850
Career Education

All students are urged to make use of the career education facilities of the University for assistance in deciding upon a major and minor, planning for realistic entry-level jobs, and visualizing a career path for the future.

Career counseling and advisement are available in the offices of the Counseling Center, and curriculum and departmental advisors. Two courses directly related to career education are offered. They are: Arts and Sciences 100, Career Development for the Undecided Student and Career Planning; Arts and Sciences 373, Communication Skills and Career Planning. The office of the University Placement Services offers seminars and workshops to assist students in their transition from college to the world of work.

A suggested schedule of career education activities follows:

Freshmen and Sophomores
This is the time for assessment and exploration:
1. Be clear as to why you are in college, and what a college education means to you, what you hope the return on your monetary and psychic investment will be. Muddled thinking in any of these areas tends to take a toll on grade point average, interest in and motivation to attend classes, and willingness to take responsibility for your own academic progress.
2. Assess your interests, skills, and abilities. Knowing about yourself in these terms provides vital information needed to make decisions about your educational and/or career direction. Since you will be spending a great deal of your time in the next few years becoming knowledgeable in an academic discipline, it follows that you need to be interested in it, have the ability to master the material, and to acquire the skills necessary to develop an initial competence in the field. The same things are important to consider in deciding what you will do after you graduate.
3. Discover what your values about work are. Since you will eventually be spending 35 to 40 hours a week engaged in some activity for which you will be paid, you need to be clear about what settings you prefer—outdoors, indoors, working with people or things, supervised, routine duties or constant change, staying in one place or traveling. These are just a few of the factors that contribute to satisfaction with your work.
4. Explore various academic and career areas. Take classes that will introduce you to a discipline, talk with the faculty, research careers that might logically be associated with the discipline, talk to people currently employed in those careers that interest you.

This kind of information does not come automatically as a result of physically being on campus or attending classes. It is each student’s responsibility to seek it out. The choice of an educational direction or the reinforcement of a previous choice will be a natural result of these activities.

Juniors and Seniors
This is the time to actively plan for the first job you will hold after graduation.
1. Research various careers for which your educational background would be appropriate, or careers which interest you but do not require a specific educational background. Read about them, talk to people who are actually working in them, attend meetings and join professional organizations related to them, read publications written by and for these people, volunteer to work in areas that interest you, try to find part-time or summer employment so that you can get the feel of what it is like to actually do this kind of work.
2. Get to know your major professors well. They can give you a lot of support, many valuable tips, and may recommend you to future employers.
3. Get involved in campus activities and/or classes that will help you to develop the skills you have identified as being necessary to excel in a career which interests you.
4. Start getting familiar with the Placement Services. Talk to the placement counselors, find out how they can help you negotiate the job market. Check on the market projections in your field of interest, learn how to conduct your part of a job interview, learn to write resumes and letters of inquiry and application. Sign up for on-campus interviews. Talk to as many people in your field of interest as you can.
5. Be able to articulate your job objectives—what you want to do, why you feel that you can do it well, and for whom you wish to do it. This is vital information to give to potential employers.
Degrees and Curricula

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

Bachelor of Arts
The student who regularly completes a curriculum conforming to the requirements of this degree and embracing at least 70 hours of General 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 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 courses in Language and Literature, Science or Social Science areas, is eligible for the degree of Bachelor of Science.

Bachelor of Business Administration

Bachelor of Fine Arts

Bachelor of Science in Medicine
(Physicians' Assistants)

Bachelor of Music

Bachelor of Science in Engineering
(Aircraft) (Automotive) (Computer Systems) (Electrical) (Environmental) (Industrial) (Mechanical) (Paper)

Second Bachelor's Degree
A student may earn a second bachelor's degree at Western Michigan University. In order to qualify for a second degree from Western Michigan University, a student must meet all Western Michigan University bachelor degree requirements and earn thirty (30) semester hours of residence credit beyond those required for the first degree. The additional hours need not be taken subsequently to completion of requirements for the first degree. The second degree may not be the same as the first and must be in a substantially different curriculum. Students who are interested in a second degree must receive written approval of their program of study from the Director of Academic Records before beginning their course work.

Graduate Degrees
Master of Arts
Master of Business Administration
Master of Fine Arts
Master of Music
Master of Occupational Therapy
Master of Public Administration
Master of Science in Accountancy
Master of Science
Master of Science in Librarianship
Master of Science in Statistics
Master of Social Work

Specialist in Arts
Six-year programs are offered primarily for the preparation of Community College teachers in Business Education, History, Librarianship, Mathematics and Science Education.

Specialist in Education
Sixth-year programs are offered in Educational Leadership, Counseling and Personnel, School Psychology and Special Education.

Doctor of Education
Three doctoral degree programs are offered by the College of Education: Counseling and Personnel, Educational Leadership, and Special Education.

Doctor of Philosophy
Programs leading to the Ph.D. degree offered in Chemistry, Mathematics, Psychology, 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.

University 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. Some students 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 and two year colleges, which are signatory to the Michigan Association of Collegiate Registrars and Admissions Officers General Education Agreement, will automatically have fulfilled the first and second year general education requirements.

General education requirements of two courses 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 activities classes. First-year students 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 student limited in physical activity may receive counseling for courses suited to his/her limitation through the Medical Recommendation Procedure. (See "General Physical Education," Exceptions, #9) A maximum of eight hours of general physical education may be counted towards graduation.

F. Minimum residence requirements: All candidates must present a minimum of 30 hours through Western Michigan University. Ten of the last 30 hours must be taken through Western Michigan University. Correspondence credit and credit by examination 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 two-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. (For exception see "Special Policy ..." under "Graduate Requirements for a Bachelor of Science in Engineering" listed in the College of Applied Sciences.)

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/her initial registration at the two-year institution. The student 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 attempts to insure some degree of breadth for every student at W.M.U., and may provide coursework 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. Honors College students may satisfy their general education requirements through the Honors College General Education program. 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 consists of a large number of courses offered for General Education by numerous departments throughout the University. These courses offer a variety of approaches to introduce the student to the Humanities and Fine Arts, the Social Sciences, the Sciences, and the Non-Western World. There are introductory courses for students wishing to explore new areas of knowledge and there are more advanced courses for students wishing to delve into specialized areas. Many special topic courses, for example, courses on the environment, are offered. In addition, interdisciplinary courses are offered that use the skills and techniques of study of several fields. The essential goal of the Distribution Program is to extend the undergraduate experience beyond the student's area of concentration and to provide students with the skills necessary for synthesizing their experience into an understanding of themselves and their world.

Within the guidelines below, students can take classes in a number of departments. Quite a few of these courses can count toward a student's major or minor as well as for General Education. Curriculum advisers will be glad to assist students in selecting and planning their Distribution Program.

2. The Integrated Programs These programs consist of courses which have been designed to provide coherence and continuity for the General Education experience. Each approaches subject matter from the viewpoint of the three basic areas of knowledge: the sciences, the social sciences, and the humanities. Students have a choice of two programs. In each program students deal with the inter-relationships between ways of knowing—the integration of knowledge—hence the name, Integrated Programs.

All courses listed in italics in this catalog have been approved for General Education purposes.

Requirements for the Distribution 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. Only one (1) course from each department may count toward an Area requirement, with the exception of courses from the College of General Studies.

5. At least two courses must be completed satisfactorily at the junior-senior (300-500) level.

6. No more than two (2) courses may be taken in any one department toward meeting the 35 hour requirement. Since the College of General Studies is organized on an inter-disciplinary basis, this restriction does not apply to General Studies courses.

General Education Distribution Program

AREA I

Humanities and Fine Arts

AREA II

Social and Behavioral Sciences

AREA III

Natural Sciences & Mathematics

AREA IV

Non-Western World

AREA V

Optional Electives

Integrated Programs and Requirements

Either of the following Integrated Programs satisfies the General Education requirement. There are three stipulations:

1. Course work, elected in consultation with the student’s Integrated Program advisor, must total at least 35 semester hours of credit.

2. At least two courses must be completed satisfactorily at the junior-senior (300-500) level.

3. Every program must include an introduction to the Non-Western World.

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

Program A
The Integrating Perspective This program is designed to provide understanding of a personal perspective that is unique for each human being; a world perspective which is generally available to all of us; and an understanding of what occurs when these two perspectives interact (the reciprocal perspective). This is accomplished by interrelating the perspectives of the humanities, the social sciences, and the natural sciences.
14 DEGREES AND CURRICULA

North Central Michigan College AA, AS
Northwestern Michigan College AA, AS
Oakland Community College AA, AS
St. Clair County Community College AA
Schoolcraft College AA, AS
Southwestern Michigan College AA, AS
Wayne County Community College AA, AS
Washinaw Community College AA, AS
West Shore Community College AA, AS

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.

4. Waiver of junior-senior requirement for transfer students with advanced standing A student transferring 90 or more semester hours may be 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.

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 satisfy their requirements by successfully completing two 300-500 level General Education courses. A course in Non-Western World must be included in this coursework 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)
   - General Humanities
   - Foreign Language (1st year only)
   - Music (Appreciation or History)
   - Philosophy (and Logic)
   - Religion (non-doctrinal)
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 Ethnicity)
   - 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 a 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.

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

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 the opportunity for individualized interdisciplinary 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 the student has completed 75 credit hours.

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

Undergraduate Curricula and Approved Majors

College of Applied Sciences: AAS
CURR: AGR Agricultural Distribution
Major: AGR Agriculture
CURR: AME Automotive Engineering
Major: AME Automotive Engineering
CURR: AUM Automotive Management & Service
Major: AUM Automotive Management & Service
CURR: ACE Aircraft Engineering
Major: ACE Aircraft Engineering
16 DEGREES AND CURRICULA

CURR: SED Secondary Education
Major: AGR Agriculture
AMS American Studies
ANT Anthropology
BIO Biology
BMW Biomedical Sciences
CMH Chemistry
CAS Communication Arts & Sciences
EAR Earth Science
ECO Economics
ENG English
FRE French
GEG Geography
GER German
HIS History
LAT Latin
MAT Mathematics
PHY Physics
POL Political Science
PSY Psychology
RUS Russian
SCI Science
SOS Social Science
SOC Sociology
SPA Spanish

CURR: LIB Librarianship
Major: Should select major from EED or SED

CURR: PEP Physical Education
Major: AOE Aquatics Education
HED Health Education
PEA Physical Education—Coaching
PHE Physical Education—Elementary
PES Physical Education—Secondary
REC Recreation

CURR: RUL Rural Elementary
Major: RUL Rural Life

CURR: SCH Special Education—Orthopedically Handicapped
Major: SCH Special Education—Orthopedically Handicapped

CURR: SDC Special Education—Emotionally Disturbed
Major: SDC Special Education—Emotionally Disturbed

CURR: SMH Special Education—Mentally Handicapped
Major: SMH Special Education—Mentally Handicapped

CURR: SBE Special Education—Visually Handicapped (Elem)
Major: SBE Special Education—Visually Handicapped (Elem)

College of Fine Arts: FAR
CURR: ART Art
Major: ART Art
ATE Art Teaching
ARTH Art History
CER Ceramics
GBD Graphic Design
JMS Jewelry-Metal smith
MMD Multi-Media
PAI Painting
PHL Photography
PRM Printmaking
SCU Sculpture
TEX Textile Design

CURR: DAC Dance
Major: DAC Dance
DAN Dance Education

CURR: MSC Music
Major: MSC Music
MUA Applied Music
MUC Music Composition
MUE Music Education
MUH Music History
MUS Music Jazz
MUR Music Theater
MUT Music Theory
MUY Music Therapy

CURR: THR Theatre
Major: THR Theatre
THN Theatre Education

College of Health and Human Services: HHS
CURR: OT Occupational Therapy
Major: OT Occupational Therapy

CURR: PYA Physicians’ Assistants
Major: PYA Physicians’ Assistants

CURR: PMT Pre-Medical Technology
Major: PMT Pre-Medical Technology

CURR: PSW Pre-Social Work
Major: PSW Pre-Social Work

CURR: PSN Pre-Speech Pathology & Audiology
Major: PSA Pre-Speech Pathology & Audiology

CURR: SW Social Work
Major: SW Social Work

CURR: SPN Speech Pathology & Audiology
Major: SPC Speech Pathology & Audiology

Honors College
CURR: HNC Honors College
Major: Any Undergraduate Major

Division of Continuing Education: DCE
CURR: GUS General University Studies
Major: AMT American Studies
(Area ALS Applied Liberal Studies
of CJU Criminal Justice
Concen- EVL Environmental Studies
ration) HTH Health Studies

CURR: SPC Speech Pathology & Audiology
Major: SPC Speech Pathology & Audiology

Recommended Third Year
General Education
Major and minor requirements
Electives

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
Imy V. Holt, Medical Sciences
Advisor
2600 Friedmann Hall
383-6122

Although the Dental Aptitude Test is required of all applicants to any dental school, the amount and kind of academic work needed for admission vary. Therefore, students planning to do their pre-dental work at Western Michigan University should refer to the catalogs from the schools of their choice and plan their 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. Pre-dental students should see the preprofessional advisor in Room 2060, Friedmann Hall for curriculum suggestions, a Pre-Dental Advisory Kit, Dental Aptitude Test application forms, centralized application service information, and Preprofessional Evaluation Committee services. In addition, pre-dental 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 pre-dental course requirements in two years. This sequence, however, can be altered to meet the requirements of the particular academic major and minor of the student’s choice.

First Year
English ............................. 8
Biology 101 and 102 or Biomedical Science 112 and 113 6-8
Chemistry 101 or 120 8
Mathematics 120 and 121 or 122 8
and 123 or 200 and 360* 8
Physical Education .............................. 1-2

Second Year
Biology or Biomedical Science 3-4
Physics 110 and 111 or 210 and 211* 8
Organic Chemistry 360 and 361 8
General Education 8

*Chemistry majors should take Physics 210 and 211 and Mathematics 122 and 123
Pre-Architecture
Carolyn Chingo, Advisor

A preprofessional curriculum in architecture is outlined in this bulletin under the College of Applied Sciences.

Pre-Engineering
Carolyn Chingo, Advisor

A typical pre-engineering program for students who wish an engineering program other than those offered in the College of Applied Sciences is listed in the College of Applied Sciences' section of the catalog.

Librarianship
William K. Smith, Advisor
School of Librarianship
2080 Waldo Library
383-1849

A preprofessional curriculum in librarianship is outlined preceding the section on College of Applied Sciences.

Medicine and Osteopathy
Imy V. Holt, Medical Sciences Advisor
2060 Friedmann Hall
383-6122

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 each spring and fall. The advisor should be consulted as to the appropriate testing time.

Students planning to do their premedical work at Western Michigan University should refer to the catalogs from the medical or osteopathic schools of their choice and should plan their 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 pre-medical students should see the preprofessional advisor in 2060 Friedmann Hall for curriculum suggestions, Medical and Osteopathic Advisory Kits, Medical College Admission Test, application forms, centralized application service forms, and Preprofessional Evaluation Committee services. In addition, pre-medical and pre-osteopathic students are encouraged to join the Medical Sciences Association which is composed of students interested in health science careers.

The curriculum suggestions listed below assure early completion of most pre-medical and pre-osteopathic course requirements. This sequence, however, can be altered according to the student's interest.

First Year
English.................................................. 8
Biology 101 and 102 or
Biomedical Science 112
and 113............................................. 6-8
Chemistry 101 or 102 and 120 . . . . . . . . . 8
Mathematics 120 and 121 or 122
and 123 or 200 and 360*................. 8
Physical Education................................. 1-2

Second Year
Biology or Biomedical Science .... 6-8
Physics 110 and 111 or
210 and 211*........................... 8
General Education......................... 16

Recommended Third Year
Organic Chemistry 360 and 361* General Education Minor and major requirements Electives
*Chemistry majors should take Physics 210 and 211 and Mathematics 122 and 123. In addition, Organic Chemistry should be taken the second year.

Professional Preparation

Law
Advisors: College of Business
W. Morrison, N. Batch, J. Bliss, T.
Gossman, F. W. McCarty, L.
Stevenson
260 North Hall
383-6249
Advisors: College of Arts and
Sciences
G. H. Demetrakopoulos
2060 Friedmann Hall
383-6122
P. G. Renstrom
3029 Friedmann Hall
383-0483

No special college program is required or recommended by most law schools. In general, law schools urge a solid four-year program leading to a Bachelor's degree. Although it is relatively unimportant what the prospective law student uses for a 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 first-year student is urged to concentrate on satisfying first year general education requirements and also in improving the writing and speaking skills by taking courses in English and Communication.

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

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 the subject of specialization, such as: mathematics, accounting, biology or chemistry.

2. The curriculum may be general or specific to prepare 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 advisers 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 or two minors, the Elementary Education minor is required.

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

6. Under certain conditions General 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. Required professional courses in education
   b. 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 Requirement)

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<th>DESCRIPTION</th>
<th>MAJOR AND/OR CURRICULUM SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
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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

certificates are valid for continued
teaching or administrative service in
Michigan schools in the grades,
subjects, or levels specified on the
certificates.

The following procedures must be
followed to qualify for the continuing
certificate:
1. Application must be made to the
Certification Officer, College of
Education, Western Michigan
University, prior to the expiration
of the provisional certificate or its
renewal.
2. The candidate must have taught
successfully during the life of the
provisional certificate for 3 years
according to the validity of the
certificate. The success of this
teaching is determined by the
State Board of Education upon
recommendation of the University
and of the local school district(s).
3. The candidate must present
evidence that he or she has
completed a minimum of 18
semester hours in a planned
course of study or an approved
Master's degree subsequent to
the issuance of the provisional

Certificates
Teacher Certification—Provisional
The following types of teaching certificates are granted:
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.
Student Fees

Student fees are assessed on a credit hour basis. See Fee Revisions on next page. Fees per credit hour for 1978-79 were:

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<tr>
<td>75.00</td>
<td>2.75</td>
<td>77.75</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Per Semester</th>
<th>Per Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>Cr. Hours</td>
</tr>
<tr>
<td>Hours</td>
<td>Cr. Hours</td>
</tr>
<tr>
<td>$10*</td>
<td>$21.25</td>
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<tr>
<td>10*</td>
<td>21.25</td>
</tr>
<tr>
<td>10*</td>
<td>21.25</td>
</tr>
</tbody>
</table>

*Plus appropriate user fees or the option to pay the full fee.

Facility Fee Each student is assessed as a part of total student fee, $2.75 for the retirement of bonds issued to construct various student facilities.

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.

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.

Flight Instruction Based on the courses taken, fees range from $250 to $800 per course. For a specific course fee, consult Department of Transportation Technology.
Graduation Fee

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

Room and Board

Cost of room and board is $770 per student for each semester. The rate for room only in those residence halls which do not provide board is $285 per 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 or more 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.

 Newly admitted undergraduate students are automatically sent information dealing with residence hall offerings for the semester they anticipate coming to the University. Individuals returning to the University as reentries and newly admitted graduate students will receive information by return mail upon requesting details from the Manager of Residence Hall Facilities, Student Services Building. Residence hall accommodations are not automatically made as a result of admission to the University.

Fee Revisions

Fees and costs pertain to the 1978-79 academic year except as noted and are subject to change by action of the Board of Trustees. Questions concerning current fee schedules should be directed to the Office of the Assistant Vice President and Controller.

Complete Withdrawal

From All Courses

Students completely withdrawing from all classes must report to the information desk at the Drop/Add Center, or to the Academic Records Office during the official drop/add days in time to process their withdrawals and assure their 100% refund.

Students who find it impossible to be on campus to process a complete withdrawal may call the Academic Records Office at 383-1770 during office hours or write to the Academic Records Office, Room 3210 Administration Building, for aid in processing their complete withdrawals. All written requests for complete withdrawals must bear the appropriate postmark date for consideration of the 100% or 50% refund policy (see refund policy).

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.

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 or her attendance as a student, unless and until he or she demonstrates that his or her previous domicile has been abandoned and a Michigan domicile established.

2. The residence of a student who is a minor follows that of 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 or her 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 would qualify as a resident for tuition purposes.

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

Academic Regulations

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/her academic load should not exceed eight to ten hours.

Full-time teachers will be limited to a maximum of six hours each semester either on campus, through Division of Continuing Education or both.

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

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.

Completion of Work — Final Date
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 reaplication 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. Under no circumstances will any student be graduated with a class if their academic record does not show complete fulfillment of all requirements within 30 days after the established commencement date.

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 requirements:

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 credit hour basis and are the same for all students. The current fee schedule:

Less than four credit hours $25.00
Four credit hours to eight credit hours $50.00

By special arrangement some course examinations may require higher fees.

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 499. Graduate courses are numbered 600 through 799. Courses numbered 500 through 599 are for graduate and advanced undergraduate students. If the course number has been changed within the past three years, the former number is shown in parentheses following the current course number.

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24 GENERAL REGULATIONS

Course Numbers Levels
0-89 Non-credit courses
90-99 Terminal course credit that may not be applied toward degree programs
100-199 Courses primarily for First-Year Students
200-299 Courses primarily for Sophomores
300-399 Courses primarily for Juniors and Seniors
400-499 Courses primarily for Seniors
500-599 Courses for graduate students and advanced undergraduate 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.

Credit/No Credit System
The regulations of a system supplementing the A, B, C, D, and E grading system but not replacing it except as the student wishes are as follows:
1. The name of the program shall be Credit/No Credit.
2. “Credit” will be posted for each student who earns the grade of A, B, or C. “No Credit” will be posted for the grade of D, E, or I. 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 approved for General Education or General Physical Education credit, as well as other courses not counting toward his/her major or specified in his/her curriculum as defined in the University Undergraduate Catalog. Directed Teaching, a required course, is taken on a credit/no credit basis. 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.

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.
3. Official Dean’s Lists are not prepared for the spring or summer sessions.

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 session.)

Students may withdraw (Drop) from courses without academic penalty through the first Friday 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 academic 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 Registrar on appropriate forms to be secured at the Registrar’s 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/her 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.”

Examinations
1. All students enrolled in a course in which a final examination is given must take the examination.
2. Student request for an examination at any other than the scheduled time will not be honored.

Grade Changes
A student who believes that an error has been made in the assignment of a grade must initiate contact with the faculty member involved within 90 days of the end of the semester for which the grade was assigned. Failure to act within the 90 day time period will disqualify the student from further consideration of the matter.

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

Grading System
The student receives one grade in each course taken. This grade combines the results of course 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</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Outstanding</td>
<td>4.0</td>
</tr>
<tr>
<td>B</td>
<td>Very Good</td>
<td>3.0</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>Poor</td>
<td>1.0</td>
</tr>
<tr>
<td>E</td>
<td>Failing</td>
<td>0.0</td>
</tr>
<tr>
<td>X</td>
<td>Failure (Unofficial Withdrawal)</td>
<td>0.0</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>
<tr>
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<td>Audit (non-credit enrollment)</td>
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Grade Significance Points

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<td></td>
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</tbody>
</table>
Graduation

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

Application for graduation:

Summer Session
Apply by April 1, but not later than July 1.

Fall Semester
Apply by January 1, but not later than November 1.

Winter Semester
Apply by September 1, but not later than March 1.

Spring Session
Apply by January 1, but not later than May 1.

Honor Points

The number of honor points earned in a course is the number of semester hours credit given by the course multiplied by the number of honor points per hour of credit corresponding to the letter grade received, as shown in the preceding table. For example, a grade of B in a four hour course gives 4 \times 3, or 12 honor points.

Honors

Honors are conferred upon graduating students who have displayed a high level of performance during their university career.

Recipients of honors receive their degrees:
Cum laude—when their grade-point average is 3.50 to 3.69, inclusive
Magna cum laude—when their grade-point average is 3.70 to 3.89, inclusive
Summa cum laude—when their grade-point average is 3.90 to 4.00, inclusive

In computing grade-point average for honors in course, the following rules will apply:
1. All credits and honor 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.

"I" Incomplete

This is a temporary grade which may be given to an undergraduate student when illness, necessary absence, or other reasons beyond the control of the student prevent completion of course requirements by the end of the semester or session. This grade may not be given as a substitute for a failing grade.

A grade of "I" must be removed by the instructor who gave it or, in exceptional circumstances, by the department chairperson. If the unfinished work is not completed and the "I" grade removed within one calendar year of the assignment of the "I", the grade shall be converted to an "E" (failure). Students who receive an incomplete grade in a course must not reregister for the course in order to remove the "I".

An instructor who assigns a grade of "I" will complete an official Report of Incomplete Work form indicating the remaining requirement for removal of the incomplete grade and indicating the time allowed if less than one full year. The instructor should retain a copy for his/her own records and submit a copy to the departmental office. The remaining copies should be returned, along with the grade sheets, to the Academic Records Office, which will provide the student with a copy (Approved Faculty Senate 10/7/76).

I.D. Regulations

Each student on campus is required to have an identification card which includes photo, name, social security number, student signature, and validating label. The student is eligible for an I.D. card free of charge. This card should be validated each semester and used throughout the student’s entire enrollment at Western. An official sticker for the semester is affixed at validation, at the time and place of 1.0. photography and validation are published in the Schedule of Classes prior to each semester or session. At other times business may be conducted at the Registration Department.

Lending this card to anyone or allowing the holder to disciplinary action. By University officials is a violation of University regulations and subjects the holder to disciplinary action.

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Independent Study

"Independent Study" refers to enrollment in an appropriately designated, variable-credit course for a specific plan of study, authorized and supervised by a designated, consenting faculty member.

Independent Study is not a substitute for regular courses, but an enrichment opportunity. Normally, it is a project designed to allow students to investigate an area of interest not within the scope of a regular course, to probe more in depth than is possible in a regular course, or to obtain an educational experience outside that normally offered by a regular course.

Since individual Independent Study projects are not normally reviewed through the usual departmental and University processes, it is essential that the academic adequacy of such projects be assured by some other means applied consistently throughout the University.

The following policy guidelines are intended to serve that function.

Proposals for Independent Study

Independent Study requires an adequate description of the work to be undertaken, which, in turn, requires planning in advance of the registration period. Sufficient advance notice, therefore, must be allowed for such planning and for obtaining the necessary faculty and administrative approvals.

While the Independent Study project is normally student-initiated, early interaction with faculty is essential in the development of a mutually-acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contacts, and a statement of the evaluative criteria to be used by the faculty member.

Approval Process

The faculty member must accept and approve the student and the project, and then submit the agreed-upon proposal on the appropriate University form to the department chairperson for approval. If the chairperson approves, he/she must submit information copies of the form to the dean and the Registrar. The Registrar will not accept registrations without this information and authorization.

The granting of approval by the department chairperson may involve considerations, such as faculty workload, which go beyond the merits of the project.
Faculty Responsibility

Independent Study is basically a tutorial process, necessarily involving substantial faculty participation. In that respect, it should be distinguished from "credit by examination," a different option in which the role of the faculty member is primarily evaluative.

A student is on his/her own in Independent Study in that it involves no class meetings or formal lectures, but the faculty member is the responsible custodian of the project, obliged to provide guidance, assistance, criticism, suggestion, and evaluation.

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 Student Fees.

The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 is a Federal law which states (a) that a written institutional policy must be established and (b) that a statement of adopted procedures covering the privacy rights of students be made available. The law provides that the institution will maintain the confidentiality of student education records.

Western Michigan University accords all the rights under the law to students who are declared independent. No one outside the institution shall have access to nor will the institution disclose any information from students' education records without the written consent of students except to personnel within the institution, to officials of other institutions in which students seek to enroll, to persons or organizations providing students financial aid, to accrediting agencies carrying out their accreditation functions, to persons in compliance with a judicial order, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Western Michigan University community, only those members, individually or collectively, acting in the students' educational interest are allowed access to student education records. These members include faculty, administration, clerical and professional employees, and other persons in whose student record information (e.g., Office of the Registrar, Academic Records Office, Controller, Financial Aid and the Office of Admissions).

At its discretion the institution may provide Directory Information in accordance with the provisions of the Act to include: student name, address, telephone number, date and place of birth, curriculum and major field of study, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, participation in officially recognized activities and sports, and weight and height of members of athletic teams. Students may withhold Directory Information by notifying the Academic Records Office in writing within the official drop-add period of each semester or session.

The law provides students with the right to inspect and review information contained in their education records, to challenge the contents of their education records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they feel the decisions of the hearing panels to be unacceptable. The Registrar at Western Michigan University has been designated by the institution to coordinate inspection and review procedures for student education records, which include admissions, personal, academic, and financial files, and academic, cooperative education, and placement records. Students wishing to review their education records must make written requests to the Registrar. Only records covered by the Act will be made available within forty-five days of the request. Students may have copies made of their records with certain exceptions, (e.g., a transcript of an original or source document which exists elsewhere). These copies would be made at the students' expense at the prevailing rate of ten cents per page. Education records do not include records of instructional, administrative, and educational personnel which are the sole possession of the maker and are not accessible or revealed to any individual except a temporary substitute, records of the law enforcement unit, student health records, employment records or alumni records. Health records, however, may be reviewed by physicians of the students' choosing.

Students may not inspect and review the following as outlined by the Act: financial information submitted by their parents; confidential letters and recommendations associated with admissions, employment or job placement, or honors to which they have waived their rights of inspection and review; or education records containing information about more than one student, in which records the institution will permit access only to that part of the record which pertains to the inquiring student. The institution is not required to permit students to inspect and review confidential letters and recommendations placed in their files prior to January 1, 1975, provided those letters were collected under established policies of confidentiality and were used only for the purposes for which they were collected.

Students who believe that their education records contain information that is inaccurate or misleading or is otherwise in violation of their privacy or other right may discuss their problems informally with the person in charge of the records involved. If the decisions are in agreement with the students' requests, the appropriate records will be amended. If not, the students will be notified within a reasonable period of time that the records will not be amended and will also be informed of their right to a formal hearing by the Registrar. Students may then request a formal hearing which must be made in writing to the Registrar, who, within ten days after receiving such requests, will inform students of the date, time, and place of the hearing. Students may present evidence relevant to the issues raised and may be assisted or represented at the hearings by one or more persons of their choice, including attorneys, at the students' expense. The hearing officer who will adjudicate such challenges will be the Registrar, or a person designated by the Registrar, who does not have a direct interest in the outcome of the hearing.

Decisions of the hearing officer will be final, will be based solely on the evidence presented at the hearing, and will consist of written statements summarizing the evidence and stating the reasons for the decisions, and will be delivered to all parties concerned. The education records will be corrected or amended in accordance with the decisions of the hearing officer, if
the decisions are in favor of the students. If the decisions are unsatisfactory to the students, the students may place with the education records statements commenting on the information in the records, or statements setting forth any reasons for disagreeing with the decisions of the hearing officer. The statements will be placed in the education records, maintained as part of the students' records, and released whenever the records in question are disclosed. Revisions and clarifications will be published as experience with the law and institution's policy warrants.

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.

Scholarship Standards
A student must earn an overall 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/her overall 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 overall grade point average is 2.0 or above, the student will be warned.
3. Probation The student will be placed on probation whenever his/her overall 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 overall 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/her overall grade point average at the end of an enrollment period of Probation, or whose overall grade point average fails to reach 2.0 at the end of one enrollment period of Continued Probation, will be dismissed from the University. Exceptions may be granted, at the discretion of the Director of Admissions, where the increase has been substantial but still falls fractionally short of the minimum 2.0 requirement.

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/her final semester, he/she will be required to remove the low scholarship status before being granted a degree or certificate.

Student Cheating
The faculty of Western Michigan University wishes to assert its position that student cheating cannot and will not be tolerated. It is permitted, the honest student is penalized for honesty, and the dishonest rewarded for the harm done personally and to the rest of the academic community. Most important, cheating clearly subverts the university ideal of independent, original, and individual thinking and learning.

Definition: Cheating shall be defined as any attempt by a student to represent work performed wholly or in part by others as his/her own, or any effort to use unauthorized aids during a formal testing situation.

Procedures: A faculty member who detects cheating should either personally handle the discipline or turn the case over to the Dean of Students for reference to established disciplinary bodies. All actions taken on cheating, whether by the faculty member or by one of the disciplinary bodies, should be reported to the Dean of Students. Student representatives should have at least a preliminary voice in the disposition of all cases involving cheating that have been referred to disciplinary committee and in the establishment of fair and reasonable standards for degrees of punishment, including expulsion.

(Approved by the Faculty Senate, February 8, 1962)

Transcripts
A student desiring a transcript of his/her 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/she should give all names under which he/she may have been enrolled, and a social security number would be helpful. Each student is entitled to one transcript of his/her record without charge. Additional copies are one dollar each. No transcript will be released except upon written authorization of the student.

Transferring Credit Back To WMU
All transfer regulations governing new transfer students apply equally to WMU students taking work at other institutions which they wish to transfer back to WMU. Before enrolling at another institution, WMU students must receive the approval of both the department and the Undergraduate Admissions Office.

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.

Veterans' Assistance
The Academic Records Office on the third floor of the Administration Building certifies veterans under the G.I. Bill and its extensions. The Veterans Administration maintains an office on campus at 643 Steers Avenue. 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 may contact this office to initiate G.I. benefits. If difficulties or problems arise in receiving benefits, the veteran is strongly advised to contact this office.

Changes in enrollment or current address must be reported immediately to the Academic Records Office. Proof of a change in dependents should be sent directly to the V.A. Regional Office in Detroit. Forms may be obtained at the Academic Records Office.

Withdrawal From Classes After the Official Date to Drop
1. The final date to withdraw officially from classes without academic penalty is the first Friday past mid-semester. The specific date will be published in the Schedule of Classes each semester or session. (Each student is encouraged to confer with the instructor before withdrawing from class.)
2. Students who wish to officially withdraw from class after the first Friday past midpoint of the semester because of genuine...
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 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/she has a grievance regarding a grade, he/she should first arrange a meeting with the 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/she has not received a satisfactory resolution of the grievance from the instructor, he/she should then go to the department chairperson or head, who may effect a satisfactory resolution.

4. If the student is still dissatisfied after seeing the department chairperson 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 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) 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 chairperson or head and the Office. If the Committee decides to recommend a change of grade, the Committee will first inform the faculty member of its intent so that he/she may initiate the change. If the faculty member prefers not to initiate the change, the Committee will do so by notifying the University Registrar.

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/she was admitted, or in a later catalog if he/she chooses to meet its graduation requirements.

2. The student shall not be held responsible for meeting curricula requirements that are not listed or not applicable under the catalog governing the work he/she 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.

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. The student should be encouraged to maintain personal 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.

Center for Educational Opportunity
Norman Kurilik, Director
383-8122, 383-4957

The programs and services of the Center for Educational Opportunity are designed to provide all WMU students with the opportunity to develop, improve or sharpen their composition and reading skills. Study skills assistance and tutors are also available from the Center. The programs are: 1) free, 2) self-paced, 3) individualized. A minimum participation of 3 hours per week is required of each student in any given area. Students wishing to enroll in a program or those interested in a diagnostic and comparative evaluation of their skill levels, are encouraged to contact the Center within two weeks of a new semester.

Writing Lab
4580 Dunbar
The Writing Lab provides diagnostic testing and individualized instruction in a workshop environment for students who have composition difficulties ranging from punctuation and sentence structure to such higher-order problems as style and thematic continuity.

Reading Lab
4600 Dunbar
The Reading Lab offers diagnostic testing and individualized instruction in a self-paced program designed to improve reading rate, comprehension and vocabulary.

Study Skills
4600 Dunbar
The Study Skills Program offers help to students who want to increase the value of their study time, improve their test and note-taking strategies, develop techniques for reviewing and time scheduling, etc.

Tutorial Program
3600 Dunbar
Qualified tutors are available through this program to work individually with students who need help with the content matter of specific courses.

Center for Women's Services
The Center for Women's Services provides information, counseling and programs on skill development to Western Michigan University students and to members of both the University and Kalamazoo communities. Its official role is as a supportive agency for persons in the process of change and exploration. The Center offers a referral list and information file for specialized help on women’s problems, a library consisting of books and periodicals dealing with women’s concerns, supportive services such as discussion groups, informal lunch meetings of non-traditional students, counseling and materials to help students make decisions on careers, and workshops to develop personal growth techniques such as assertiveness, managing stress, leadership and decision-making.

Students who want information on new programs may call and ask to be put on the mailing list. Although the programs are designed to fill needs of women not met elsewhere on campus, all programs are open to men, as well.

Located in A-331 Ellsworth Hall, between the University Student Center and the parking ramp, the office is open daily from 7:45 a.m. to 4:45 p.m. Telephone: 383-6097.

Commuter Student Services
The Office of Commuter Student Services at Western Michigan University is a service center for the 14,000 students who live off-campus and commute to classes from a variety of distances and locations. It is located in Room 3510 of the L. Dale Faunce Student Services Building. Its primary function is to administer a complete rental program for students in need of off-campus housing. Car pools, share-a-ride, roommate listings, tenant/landlord mediation, transportation information and communication are just some of the other on-going programs carried out by Commuter Student Services. The success or failure of a student’s academic life can often be traced to
the living environment. Don't minimize the importance of good housing. Telephone: 383-6114.

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 career exploration. They may become involved in social and personal situations which leave them feeling confused and upset. In addition, it may be likely that the inherent stresses of university life will, at some time, interfere with academic achievement and personal growth. The University Counseling Center, located on the main floor of the Student Services Building, exists to help students deal effectively with such concerns.

The Center is staffed with professionally trained counselors and psychologists and accredited by the International Association of Counseling Services.

Among Counseling Center services are the following:

**Personal Counseling** to assist individuals in better understanding themselves and the emotional conflicts which may interfere with their everyday lives as students, to help them become more aware of alternative means of coping with conflicts, and to aid them in developing more satisfying and fulfilling lifestyles.

**Educational Counseling** to help students deal with conflicts concerning academic planning, educational goals, course selection and curricular choices.

**Career Development Programs** to provide students with the resources, skills, and experiences necessary for reasonable educational and career choices. Individualized activities are offered to (1) increase self-understanding, including insights into one's interests, values, abilities, and skills; (2) learn how to acquire information about careers; (3) review choices, make decisions, and establish plans of action; and (4) test the feasibility of individual plans by experiencing the reality of the working world.

The Career Exploration/Media Center contains a wide and varied selection of printed materials with emphasis on self-understanding, career exploration and preparation, occupational information and job trends. Included is a section of college and university catalogs, educational guides and audio-visual materials pertinent to career awareness.

**Services for Handicapped Students** provides services to all physically handicapped students at the University. Services offered include: individual help in problem solving; assistance with registration procedures; accessibility information; a resources and information center; transportation assistance, and referral to other University and community agencies.

**Workshops** in addition to these regular ongoing services, Counseling Center staff members periodically offer a number of workshops dealing with such topics as the Elimination of Self-Defeating Behaviors, Personal Growth, and Assertiveness Training.

**Training and Internship Programs** for graduate students and interns from Counseling and Personnel and Psychology. Included in the training experience are demonstrations, case studies, and supervision.

**Policy of Confidentiality**

The Counseling Center is thoroughly committed to the need for confidentiality in client/counselor communications. At a time when invasion of privacy is common experience, it is critical that clients have a place where they may openly discuss their most private concerns without fear of revelation or social reaction.

Appointments may be made by telephone (383-1850) or by stopping at the Counseling Center reception desk between 7:45 a.m. and 4:45 p.m., Monday through Friday. Students unable to utilize the Center's services during regular hours may make arrangements for evening appointments.

**Foreign Study Services**

The Foreign Study Office has been established to provide an advisory and referral service for students and faculty interested in study, work, or travel abroad. The following services are provided:

**Foreign Study Advising** The Foreign Study Office maintains up-to-date listings, brochures, and application forms for more than 1500 academic year and summer study programs in other countries. Material and advice on evaluation of foreign study programs is available.

**Credit Transfer Advice** Advice is offered to students who wish to pursue independent study abroad with the intention of receiving academic credit toward their degrees at WMU. Student files are maintained and contact is made with academic departments and college advising offices to insure the proper transfer of credit.

**Financial Aid Information** The office provides information on sources of financial aid for undergraduate, graduate, and post-graduate study abroad.

Employment Abroad A collection of source material on employment in various countries is maintained. The office is specifically concerned with short-term employment that is of interest to students, but there is also some information on teaching, internships, and other job possibilities abroad.

**Travel Information** Information on all aspects of foreign travel is provided, including passport application procedures, visa information, consulate addresses, currencies and rates, health information, customs regulations. The office is specifically interested in providing information on low-cost opportunities—youth hosteling, railpasses, bicycling and hiking, low-cost accommodations, car-rental possibilities, the most reasonable flights for students and faculty, etc.

Students may purchase the International Student Identity Card and AYH Pass at the office and pick up passport applications, vaccination certificates, and international driving permit applications.

**Foreign Study Library** The office houses a growing library of books, pamphlets, newspaper and magazine clippings, maps, posters, pictures, etc., on travel and study abroad.

Students, faculty and staff are invited to use the library materials in the office at any time during regular working hours.

**Special Programs** The Foreign Study Office sponsors the annual International Study/Travel Night during the fall semester and workshops and smaller presentations on study, work, and travel abroad throughout the year. Students and faculty wishing to participate are urged to contact the office.

**Liaison** The Foreign Study Office maintains contact with study abroad advisors and administrators at other universities, embassies and consultates, travel bureaus, and consultants on international education, and maintains affiliation with appropriate national and state organizations such as the Council on International Educational Exchange, the Institute of International Education, the SECUSSA section of the National Association for Foreign Student Affairs, and other organizations and agencies specializing in program and credit evaluation.
Housing

All students enrolled at Western Michigan University are permitted to live in housing of their own choosing. However, freshmen are encouraged to give consideration to the educational and social benefits of living in a residence hall or a student family apartment as well as the convenience of being close to their classes and other University activities.

Residence Halls

Each year hundreds of WMU students discover more about the world they live in, their colleagues and themselves through the involvement possible while living in a residence hall. Opportunities for group participation and leadership development await those interested. Any currently enrolled WMU student, regardless of the number of semester hours he or she is enrolled for, may reside in a hall. Newly admitted undergraduate students are automatically sent information (Fall—month of May; Winter—November; Spring—February; and Summer—March) detailing the residence hall offerings for the semester they anticipate coming to the University. Individuals returning to the University as re-entries and newly admitted graduate students will receive information by return mail upon requesting details from the Manager of Residence Hall Facilities, Student Services Building.

Admission to the University does not carry a guarantee that a residence hall assignment will be available. Likewise, receiving a contract and submitting a residence hall assignment request does not guarantee the hall assigned will be available. Assignments are made on a first come, first served basis up to the space available. Requests received after all halls have been filled to capacity will be placed on a waiting list.

Nineteen residence halls offering a variety of services are located in all sections of the campus. Some halls provide room-only accommodations with the individuals purchasing their meals off campus or in the University Student Center. One non-food service hall (Spindler) offers extensive cooking facilities for the resident and, in addition, is available for continuous housing throughout the year. Residents of this hall are permitted to remain in their assigned rooms during the Thanksgiving and March recess periods.

Most of the residence halls furnish 20 meals per week (Sunday evening excluded), with the dining rooms open from 7:00 a.m. to 6:15 p.m. six days a week, and 8:00 a.m. until 1:00 p.m. on Sunday. The food service enjoys an excellent reputation with an extensive menu developed in consultation with professional dietitians and residents. Food service residence halls are available during the fall and winter semesters and the spring session. During these periods meals usually begin the day classes start and stop the last day of classes. Meals are not served during the Thanksgiving period.

Different assignment patterns are used in the various residence halls. Some halls are reserved exclusively for men, others for women, while in other locations assignments are by sex to alternate floors or alternate suites. In locations where co-ed type assignments exist, separate bath and toilet facilities are provided.

The residence hall offerings at Western attract over 6,000 students each Fall/Winter semester. The residents assigned to the halls represent individuals from all walks of life and academic interests. In addition to the majority of the students who are from all of the 50 states, many foreign countries are represented. A diverse group of individuals provides a stimulating atmosphere for the individual interested in learning about others.

Both undergraduate and graduate students are welcome in halls. Students most often prefer a specific hall because of location or assignment pattern (co-ed). During the fall and winter semesters graduate and older students find Walwood Hall, a co-ed non-food hall on main campus of special interest. Students must be 21 or older to live in Walwood Hall and must be 21 or of junior standing to live in Davis. No hall is reserved for the exclusive use of graduate students.

Charges for residing in a residence hall are kept as low as possible, recognizing the minimum services necessary and desired by most students.

Family Housing

The 590, on-campus apartments provide convenient, inexpensive housing for many student families. Married couples, with or without children, and single parents with dependent children who are duly enrolled WMU students are eligible to reside in Family Housing. These one- or two-bedroom style apartments are available in either furnished or unfurnished condition. Approximately 1,500 students, spouses and children live in the apartments on a year round basis. It is our experience that these families have similar economic and social circumstances. This makes for pleasant relationships among neighbors, and often, friendships are formed which exist long after a family leaves campus. Reciprocal babysitting arrangements can usually be worked out with a neighbor. New families are quick to find their niche in the Family Housing community.

Assignments are made based on the date of application; therefore, the earlier a person applies the better the chances are for receiving an assignment. Early application is encouraged and may be submitted before official admission to the University. All inquiries should be made directly to the Family Housing Office, Student Services Building, Telephone (616) 383-4970.

Off-Campus Housing

Approximately 70 per cent of Western’s student enrollment live off-campus in privately owned housing. Thus, a unique service is provided to assist them in locating a place to live. It registers approximately 2,500 rental units ranging from modest sleeping rooms to luxurious apartment complexes. Rental listings of apartments, houses, and sleeping rooms are maintained and printed for distribution. Listings of students in need of roommates as well as those available as roommates are updated regularly and used extensively by the thousands of students who live off-campus and share their housing costs. While most students look forward to off-campus living as an opportunity to pursue individual life styles, their experiences are often plagued by strained roommate relations and rental difficulties that interrupt their academic achievement.

Recognizing the significance of an adequate housing environment for all students, the University’s rental listing program is supplemented with tenant counseling and educational programs as well as tenant/landlord services. For additional information regarding off-campus housing, contact the Office of Commuter Student Services, Room 310, Student Services Building.

Sorority/Fraternity Housing

Privately owned and operated by various fraternity organizations for their members. For information contact the Office of Student Activities, Student Services Building.
International Student Services

Western Michigan University has long recognized the value of international educational interchange. Over the years, hundreds of students from other nations have entered the University to pursue their educational objectives. Conversely, many U.S. students have sought to broaden their educational background by undertaking a period of study and/or travel in a foreign country(ies). This educational interchange has given the University an international atmosphere which has fostered 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 International Student Services was established to assist students involved with the interchange process.

Foreign Student Services

The Office of International Student Services works 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 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 are encouraged to participate in academic and social activities as their interests and time allow.

Any foreign student interested in seeking admission to Western should contact the Office of International Student Services for an application form and instructions. To qualify for admission, a foreign student must demonstrate to the University that he/she is academically, financially and linguistically capable of undertaking the academic program being proposed, generally on a full-time basis. Before a prospective student can be admitted and the Certificate of Eligibility for a visa (Form I-20 or DSP-66) issued, educational records documenting all previous secondary and post-secondary schooling must be on file along with a financial statement which has been signed and returned from a sponsor(s) showing that adequate money will be available to cover the student’s educational and living expenses for the duration of anticipated enrollment. Regarding linguistic capability, prospective students from non-English speaking countries must submit the results (scores) of a recognized English language proficiency examination prior to initial registration. Applicants who have successfully completed at least one year of full-time academic study at another accredited U.S. institution may be exempted from this requirement, at the discretion of the Office of International Student Services, depending upon the quality of their previous academic work, performance recommendations, and other factors. The two examinations preferred by the University are the Test of English as a Foreign Language (TOEFL) and the Michigan Test of English Language Proficiency (MTELP). To qualify for unrestricted full-time enrollment, a prospective student must present a TOEFL “total score” of at least 550 or MTELP “adjusted score” of at least 80 percent. Prospective students who are subject to the English proficiency test requirement but who have not submitted test scores prior to the time they report for orientation and enrollment will be required to sit for an on-campus administration of a University prescribed English proficiency examination. Students whose scores on this examination indicate a need for further training in English will be advised accordingly. Within certain limits, a prospective student will be allowed to register for courses on a restricted basis. The limits and the restrictions to be observed will be established and administered by the Office of International Student Services. (See “Student Health Insurance” for the University’s policy on health and accident insurance for foreign students.)

The Martin Luther King, Jr. Program

The Martin Luther King, Jr. Program is a student development program which has been in existence at W.M.U. since 1968. Named in honor of the late Dr. King, this particular program has the distinction of being the forerunner of similar programs in colleges and universities throughout the United States.

Initially, the Program was designed to encourage “marginal” minority students to pursue a post-secondary education. Funded through a grant from the Kellogg Foundation, the Program was able to provide Scholarships as well as remedial help to its participants. “Project 73”, the original name of the Program, began in the fall of 1968 with 65 W.M.U. freshmen coming from high schools throughout Southwestern Michigan. It now is a year-round program beginning in the summer of the student’s freshman year.

The Primary Purpose of the MLK Program is:

1. To encourage students who would not otherwise pursue a higher education to do so.
2. To provide supportive services such as academic advising, vocational and personal counseling, tutoring and testing—to meet each individual student’s needs.

Application is made through the Office of Undergraduate Admissions. The standard W.M.U. application is used. Students interested in the Program should note the same on the application or include a letter to that effect. There is a $10.00 fee for application to Western. (The fee can be waived per request by a high-school counselor, caseworker, or minister—someone who is familiar with the family circumstances.)

After the application is received and processed, it is referred to the MLK Program office. The Program then contacts the student. Before a student is admitted, he/she must:

A. Complete a personal on-campus interview with a MLK Staff person.
B. Have returned a signed “List of Conditions”. (see page three of MLK Handbook.)
C. Have completed and mailed all financial aid forms (B.E.O.G., etc.) (if applying for grant/loan prior to on-campus interview.)

Participants begin their freshman year during the W.M.U. 7½ week summer session. Each student is assigned a counselor. This peer counselor is a graduate or upperclass student who functions as friend, student evaluator, liaison and resource person to the new student. They, and the full time administrative staff work in conjunction with the other University departments to provide personal attention and supportive services as needed for each individual student.

The transition from high school to the University community is often a difficult one. By beginning during the summer, the student is allowed time to make some adjustments before the hectic pace of the Fall semester begins.

During the summer session, students considered fulltime at W.M.U. must take a minimum of six credit hours. Freshmen are advised to take no more than eight hours maximum. A minimum of 12 hours is required during the Fall and Winter semesters.

The MLK Program does not offer any direct financial assistance to its
participants. All W.M.U. students interested in financial assistance must apply through the Office of Financial Aid and Scholarships. Awards are made on the basis of need as determined through the applications. Students not eligible for monies based on federal guidelines may secure a Guaranteed Student Loan through a bank in his/her hometown.

Minority Student Services

The Office of Minority Student Services is committed to the goals of increasing the minority presence and participation at Western Michigan University by encouraging Black, Chicano, Native-American, and Oriental enrollment. This goal is based on the premise that every minority student who desires to uplift his/her skills through higher education be given the opportunity to do so upon having demonstrated the required desire and potential to complete this task. The objectives of this office are thus:

1. To stimulate interest in higher education through minority student identification and the dissemination of matriculation information to these students.
2. To recruit minority students into the various programs at W.M.U. through an extensive program of state-wide visitation to high schools and community agencies.
3. To provide supportive services to minority students in order to promote a successful academic experience for minority students, as well as, assisting them to become self-sufficient, thus preparing them for their specific professional careers.
4. To monitor, evaluate and improve university-wide operations as they relate to minority students.

Through these efforts, it is hoped that the greatest opportunity for a successful and relevant educational experience is provided for our minority populace.

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 20 student religious organizations and the 14 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 four regular Sunday worship services, and provides a popular site for student weddings. The Office of Religious Activities and 10 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.

Sara Swickard Preschool

The Sara Swickard Preschool is open from 7:45 to 5:15 weekdays and is located on Western’s campus at 1211 Knollwood. The location is convenient for student parents who wish to leave their children on the way to class. Children from 2½-6 can stay at the Preschool for a minimum of two hours to a full day session. The program and environment attempts to minimize failure and competition while promoting cooperation, creative thinking, problem solving and kindness. Application to the Preschool should be made well in advance. Forms are available in the office at the Preschool on the second floor.

Speech, Language, and Hearing Services

The Speech and Hearing Clinic, a service program provided for persons with communication disabilities by the Department of Speech Pathology and Audiology, is located on the East Campus in the Speech and Hearing Center. Students and their dependents may take advantage of diagnostic and therapeutic services for speech, language and hearing problems by contacting the Department for an appointment. Because the services are an integral part of the Department’s clinical education program, no charges are made for these services. Phone 383-0963.

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 160 organizations coordinated and sanctioned by the Office of Student Activities located in the Student Services Building.

To develop leadership skills, acquire valuable 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 on campus.

Organizations are divided into these interest areas:

- Departmental and Professional
- Honorary
- Publications and Communications
- Religious
- Student Volunteer Services
- Service Organizations
- 17 Fraternities
- 10 Sororities
- Special Interest
- Student Government

Testing and Evaluation Services

Testing and Evaluation Services provides many self-assessment instruments for students without vocational goals or for those individuals who are looking for alternative considerations. Vocational interest inventories, personality measures, and achievement tests are administered in helping students to arrive at a career decision. There is a minimal charge to cover the test scoring.

Testing and Evaluation Services also offers assistance in planning research projects and papers. Scanning sheets are available free to faculty and students for the purpose of collecting data and for various types of statistical analysis. Other scanning sheets can be used for multiple choice, and true-false classroom tests. In addition, several computer printouts for each test can be obtained. They include lists with
scores, percentiles, frequency distribution, and item analysis.

Testing and Evaluation 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 and may be checked out.

Information and registration assistance can be obtained on most major required admission tests such as the Graduate Record Examination, Miller Analogies Test, and the College Level Examination Program. Testing and Evaluation Services is located at West Hillside Apartments. Phone 383-0955.

University Health Center

The Western Michigan University Health Center was established to provide for the general health care of University students. Good health and the means to maintain that health are an integral part of the student services support programs necessary to help students to study and to learn. The Center endeavors to furnish courteous, efficient, sympathetic, and high quality health care within the limits of the resources available to it. A Health Center Advisory Committee, composed of students and staff, exists to provide continuous review of Health Center operations and to make recommendations to the administration on policies or services which will enhance University health care.

Each student attending the University is required to have a Health Center questionnaire on file with the Health Center. Registration is not considered complete until the student has had a physical examination and student record has been received. In order to insure uniformity of records the University Health Center questionnaire is sent to each student by the Admissions Office along with the individual's notification of acceptance as a student. A student with a health problem requiring restriction of physical activity is to notify the Health Center by completing the form which accompanies the Health Center questionnaire. See also "General Physical Education," Exceptions, 5.

Eligibility for Care

All students regularly enrolled in the University are entitled to health service during the term in which they are enrolled up to the first day of the next semester or session. Recently graduated students are eligible for care during the semester (or two sessions) immediately following their graduation. Faculty and staff members enrolled in one or more courses and paying the appropriate fee are considered students and are eligible for care at the Health Center.

Non-enrolled students who have been enrolled in either Fall or Winter semester of the current academic year or who will be enrolled in the next semester may elect to pay the fee and be eligible for full services. Spouses of students may elect to pay the full fee during any semester or session their student spouse is eligible and also be eligible for full services. Any student or spouse electing to "buy-in" to the program must do so within the first three weeks of a semester and the first week of a session. With the exception of the initial billing for tuition and fees, all HMF fees must be paid at the Health Center.

Hours

During the Fall and Winter semesters and the Spring Session, Monday through Friday, regular office hours are from 7:45 a.m. to 11:30 a.m. and 1:00 p.m. to 4:45 p.m. Regular hours on Saturday are from 9:00 a.m. to 11:30 a.m. "Immediate care" is available all other hours when school is in session. During the Summer session office hours are 7:30 a.m. to 4:15 p.m., Monday through Friday only.

Appointments

Students are encouraged to make appointments with the Physician or Physician Assistant of their choice in order to insure prompt service. Appointments may be made up to two weeks in advance, by calling the Health Center at 383-6005, Monday through Friday from 7:45 a.m. to 4:45 p.m. It is necessary to cancel an appointment, it is request that the student be sure to call to cancel it so the time period can be used by another student.

Psychiatric Consultations

Consultations are made on a referral basis by Health Center physicians, the Counseling Center and/or an appointment basis by the student.

Fees

A Health Maintenance Fee (HMF) will be charged all enrolled students taking classes on campus each semester and session. Students paying the full fee will receive all medical and ancillary services at no charge with the exception of pharmaceuticals. All non-HMF members will pay a fee for all services rendered at the Health Center.

Specialty Clinics

Specialty clinics available at the Health Center include: Gynecology, Occult and Joint, Dermatology, Allergy and Wart Removal. There is no specialty clinic charge made to HMF members. All others will pay a fee for service.

Pharmacy

A pharmacy is available at the Health Center for the use of students, spouses of students, faculty, staff and emeriti. Pharmacy hours correspond to the regular office hours of the Health Center.

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 have the scheduled administration of the medication performed there.

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. 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.

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. Costs related to hospitalization, including fees of outside consulting physicians, are the responsibility of the student or parents. It shall not be the responsibility of the University to pay for such hospitalization or consultation.

Student Health Insurance

To cover some 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.

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, are required to maintain adequate health and accident insurance coverage while...
they are enrolled. This University policy is supervised by the Office of University Judiciaries. Foreign students who have adequate insurance in effect at the time they register should notify the Office of University Judiciaries of their existing coverage. Those who do not present proof of existing coverage will be automatically enrolled in the University’s Student Health Insurance Plan. Information on other acceptable insurance programs for foreign students is available in the Office of International Student Services.

Location
The Health Center is located on the west side of Gilkison Drive, north of Michigan Avenue. The ‘immediate care’ entrance is on the south side of the building, just west of the main entrance.

University Placement Services
Assistance in total job search planning is offered free of charge by the University Placement Services to students and alumni of Western Michigan University. Placement services include: job counseling, career information library, on-campus interviewing schedule, weekly employment opportunities bulletin, job vacancy postings, direct referrals to employers, maintenance and distribution of credentials, assistance with job search correspondence such as resumes and letters of application, interviewing videotapes, special career workshops and seminars, summer job information, and referral to specialized campus agencies providing career planning services.

The office is centrally located on the First Floor of Ellsworth Hall, adjacent to the University Student Center. Office hours are from 7:45 a.m. to 4:45 p.m., Monday through Friday.

University Ombudsman
The Ombudsman is a presidential appointee chosen with the active participation of students, faculty and staff and confirmed by the Board of Trustees.

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 a malfunction in the administrative process or an abuse of power is discovered, the Ombudsman assists the individual in accomplishing a quick and fair resolution of the problem. Some problems can be remedied by the Ombudsman, but when appropriate, some persons are referred to other University members and/or offices. The Ombudsman is authorized to make thorough investigations and has prompt access to all University offices and relevant records. No person shall suffer any penalty because of seeking assistance from the Ombudsman. All information presented to that office by persons seeking assistance shall be considered confidential. The Ombudsman 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.

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.

The information in this section describes Student Financial Aid programs and criteria applicable to awards made for the 1979-80 academic year. The University, therefore, is only responsible for administering these programs according to the description and the criteria applicable at the time.

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, State Direct Student Loan, 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. (See Student Employment.)

The scholarship program at Western Michigan University is designed to reward academic excellence. 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.

An application for a Scholarship is not required of incoming students (freshmen and transfers). Current WMU students seeking a scholarship, however, must complete a WMU Scholarship Application and submit it no later than February 15 for the following academic year. This application is available at the WMU Office of Student Financial Aid and Scholarships.

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

Information concerning fellowships may be obtained from the Graduate Office of Student Financial Aid and Scholarships.

In awarding financial assistance, Western utilizes the recommendations of the College Scholarship Service and the American College Testing. An entering student who plans to apply for a National Direct Student Loan, a Supplemental Educational Opportunity Grant, or a College Work-Study job must submit a copy of either the Financial Aid Form (FAF) to the College Scholarship Service or the Family Financial Statement (FFS) to American College Testing, designating that a copy of the result (FAF, FFS) 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 must take the following steps:

1. Submit either a Financial Aid Form (FAF) or a Family Financial Statement (FFS) to the appropriate address on the statement. The FAF or FFS may be obtained from a high school principal or counselor or the Office of Student Financial Aid and Scholarships, and

2. Send the results, if an undergraduate, of the Basic Grant Application to the WMU Office of Student Financial Aid and Scholarships (See Basic Educational Opportunity Grant) and

3. Submit any additional information requested by the WMU Office of Student Financial Aid and Scholarships.

No WMU Aid Application is used or required for these programs.

**Scholarships and Awards**

**Distinguished University Scholarships**

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

**Paul V. Sangren Scholarship**—Funds contributed by alumni and friends have established this scholarship to honor the second president of the University. Recipients have traditionally been junior or senior level students selected by the University Scholarship Committee on the basis of their academic record and participation in extracurricular and community service activities.

**Waldo-Sangren Scholarship 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 WMU upperclassman. A project proposal with evidence of imagination, originality, creativity. Maximum amount of the award for the academic year is $1,000. Applications and information concerning felowships may be obtained from the Office of Student Financial Aid and Scholarships.

**Western Michigan University Academic Scholarship**

Academic scholarships of $400 per year are awarded to incoming freshmen, transfer and current WMU undergraduate students on the basis of academic criteria. No financial statement is required or used to determine eligibility or amount. Incoming freshmen scholarships will be awarded to students with the highest combined high school SAT scores and high school grades. In order to receive consideration, prospective freshmen must submit their ACT scores to Western Michigan University. Awards will be offered on a first come-first served basis until designated funds are expended.

In the case of students awarded a scholarship, generally will not be offered until designated funds are expended. No scholarship application is required. Transfer students with a 3.5 or better grade point average will be considered for scholarship upon admission to the University. Awards will be offered until designated funds are expended. No scholarship application is required. Currently enrolled WMU undergraduates will be considered for a scholarship on the basis of their grade point average. Applicants must have a minimum cumulative grade point average of 3.2 and file a scholarship application by February 15. Applications are available at the WMU Office of Student Financial Aid and Scholarships.

**Sponsored Scholarships**

**The Clifford and Ella Chapman Scholarship**—These awards are provided from funds of the trust established in 1964 by Mr. & Mrs. Clifford Chapman, long-time friends of Western Michigan University. In recent years, recipients have been senior level students selected by the University Scholarship Committee on the basis of their academic record and participation in extracurricular and community service activities.

**Elizabeth Durand Hebben Scholarship**—This fund was initiated by Elizabeth Durand Hebben, as a student at Western Michigan University, became aware of the many students with financial difficulties. The desire to help these students resulted in the continuing of this support through the generous contributions of Elizabeth and George Hebben. Consideration is given to junior and senior students with high academic standing and/or 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. The Russell H. Seibert Fund

This fund supports undergraduate research and teaching assistantships and undergraduate assistants to community leaders, artists or scholars. This fund supports student research, internships, scholar-associates and other meritorious undergraduate academic endeavors. Stipends and other costs are funded. Applications and information may be obtained from the Honors College.

**The Edwin and Adelaide Steffen Scholarship Fund**—Funds provided from funds of the trust established in 1964 by Mr. & Mrs. Edwin and Adelaide Steffen, long-time friends of the University. Awards are provided by an endowment established by the Steffens to recognize students who have graduated from Saginaw, Decatur or L'Anse high schools. The award is available to entering freshmen with a minimum cumulative grade point average of 3.0. It is not renewable. Contact the Office of Student Financial Aid and Scholarships.

**College of Applied Sciences**

**College of Applied Sciences Scholarship**—A limited number of scholarships are awarded each year by the College of Applied Sciences to outstanding students enrolled in four-year curricula within the College. Funds for this program are made available through donations of alumni and friends of the University. Apply to the College of Applied Sciences.

**Agriculture**

**Agriculture Alumni**—Open to any Agriculture major in good standing. Award amounts vary, but usually range from $100-$125. Apply to the Agriculture Department.

**Michigan Farm Bureau**—The Michigan Farm Bureau awards four scholarships of $125 each annually to the senior students chosen as the outstanding students majoring in Agriculture. Apply to the Agriculture Department.
Engineering Division

American Foundrymen's Society Scholarship—The Central Michigan and Detroit Chapters of the Society offer several scholarships each year to students in Foundry-related curricula. Apply to the Mechanical Engineering Department.

Durametallic Scholarship—The Durametallic Corporation offers several scholarships each year to students in Engineering or Technology curricula. Apply to the Industrial Engineering Department.

Foundry Educational Foundation Scholarship—The Foundry Educational Foundation offers a number of scholarships each year to any Engineering or Technology student having a direct interest in the foundry industry. Apply to the Mechanical Engineering Department.

H. H. Harris Foundation—The Foundation has made funds available to students in Engineering and Technology with an interest in the foundry industry. Awards range from $300 to $2,000. Apply to the Mechanical Engineering Department.

Michigan Society of Professional Engineers—One $500 scholarship will be awarded annually to a high school senior selected from applicants in the NSPE/MSPE Scholarship program and who are accepted for admission to the Industrial Engineering Program. One $500 scholarship will be awarded annually to a female or minority high school senior selected from applicants in the NSPE/MSPE Scholarship program and who are accepted for admission to any engineering program. Applications should be made directly to the MSPE SCHOLARSHIP FUND, Michigan Society of Professional Engineers, P.O. Box 10204, Lansing, Michigan 48901.

Lee Stryker Memorial Scholarship—The Stryker Corporation offers a scholarship to encourage the interest of under-represented groups in the field of engineering. Applicants must be enrolled in an engineering degree program at Western Michigan University. Applications should be made directly to the College of Applied Sciences.

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.

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 $750. It is offered for one year only. Apply directly to the Distributive Education Department.

Distributive Teacher Education

Distributive Teacher Education Scholarship—The Distributive Education Department awards a $200 scholarship each academic year to a first-semester Distributive Teacher Education major. Applications may be obtained from the departmental office.

Industrial Education

Clausing Corporation—Special Products Group Scholarship—The Clausing Corporation-Special Products Group offers a scholarship to stimulate interest in Industrial Education or Technology. 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 or Technology curriculum. The award is for $600 the first year and is renewable for an additional three years for a total of $2400.

S.P.E. Scholarships—The Society of Plastic Engineers offers two scholarships each year. Provisions include free student membership to S.P.E., 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.

Industrial Education Award—A plaque is presented to the outstanding senior student in the department.

Military Science

Military Science R.O.T.C. Merit Scholarships—Four, three, two and one year scholarships are available to qualified male and female students. 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 to competitive basis to high school seniors who plan to enter Army R.O.T.C. as freshmen. Applications must be submitted between July 1 and December 15 of the senior year in high school. The other scholarships are open to all qualified University students, whether or not currently enrolled in R.O.T.C. Students who desire scholarship applications or other information should contact the Head of the Military Science Department prior to February 1.

Military Science Grants—All advanced course R.O.T.C. cadets receive $100 per month for up to ten months each school year.

Military Science Awards—The University President's Award is presented annually to the Cadet Corps Commander. Academic and Military Achievement Awards are presented to outstanding cadets in each class year group. The Outstanding Summer Camp Award is presented to the Western Michigan University cadet achieving the highest score at the annual Advanced R.O.T.C. Summer Camp.

Paper Science and Engineering

Merit scholarships ranging in size from $200-$550 a semester for Michigan residents and $675-$1,200 for non-Michigan residents are available to students majoring in the Paper Science and Engineering and Environmental curricula. Grants are given to cover tuition costs within the Paper Science and Engineering Department. The scholarship program is supported through the Paper Technology Foundation, Inc., and the organizations listed below.

Beginning students interested in physical science, engineering and/or environmental engineering may write the Department directly to request additional scholarship and curriculum information and to obtain scholarship applications. College students already in the Department or majoring in science or engineering and transferring to the Department are also eligible to apply.

These scholarships are awarded on a semester-to-semester basis, primarily on the basis of superior academic achievement or promise. Conditions for renewal of the scholarships include the maintenance of a 2.75 cumulative grade point average and enrollment in one of the curricula of the Department of Paper Science and Engineering.

Members of the Paper Technology Foundation, Inc.

Albany International Corporation
Allied Paper Incorporated
Alton Box Board Company
American Can Company
American Cyanamid Company
Anglo-American Clays Corporation
Appleton Papers
Asten-Group, Inc.
Beloit Corporation
The Black Clawson Company
Blandin Paper Company
Boise Cascade Corporation
Borden Chemical Company
Boxboard Research and Development Association
Brown Company
Buckman Laboratories, Inc.
Cameron-Waldron, Midland-Ross Corporation
Cargill, Incorporated
C-E Bauer
Celanese Coatings & Specialties Company, Stein, Hall Products
Champion International Corporation
CIBA-GEIGY Corporation
Clark & Vicario Corporation
Clevpak Corporation
Consolidated's Civic Foundation, Inc.
Container Corporation of America
CPC International, Inc., Corn Products Division
Crown Zellerbach Corporation
Diamond International Corporation
Diamond Shamrock Chemical Company
Dow Chemical U.S.A.
Draper Brothers Company
Eastman Kodak Company
Engelhard Minerals and Chemicals Corporation
Federal Paper Board Company, Inc.
Freeport Minerals Company
French Paper Company
Georgia Kaolin Company
Georgia-Pacific Corporation
P. H. Glattfelder Company
Gold Bond Building Products, Division of National Gypsum
Gottesman-Central National Organization
Grain Processing Corporation
Hammerrmill Paper Company
Hercules Incorporated
Hooker Chemical and Plastics Corporation
J. M. Huber Corporation
Hyuck Corporation
Industrial Nucleonics Corporation
Ingersoll-Rand Company
International Paper Company
ITT Rayonier, Inc.
The Johnson Corporation
Kamyr Incorporated
Lindsay-Woof Weaving Company
Madden Machine Company, Inc.
Mead
Measurex Corporation
Menasha Corporation
Monsanto Corporation
Nalco Chemical Company
Nekoosa Papers, Inc.
Newark Boxboard Company
Niagara Lockport Industries, Inc.
Nicolet Paper Company
NL Industries Foundation, Inc.
The Orr Fell Company
Owens-Illinois
Packaging Corporation of America
Penntech Papers, Inc.
Pentair Industries, Inc.
Plainwell Paper Company
Potlatch Corporation
Rust Engineering Company
St. Regis Paper Company
Sandoz Foundation, Inc.
Simpson Paper Company
Sonoco Products Company
Stowe-Woodward Company
Thielie Kaolin Company
Union Camp Corporation

Voith, Inc.
Voith-Morden, Inc.
S. D. Warren Company, Div. of Scott Paper Company
Weston Environmental Consultants-Designers
Westvaco
Weyerhaeuser Company Foundation

Scholarship Funds
Burgess Cellulose Foundation Named Scholarship Fund
Mae Munter Callighan Named Scholarship Fund
Olin W. Callighan Named Scholarship Fund
Cargill Incorporated Named Scholarship Fund
Theodore W. Dunn - George C. Dunn Memorial Scholarship Fund
Philip H. Glattfelder Named Scholarship Fund
Hammerrmill Paper Company Foundation Named Scholarship Fund
Alberts S. Harman Named Scholarship Fund
Michigan Carton Company Named Scholarship Fund
Paper Technology Alumni Association Scholarship Fund
PIMA - Michigan Division Scholarship Fund
Russell H. Savage Scholarship Fund
Frederick W. Sutherland Scholarship Fund
TAPPI, Kalamazoo Valley Section Scholarship Fund (Most Improved Student Award)
Vicksburg Foundation Scholarship Award
Paper Science and Engineering Award - Kalamazoo Valley Section of TAPPI offers a Senior Thesis Award each year in the amounts of $100, $60 and $40.

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 Industrial Education.

Central Michigan Oilmen's Club—A grant for student fees and books up to a maximum of $500 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 Industrial 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.

Harold Wright Scholarship Award—A grant up to a maximum of $600 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 and daughters of oil families and oil company employees.

Michigan Shell Jobbers Memorial Scholarship—A scholarship award of $500 to an incoming student 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.

Union Oil Foundation Grant—A grant of up to $500 per year is available to a minority student. The student must be majoring in Petroleum Distribution. Apply directly to the Department of Distributive Education.

Union Oil Grants-In-Aid Program—Four grants for two years each to sons and daughters of dealers, jobbers or employees who are high school graduates and interested in careers in petroleum. Maximum grant amounts are $500 per year. For information, contact the Chairman, Department of Distributive Education.

Printing Management
Northeastern Printers, Inc.—An award of $300 per year, to be divided equally between the Fall and Winter semesters, is available to students enrolled in Printing Management at WMU who have completed at least one semester of courses and have earned a 2.5 GPA overall and a 3.0 GPA in graphic arts courses. The applicants must have been residents of Michigan for at least six months prior to the date of admission. 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 Harrach Memorial Scholarship—Awards up to $250 will be available each semester to students in aviation curricula. Undergraduates who have completed 15 semester hours at WMU are eligible. Apply directly to the Transportation Technology Department.

Lubrizol Scholarship—An award of $500 for a student in Automotive Engineering. 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.

College of Arts and Sciences
College of Arts and Sciences Merit Scholarships—the College of Arts and Sciences, from gifts to the Annual Fund of the University, offers Merit Scholarships for outstanding undergraduate students. The Merit Scholarships recognize and honor extraordinary students with unique abilities, exceptional aptitudes, unusual talents, and achievements beyond their grade point average. Four annual awards are usually made of about $550 per year, to be divided equally between the Fall and Winter semesters. The awards are rotated each year among the three Divisions of the College—the Humanities, Social Sciences, and Sciences and Mathematics. To be eligible a student must be a declared major in one of the departments or programs of the Division which will make the awards that particular year. A student should have, normally, a 3.00 overall grade point average, be enrolled at Western Michigan University at the time of application, and, finally, have attained Junior or Senior status and be enrolled full time during the period covered by the award. A student cannot receive another University general scholarship concurrent with this one. Announcements of the scholarships, the Division in which the awards will be given, and due dates for applications will be made in January of each year.

It is expected that through contributions of graduates of the College of Arts and Sciences the number and/or amount of awards will increase.

Biology
Hazel Wirick Recognition Award—Sponsored by the Kalamazoo Garden Council, this award of $250 is available to upperclass Biology majors with a project in the areas of Botany or Ecology. Contact the Chairman, Department of Biology.

Biomedical Sciences
The Merrill Wiseman Award—This 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.

Chemistry
The William McCracken Award—This 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
The Wall Street Journal Award—This award is given annually to the outstanding senior in economics.

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

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

Geology
The Kalamazoo Geological & Mineral Society Scholarship—This award provides financial assistance to a qualified Geology major of junior status who plans to enroll in the six-week summer field course. An honorary one year membership in the Kalamazoo Geological & Mineral Society accompanies the variable monetary stipend. Information and applications are available from the Geology Department Chairperson.

History
The James O. Krauss History Award—This award was established in honor of a distinguished scholar and teacher who was on the faculty for thirty years and 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 or her university career.

The Smith Burnham History Award—This 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.

Mathematics
The Senior Mathematics Award—An award given to the senior mathematics major judged by the Department of Mathematics to have exhibited the highest proficiency and promise in mathematics.

Mathilde Steckelberg Scholarship—Awarded annually to the outstanding junior mathematics major.

Robert C. Seber Memorial Scholarship—Awarded annually to a junior level Secondary Teaching Mathematics Major for outstanding scholarship in the field of mathematics.

The Dr. John P. and Nora Everett Award—Annually awarded to seniors showing outstanding promise as teachers of secondary school mathematics.

The Charles H. Butler Award—Awarded annually to outstanding teaching assistants for their excellence in teaching. The selection of the recipients of this award is partially based on undergraduate student evaluation of their teaching.

Annual prizes are awarded to freshmen students of mathematics scoring highest on a competitive examination.

Modern & Classical Languages
Mathilde Steckelberg Scholarship Fund—This endowment fund, established through the generosity of Mathilde Steckelberg, enables the Department of Modern and Classical Languages to recognize outstanding scholarship performance by students majoring in French, German, Spanish, or the Classical Languages. Academic performance and potential in the particular language area will be stressed in the selection of recipients for the four annual, non-renewable awards. Direct inquiries to Chairman, Department of Modern and Classical Languages.

Travel/Study Abroad Awards—To encourage more foreign language students to travel and study abroad, two awards of $200 each will be granted annually by the Department of Modern & Classical Languages. Recipients must have an academic record of 3.5 or better in a declared major or minor in the Department and must have submitted an acceptable individual project to be pursued during the travel and study abroad.

Political Science
Arden J. Eisasser Memorial Scholarship—This scholarship has been established by the League of Women Voters of the Kalamazoo area in memory of Arden J. Eisasser, 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 vary depending on the availability of funds. Application is open to
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. Contact the Chairman, Political Science Department, for information and applications.

**Philosophy**

*The Robert Friedmann Philosophy Prize—* This award 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**

*Paul Rood Fellowship—* The generous gift of Dr. and Mrs. Paul Rood has made it possible to grant outstanding men and women majoring in physics amounts up to $300. Preference will be given to entering freshmen. 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.

*The Charles J. Wilcox Memorial Award—* This 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.

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).

**College of Business**

**General Scholarships Open to All Students in the College of Business**

*American National Bank Scholarship—* An annual award in memory of Robert M. Rogge given to a student enrolled in any curriculum in the College of Business. The award is based upon scholarship ability and financial need. 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.

*College of Business Achievement Scholarships—* These awards are given to outstanding students enrolled in a College of Business curriculum. The awards are financed by general gifts from alumni, and by specific gifts from the College of Business. Apply directly to the College of Business.

*Al Pugno Scholarships—* An Endowment given in memory of Al Pugno supports these scholarships. One or more annual awards are given to students enrolled in any College of Business curriculum. The recipients must exhibit financial need. Apply directly to the College of Business.

*Arnold E. Schneider Scholarship Award—* The Gamma Tau Chapter of Alpha Kappa Psi awards each annually a 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 an Active Member Scholarship. The 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 Gamma Tau Chapter of Alpha Kappa Psi.

**Accountancy**

*Alexander Grant and 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 one or are completing their junior year. Both need and scholarship must be demonstrated. Contact the Department of Accountancy, College of Business.

*Bristol & Leisenring Scholarship—* An annual award by Bristol & Leisenring, Certified Public Accountants to a student majoring in accountancy for the recipient's senior year. Contact the Department of Accountancy, College of Business.

*Crowe, Chizek & Company Scholarship—* Two annual awards to accounting majors for their junior year at Western Michigan University. Contact the Department of Accountancy, College of Business.

*Doeren, Mayhew & Company Scholarship—* An annual award to a senior student majoring in accounting for the recipient's senior year. Contact the Department of Accountancy, College of Business.

*Ernst & Ernst Award—* Awarded annually on the basis of scholastic achievement to a graduating student who has majored in accounting. The student's grades in accounting and overall are the factors considered in making the selection.

**Insurance Scholarship—** An academic year scholarship awarded to a senior student majoring in accounting who have completed or are completing their junior year. Applicants must demonstrate scholarship ability.

**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 recommending the student 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**

*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. William F. Morrison, Chairperson, Department of General Business.

*Elidon M. Smith Scholarship—* An academic year scholarship is awarded to an undergraduate with an interest in pursuing a career in the insurance profession. The award is made on the basis of scholastic ability and moral character and may be renewed at the option of the donor. Apply to Dr. W. L. Burdick, Department of General Business, Finance Area.

*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 profession. 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.

Management

The Edward Polstin Award—This award is given, when appropriate, to an outstanding senior who has majored in management. Performance in management courses, proficiency, and potential are considered in making the selection.

Marketing

Dow Marketing Scholarships—Five scholarships in the amount of $500 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. Two of these scholarships are designated for qualified minority students. Awards are available in amounts of $250 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 returned to Dr. Brian G. Long, 231 North Hall, by January 31. Final selection will be made by the board of directors of the Southwestern Michigan Association of Purchasing Management.

Jack A. Stephens Advertising Scholarship—An annual advertising scholarship of $100, sponsored by the Kalamazoo Ad Club, awarded during the winter semester for the following school year to a declared advertising major of junior class standing (56-87 hours) who is carrying a minimum of 12 semester hours and whose cumulative grade point average is at least 3.0. Application forms can be obtained from and should be returned to the Marketing Department Secretary, 224 North Hall, East Campus, by February 15.

College of Education

College of Education Scholarship—Several awards are made annually to deserving students enrolled in the College of Education who may not be recognized through other scholarship programs. Funds for this program are made available through donations of alumni and friends of the University. Apply to the College of Education.

Beulah and Harold McKee Scholarships for Undergraduates in Early Childhood Education—A scholarship award to students in early childhood education is made possible by the generous financial support and strong commitment to Western’s students by Beulah and Harold McKee, both graduates of Western. The $500 annual award, to be divided equally between Fall and Winter semesters, will be granted to students in early childhood education. Preference will be given to graduates of high schools in the greater Kalamazoo area. A minimum overall grade point average of 3.0 is required. Contact Dr. Mary Cain, Teacher Education Department.

College of Fine Arts

College of Fine Arts Scholarships—Four $300 scholarships are awarded annually to outstanding young artists in art, dance, music and theatre. The scholarship extends over two semesters, $150 in the fall and $150 in the winter. A 3.0 GPA must be maintained to continue receiving the scholarship. Applicants must major or minor in a CFA curriculum, attend Western as full-time undergraduate students, have a 3.0 GPA in all course work completed, obtain the recommendations of at least one faculty member, demonstrate achievement in an arts discipline or show promise as a new student or provide services to a department or the College, and must not be in receipt of another University scholarship. Scholarship recipients may apply for the award in subsequent years. Funds for this program are made available through donations by alumni and friends of the University.

Art

Ford Foundation Grant—Selected funding has been made possible through a $100,000 matching grant for use by Bachelor of Fine Arts students in order to support exhibitions, materials and travel expenses. Information may be obtained from the Department of Art.

The Walter Enz Memorial Award—This award, made possible by the generous support of the Walt Enz family, will be given to students enrolled in a curriculum within the Department of Art, at the discretion of a panel composed of members of the Art faculty and a member of the Walt Enz family. Further information may be obtained from the Department of Art.

Music

Applied Music Scholarship—Applied Music Scholarships are awarded to students who demonstrate outstanding performance ability in their applied area. These scholarships carry a stipend of $200 per academic year. The student must be enrolled in applied music, but does not need to be an applied major. The recipient must be a full-time music major, and must carry an overall grade-point-average of 2.75.

Area Scholarship—Area Scholarships are awarded to those students who academically distinguish themselves in their particular major (composition, performance, music history, education, etc.). These scholarships carry a stipend of $150 per academic year. The student must be a full-time major and must carry an overall grade-point-average of 3.0.
Department Chairman Award—Department Chairman Awards are presented to new students (freshmen or transfer) who demonstrate outstanding promise as music majors for their first year of study in the Department. The awards are made in the amount of $200 ($100 per semester) and are normally held in conjunction with an Area or Applied Music Scholarship.

Nancy Ellis Memorial Scholarship—The Nancy Ellis Memorial Scholarship is awarded each year to a music therapy student who has a particularly distinguished academic record. This scholarship carries a stipend of $150 per academic year. The recipient must be a full-time student with an overall grade-point-average of 3.0.

Ensemble Grant—Ensemble Grants insure the high quality of Western’s bands, choirs and orchestras, and are based upon the contribution of the individual performer to the ensemble. Each grant carries a stipend of $150 per academic year. The student must be enrolled in a major ensemble, must be a full-time student and maintain a minimum graduating grade-point-average.

Harper Maybee Scholarship—The Harper Maybee Scholarships recognize students in their final year of music study. The awards are made in the amount of $400 ($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 WMU’s Department of Music, are contributed by music alumni and friends.

Honors String Quartet Scholarship—Honors String Quartet Scholarships are made possible by grants from the Kalamazoo Symphony Orchestra and Western Michigan University. The awards carry a stipend of $1100 to $1300 per year, depending upon the Kalamazoo Symphony schedule. The awards are available to violin, viola, cello and string bass students who are majoring or intend to major in music at Western Michigan University. Recipients must be full-time music majors, perform in the Kalamazoo Symphony and an Honors String Quartet. They must maintain an overall grade-point-average of 3.0.

Sigma Alpha Iota Alumnae Award—The Sigma Alpha Iota Alumnae Award is open to junior and senior music students, with preference given to music therapy majors. The award is presented by the alumnae of Sigma Alpha Iota (professional music fraternity for women) in the amount of $150 ($75 per semester). The recipient is chosen on the basis of scholarship, musicianship, financial need and faculty recommendation.

Special Ability Grants—Special Ability Grants recognize special talents that contribute to the ongoing activities of the Department of Music. These grants carry a stipend of $300 per academic year. The recipient must provide music-related services to the Department, and must be a full-time student and have an overall grade-point-average of 2.75.

Julius Stulberg Memorial Scholarship—Julius Stulberg Memorial Scholarships recognize string instrument majors of outstanding ability and/or potential. The awards are given in addition to an Applied Music Scholarship and provide for a total stipend of $400 per academic year. Funds for these scholarships are contributed in memory of Julius Stulberg, a member of Western’s music faculty from 1945-72.

Mae Arnold Thacker Scholarship—The Mae Arnolld Thacker Scholarships recognize students at the sophomore and junior level of music study. The awards are made in the amount of $200 ($100 per semester) to outstanding music majors who carry a minimum overall grade-point-average of 3.0, and who demonstrate major evidence of accomplishment in their music study. These scholarships are normally held in conjunction with an Area or Applied Music Scholarship or Ensemble Grant. Funds for these scholarships, which honor the memory of her mother, Mae Arnold Thacker.

Theatre

The David Wayne Scholarship—An annual award given in recognition of student(s) with an overall cumulative grade point average of 3.0, who have a genuine interest in theatre demonstrated by their achievement and participation in the University Theatre program.

The Laura V. Shaw Scholarship—An annual award given in recognition of outstanding scholarship (must have an overall grade point average of 3.0), talent and contribution to the University Theatre program.

College of General Studies

College of General Studies Award for Meritorious Accomplishment—This award, ranging up to $500 per year, recognizes students enrolled in the College of General Studies who have distinguished themselves in some way in addition to academic achievement. Funds for this program are made available through donations by alumni and friends of the University. Apply directly to the Dean’s Award Committee at the College office.

College of Health and Human Services

College of Health and Human Services Scholarship Program—Several awards in varying amounts are made to outstanding students who are enrolled in the College’s curricula. Funds for this program are made available through donations by alumni and friends of the University. Apply directly to the College of Health and Human Services.

Gerontology

Gernant Scholarship—Established to honor former Dean of Academic Services, Leonard Gernant, this award recognizes undergraduates of high academic achievement who are pursuing a minor in the Gerontology Program. Apply to the College of Health and Human Services.

Medical Technology

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 Health and Human Services.

Occupational Therapy

Edna Burian Skelton Scholarship Fund—Supported by the Kenny-Michigan Rehabilitation Foundation, this fund provides scholarships in varying amounts. 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 of
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 in Occupational Therapy. Amount of each award is $150 annually. Apply directly to the Department of Occupational Therapy.

The Marion R. Spear Award—This 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 WMU between 1944 and 1958. It is awarded annually to an outstanding senior who gives promise of being a superior occupational therapist.

Mabel A. Val Dez Award—The Mabel A. Val Dez Award was established in memory of a deceased faculty member of the Occupational Therapy Department. Cash awards for students in the Occupational Therapy curriculum are available to support attendance at national and international O.T. conferences and conventions. Apply directly to the Occupational Therapy Department.

School of Social Work

Whitney Young Scholar’s Program—This competitive program is open to minority seniors and first-year minority graduate students. Applicants submit a project or essay to be evaluated by a panel of judges. There are three semifinalist awards of $50 each and two first-place awards of $200 each. Apply to the School of Social Work.

Speech Pathology and Audiology

Clinician of the Year Award—This award is presented annually to a junior or senior level student who, in the judgment of the Speech Pathology and Audiology faculty, has demonstrated outstanding competence in diagnostic and therapy practicum activities.

Inter-Collegiate Athletics

Athletic Grants-In-Aid—Western Michigan University makes certain grants-in-aid available to students excelling in athletics and participating in varsity sports. A student must be recommended by the Athletic Department.

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 may not exceed $2,500 in the first two years in college, and not exceed $5,000 as 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. To be considered for the National Direct Student Loan Program a student must submit either a Financial Aid Form (FAF), or a Family Financial Statement (FFS) to the appropriate address. In addition, the student must submit the results, if an undergraduate, of the Basic Grant application (See Basic Grant, later in this section), to the WMU Office of Student Financial Aid and Scholarships and submit any additional information requested by that office.

Federally Insured Student Loan Program (Guaranteed Student Loan)

The federal government guarantees loans made by private lending institutions to undergraduate and graduate students who are enrolled as at least one-half time students. A maximum of $15,000 may be borrowed including both undergraduate (maximum of $2,500 per year) and graduate (maximum of $5,000 per year) loans. These loans bear a 7% simple interest rate which is the obligation of the student borrower. Federal legislation provides that a student borrower pays no interest while in attendance as a one-half time student or better at an eligible institution or for nine months thereafter. Applications for this program must be acquired from a student’s local lending institution (Bank, Credit Union or Savings and Loan Association). The names of participating lending institutions can be obtained from your local high school principal or counselor or (for Michigan residents only) at the WMU Office of Student Financial Aid and Scholarships.

State Direct Loan Program

The Michigan Higher Education Student Loan Authority was created to provide a source of guaranteed loans (State Direct Loan Program) to legal residents of Michigan who are eligible for federal interest benefits but are unable to secure guaranteed loans from private lending institutions. Students accepted for enrollment or enrolled in good standing at WMU may apply at the Office of Student Financial Aid and Scholarships for loans to help pay educational expenses. Undergraduates may borrow a maximum up to $7,500 and this may be extended up to $15,000 for those who also borrow for graduate and professional study. The maximum loan for any academic year cannot exceed $2,500 or the total cost of education less other financial aid received, or be more than 50% of the total educational costs for the year involved as determined by WMU whichever is less. The Michigan Higher Education Student Loan Authority will determine the amount of each loan after consideration of WMU’s recommendation. Contact WMU’s Office of Student Financial Aid and Scholarships for further details.

United Student Aid Fund Program

Students unable to qualify for a National Direct Student Loan and unable to obtain a State Direct Loan (Michigan Higher Education Student Loan Authority) or Michigan Higher Education Assistance Authority (G.S.L.) loan or non-resident of Michigan unable to obtain a federally guaranteed loan in their own state may apply to their 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. Undergraduates may borrow up to $2,500 per academic year and graduates may borrow up to $5,000 per academic year.

Short-Term Loans

The loan funds listed below provide emergency assistance for enrolled full-time or part-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.
William McCracken Loan Fund
Migrant Student Loan Fund
The R. C. Mahon Foundation Loan
The Charles H. Maher Loan Fund
The David E. Ling Memorial Loan Fund
The Dr. Radford Kuykendall Memorial
Alice Louise Lefevre Memorial Fund
Michigan Broadcasting Loan Fund
Migrant Student Loan Fund
Michigan Indian Student Loan Fund
The Michigan Broadcasting Loan Fund
Mexican-American Loan Fund
Mathematics Faculty Memorial Loan
Mildred Maloney Memorial Loan Fund
William McCracken Loan Fund
A. A. U. W. Graduate Social Work Loan
A. A. U. W. Nursery Education Loan
Alpha Epsilon, Xi Chapter, Loan Fund
Alumni Short-Term Loan Fund
American Business Club Loan Fund
Charles E. Mahon Memorial Loan Fund
Associated Women Students Loan Fund
Auscus 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 Kappa Gamma Alpha Psi Loan
Fund
Delta Sigma Theta Loan Fund
Viada and Irene Dimac Loan Fund
Distributive Education Loan Fund
The Gordon and Ferne Elferdink Loan
Fund
Frank Fatzinger Memorial Loan Fund
Michael Finley Memorial Loan Fund
Foreign Student Aid Loan Fund
James Gardner Memorial Loan Fund
Marie Harik Loan Fund
Harris-Brigham Loan Fund
Leroy H. Harrick Memorial Loan Fund
Eunice E. Herald Home Economics
Loan Fund
Deldeen M. Herman Forensic Loan
Fund
Hillman Buyers Guild Loan Fund
John C. Hoekje Loan Fund
Home Economics Memorial Loan Fund
Inter-Fraternity Council Loan Fund
Freburn W. James Loan Fund
Reverend B. Moses James Memorial
John Jenkins Memorial Loan Fund
Walter Larry Jenkins Memorial Fund
Kalamazoo Area Chapter Maedec Loan
Fund
Kalamazoo Ladies' Library Ass'n Loan
Fund
Kalamazoo Motor Freight Loan Fund
Alice J. Kaufman Loan Fund
Jerome E. J. Keane Loan Fund
Kiwania Educational Aid Fund
The Dr. Radford Kuykendall Memorial
Loan Fund
Alice Louise Lefevre Memorial Fund
Elizabeth E. Lichy Loan Fund
Marvel L. Liddie Student Loan Fund
The David E. Ling Memorial Loan Fund
Larry G. Lochner Memorial Fund
Rayth W. Lower 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
The William McCracken Loan Fund In
Chemistry
Michigan-American Loan Fund
Migrant Student Loan Fund
Michigan Indian Student Loan Fund
Frederick W. Miholich Memorial Loan
Fund
Frederick W. Miholich Memorial Fund
for Special Education
Muskegon County Retired Teachers
Association Loan Fund
Charles S. Nichols Memorial Loan
Fund
Occupational Therapy Fund
Omnius Loan Fund
Dr. Gerald Osborn Memorial Loan
Fund
Panhellenic (Grand Rapids) Loan Fund
Panhellenic (Detroit) Loan Fund
Panhellenic WMU Council Loan Fund
Truman A. Pascoe Memorial Loan Fund
Ray C. Pellet Memorial Loan Fund
PIMA (Michigan Division) Loan Fund
Archie S. Potter Memorial Fund
Douglas V. Ratcliffe Memorial Loan
Fund
Nellie N. Reid Memorial Loan Fund
Raleigh A. and Vivianne C. Robinson
Memorial Loan Fund
Eavlyn Underwood Rogers Loan Fund
Rotary Student Loan
Katherine Shaver Loan Fund
Sigma Phi Omega Bob Hayes Memorial
Fund
Sigma Tau Gamma Memorial Loan
Fund
J. Towner Smith Loan Fund
The R. Franklin Smith Memorial 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
C. N. Van Deventer 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 Wegeirly Scholarship Loan Fund
James A. Welch Foundation Loan Fund
The Mary Howe Watt Loan Student
Fund
Helen and Bernard Weisberg Loan
Fund
WMU Language Department Loan
Fund
WMU Paper Technology 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
Grant Programs
Basic Educational Opportunity 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 $1,800 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 interested in this grant should complete and file either a
Financial Aid Form or a Family Financial Statement. It should be
indicated at the place provided on each form that the information is to be
forwarded to the Basic Grant processor.
When it is anticipated that the family income will be reduced in the current
year over that of the preceding year, the student should complete the Basic
Grant Application and the Supplemental Form for the Basic Grant
Application. Both are available at the high school counselor's office or the
WMU Office of Student Financial Aid and Scholarships.
Supplemental Educational Opportunity Grant 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 a
Supplemental Educational Opportunity Grant, a student must submit either a
Financial Aid Form (FAF) or a Family Financial Statement (FFS) to
the appropriate address listing Western Michigan University as a recipient. In addition, a student must
submit to the Office of Student Financial Aid and Scholarships:
1. The results of the Basic Grant
2. A photostatic copy of his/her
Assistant financial aid statement (Form 1040 or 1040A), and
3. Any additional information
requested by the WMU Office of Student Financial Aid and Scholarships.
The College Work-Study Program

See Student Employment

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 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 or in the "Criminal Justice Program," offered by the Sociology Department. 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.

Student Employment

The College Work-Study Program
The College Work-Study Program is a cooperative program between the University and the Federal Government. Its purpose is to promote the employment in institutions of higher education and non-profit agencies of 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. To be considered for the College Work-Study Program a student must submit either a Financial Aid Form (FAF), or a Family Financial Statement (FFS) to the appropriate address listing Western Michigan University as a recipient. In addition, the student must submit:

1. The results, if an undergraduate, of the Basic Grant application (See Basic Grant Program, under "Educational Opportunity Grant Programs"), and
2. Any additional information requested by the WMU Office of Student Financial Aid and Scholarships.

Off-Campus Employment
Students may find work through numerous local employers in and around the City of Kalamazoo. Students looking for work can receive assistance through the Student Employment Referral Service in Ellsworth Hall. The Student Employment Referral Service actively recruits employment opportunities for students within the Kalamazoo area. When arriving on campus, students seeking employment are encouraged to contact this office.

On-Campus Employment
A large number of students are employed by all areas of the University. Each department handles its own student employment program. Departments are requested, but not required, to list job vacancies with the Student Employment Referral Service. These employment opportunities can best be secured by direct contact with departments.

Miscellaneous Information

Alumni Affairs and Development
The Office of Alumni Affairs and Development seeks to coordinate programs related to its alumni and the fund raising efforts of the University. The areas of Alumni and Development provide two separate functions which are described below.

Alumni
The Office of Alumni Relations serves all graduates of Western Michigan University, acts as a liaison between former students and the University, and encourages their continued interest and support of higher education.

The Alumni Office helps coordinate Homecoming, promotes Alumni Continuing Education programs, organizes travel and tour programs, plans reunions and special events, and maintains a complete alumni records system. Alumni awards are presented each year for excellence in teaching and for distinguished service. Alumni clubs are active around the country and members are encouraged to recruit prospective students and to assist in finding employment for graduates. The Alumni Office serves in an advisory capacity to the Student Alumni Service Board, thus maintaining a communications link with currently enrolled students.

Constituent groups and individual alumni participate in social and fund raising events in support of the University. Alpha Beta Epsilon alumnae sorority chapters are active throughout Michigan and provide scholarship and loan funds for Western students.

A 21 member Board of Directors serves as the governing body of the Alumni Association. This Board conducts the business of the Association and is responsible for the promotion of Western Michigan University. The Director of Alumni Relations is the executive secretary for the Board.
Development

The Development Office seeks to raise private support for academic programs, building projects, loans and scholarships and a variety of other University needs. The support is received from alumni, emeriti, parents, friends, business and industry, and foundations. The four major areas of Development are: the Annual Fund, which through its direct mail program and personal solicitation, seeks to enlist 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; Corporation/Foundation Relations, which seeks support from business and industry and private foundations; and the Mike Gary Athletic Fund, which solicits gifts for Western's Intercollegiate Athletics program. The contributions received through these efforts help to insure financial support for students and the resources essential to the continued high quality of education at the University.

Western Michigan University Foundation

The WMU Foundation is a non-profit, tax-exempt corporation which was formed exclusively for the benefit of the University. The Foundation exists to secure and distribute private gifts to the University for the purpose of improving or creating services and programs which would not otherwise thrive.

The Foundation was created by the University Trustees as a corporate, but University-related, organization. It has a corporate body and a Foundation Board of Directors comprised of 24 prominent alumni and friends of the University.

The Foundation Board, national in scope, will attract, invest and distribute private donations solely for the benefit of Western Michigan University. All contributions to the WMU Foundation, whether designated for a particular program, college or department or for unrestricted use, are tax deductible.

Athletics—Intercollegiate

The University is represented by men's teams in football, baseball, basketball, indoor and outdoor track, cross country, tennis, wrestling, swimming, gymnastics, golf, ice hockey, and soccer. Women's teams represent the University in basketball, cross country, field hockey, gymnastics, softball, swimming and diving, synchronized swimming, tennis, track, and volleyball.

Athletics are governed by the Athletic Board which adheres to the policies and principles established by the National Collegiate Athletic Association and the Association for Intercollegiate Athletics for Women. 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 teams winning Mid-American Conference championships in basketball and baseball qualify automatically for the annual NCAA playoffs.

Western Michigan University is also a member of the MAIAW and the SMAIAW. These organizations, along with the AIAW, sponsor the state, regional, and national tournaments for the women's sports.

Audiovisual Center

The Audiovisual Center is operated by the Division of Instructional Communications to serve the students and faculty of Western Michigan University with audiovisual materials and equipment. The A-V Center includes a film library, preview facility, and central offices in Waldo Library, and an equipment center in Dunbar Hall. In addition, a staff of students is employed to work in both locations and to operate audiovisual equipment for classroom instruction and campus activities.

Other services of the Center include consultation services, an extensive source library for locating media nationwide, a one hundred-seat auditorium, and, in conjunction with Technical Services, a fully equipped maintenance facility for a-v equipment.

Audio Services

Audio Services of the Division of Instructional Communications, located in Dunbar Hall, serves the recording and production needs of students and faculty and supplies blank tape and cassettes to all departments on campus. Student sound projects, slide film sound tracks, and correcting sonically deficient recordings are done by appointment. High speed copies of tapes and cassettes can be made, often, in a matter of minutes. Audio Services personnel also assist in script preparation. Large music and effects libraries offer the appropriate finishing touch to your production.

Educational Resources Center

The Educational Resources Center, winner of the NCAE 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 media courses leading to advanced degrees in Instructional Media.

Forensics—Intercollegiate Debate

Debate began at Western on an informal basis in 1916. It has been an official University-sponsored activity since 1921. Participants engage in intercollegiate competition at regional, national, and invitational tournaments. They participate in international debates with visiting foreign debaters. And, they make public service appearances before local audiences.

The debating program has two main purposes: (1) to train students in the techniques of analysis, argument, and public address; and (2) to motivate them to inquire into the controversial issues which are the concern of every citizen in a democracy. Through continuing affiliations with the Michigan Intercollegiate Speech League and the American Forensic Association, participants have the opportunity to qualify for the annual National Debate Tournament, and they are eligible to join the national forensics fraternity, Delta Sigma Rho—Tau Kappa Alpha.

The Humanities Area of the College of General Studies sponsors the program for the University, and General Studies elective credit is available to participants who enroll for it.

Persons wishing further information should contact Professor Howard J. Dooley, Director of Debate, Humanities Area, College of General Studies (383-3838).
Graphics / Photographic / Motion Picture Production Services

These services, located in Dunbar Hall, produce instructional materials for use by the University Community. All three services employ a limited number of students.

Motor Vehicles

Detailed regulations covering the use of motor vehicles on campus are available from the Department of Public Safety. All students are eligible to park a motor vehicle on University property; however, they must first register their cars (or motor bikes, motorcycles, etc.) with the Department of Public Safety and pay a registration fee.

Music

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

Students may participate actively in the music life on campus by joining one of the many ensembles—the Marching Band, Symphony Band, Wind Ensemble, Orchestra, University Chorale, Collegiate Singers, Gold Company, Campus Choir, Grand Chorus, 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, WMU's 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 L. Dale Faunce Student Services Building. The paper is printed in the University's Printing Services.

The Western News, the official University newspaper for the administrators and faculty and staff, is published each Thursday during fall and winter semesters, except during examination and vacation periods, by the Office of Information Services. The staff of this office also publishes the quarterly University Magazine, in cooperation with the Alumni, Development, and News Services Office. The latter office and the Sports Information Office are responsible for the preparation of University news releases and special brochures.

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

There are three journals published by the English Department of Western Michigan University. Currents is a student-edited literary journal containing poetry, prose, and non-fiction writings of students and faculty. Trial Balloon is a faculty-edited literary journal containing work produced in creative writing courses. Comparative Drama is a faculty-edited journal of dramatic criticism. Submissions to any of the three journals can be sent in care of the English Department of Western Michigan University.

Radio

WMUK is the FM broadcasting service 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 involves the community in programming for those with interests in the fine and popular arts, news and information, and instructional, and also airs programs for minority and other special interest groups.

WMUK began broadcasting in 1951, with a power of 400 watts. In 1955 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 of the National Public Radio network of some 200 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.

WMUK is a student-operated carrier current radio station carrying student-oriented and contemporary programming to each residence hall and complex. The station is a full-time semi-commercial operation. Founded in 1953, WMUK is one of the oldest and most highly regarded stations of its type in the nation.

WIDR FM, a 10 watt station operated by students and broadcasting on frequency 89.1, serves a predominantly student listening audience in Kalamazoo. Facilities of WIDR AM and FM are located in the Dale L. Faunce Student Services Building.

R.O.T.C.
The U.S. Army Reserve Officer's Training Corps (ROTC) program at Western Michigan University offers all male and female students an opportunity to secure commissioned status as a Second Lieutenant in the United States Army Reserve, National Guard, or the Regular 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 wish to apply. All students receive $100 a month allowance during their junior and senior years.

The Military Science Department sponsors several extracurricular activities, including the ROTC Rifle Team, Orienteering Team, Western Rangers, the Association of the United States Army (USA), and the Strategy Club.

Three, two, and one-year scholarships are available to qualified male and female students on a competitive basis. Each scholarship provides for all tuition, textbooks, and laboratory fees in addition to an allowance of $100 per month for up to ten months of each school year.

The minimum starting salary for a Second Lieutenant is $13,000 plus free medical and dental care and 30 days paid vacation yearly. If a student serves in the Army after graduation his or her major area of study will be utilized whenever possible. For example, Distributive Education students may apply for the Quartermaster Corps which specializes in food and petroleum distribution and management.

Transportation Technology students may apply for the Transportation Corps which specializes in automotive, aviation, and transportation management and operations. Criminal Justice students may apply for the Military Police

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Corps which specializes in law enforcement, criminal investigation, and correctional management. Industrial Engineering students will find the Corps of Engineers, which specializes in engineering administration and operations, both rewarding and challenging. Public Administration students and Business Administration students may apply for the Adjutant General's Corps which specializes in business and personnel administration. Accounting and Finance students may apply for the Finance Corps and Communications students may apply for the Signal Corps. The Army also has specialties in education, computer science, audio-visual technology, and medical administration as well as many other fields.

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.

Television Production and Performance courses are taught, in part, using these facilities. Students are employed as crew members operating camera and sound equipment during productions. Organized student groups can arrange to use the facilities for educational purposes. For further information contact Television Services, Room 1470 Dunbar Hall.

Theatre
All students in good academic standing, regardless of major or minor, may participate in the University Theatre program of the Department of Theatre. Housed in the excellent and spacious Laura V. Shaw Theatre complex, the theatre opportunities each year include acting and technical work in faculty-directed productions; for public performance on the proscenium and arena stages, as well as student-directed "laboratory productions." Both adult and children's theatre are performed. In addition, opportunities for study and practice in the theatre arts are available during the Spring and Summer Sessions.

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 total collection, which numbers well over 1.7 million bibliographic items, includes books, bound periodicals, music scores, recordings, maps, documents and materials in microform. Over 11,000 periodical and serial titles and some 50 newspaper titles are currently received.

A rare book, William Beaumont's "Physiology of Digestion, with Experiments on the Gastric Juice," was acquired in October, 1977 as the one millionth volume in Western's libraries. The book is considered a milestone in medicine, was written by a military surgeon stationed at Ft. Michilimackinac (now Mackinaw City) in 1822.

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 located in Waldo Library are the School of Librarianship, the University Archives, and the Audiovisual Film Library.

The Library system is a depository for United States and Michigan government documents, and receives the microprint edition of United Nations documents and official records. Most of these documents are housed and serviced in the Documents Library on the third floor of Waldo Library.

A microform collection of over 350,000 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, Early English Books printed in Great Britain from 1475-1700, and ERIC documents (documents in educational research published by the Educational Resources Information Center).

Some special collections are maintained by the Library and holdings have been especially strengthened in some subject areas to support University programs:

1. The Ann Kercher Memorial Collection 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 library resources.

2. Library holdings on South Asia is another area of special strength. Together with the Kercher African collection it helps support the University's commitment to area studies.

3. Another area of collection strength is the history, religion, philosophy and culture of the medieval period—holdings which help support the University's Medieval Institute.

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

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

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, is the second largest academic library map collection in the State of Michigan and the third largest of all map libraries in the State. The present collection of 150,000 items includes Army and U.S. Geological Survey maps which are cataloged and readily available for use. In addition to the maps, the Map Library also possesses over 900 atlases.

The Business Library, located in North Hall, has a collection of some 60,000 items which include special microform collections, annual reports from businesses and industries, and current subscriptions to periodical and newspaper titles.

The Music Library is on the second floor of Maybee Music Hall. In addition to over 20,000 books and scores and extensive holdings in music periodicals, this branch contains a collection of 10,000 phonodiscs and tapes, and extensive listening facilities.

The Physical Sciences Library contains over 50,000 volumes in the fields of Mathematics, Astronomy, Physics and Geology, and has subscriptions to about 400 periodical and serial titles. This branch is located on the third floor of Rood Hall.
The Educational Resources Center Library in Sangren Hall has some 290,000 bibliographic items and receives over 600 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 audio-visual services into a single center for the improvement of instruction and learning.

Holdings in all of the University Libraries are recorded in the union card catalog in the Main (Waldo) Library; each branch maintains a special card catalog of its own holdings.

General and specialized reference service is provided at the main Reference and Information Desk, the Science Reference Desk, and in the Documents and Maps Department in Waldo Library. Reference collections of indexes, abstracts, dictionaries, handbooks, bibliographies, etc. are maintained in each of the University Libraries, and reference librarians offer personal assistance in finding the books, information and other resources you may need for class or research related problems. In addition, the reference staff offers a three credit hour course: Library Resources, General Studies 241. The course is designed to introduce the student to the use of our library system, and especially to the bibliographic tools and methods necessary to find information in the various subject fields.

An on-line automated retrieval system (OARS) offered by the Library accesses over 70 data bases in nearly every subject. The computerized operation allows users to significantly shorten time spent on literature searches for research projects. It is available to faculty, staff and students on a cost retrieval charge basis. Inquiries about this service may be made at Reference Services in the main library and at all branch libraries.

Interlibrary loan service is available to both students and faculty to provide access to materials not owned by the University Libraries. Requests for loans may be initiated at public service desks in all libraries as well as at the Interlibrary Loan office in Waldo Library.

Students enrolled in off campus classes are always welcome at the libraries on campus. They are also provided library services through the library at the Continuing Education Center in Muskegon (Fruitport), through the Lake Michigan College Library in Benton Harbor, through an arrangement with the Grand Rapids Public Library in Grand Rapids, and by special on-site arrangements for classes taught elsewhere.
The Honors College

Samuel I. Clark, Director of Honors

The Honors College coordinates all Honors work at Western Michigan University and provides programs designed for bright, creative and enterprising students. These programs are flexible and accommodate the particular talents or inclinations of students. These programs provide opportunity for students to closely associate with faculty and the academic departments of the University. Innovative and experimental teaching and learning, as well as traditional academic work, are an important part of Honors College programs.

There are two principal ways of associating with the Honors College. Entering first-year students who meet the selection criteria of the Honors College may enter the General Education Honors Program. Sophomores, juniors and transfer students with excellent academic records may become members of the Honors College.

The General Education Honors Program is an Honors College route toward fulfilling the general education requirements of the University. First-year students enter the program when they first enter the University and are “provisional” members of the Honors College.

The program provides a challenging and engaging educational experience for many of the University’s promising entering students. It offers opportunity for small classes, excellent instruction and considerable intellectual freedom. General Education Honors consists of 36 semester hours of study, pursued mainly during the freshman and sophomore years.

Students normally meet this 36 hour requirement by selecting courses in three general academic areas: Humanities, Social Science, and Natural Science. Courses fulfilling these requirements are selected from Honors courses of offerings or approved alternatives.

High school records, American College Tests scores, extracurricular interests and activities, and enthusiasm for participation in Honors programs are all considered in selecting students for GEH. Interested high school students are encouraged to address inquiries to the Honors College.

Membership in the Honors College is open to all sophomores, juniors and transfer students with excellent academic records. Applications are generally not accepted from freshmen and seniors. Students who successfully complete General Education Honors are invited to enter the Honors College.

Honors College members must, in their senior year, write an Honors paper or produce a creative work of art in their major academic field and pass an oral examination by their faculty advisor on this senior project. An Honors College graduate is so designated upon graduation.

A variety of programs and activities are available to members of the General Education Honors Program and the Honors College. These include, but are not limited to: independent study, interdepartmental major concentrations, special Honors seminars, interuniversity enrollment at local colleges and undergraduate internships in the community. Many programs and opportunities are available to students who wish to pursue a special field of study with particular diligence. These programs require a minimum grade point average both to enter and to remain in them. They generally serve Junior and Senior students.

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, these programs are reserved for students of high promise and performance who wish to pursue a special field of study with particular diligence. These programs require a minimum grade point average both to enter and to remain in them. They generally serve Junior and Senior students.

Departmental Programs generally involve independent study, small group seminars, advisory faculty and senior year papers or projects. Students interested in a particular departmental honors program should communicate directly with the department.

Departments having honors programs are: Anthropology, Chemistry, Economics, English, Geography, History, Mathematics, Occupational Therapy, Physics, Political Science and Sociology.

Many programs and opportunities administered by the Honors College are not limited to members of General Education Honors students or members of the Honors College. Inquiries concerning its various programs are welcome from all Western Michigan University students.

a student is associated with the Honors College. Failure to enroll in an Honors course any academic year when a student is otherwise enrolled at the University shall be interpreted as withdrawal from the Honors College or the General Education Honors Program. A course may be one or more credit hours.

(Exceptions must be negotiated in advance.)

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, these programs are reserved for students of high promise and performance who wish to pursue a special field of study with particular diligence. These programs require a minimum grade point average both to enter and to remain in them. They generally serve Junior and Senior students.

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Course Descriptions

General Education

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 humanity.

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 humanity'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 first and second-year 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 399 Field Experience (Community Participation)
Variable Credit
An organized association with a person or institution involving work and learning activities related to a significant academic interest of the student.

Honors College 490 Honors Seminar
Variable Credit
An undergraduate seminar for upper level honors students. The content of these seminars 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 these seminars 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 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.

The above listing of Honors courses does not include all courses available to Honors College students. Each semester a variety of Honors seminars and Departmental Honors Introductory courses are offered. Many of these are applicable to General Education Honors requirements. Descriptions of Departmental Honors Courses may be found under appropriate departmental listings elsewhere in this catalog. Honors College seminars are described in Honors College material printed each semester and titled "Information on Registration."
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 may meet certification requirements for teacher-librarianship by taking the undergraduate minor in library science and (1) for secondary certification: electing a major or group major of 30-36 hours in subjects or subject fields taught in the secondary school, or (2) for elementary certification: electing an additional minor or group minor of 20-24 hours and completing the Elementary Education minor (see Elementary Curriculum). The Librarianship minor consists of the following courses: 100, 230, 416, 510, 512, 530, and 542 or 546. School Media Center 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 media centers. 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: Hrs.
Total hours required for this curriculum 122
1. General Education requirements
2. Humanities
   - Modern Language 8
   - English electives 8
   - Communication Arts & Sciences Elective 3
   - Elective 3
3. Science or Psychology
   - Elective 3
4. Social Sciences
   - Political Science elective 3
   - History elective 3
   - Sociology elective 3
   - Elective 3
5. Librarianship
   - Librarianship as a Profession: Introduction 100 2
   - Fundamentals of Library Organization 230 3
   - Collection Development 510 3
   - Reference Services 512 3
   - Introduction to Cataloging and Classification 530 3
   - Reading Interests of Young Adults 542 or 546 3
   - Storytelling 546 or ED 548 3
6. Physical Education 2
7. Electives and Departmental Requirements for Subject Major

Course Descriptions

Undergraduate
(*Open to students in other departments.*)

100 Librarianship as a Profession: Introduction* 2 hrs.
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.
Introduction to the procedures of acquisition, processing, and circulation of library materials.
Library promotion, business records, displays, annual reports, and library standards are also studied. Emphasis is on basic library organization and access.

407 School Media Center Experience
3 hrs. Fall, Winter, Spring
An introduction to library activities and services through assignment to a selected school media center. A minimum of 90 hours of observation and participation under supervision of the cooperating school media specialist and a library school faculty member is required. Must be elected before Directed Teaching. Credit/No Credit. Approved application required.

416 Instructional Materials, K-12*
3 hrs.
Identification and characteristics of media which support classroom instruction 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.

Upper Division and Graduate
(*Open to students in other departments.)

505 Introduction to Computers
2 hrs.
The BASIC programming language is used to acquaint students with the computer facility and with the abilities of computers. The course consists of one hour of lecture and one hour in a recitation section each week. Computer terminology and capabilities are explored. Student-written computer programs are executed and related to a variety of computer applications. Illustrations will be given of programming techniques and the significance of computers in contemporary society.
Prerequisite: 1½ years of high school algebra or Math 111 (Cross-listed, same as Computer Science 105).

510 Collection Development
3 hrs.
Introduction to the basic principles of building collections for libraries and information centers. Includes selection and evaluation of materials for individual collections and examines principles and examples of library resource sharing.

512 Reference Services*
3 hrs.
Examination of reference sources, print and non-print, their evaluation, and the ways in which they may be used to provide service. Includes reference interview techniques, search strategies, and automated searching.

530 Introduction to Cataloging and Classification
3 hrs.
Introduction of the theories and practices of cataloging and classification. Emphasis on Dewey Decimal Classification, subject cataloging from the Sears and Library of Congress headings, descriptive cataloging of monographs, serials, and non-print materials, filing rules, and OCLC terminal utilization. Includes cataloging laboratory.

542 Reading Interests of Young Adults*
3 hrs.
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.
Underlying principles of the art of storytelling as a means of developing appreciation of literature and stimulating an interest in reading. Includes content and sources of materials, techniques and practice in telling stories before groups of children, and planning the story hour program.

598 Readings in Librarianship
1-3 hrs.
Offers a program for the advanced student for independent study in a special area of interest, arranged in consultation with the advisor. Written permission of instruction required.
Departments:
Agriculture
Distributive Education
Electrical Engineering
Home Economics
Industrial Education
Industrial Engineering
Mechanical Engineering
Military Science
Paper Science and Engineering
Transportation Technology

Within the University, the role of the College is to provide to the University community professional and vocational expertise based on the application of scientific, management and educational principles in the development of University goals. Also, the College provides a portion of the interdisciplinary environment within which students and faculty are encouraged to develop their capabilities and to interact with others throughout the University by an interpretation of the technical aspects of the relation between technology and society.

The mission of the College of Applied Sciences is to create within the University a place where the application of the principles of the physical, natural and social sciences can be brought together to encourage the use of these principles in a practical manner. In such an atmosphere, people are educated and assistance is provided to business, commerce, technical educators and society in the application of these same principles to their activities. The mission of the College is principally directed toward areas of engineering, specialized management in technical fields, and professional-vocational education.

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.

Undergraduate Programs
The College of Applied Sciences offers undergraduate programs in 36 curricula and majors leading to careers in professional and technical management, engineering, and vocational and practical education.

Careers in Professional and Technical Management
Agricultural Distribution
Aviation Technology and Management
Automotive Management and Service
Construction Supervision and Management
Dietetics
Engineering Graphics
Engineering Metallurgy
Family and Individual Relationships
Fashion Merchandising
Flight Technology
Food Distribution
Food Service Administration
Industrial Design
Industrial Technology
Interiors and Housing
Manufacturing
Manufacturing Administration
Military Science
Paper Science
Petroleum Distribution
Printing Management
Textile and Apparel Technology
Transportation Systems
Vocational-Technical Management
Variety of disciplines

*Careers in Engineering*
- Aircraft Engineering
- Automotive Engineering
- Computer Systems Engineering
- Electrical Engineering
- Environmental Engineering
- Industrial Engineering
- Mechanical Engineering
- Paper Engineering

*Careers in Vocational and Practical Education*
- Distributive Education
- Home Economics Education
- Industrial Education
- Technical Education
- Vocational-Technical Education

*Graduate Programs*

The College of Applied Sciences offers graduate programs leading to a masters degree in the areas of professional and technical studies, science and research, and teaching of technical studies.

*Specialization in Professional and Technical Studies*

**Engineering and Manufacturing Administration**
- Operations Research

**Specialization in Science and Research**
- Home Economics
- Paper Science

**Specialization in Teaching of Technical Studies**
- Distributive Education
- Home Economics
- Industrial Education

*Related Academic Programs*

**Cooperative Education Program**
Roger Urich, Director

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.

Students enrolled in the Engineering 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 IEGM 300, Co-op Internship. Co-ops are 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.

Other Cooperative Education Programs are available in Distributive Education and Home Economics in the fields of Food; Petroleum; and Fashion Management, Marketing and Merchandising. The arrangement of work assignments may vary by department.

**Foundry Program**

Any student enrolled in an Engineering or related curriculum and interested in a career in the metal casting industry may be admitted into the Foundry Program by his or her counselor. While engaged in this special program, the student must also meet the requirements for a B.S. degree offered by the College of Applied Sciences. The Foundry Program is designed to allow the student an opportunity to elect various specific interest courses while earning a degree in any standard curriculum.

*Graduation Requirements for a Bachelor of Science in Engineering*

The Baccalaureate Programs in Engineering shown on the following pages are designed to be completed in four consecutive academic years. A student must meet all the requirements listed in any one of the catalogs in effect during this four year period at the University or, in the case of a transfer student, during the same four year period of enrollment at this or other academic institution from which credit is transferred and accepted.

Students who will not graduate in four consecutive academic years must meet all the requirements listed in the catalog in effect for the semester during which the student is first classified a senior. In such instances, a transition plan should be made with the engineering student's academic counselor. Failure to have a plan made in accordance with the above will require that the student fulfill all requirements in effect at the time of such plan approval or graduation audit whichever shall occur first.

**Special Policy for EET and MET Graduates to Obtain EE and ME Degrees**

A graduate who has received a Bachelor of Science degree in either Electrical Engineering Technology or Mechanical Engineering Technology at Western Michigan University may obtain an engineering degree in the same technical area by the following:

Meeting all current technical course requirements of the engineering degree shown in the catalog in effect at the time the student applies for this degree. A maximum of 26 months from the date of approval will be allowed for completion of this course work. This policy will terminate June 30, 1980, after which no further degrees under this policy will be granted.

*Grand Rapids Degree Programs*

Students living in the Grand Rapids area may complete the Industrial Engineering, Manufacturing Administration, and Mechanical Engineering degree requirements through the Grand Rapids Center. Local colleges in Grand Rapids and Western Michigan University combine to offer complete four year degrees in the above mentioned areas. The courses are offered primarily in the evening, thus allowing the individual that is working full time to pursue his or her education on a part-time basis.

Additional information on these programs can be obtained by calling the University Consortium Center in Grand Rapids (616) 459-7123.

*Academic Counseling Program*

**Academic Planning**

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, properly planning will maximize their benefits
from the courses taken and minimize their problems with respect to registering for classes and graduating.

Course offerings by semester for the years 1979-83 may be obtained in the College Counseling Office, Room 2038, Industrial and Engineering Technology Building.

Professional Registration
State professional engineering registration is of importance to some engineering graduates. In Michigan, registration eligibility requirements have been undergoing change with increasing emphasis upon degrees from ECPD accredited programs and decreasing emphasis on work-experience.

Under this catalog, WMU graduates of the Industrial Engineering, Mechanical Engineering and Electrical Engineering programs have acceptable engineering degrees. Other engineering degrees are acceptable so long as the school can show acceptable documentation, including official transcripts and supporting analysis, that the education of the individual student meets the ECPD guidelines.

Professional registration and licensing requirements in other states may vary. Students or prospective students who have any questions concerning registration are encouraged to inquire of their counselor.

General 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 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 (See "General Education Requirement" section of the catalog) 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.

Engineering Transfer Programs
An engineering transfer program to be taken at a community college acceptable to each of the Engineering Colleges in Michigan has been prepared by the Engineering College-Community College liaison committee. A brochure describing this transfer program is available from any community college or from the office of the Dean of any of the Engineering Colleges.

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 in the section headed "Student Financial Aid and Scholarships".

Interdisciplinary Programs
Interdisciplinary programs having as a base a significant core of knowledge related to Applied Sciences are, at the undergraduate level, General Curriculum, Pre-Engineering, Pre-Architecture, General University Studies, Technical and Scientific Studies, Manufacturing and, at the graduate level, Operations Research.

The General Curriculum
Carolyn Chingo, Advisor
A curriculum designed to allow enrollment of students intending to transfer College of Applied Sciences credits to another university.

Written permission of the academic advisor is required to enroll in this curriculum beyond the first year.

Pre-Engineering
Carolyn Chingo, Advisor
A typical Pre-Engineering program for students who wish an engineering program other than that offered in the College of Applied Sciences is as follows:

<table>
<thead>
<tr>
<th>Recommended Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Calculus</td>
<td>15</td>
</tr>
<tr>
<td>2. Computer Language</td>
<td>3</td>
</tr>
<tr>
<td>3. Writing</td>
<td>4</td>
</tr>
<tr>
<td>4. Chemistry</td>
<td>8</td>
</tr>
<tr>
<td>5. Physics</td>
<td>8</td>
</tr>
<tr>
<td>6. Humanities</td>
<td>6</td>
</tr>
<tr>
<td>7. Economics</td>
<td>6</td>
</tr>
<tr>
<td>8. Engineering</td>
<td>10</td>
</tr>
</tbody>
</table>

TOTAL 62

Specific requirements for Michigan Technological University, Michigan State University, University of Michigan, Oakland University, and Wayne State University are available in Room 2038.

Pre-Architecture
Carolyn Chingo, Advisor
The following is a typical Pre-Architecture program for students who wish to pursue an Architecture degree at another college or university.

<table>
<thead>
<tr>
<th>Recommended Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Math</td>
<td>12</td>
</tr>
<tr>
<td>2. Computer Language</td>
<td>3</td>
</tr>
<tr>
<td>3. Physics</td>
<td>8</td>
</tr>
<tr>
<td>4. Natural Science</td>
<td>4</td>
</tr>
<tr>
<td>5. Economics</td>
<td>6</td>
</tr>
<tr>
<td>6. Social Science</td>
<td>6</td>
</tr>
<tr>
<td>7. English</td>
<td>4</td>
</tr>
<tr>
<td>8. Humanities</td>
<td>10</td>
</tr>
<tr>
<td>9. Drawing</td>
<td>7</td>
</tr>
<tr>
<td>10. Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL 64

General University Studies—Technical-Scientific Studies
AAS 497 General University Studies (Variable Credit) F, W, SP, SU
Evaluation of work experience and/or course work relevant to the area of specialty in the Technical-Scientific area studies. Prerequisite: Permission of Director of Counseling, D. W. Nantz.
Manufacturing Program
AAS 397 Orientation
1 hr. F, W, SP, SU
Provides the Manufacturing student with the opportunity to define and develop an educational program in order to achieve a vocational goal. Prerequisites: Manufacturing curriculum and permission of Director of Counseling, D. W. Nantz.

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 is based upon the student's prior experience in the particular areas in which he/she 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.) or the equivalent plus sixty hours at Western Michigan University and two hours of Physical Education.

The curriculum is specifically designed for students who have completed an Associate Degree program (or the equivalent) in Applied Sciences. It is made up of two parts:

PART I: LEVEL OF ACHIEVEMENT
A. Graphics: ability to make and read working drawings.
B. Materials and Processing: knowledge and application of two types of processes and properties of standard materials.
C. Science: principles of chemistry and physics.
D. Manufacturing Management: principles of manufacturing management, economics, accounting, human relations and communications.

Note: All students will enroll in AAS 397 Orientation for one semester hour to determine the student's competence in each of the above areas.

PART II: AREA REQUIREMENTS
A. Mechanical—Materials—Processing area
1. Technical Analysis: elements of calculus, statistics, proficiency in a basic computer language, engineering mechanics for analysis of static force systems, and stresses in machinery and structures; principles of electrical circuits, machines, and electronics as applied to manufacturing.
2. Area of Specialization: a selection of courses designed to meet the student's vocational choice and meet employable standards as determined by the student and the counselor.

B. Electrical—Electronics
1. Technical Analysis: elements of calculus, statistics, proficiency in a basic computer language, analysis of static force systems, and stresses in machinery and structures; principles of circuits, electronics and machines as applied to manufacturing.
2. Area of Specialization: a selection of courses designed to meet the student's vocational choice and meet employable standards as determined by the student and the counselor.

C. Supervision—Management
2. Area of Specialization: a selection of courses designed to meet the student's vocational choice and meet employable standards as determined by the student and the counselor.

D. Other Areas—It is possible to develop other areas of specialization similar to the areas in manufacturing.
1. A 48 semester hour program of study designed to develop a higher degree of proficiency in areas outlined in Parts I and II; and development of an area of specialization selected by the student. The student in conference with his/her counselor will select courses to meet the degree requirements.
2. General Education
   (12 semester hours of courses designed to establish individual awareness of social responsibilities in government, ecology, interpersonal relationships, and history.)

The program requires 60 semester hours at Western Michigan University in addition to the 60 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.)

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.

Professional and Honorary Societies
Each department has student branches of professional and honorary societies whose purpose is to provide opportunities for students to become more directly involved with specific activities in their areas of interest. Students interested in enlarging their understanding of the professional field in which they intend to work should join one of these societies. Students may obtain further information by contacting their academic counselor or department chairperson.

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 manufacturing administration, engineering economy and capital budgeting. Experimental facilities are available.

On-going programs are being conducted by the Center for Depreciation Studies, the Center for Metric Education and Studies, and the Center for Industrial Services. For information, write to Professor R. E. Boughner, Managing Director of the Institute.
Agriculture
Lee O. Baker, Chair
Max Benne
John Houdek

The Agricultural Distribution curriculum is a four-year degree program which deals with the production, distribution, and service aspects of the agricultural industry.

The program is designed to provide:
1. The technical information related to the production of agricultural commodities.
2. Basic training for employment in agricultural industry and governmental agencies.
3. Knowledge of land use as it relates to agriculture and the environment.
4. Preparation for employment in agricultural education.

The program requires 30 semester hours of courses in Agriculture for a major or 18 semester hours for a minor. This curriculum requires a minimum of 122 semester hours.

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Agricultural Distribution Bachelor of Science Degree

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 eight semesters:

<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></td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>MAJOR COURSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGR 110</td>
<td></td>
<td>Animal Industry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AGR 111</td>
<td></td>
<td>Animal Industry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AGR 220</td>
<td></td>
<td>Agronomy</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AGR 320</td>
<td></td>
<td>Introduction to Soils</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AGR 322</td>
<td></td>
<td>Agriculture, Marketing Finance</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AGR 330</td>
<td></td>
<td>Farm Organizations &amp; Management</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AGR Electives</td>
<td></td>
<td></td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>BUSINESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY 201</td>
<td></td>
<td>Accounting Concepts and Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY 210</td>
<td></td>
<td>Principles of Accounting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RELATED COURSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT 200</td>
<td></td>
<td>Decision Making With Statistics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUS 340</td>
<td></td>
<td>Business Law</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 111</td>
<td></td>
<td>Algebra II (3)</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>MATH 122</td>
<td></td>
<td>Calculus I (4)</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td></td>
<td>Principles of Economics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC 200</td>
<td></td>
<td>Principles of Sociology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CAS 104</td>
<td></td>
<td>Business and Professional Speech</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GENERAL EDUCATION—DISTRIBUTION PROGRAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AREA I</td>
<td></td>
<td>Humanities</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>AREA II</td>
<td></td>
<td>Social Science*</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>AREA III</td>
<td></td>
<td>Natural Science &amp; Mathematics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4 Hrs. Math Incl. in Curr.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AREA IV</td>
<td></td>
<td>Non-Western World</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AREA V</td>
<td></td>
<td>Optional Electives***</td>
<td>4 4 5 6 7 9 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing Requirement***</td>
<td>3 4</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL EDUCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEGN</td>
<td></td>
<td>Physical Education</td>
<td>1 1</td>
<td></td>
</tr>
<tr>
<td>ELECTIVES</td>
<td></td>
<td>Approved Electives***</td>
<td>4 5 6 7 9 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total For Graduation—122 Hrs.</td>
<td>13 16 15 16 16 16 15</td>
<td></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
CHEM 101 or 102
BIO 101, 102
BIO 323 Plant Pathology
GEOL 130 Physical Geology
BIO 542 Entomology
BIO 234 Outdoor Science
GEOG 244 Economic Geography

Course Descriptions
(Courses described in italics are approved for General Education)
Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

100 Agriculture Science (3-0)
3 hrs. Fall, Winter
An introduction to the scientific principles and practices of food and fiber production and agriculture's role in today's society and economy.

110 Animal Industry (3-0)
3 hrs. Fall
Fundamental problems and essential general concepts of livestock production and marketing in the United States. An introduction to types, breeds, selection, feeding and management of dairy cattle, beef cattle, and swine.
111 Animal Industry (3-0)
3 hrs. Winter
A continuation of 110 with sheep, horses, and poultry being considered.

120 Practical Vegetable Gardening (1-1)
2 hrs. Spring
The basic concepts and fundamental practices of vegetable growing for the home gardener.

220 Agronomy (Crop Production) (4-0)
4 hrs. Fall, Winter
The principles of crop production, management, breeding, weed control and crop quality are considered as they relate to field crops.

222 Principles of Horticulture (3-1)
4 hrs. Fall, Winter
Basic principles of modern horticulture. Study includes: fruits, vegetables, flowers, ornamental trees, turf management, plant propagation and nursery culture. Greenhouse experience also.

310 Feeding and Animal Nutrition (4-0)
4 hrs. Fall
The science of feeding, caring for, and managing livestock, including the formulation of rations for beef, dairy, sheep, swine, poultry and horses.

320 Introduction to Soils (3-1)
4 hrs. Fall, Winter
The origin and development of soils as natural entities with certain inherent characteristics. Basic relationships between soils and plants and the principles involved in the practical use and conservation of the soil. Prerequisite: CHEM 100 or one unit H.S. Algebra and Chemistry.

322 Landscape Gardening (3-0)
3 hrs. Winter or Spring
Care and planting of trees, flowers, and shrubs, lawn establishment and care, identification and selection of planting materials, and basic landscape design.

323 Landscape Design (3-0)
3 hrs. Winter or Spring
Emphasis in this course will be placed on the environmental approach to landscaping. This concept considers the relationship between a house and its lot and consequently their relationship to the neighborhood, the community, and ultimately the whole region.

324 Land Use and Soil Conservation (3-0)
3 hrs. Winter
A study of the utilization of land by individuals 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 (4-0)
4 hrs. Winter
The farm as a business and efficient use of all resources. Basic principles of production, management, farm accounting and related fields of agriculture science and the various organizations serving agriculture.

332 Agriculture Marketing and Finance (4-0)
4 hrs. Spring
The organization and functioning of markets as they relate to the marketing of such farm products as grains, fruits, livestock, and vegetables. Financing of various enterprises and sources of credit available to the farm operator.

400 Independent Study
1-6 hrs. Fall, Winter, Spring
A flexible course to enable students to pursue an area of interest under faculty supervision.

495 Special Topics in AGR: Variable Topics (3-0)
3 hrs. Fall, Winter, Spring
A specialized course dealing, each time it is scheduled, with some particular aspect of agriculture not usually included in other course offerings.

520 Soil Science (3-0)
3 hrs. Winter
Treats soil as a natural resource, and how 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, plant growth and land use. Prerequisite: AGR 320.
Distributive Education
Raymond A. Dannenberg, Chair
William O. Haynes
Jack T. Humbert
Richard Nesich
Lawrence A. Williams

The Distributive Education Department offers programs in Food Distribution, Petroleum Distribution, and Teacher Education. The programs are designed to prepare personnel for the fields of marketing, merchandising, management and teaching.

Cooperative Education Programs
The Cooperative Education programs offered in Food Distribution and Petroleum Distribution are designed to develop occupational competencies in their respective areas. These programs, which are sponsored jointly with industries, provide students with an opportunity to earn a two-year certificate or to complete a four-year program leading to a Bachelor of Science degree. Cooperative Education programs use an alternate semester-in-school and semester-on-the-job approach and provide students with valuable field experience.

Consultative Services
Consultative services are provided by the department to secondary schools which conduct Cooperative Education programs. In addition to supplying related classroom instruction materials, the department assists the various institutions in planning and conducting adult education programs and workshops.

Distributive Education Curriculum
The Distributive Education curriculum has three options—Distributive Teacher Education, Food Distribution and Petroleum Distribution. A student must complete all of the courses required in the option area in order to have a distributive education major. A minor may be secured by obtaining written approval of the department advisor for a given sequence of courses which have been mutually agreed upon.

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Food Distribution
(DISTRIBUTIVE EDUCATION CURRICULUM)
Bachelor of Science Program

Requirements Candidates for the Bachelor of Science degree must complete the following program. Schedule below is an example of one leading to graduation in 12 semesters and sessions starting in the fall. Transfer students must consult program advisors for alternate programs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester/Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED 109</td>
<td>Industry Survey</td>
</tr>
<tr>
<td>D ED 130</td>
<td>FD Industry</td>
</tr>
<tr>
<td>D ED 132</td>
<td>FD Merchandising</td>
</tr>
<tr>
<td>D ED 231</td>
<td>FD Supervision</td>
</tr>
<tr>
<td>D ED 232</td>
<td>FD Operations</td>
</tr>
<tr>
<td>D ED 331</td>
<td>FD Managerial Processes</td>
</tr>
<tr>
<td>D ED 332</td>
<td>FD Systems &amp; Control</td>
</tr>
<tr>
<td>D ED 496</td>
<td>Problems in Food Dist</td>
</tr>
<tr>
<td>D ED 498</td>
<td>Current Issues—Food Dist</td>
</tr>
<tr>
<td>D ED 500</td>
<td>Seminar in Distr. Education</td>
</tr>
<tr>
<td>D ED 202</td>
<td>Coordinated Dist Practices</td>
</tr>
<tr>
<td>D ED 302</td>
<td>Coordinated Dist Practices</td>
</tr>
<tr>
<td>D ED 400</td>
<td>Mass Merchandising</td>
</tr>
</tbody>
</table>

CURRICULUM REQUIREMENTS

| ACTY 210 | Principles of Accounting | 3 |
| ECON 201 | Principles of Econ (Micro) | 3 |
| ECON 202 | Principles of Econ (Macro) | 3 |
| BED 242 | Business Communication | 3 |
| BUS 340 | Legal Environment | 3 |
| MKTG 370 | Marketing | 3 |
| MGMT 300 | Fundamentals of Management | 3 |
| MGMT 102 | Computer Usage | 3 |
| CAS 104 | Business & Prof. Speech or- | |
| CAS 130 | Public Speaking | 3 |
| H EC 116 | Family Foods | 2 |

GENERAL EDUCATION—DISTRIBUTION PROGRAM*

AREA I

| Humanities, 6 Cr. | 3 |
| Hr. Min. | 3 |
### Petroleum Distribution

(DISTRIBUTIVE EDUCATION CURRICULUM)

Bachelor of Science Program

**Requirements** Candidates for the Bachelor of Science degree must complete the following program. The curriculum schedule listed below is an example which provides graduation in 11 semesters and sessions. Transfer students must consult program advisors for alternate programs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester/Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY 211</td>
<td></td>
<td>Principles of Accounting</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>ECON 201</td>
<td></td>
<td>Principles of Econ (Micro)</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>ECON 202</td>
<td></td>
<td>Principles of Econ (Macro)</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>CAS 104</td>
<td></td>
<td>Business &amp; Prof. Speech &amp;-</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>CAS 130</td>
<td></td>
<td>Public Speaking</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>MGMT 102</td>
<td></td>
<td>Computer Usage</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>BED 142</td>
<td></td>
<td>Informational Writing</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>MGMT 300</td>
<td></td>
<td>Fundamentals of Management</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>D ED 400</td>
<td></td>
<td>Mass Merchandising</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>D ED 300</td>
<td></td>
<td>Preparing for Employment</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
<tr>
<td>BED 242</td>
<td></td>
<td>Business Communications</td>
<td>1 2 SP-S 3 4 SP-S 5 6 SP-S 7 8</td>
</tr>
</tbody>
</table>

*General Education must include 2 courses at 300-500 level.

**TOTAL 17 hrs. With 6 hrs. in Spring following semester 8.**

### Two-Year Certificate Program in Food Distribution and Petroleum Distribution

Students may receive a two-year certificate in Food Distribution or Petroleum Distribution by completing 61 hours of approved courses. Students on a certificate program may transfer into the four-year Food Distribution, or Petroleum Distribution program, and work toward a Bachelor of Science Degree. Students completing a certificate program shall have complete transferability of courses to the four-year Bachelor of Science Degree program.
Distributive Teacher Education

(DISTRIBUTIVE EDUCATION CURRICULUM)

Bachelor of Science Program

Requirements

Candidates for the Bachelor of Science degree must complete the following program. The curriculum schedule listed below is an example which provides graduation in 12 semesters and sessions. Transfer students must consult program advisors for alternate programs. This program qualifies graduates to receive both the Vocational and Secondary Provisional Certificates.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester/Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 120</td>
<td>Intro to Petroleum Industry</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>ED 130</td>
<td>Food Distribution Industry</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>ED 200</td>
<td>Dev. &amp; Superv. of DECA Prog.</td>
<td>1</td>
<td>SP-S</td>
</tr>
<tr>
<td>MKTG 270</td>
<td>Salesmanship</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 300</td>
<td>Preparing for Employment</td>
<td>1</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 302</td>
<td>Coord. Distr. Practices*</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>MKTG 374</td>
<td>Advertising</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 400</td>
<td>Mass Merchandising</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 500</td>
<td>Seminar in D.E.</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 572</td>
<td>Teaching Techniqs/Mats.—D.E.</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 570</td>
<td>Coord. Techniqs—Coop Ed</td>
<td>3</td>
<td>SP-S</td>
</tr>
<tr>
<td>D ED 570</td>
<td>Organization &amp; Oper of DE</td>
<td>2</td>
<td>SP-S</td>
</tr>
</tbody>
</table>

MINOR: TEACHABLE,

Min 20 Hrs Regd

Business Education recommended.

(Minor must include one of the following: BED 140, 142, or 292.)

RELATED COURSES/EDUCATION/APPL SCIENCES

TEED 250 Human Devel & Learning 4

TEED 301 Teaching & Learning 3

TEED 410 Seminar in Education 2

TEED 470 Directed Teaching 9

ED 512 Principles of Voc Educ 3

CURRICULUM REQUIREMENTS

ECON 201 Principles of Econ (Micro) 3

MKTG 572 Advertising, Copy & Layout 3

ACTY 210 Principles of Accounting 3

HEC 420 Display Fundamentals 2

Course Descriptions

(Courses described in italics are approved for General Education.)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

109 Industry Survey (3-0)

3 hrs. Spring, Summer

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 for transportation and housing is required from each student.

200 Dev. & Supervision of DECA Programs (1-0)

1 hr. Fall, Winter

Objectives of Distributive Education Clubs of America and their value to the total Distributive Education field, emphasizing development, curricular integration and evaluation of programs and activities.

202 Coordinated Distribution Practices

3 hrs. Fall, Winter, Spring

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. First or second year students.

300 Preparing for Employment (1-0)

1 hr. Fall, Winter, Spring

Job resume, letter of application, application for employment, career resources and establishing contacts, questions and kinesics in the job interview.

302 Coordinated Distribution Practices

3 hrs. Fall, Winter, Spring, Summer

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.
400 Mass Merchandising (3-0) 3 hrs. Fall, Winter
Provides student acquisition of mass merchandising competencies developed through performance objectives. Prerequisite: Junior standing.

500 Seminar in Distributive Education (3-0) 2-4 hrs. Fall, Winter
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.

596 Independent Study 2-6 hrs. Fall, Winter, Spring, Summer
A program of independent study to provide the unusually qualified student with the opportunity to develop and complete a project which will meet his/her needs and interests in distribution, under the guidance of a departmental faculty member. Two hours credit per semester, accumulative to six hours. Enrollment beyond the first semester may be either for the same project or for a new one. Prerequisite: consent of instructor.

596 Readings in Distributive Education 1-3 hrs. Fall, Winter, Spring, Summer
Directed, individual study of topics and areas of interest which are not otherwise treated in departmental courses. Prerequisite: consent of Department Chairperson.

Food

130 Food Distribution Industry (3-0) 3 hrs. Fall, Winter
An introductory course for those entering the field of food distribution. A study of food distribution, its history, evolution, and structure with emphasis on the growing importance of the store unit will be analyzed. Basic principles and practices of the industry will be considered.

132 Food Distribution Merchandising (3-0) 3 hrs. Fall, Winter
A course designed to acquaint the student with the various merchandising techniques peculiar to food distribution. Receiving emphasis will be buying, display, promotion, turnover, pricing for profit, and increasing departmental sales. Resource people from the industry will be utilized to enrich classroom activities.

231 Food Distribution Supervision (3-0) 3 hrs. Fall, Winter
A course designed for providing techniques in supervising and developing people in food distribution. Attention will be directed toward organizational principles, labor relations, understanding people, communication, coaching, and building a store team. Leadership concepts so necessary in the industry will be stressed. Periodic lectures from industry resource people will enrich classroom instruction.

232 Food Distribution Operations (3-0) 3 hrs. Fall, Winter
A course designed to acquaint the student with the principles and methods used in the operation of food distribution units with regard to organization, planning and control. The over-all objective will be to provide knowledge and develop understanding in the students for efficient unit operation. Resource people from food distribution will appear in the classroom to enrich the instructional program.

331 Food Distribution Managerial Processes (3-0) 3 hrs. Fall, Every 4th Spring beginning Spring 1979
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 (3-0) 3 hrs. Fall, Every 4th Spring beginning Spring 1980
An analysis of the systems and controls used in the food distribution industry for controlling operations, maximizing profits and minimizing costs. The use of special operating data and ratios to measure performance, budget manpower, and forecast sales and profits. Other strategies and control systems applicable to food distribution. Prerequisite: Food Distribution Operations 232.

Petroleum

120 Introduction to Petroleum Industry (3-0) 3 hrs. Fall, Winter
A basic course in the study of the petroleum industry dealing with its history, exploration, drilling, production, refining, distribution, service station records and sales; and general economics and structure of the industry. The course includes the orientation necessary for the student to understand the cooperative work program and the student's responsibility to such a program.

220 Properties and Application of Petroleum Products (3-0) 3 hrs. Winter
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 (3-0) 3 hrs. Fall
The responsibilities and activities of the petroleum company salesperson 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.

237 Petroleum Distribution Finance (3-0) 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 (3-0) 3 hrs. Fall
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 processing.

380 Distribution and Handling of Petroleum Products
(3-0)
3 hrs. Winter
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.

420 Issues in Oil
(1-2)
3 hrs. Winter
A study of the current issues affecting the petroleum industry. This is a capstone course for petroleum distribution majors using a seminar approach. Prerequisites: senior standing or permission of the instructor.

Distributive-Cooperative Teacher Education

570 Organization and Operation of Distributive Education
(2-0)
2 hrs. Fall
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.

572 Teaching Techniques and Materials in Distributive Education
(3-0)
3 hrs. Winter
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
(3-0)
3 hrs. Fall, Spring
This is a study of duties and responsibilities of the teacher-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 activities in the community, especially adapted to prospective coordinators.

Electrical Engineering
Cassius A. Hesselberth, Chair
Gurbux Alag
Charles A. Davis
Joseph Kelemen
John L. Mason
William M. McCabe
Frederic Rowe
Lambert R. VanderKooi
Glade Wilcox
Charles Yunghans

The Electrical Engineering Department offers curricula designed primarily to prepare personnel for professional careers in electrical engineering or computer systems engineering. Both programs provide students with 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, quality control and maintenance management of major companies.

Academic Counseling
Students should contact the Electrical Engineering 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 and Curriculum Committees. 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 under the beginning of the Applied Sciences' section of the catalog.

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Electrical Engineering
Bachelor of Science in Engineering (Electrical) Degree

The Electrical Engineering program is designed to meet the needs of those students who plan to seek employment in such areas as electric power, electronics, communication, instrumentation, and controls.

A Bachelor of Science degree requires 128 semester credit hours. An overall average of 2.00 must be obtained in EE courses and students may not receive more than 2 D's in all required courses for graduation.
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</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRICAL ENGINEERING—49 Hrs.</td>
<td>EE 250</td>
<td>Introductory Logic Design</td>
<td>1 2 3 4 5 6 7 8</td>
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<tr>
<td></td>
<td>EE 210</td>
<td>Circuit Analysis I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 211</td>
<td>Machines &amp; Electronic Circuits</td>
<td></td>
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<tr>
<td></td>
<td>EE 221</td>
<td>Electronics I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 310</td>
<td>Circuit Analysis II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 320</td>
<td>Electronics II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 330</td>
<td>Electrical Machinery</td>
<td></td>
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<tr>
<td></td>
<td>EE 351</td>
<td>Digital Systems I</td>
<td></td>
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<td></td>
<td>EE 361</td>
<td>Electromagnetic Fields</td>
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<td></td>
<td>EE 371</td>
<td>Linear Systems</td>
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<td></td>
<td>CS 306</td>
<td>Introductory Programming</td>
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<td>CHEM 101</td>
<td>General Chemistry</td>
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<td></td>
<td>PHYS 210</td>
<td>Mechanics &amp; Heat</td>
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<td></td>
<td>PHYS 211</td>
<td>Electricity &amp; Light</td>
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</tr>
<tr>
<td></td>
<td>PHYS 212</td>
<td>Introductory Modern Physics</td>
<td></td>
</tr>
<tr>
<td>GENERAL EDUCATION—DISTRIBUTION PROGRAM*</td>
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<td></td>
</tr>
<tr>
<td>AREA I</td>
<td></td>
<td>Humanities and Fine Arts</td>
<td>3 3</td>
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<tr>
<td>AREA II</td>
<td></td>
<td>Social and Behavioral Science</td>
<td>3 3</td>
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<tr>
<td>AREA III (8 Hrs. Included in Curr.)</td>
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<td></td>
<td></td>
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<tr>
<td>AREA IV</td>
<td></td>
<td>Non-Western World Electives</td>
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<td>AREA V</td>
<td></td>
<td>Writing Requirement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Recommended IEGM 102 -or-</td>
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<tr>
<td></td>
<td></td>
<td>BED 142 -or- ENG 105) (8 Hrs.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Included in Curriculum)</td>
<td></td>
</tr>
<tr>
<td>ELECTIVES—5 Hrs.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PHYSICAL EDUCATION—2 Hrs.</td>
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<td></td>
<td>1 1</td>
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<tr>
<td>Total for Graduation—128 Hrs.</td>
<td></td>
<td></td>
<td>15 16 16 16 17 17 16 15</td>
</tr>
</tbody>
</table>

*Two general education courses must be in the 300-500 level.

**Computer Systems Engineering**

Bachelor of Science in Engineering (Computer Systems) Degree

The Computer Systems Engineering program is primarily for those interested in the design, analysis and implementation of electronic digital systems. This program includes both the “hardware” and programming aspects of computers 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 EE courses and students may not receive more than two D’s in all required courses for graduation.

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</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRICAL ENGINEERING—37 Hrs.</td>
<td>EE 250</td>
<td>Introductory Logic Design</td>
<td>1 2 3 4 5 6 7 8</td>
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<tr>
<td></td>
<td>EE 210</td>
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<td></td>
<td>EE 221</td>
<td>Electronics I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 310</td>
<td>Circuit Analysis II</td>
<td></td>
</tr>
</tbody>
</table>
### Course Descriptions

(Courses described in italics are approved for General Education.)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

#### 100 Fundamentals of Circuits and Electronics (2-3)
3 hrs. Fall, Winter, Spring
Basic principles of electricity, magnetic devices and electronics. May not be used as prerequisite for other EE courses except 101. Cannot be used as credit in engineering curricula. Prerequisites: MATH 111 or equivalent and high school physics.

#### 101 Fundamentals of Electronics and Machines (2-3)
3 hrs. Fall, Winter, Summer
Basic principles, characteristics, and applications of semiconductor devices, AC machines and DC machines. May not be used as prerequisite for other EE courses. Cannot be used as credit in engineering curricula. Prerequisite: EE 100.

#### 207 Electrical Circuit Problems (0-1)
1 hr. Fall, Winter, Spring
Calculus solutions of problems in the fundamentals of circuit analysis. Prerequisite: College level circuit analysis course(s). Not open to students with credit in EE 100 or 210. Consent of Department required.

#### 210 Circuit Analysis I (3-3)
4 hrs. Fall, Winter, Spring
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. Prerequisites: Phys 211 (may be taken concurrently), MATH 123.

#### 211 Machines and Electronic Circuits (3-3)
4 hrs. Fall, Winter, Summer
Introduction to machines and electronics for engineering students. Principles of operation, characteristics, ratings, and applications of transformers, alternators, motors, diodes and transistors. Prerequisite: EE 210.

#### 221 Electronics I (3-3)
4 hrs. Fall, Winter
Analysis and design of electronic circuits and systems, diode circuits, stabilization, small and large signal analysis, multi-transistor circuits and feedback fundamentals. Prerequisite: EE 211.
250 Introductory Logic Design (2-3)
3 hrs. Fall, Winter, Summer
Analysis and design of combinational and sequential logic systems. Prerequisite: MATH 111 or equivalent.

310 Circuit Analysis II (3-3)
4 hrs. Fall, Winter
Complete circuit response using differential equations and Laplace transforms. Also, network functions and coupled circuits. Prerequisites: EE 211; CS 112 or 306; MATH 374, or 274 and 230.

320 Electronics II (3-3)
4 hrs. Fall, Winter
Analysis, design and construction of modern electronic circuits using solid-state devices and integrated circuits, field effect transistors, basic logic gates, multivibrators, operational amplifiers, frequency response analysis and photodevices. Prerequisites: EE 221, EE 310.

330 Electrical Machinery (3-3)
4 hrs. Fall, Winter
Three-phase circuit analysis, power transformer analysis. Basic principles of operation, design and control of synchronous and induction machines. Prerequisite: EE 310.

350 Digital Electronics (3-3)
4 hrs. Winter
The electrical and logic aspects of digital integrated circuits and their applications. Prerequisites: EE 221, EE 250.

351 Digital Systems I (3-3)
4 hrs. Fall, Winter
Machine and assembly language programming of small computers. Introduction to microcomputer architecture and interfacing. Prerequisites: EE 250, CS 106 or 111 or 306.

361 Electromagnetic Fields (4-0)
4 hrs. Fall
A study of the fundamental laws and engineering applications of electric and magnetic fields, Maxwell's Equations. Prerequisites: MATH 374 or 274 and 272, PHYS 211.

371 Linear Systems (3-0)
3 hrs. Winter
Analysis of linear, time invariant systems with applications to communication systems and automatic control. Prerequisite: EE 310.

420 Industrial Electronics (3-3)
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. Prerequisite: EE 250, 320 or 350.

430 Electrical Power Systems (3-0)
3 hrs. Fall
Transmission lines, network analysis, loadflow, system faults, fault calculation, transients and system stability. Prerequisite: EE 330.

440 Measurements and Instrumentation (3-3)
4 hrs. Fall, Winter
Analysis of measurement data, error analysis, electronic conditioning of analog signals, A-D and D-A conversion of measurement of signals, design of digital measurement instruments, and testing of measurement systems. Prerequisites: EE 320 or 350, 371.

451 Digital Systems II (3-3)
4 hrs. Winter
Analysis and design of microcomputer-based digital systems. Prerequisites: EE 351, EE 320 or 350.

460 Communication Theory (3-0)
3 hrs. Fall
Introduction to communications systems with an emphasis on signal design. Noise effects in amplitude, angle, and pulse modulation systems. Prerequisite: EE 371.

470 Feedback Systems (3-3)
4 hrs. Fall
Analysis and design principles of linear feedback systems. Introduction to non-linear systems. Prerequisite: EE 310.

490 Independent Research and Development 1-4 hrs.
Individual research or special project in Electrical Engineering. 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 Chair. Students may register more than once, not to exceed 4 hrs.

498 Readings in Electrical Engineering 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 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 (3-0)
3 hrs. Winter—Odd Years
Topics in circuit analysis and design such as computer analysis, state-space analysis, sensitivity, and distributed networks. Prerequisite: EE 371.

530 Power System Analysis I (3-0)
3 hrs. Spring—Odd Years
Modern systems, control, optimization, network theories, matrix language, computer methods, steady state. Prerequisite: EE 430.

550 Digital Signal Processing (3-0)
3 hrs. Winter
Introduction to discrete systems, design and implementation of digital filters, applications of fast fourier transforms. Prerequisite: EE 371.

561 Electromagnetic Fields (3-0)
3 hrs. Fall—Even Years
Time-varying electromagnetic fields with applications to wave guides and antennas. Prerequisites: EE 361 and 371.

570 Modern Control Theory (3-0)
3 hrs. Spring—Even Years
Modern control theory using "state variable" formulations provides a unified approach to a wide variety of problems—depends on matrix theory and linear algebra. Prerequisite: EE 371 or permission of instructor.
Home Economics

The Home Economics Department offers four-year programs leading to a Bachelor of Science degree. Major areas in Home Economics include:

- Family and Individual Relationships
- Fashion Merchandising
- Food Service Administration
- Dietetics
- Interiors and Housing
- Teacher Education (Vocational Certification)
- Textile and Apparel Technology

Minor Areas in Home Economics include:

- Clothing/Textile
- Family Life (Teachable)
- General
- Occupational Foods (Teachable)
- Interior Design

Academic Counseling

Room 2038, Industrial & Engineering Technology Bldg. An academic counselor is available to assist in individual program preplanning, 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.

In early September and/or January students should complete their planning forms to ensure enrollment in the desired courses. This is done in the Applied Sciences 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 under the beginning of the Applied Sciences' section of the catalog.

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Fashion Merchandising

Bachelor of Science Degree

This curriculum 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. Manufacturing, fabrication, buying offices and 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. (Third year students have the option of attending The Fashion Institute of Technology, New York, New York, for 1 or 2 semesters if a 3.0 G.P.A. has been maintained.) The schedule below is an example of one leading to graduation in 4 years.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. No. Course Title</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
</tr>
</tbody>
</table>

**DEPARTMENT COURSES—36 Hrs.**

- **HEC 100** Design Principles
- **HEC 106** Intro to Fashion Merchandising
- **HEC 200** Textiles
- **HEC 208** Non-Textile Products
- **HEC 306** History of Costume
- **HEC 308** American Costume
- **HEC 309** Promotion and Coordination
- **HEC 352** Consumer Education
- **HEC 375** Coordinated Field Exp.
- **HEC 401** Fashion Analysis
- **HEC 420** Display Fundamentals

Choose Three Hours from the following:

- **FREN 104** Mini French
- **HEC 104** Clothing Construction
- **HEC 216** Textile Fabrication
- **IEGM 240** Housing
- **HEC 204** Selection and Construction of Family Clothing
- **HEC 305** Experimental Clothing Technique
- **HEC 316** Dressmaker Tailoring
- **HEC 350** Interiors
- **HEC 400** Advanced Textiles
- **DED 400** Mass Merchandising
- **HEC 406** Tailoring
- **HEC 504** Soc./Psych. Asp. of Clothing

**Total: 36 Credit Hours**
<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No. Course Title</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 475</td>
<td>Internship</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Prerequisite HEC 375 and Departmental approval)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CURRICULAR REQUIREMENTS—25 Hrs.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 107</td>
<td>Chemistry*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 102</td>
<td>Technical Communications*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 102</td>
<td>Computer Usage</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACTY 210</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td><strong>GENERAL EDUCATION—25 Hrs.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Courses with * meet General Education requirements for 10 hours.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AREA I</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>AREA II</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>AREA III</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AREA IV</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Additional Electives (Arts and Sciences)</td>
<td>5 hrs.</td>
<td>2</td>
<td>3</td>
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<tr>
<td><strong>PHYSICAL EDUCATION—2 Hrs.</strong></td>
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<td>1</td>
<td>1</td>
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<tr>
<td><strong>ELECTIVES—29 Hrs.</strong></td>
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<td>3</td>
<td>3 6 3 4 7</td>
</tr>
</tbody>
</table>
| Total for Graduation—122 Hrs. | | 16 15 15 15 15 15 15 15 15 15 14

**Interiors and Housing**

(Bachelor of Science Degree)

This curriculum is offered to the student who desires to pursue a career in residential and commercial interior design, home furnishings, building products marketing, as well as the interior design aspect of the building construction field and the field of real estate.

Counselor: Ms. Alice Kavanaugh

**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 4 years:

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No. Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 361</td>
<td>Period Interiors II</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 375</td>
<td>Coordinated Field Exp.</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 420</td>
<td>Display Fundamentals</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 440</td>
<td>Residential Design</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 445</td>
<td>Contract Design</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 460</td>
<td>Creative Interiors</td>
<td></td>
<td>3</td>
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<tr>
<td><strong>RELATED CURRICULUM REQUIREMENTS—30 Hrs.</strong></td>
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</tr>
<tr>
<td>ECON 201*</td>
<td>Principles of Economics</td>
<td>3</td>
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</tr>
<tr>
<td>IEGM 140</td>
<td>Interior Design Drafting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 221*</td>
<td>History of Art</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 240</td>
<td>Housing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 242</td>
<td>Interior Design Graphics I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 243</td>
<td>Interior Design Graphics II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>GROUP A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 102*</td>
<td>Technical Communications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BED 142*</td>
<td>Informational Writing</td>
<td>3</td>
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<tr>
<td><strong>GROUP B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS 104</td>
<td>Business and Professional Speech</td>
<td></td>
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</tr>
<tr>
<td>CAS 170</td>
<td>Interpersonal Communication I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>GROUP C</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MGMT 250</td>
<td>Small Business Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Principles of Management</td>
<td></td>
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<tr>
<td><strong>GENERAL EDUCATION—31 Hrs.</strong></td>
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</tr>
<tr>
<td></td>
<td>Courses with * meet 9 hours of 40-hour requirement.</td>
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</tr>
<tr>
<td>AREA I</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>AREA II</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>AREA III</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>AREA IV</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>AREA V</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>PHYSICAL EDUCATION—2 Hrs. (Required)</strong></td>
<td></td>
<td>1</td>
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</tr>
<tr>
<td><strong>ELECTIVES—20 Hrs.</strong></td>
<td></td>
<td>3</td>
<td>3 3 3 8</td>
</tr>
<tr>
<td>Total for Graduation—122 Hrs.</td>
<td></td>
<td>16 15 15 15 15 15 15 15 14</td>
<td></td>
</tr>
</tbody>
</table>
Textile and Apparel Technology

This curriculum is designed for students interested in pursuing careers in the creative, protective and functional, and communicative aspects of clothing and textiles.

Students will develop a direction for this curriculum through the selection of additional electives from options listed below in consultation with a department advisor.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>DEPARTMENT COURSES—37 hrs.</td>
<td></td>
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<td>Credit Hours</td>
</tr>
<tr>
<td>HEC 100</td>
<td></td>
<td>Design Principles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 104</td>
<td></td>
<td>Clothing Construction</td>
<td>3</td>
</tr>
<tr>
<td>HEC 199</td>
<td></td>
<td>Career Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HEC 200</td>
<td></td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 204</td>
<td></td>
<td>Selection &amp; Construction of Family Clothing</td>
<td>3</td>
</tr>
<tr>
<td>HEC 216</td>
<td></td>
<td>Topics in Clothing/Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 302</td>
<td></td>
<td>Flat Pattern Design</td>
<td>2</td>
</tr>
<tr>
<td>HEC 305</td>
<td></td>
<td>Experimental Clothing</td>
<td>3</td>
</tr>
<tr>
<td>HEC 306</td>
<td></td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td>HEC 308</td>
<td></td>
<td>American Costume</td>
<td>3</td>
</tr>
<tr>
<td>HEC 316</td>
<td></td>
<td>Dressmaker Tailoring -or-</td>
<td>3</td>
</tr>
<tr>
<td>HEC 406</td>
<td></td>
<td>Tailoring</td>
<td>3</td>
</tr>
<tr>
<td>HEC 352</td>
<td></td>
<td>Consumer Education</td>
<td>3</td>
</tr>
<tr>
<td>HEC 400</td>
<td></td>
<td>Advanced Textiles</td>
<td>2</td>
</tr>
<tr>
<td>HEC 504</td>
<td></td>
<td>Social &amp; Psychological Aspects of Clothing</td>
<td>2</td>
</tr>
</tbody>
</table>

The following OPTION and ELECTIVES may be planned with advisor.

OPTIONS—15-20 hours (in addition to above)

A. Functional and Environmental
   Clothing—Emphasizes the study of the physical limitations of aged or handicapped persons and the design of attractive clothing that is easily manipulated. Additionally, this option would explore the aspects of clothing essential to job and sport safety and environmental protection.

B. Clothing and Communication—Emphasizes the communicative factors involved in the preparation of written and visual materials to promote the industry's offerings to the producer of home or manufactured apparel.

C. Fashion Design—Emphasizes the creative and artistic approach to clothing design. Students will design and execute garments appropriate to meet the needs of society.

RECOMMENDED DEPARTMENT ELECTIVES—12-23 hours

| HEC 216                         |           | Topics in Clothing/Textiles        | 1-3               |
| HEC 300                         |           | Textiles for Interiors             | 3                 |
| HEC 302                         |           | Flat Pattern Design                | 2                 |

Dietetics
Bachelor of Science Degree

A student completing a Bachelor of Science in Dietetics is eligible to apply 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 such as restaurants, hotels, airlines, and industrial feeding. Other areas open are school cafeterias, community nutrition positions and food service in the armed forces.

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 4 years:

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Credit Hours</td>
</tr>
<tr>
<td>HEC 100</td>
<td></td>
<td>Economics*</td>
<td>3</td>
</tr>
<tr>
<td>HEC 104</td>
<td></td>
<td>Experimental Clothing</td>
<td>3</td>
</tr>
<tr>
<td>HEC 199</td>
<td></td>
<td>Fashion Promotion</td>
<td>3</td>
</tr>
<tr>
<td>HEC 401</td>
<td></td>
<td>Fashion Analysis</td>
<td>2</td>
</tr>
<tr>
<td>HEC 405</td>
<td></td>
<td>Travel/Study Seminar</td>
<td>1-4</td>
</tr>
<tr>
<td>HEC 420</td>
<td></td>
<td>Display</td>
<td>3</td>
</tr>
</tbody>
</table>

REQUIRED RELATED COURSES—16 hours

| ECON 100                        |           | Economics*                        | 3                 |
| CHEM 107                        |           | Chemistry*                        | 4                 |
| CAS 170                         |           | Interpersonal Communication*       | 3                 |
| PSY 194                         |           | General Psychology*                | 3                 |
| SOC 200                         |           | Principles of Sociology*           | 3                 |

GENERAL EDUCATION—19 hours

| AREA I                          |           |                                   | 3                 |
| AREA II                         |           |                                   | 3                 |
| AREA III                        |           |                                   | 3                 |
| AREA IV                         |           |                                   | 4                 |
| AREA V                          |           |                                   | 3                 |

PHYSICAL EDUCATION—2 hours

| PHYSICAL EDUCATION—            |           |                                   | 2                 |
|                                 |           |                                   | 1                 |

ELECTIVES—43 hours

| (Included above)                |           |                                   | 3                 |
|                                 |           |                                   | 3                 |
|                                 |           |                                   | 9                 |
|                                 |           |                                   | 7                 |
|                                 |           |                                   | 3                 |
|                                 |           |                                   | 4                 |
|                                 |           |                                   | 14                |

Total for Graduation—122 hours

| HOME ECONOMICS                 |           |                                   | 15                |
|                                 |           |                                   | 15                |
|                                 |           |                                   | 15                |
|                                 |           |                                   | 15                |
|                                 |           |                                   | 15                |
|                                 |           |                                   | 16                |

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
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<tr>
<td></td>
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<td></td>
<td>Credit Hours</td>
</tr>
<tr>
<td>HEC 140</td>
<td></td>
<td>Food Science Principles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 210</td>
<td></td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HEC 302</td>
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<td>Elective</td>
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</table>

DEPARTMENT COURSES—30 Hrs.
**Course**  
Dept. No. Course Title  

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<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HEC 312</td>
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<td>4</td>
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<tr>
<td>HEC 312</td>
<td>Quantity Foods</td>
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<tr>
<td>HEC 409</td>
<td>Advanced Nutrition</td>
<td>3</td>
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<tr>
<td>HEC 410</td>
<td>Diet and Disease</td>
<td>4</td>
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<tr>
<td>HEC 412</td>
<td>Community Nutrition</td>
<td>3</td>
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<td>HEC 416</td>
<td>Institutional Management</td>
<td>3</td>
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<tr>
<td>HEC 418</td>
<td>Advanced and Experimental Foods</td>
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</table>

**MINOR COURSES**

See advisor for mixed science minor slip.

**RELATED COURSES—34 Hrs.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH 111</td>
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<tr>
<td>Algebra II*</td>
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<tr>
<td>IEGM 102</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Technical Communications*</td>
<td>3</td>
<td>..</td>
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<tr>
<td>MGMT 102</td>
<td>3</td>
<td>..</td>
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<tr>
<td>Computer Usage</td>
<td>3</td>
<td>..</td>
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<tr>
<td>CAS 170</td>
<td>3</td>
<td>..</td>
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<tr>
<td>Interpersonal Communication I</td>
<td>3</td>
<td>..</td>
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<tr>
<td>PSY 194</td>
<td>3</td>
<td>..</td>
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<tr>
<td>Introduction to Psychology*</td>
<td>3</td>
<td>..</td>
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<tr>
<td>SOC 200</td>
<td>3</td>
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<tr>
<td>Principles of Sociology*</td>
<td>3</td>
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<tr>
<td>ECON 201</td>
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<td>Principles of Economics*</td>
<td>3</td>
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<tr>
<td>ANTH 220</td>
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<td>..</td>
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<tr>
<td>Cultural Anthropology*</td>
<td>3</td>
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<td>TEED 250</td>
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<tr>
<td>Human Development and Learning</td>
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<td>MGMT 352</td>
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<tr>
<td>Personnel Management</td>
<td>4</td>
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<tr>
<td>ANTH 531</td>
<td>4</td>
<td>..</td>
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<tr>
<td>Medical Anthropology (or)</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>ECON 419</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Political Economics of Foods and Nutrition</td>
<td>3</td>
<td>..</td>
</tr>
</tbody>
</table>

**SCIENCE—26 Hrs.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 101</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>or 102 General Chemistry I</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>BIOL 101</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>Animal Biology</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>CHEM 120</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>General Chemistry II</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>BMED 240</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>Human Physiology*</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>CHEM 365</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>BMED 230</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Microbiology and Man*</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>CHEM 450</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>3</td>
<td>..</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION—11 Hrs.**

Courses with * meet General Education Requirements  
Additional Electives—5 Hrs. from College of Arts and Sciences  

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>Design Principles</td>
<td>5</td>
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</tr>
<tr>
<td>MGMT 250</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>Small Bus. Mgmt.</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>HEC 352</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>Consumer Education</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>HEC 409</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>Adv. Nutrition</td>
<td>5</td>
<td>..</td>
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<tr>
<td>HEC 410</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>Diet &amp; Disease</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>HEC 412</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td>Community Nutrition</td>
<td>5</td>
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</tr>
</tbody>
</table>

**PHYSICAL EDUCATION—2 Hrs.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100</td>
<td>1</td>
<td>..</td>
</tr>
<tr>
<td>Design Principles</td>
<td>1</td>
<td>..</td>
</tr>
</tbody>
</table>

**ELECTIVES—19 Hrs.**

Total for Graduation—122 Hrs.

**Food Service Administration**

Bachelor of Science Degree

This option is scientifically oriented for in-depth 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.

**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 4 years:

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 140</td>
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<tr>
<td>Food Science Principles</td>
<td>3</td>
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</tr>
<tr>
<td>HEC 199</td>
<td>3</td>
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<tr>
<td>Career Seminar</td>
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<tr>
<td>HEC 210</td>
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<tr>
<td>Nutrition</td>
<td>3</td>
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<tr>
<td>HEC 214</td>
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<td>..</td>
</tr>
<tr>
<td>Microwave</td>
<td>1</td>
<td>..</td>
</tr>
<tr>
<td>HEC 214</td>
<td>1</td>
<td>..</td>
</tr>
<tr>
<td>Catering</td>
<td>1</td>
<td>..</td>
</tr>
<tr>
<td>HEC 240</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Meal Management</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>HEC 312</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>Quantity Foods</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>HEC 318</td>
<td>2</td>
<td>..</td>
</tr>
<tr>
<td>Food Service Equipment</td>
<td>2</td>
<td>..</td>
</tr>
<tr>
<td>HEC 375</td>
<td>2</td>
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<tr>
<td>Coordinated Field Experience</td>
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<td>..</td>
</tr>
<tr>
<td>HEC 416</td>
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<td>..</td>
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<tr>
<td>Institutional Management</td>
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<tr>
<td>HEC 418</td>
<td>4</td>
<td>..</td>
</tr>
<tr>
<td>Advanced and Experimental Foods</td>
<td>4</td>
<td>..</td>
</tr>
</tbody>
</table>

**CHOOSE SIX HOURS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Design Principles</td>
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</tr>
<tr>
<td>MGMT 250</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Small Bus. Mgmt.</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>HEC 352</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Consumer Education</td>
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<td>3</td>
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<tr>
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</tr>
<tr>
<td>HEC 410</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Diet &amp; Disease</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>HEC 412</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Community Nutrition</td>
<td>3</td>
<td>..</td>
</tr>
</tbody>
</table>

**CURRICULUM REQUIREMENTS—44 Hrs.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 220*</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Cultural Anthropology</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>BED 142*</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Informational Writing</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>BIOL 101*</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>or BIOMED 112</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>BMED 230</td>
<td>3</td>
<td>..</td>
</tr>
<tr>
<td>Microbiology and Man</td>
<td>3</td>
<td>..</td>
</tr>
</tbody>
</table>
### Home Economics Teacher Education

**Bachelor of Science Degree**

Western Michigan University prepares students to qualify as teachers of Vocational Home Economics in Michigan under the provisions of the state plan for vocational education. Courses are planned in the department for a major in Home Economics and minor outside the curriculum or Family Life Education or Food Service Management 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 consumer-homemaking programs in Michigan Public Schools.

**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 4 years:

---

**DEPARTMENT COURSES—25 hours**

- **HEC 120** Transitions to Adulthood 3
- **HEC 212** Food for Man 3
- **HEC 220** Human Sexuality 3
- **HEC 254** Human Growth and Development 4
- **HEC 298** Mate Selection and Marriage 3
- **HEC 352** Consumer Education 3
- **HEC 395** Parenting 3
- **HEC 480** Family in Maturity 3

**RELATED COURSES—11 hours**

- **BAS 314** The Black Community 3
- **SOC 122** Death, Dying and Bereavement 3
- **SOC 190** Men & Women in Contemporary Society 3

**GENERAL EDUCATION—37 hours**

Courses with * account for 15 hours

- **AREA I** 4
- **AREA II** 3
- **AREA III** 3
- **AREA IV** 4
- **AREA V** 5

**PHYSICAL EDUCATION—2 hours**

- **ELECTIVES—23 hours**

**Total for Graduation—122 Hrs.**

16 15 16 15 16 15 15 15 15

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**The Family and Individual Relationships Curriculum**

The Family and Individual curriculum is an interdisciplinary program designed with flexibility to meet individual needs and goals. This program is also intended for those desiring to pursue a Master's degree program in Home Economics, Counseling and other related fields.

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

---

**DEPARTMENT COURSES—25 hours**

- **HEC 120** Transitions to Adulthood 3
- **HEC 212** Food for Man 3
- **HEC 220** Human Sexuality 3
- **HEC 254** Human Growth and Development 4
- **HEC 298** Mate Selection and Marriage 3
- **HEC 352** Consumer Education 3
- **HEC 395** Parenting 3
- **HEC 480** Family in Maturity 3

**RELATED COURSES—11 hours**

- **BAS 314** The Black Community 3
- **SOC 122** Death, Dying and Bereavement 3
- **SOC 190** Men & Women in Contemporary Society 3

**GENERAL EDUCATION—14 Hrs.**

Courses with * account for 26 of 40 hour requirement.

- **AREA I** 3
- **AREA II** 4

**PHYSICAL EDUCATION—2 Hrs.**

- **ELECTIVES—29 Hrs.**

**Total for Graduation—122 Hrs.**

15 14 16 16 16 15 15 15

---

**The Family and Individual Relationships Curriculum**

The Family and Individual curriculum is an interdisciplinary program designed with flexibility to meet individual needs and goals. This program is also intended for those desiring to pursue a Master's degree program in Home Economics, Counseling and other related fields.

Candidates for the Bachelor of Science degree must complete the following study program.
### Occupational Foods Minor

**24 Semester Hours**

Students selecting this minor will be prepared to teach courses in the Occupational Food Service Cluster.

A. Designed primarily for those without previous teaching experience.

1. Complete a group minor (24 semester hours) in Food Service composed of the following courses (*No credit if part of major):

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science Principles</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>Occupational Education (Food Services)</td>
<td>2</td>
</tr>
<tr>
<td>Coordinated Field Experience (see below)</td>
<td></td>
</tr>
<tr>
<td>Institutional Management</td>
<td>3</td>
</tr>
<tr>
<td>Readings in Home Economics (Foods)</td>
<td>2</td>
</tr>
</tbody>
</table>

E elective courses to complete total of 24 semester hours:

1. Accounting Concepts and Application                     | ACTY 201 | 3
2. Personnel Management                                    | MGMT 352 | 3
3. Economics                                               | ECON 201 | 3
5. Introduction to General Psychology                       | PSY 190  | 3
6. Principles of Sociology                                  | SOCI 200 | 3
7. Coordination Techniques in Cooperative Education         | DED 573  | 3

B. Designed primarily for those who have had previous teaching experience.

1. Complete a food services minor (20 hrs.) composed of the following courses (**May be completed by passing occupational competency examination in food management area):

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Education (Food Services)</td>
<td>2</td>
</tr>
<tr>
<td>Occupational Lab Exper-Food Services</td>
<td></td>
</tr>
<tr>
<td>Readings in Home Economics</td>
<td>2</td>
</tr>
<tr>
<td>Food Science Principles</td>
<td>2</td>
</tr>
<tr>
<td>Foods for Man</td>
<td>3**</td>
</tr>
<tr>
<td>Quantity Foods</td>
<td>4**</td>
</tr>
<tr>
<td>Institutional Management</td>
<td>3**</td>
</tr>
</tbody>
</table>

2. Completion of two years of relevant work experience in the food service area of industry for a total of 4,000 clock hours. An equivalent of 2,000 clock hours may be earned in a planned, supervised cooperative work experience program sponsored by the University. (HEC 375)

### Clothing/Textiles Minor*

(*Home Economics majors are not eligible for this minor.)

The Clothing/Textiles non-teachable minor is offered for the benefit of those students majoring in curricula outside the Home Economics Department. The minor consists of 18 hours planned with advisor. Minor slip required.

Counselor: Ms. Alice Kavanaugh

### General Home Economics Minor

The General Home Economics minor is open to students from other curricula for a 24 semester hour, non-teachable minor planned with advisor. Minor slip required.
Family Life Education Minor*
(*All transfer students should see a Family Life advisor regarding transfer credits.)
This 24 hour teaching minor 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.
Counselors: Phyllis Seabolt, Isabelle Smith, Darrell Thomas
Note: Minor slip required. Obtain from Home Economics Department Office, Room 3019, I & ET Bldg.

Required courses 18-19 hrs.
HEC 120 Transition to Adulthood 3
HEC 220 Sex Education—An Introduction to Human Sexuality 3
HEC 254 Human Growth and Development 4
A. TEED students may substitute HEC 120 or HEC 515
B. HEE majors will substitute HEC 120
HEC 298 Mate Selection & Marriage 3
A. HEE majors will substitute an additional elective of 3 S.H.
HEC 450 Teaching Sex Education in the Schools 3
HEC 480 Marriage and Family in Maturity 3

Electives Minimum 5-6 hrs.
ANTH 220 Introduction to Cultural Anthropology 3
BIOL 101 Animal Biology 4
BIOL 240 Human Physiology 4
BIOL 205 The Human Body in Health and Disease 4
BAS 214 The Black Community 3
BAS 320 Ecology and the Black Community 3
CAS 170 Interpersonal Communication I 3
CAS 236 Social Issues and Action Laboratory 1
CAS 570 Studies in Communications 3
CP 580 Principles and Philosophy of Guidance 2
HEC 120 Transitions to Adulthood 3
HEC 212 Food for Man (not for HEC majors) 3
IEGM 240 Housing 3
HEC 352 Consumer Education 3
HEC 375 Coordinated Field Experience V
HEC 504 The Socio-Psychological Aspects of Clothing 2
HEC 515 Marriage and Family in Maturity 3
PSY 194 General Psychology 3
PSY 160 Child Psychology 3
PSY 210 Advanced General Psychology 3
PHIL 201 Introduction to Ethics 4
SOC 200 Principles of Sociology 3
SOC 210 Modern Social Problems 3
SOC 320 Introduction to Social Psychology 3
TEED 508 Parent Education 2
TEED 535 Introduction to Teaching the Disadvantaged 3
TEED 544 Alcohol Education 2
TEED 560 Practicum: Sociological and Psychological Foundation of Teaching the Disadvantaged 2

Interior Design Minor—Non-Departmental Major*
24 Hours
(*A methods course is required in either the major or minor.)
The Interior Design minor is offered to benefit those students outside the Department of Home Economics who wish to develop an expertise in home furnishings, housing, and related areas.

Required courses 24 hrs.
HEC 100 Design Principles 3
HEC 200 Textiles 3
IEGM 140 Drafting for Interior Designers 3
IEGM 242 Interior Design Graphics 3
HEC 360 Period Interiors I 3
HEC 361 Period Interiors II 3
HEC 440 Residential Design 3
HEC 445 Contract Design 3

Also Recommended
HEC 420 Display Fundamentals 3

Course Descriptions
(Courses described in italics are approved for General Education)
Numbers following course title indicate hours of lecture and laboratory per week during each semester (lecture hours-laboratory hours).

100 Design Principles (1-3) 3 hrs. Fall, Winter
Presentation, study and application of the principles of design.

102 Construction Techniques (1-3) 3 hrs. Fall, Winter
Evaluation of basic techniques of construction important in the fashion industry. Prerequisite for HEC 216 only.

104 Clothing Construction (1-3) 3 hrs. Fall, Winter
Basic construction techniques, pattern alterations, fitting and design as related to the individual construction of garment.

106 Introduction to Fashion Merchandising (3-0) 3 hrs. Fall, Winter
Principles of merchandise selection, sources of buying information, responsibilities of buyers in various types of firms, trends and consumer activity in apparel and non-apparel fashions.

112 Food and Asian Culture (1-2) 2 hrs. Fall, Winter
Interdisciplinary introduction to Asian food and culture.

116 Family Foods (Supermarket) (2-0) 2 hrs. Fall, Winter
Foods processing, marketing, and use in the home, and the basic principles of nutrition. Food distribution majors only.

120 Transitions to Adulthood (3-0) 3 hrs. Fall, Winter
A study of interpersonal relationships, physical and emotional development of the person in early and later adolescence.

140 Food Science Principles (2-2) 3 hrs. Fall, Winter
Relationship of food science principles to food preparation techniques. Prerequisite: CHEM 101.

Interior Design Minor—Non-Teachable—
18 Hours
The Interior Design minor is offered for Fashion Merchandising students who desire minimal acquaintances with home furnishings, housing, and related areas.

Required courses 18 hrs.
IEGM 140 Drafting for Interior Designers 3
IEGM 242 Interior Design Graphics 3
HEC 360 Period Interiors I 3
HEC 361 Period Interiors II 3
HEC 440 Residential Design 3
HEC 445 Contract Design 3
298 Mate Selection and Marriage (3-0)
3 hrs. Fall, Winter, Spring
Exploration of research, literature, and practical issues involved in love, mate selection and marriage.

300 Textiles for Interiors (3-0)
3 hrs. Fall
Application of basic textiles principles for evaluation and analysis of interior textile products with regard to quality, selection, performance and maintenance for home and office. Prerequisite: HEC 200.

302 Flat Pattern Design (0-4)
2 hrs. Winter
A study of the drafting techniques employed in the flat pattern method for designing clothing. Can be repeated once. Prerequisite: HEC 104 and 204 or 305.

305 Experimental Clothing Techniques (1-3)
3 hrs. Fall
Experiences in clothing construction with emphasis on special problems relative to varied fabrics and design. Can be repeated once. Prerequisite: HEC 104.

306 History of Costume (3-0)
3 hrs. Fall, Winter
Survey of the development of costume from primitive people through the nineteenth century with its application to contemporary dress.

308 American Costume (3-0)
3 hrs. Winter
Survey of the design and development of American costume from the colonization to present day.

309 Promotion and Coordination (3-0)
3 hrs. Fall, Winter
Principles and techniques important in presenting fashion products. Prerequisite: HEC 100 and 106.

312 Quantity Foods (2-4)
4 hrs. Winter
Quantity foods preparation in a residence hall kitchen and the school lunchroom, including quantity food purchasing techniques. Prerequisite: HEC 140, 210.

316 Dressmaker Tailoring (1-3)
3 hrs. Winter
Construction of tailored garments using time-saving methods. A minimum of two garments will be completed. Prerequisite: HEC 104, 204 or 305, or consent of instructor.

318 Food Service Equipment (2-0)
2 hrs. Fall, Alt. Yrs. Beg. 1979
Gain an understanding of quantity food service, equipment specifications, and purchasing procedures. Prerequisite: HEC 312.

340 Teaching of Home Economics (4-0)
4 hrs. Fall, Winter
Designed to acquaint students with the teaching field of Home Economics, philosophy of Home Economics Education, observations, unit planning, effective teaching materials as a basis for special methods, and student teaching. Organization of homemaking departments, developing home experiences programs, and methods of teaching for junior and senior high schools and adult homemaking classes. Prerequisite: HEC 254 and TEED 301.

341 Occupational Education in Home Economics (2-0)
2 hrs. Fall
348 Mainstreaming in Home Economics (2-0)
2 hrs. Winter
Teaching techniques and strategies important in integrating the special needs of students in the secondary home economics classroom. Prerequisite: HEC 340.

350 Interiors (3-0)
3 hrs. Fall, Winter
Basic study of the elements and principles of furnishing interiors. Prerequisite: HEC 100 or permission of instructor.

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

360 Period Interiors I (3-0)
3 hrs. Fall
Influences and characteristics of historical interiors and exteriors from antiquity up to Victorian. Prerequisite: HEC 100.

361 Period Interiors II (3-0)
3 hrs. Winter
Influences and characteristics of historical interiors and exteriors from Victorian through contemporary. Prerequisite: HEC 100.

375 Coordinated Field Experience
2-4 hrs. Fall, Winter, Spring, Summer
Field experience under the supervision of the Home Economics Department and cooperating organizations. A statement of objectives, written materials and a performance appraisal will be required. May be repeated for a maximum of six semester hours credit. Majors only.

395 Effective Parenting (3-0)
3 hrs. Fall
Preparation for parenthood; study of the relationships between the child, his development, the process of parental development, school, and family relationships. (Special attention to the systems theory as it applies to the family.)

400 Advanced Textiles (2-0)
2 hrs. Winter
An in-depth study of man-made fibers with consideration of recent developments, new construction techniques and finishes, opportunity for individual investigation and research. Prerequisite: HEC 200.

401 Fashion Analysis (1-3)
3 hrs. Fall, Winter
Elements comprising the total fashion appearance requisite to vocational preparation for men and women in Fashion Merchandising. Prerequisites: FAS major, senior.

405 Travel/Study Seminar
1-4 hrs. Winter, Spring
Student participation in departmentally sponsored travel/study program in U.S. and/or abroad; written assignments and planned itinerary. Maximum 2-3 foreign, 1-2 domestic, not to exceed 4 in total. Prerequisite: Department Approval.

406 Tailoring (1-3)
3 hrs. Fall, Even Years
Principles and practices involved in the custom method of constructing, finishing, and pressing wool tailored suits and coats. Prerequisites: HEC 104, 304, or 305.

409 Advanced Nutrition (3-0)
3 hrs. Fall
Recent developments in nutrition through readings and experiences. Prerequisite: HEC 210, BMED 240, CHEM 365.

410 Diet and Disease (4-0)
4 hrs. Winter
Study of the dietetic treatment of impaired digestive and metabolic condition. Planning of diets and reports of current research. Prerequisite: HEC 409. Dietetics major or consent of instructor.

412 Community Nutrition (2-2)
3 hrs. Fall
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: HEC 312, 410. Dietetics majors.

414 Home Management and Equipment (3-0)
3 hrs. Winter
A study of principles, functions, care and application of home equipment as related to theory and principles of home management.

416 Institutional Management (3-0)
3 hrs. Winter
Institutional administration, job analysis, labor policies, personnel problems and cost control in different types of food-service institutions. Prerequisite: HEC 210.

418 Advanced and Experimental Foods (2-4)
4 hrs. Fall
Concentrated study of principles of food preparation, development of experimental techniques and opportunities of individual studies. Prerequisite: CHEM 101, HEC 140.

420 Display Fundamentals (3-0)
3 hrs. Fall, Winter
Specific development of display fundamentals in composition, lighting, color, signing, motion, ideas, organization and management, installation, budget, tools, props, materials, mannequins, store planning, point of purchase, exhibits, showrooms and special promotion. Prerequisite: HEC 100.

440 Residential Design (1-3)
3 hrs. Winter
The preparation of renderings and purchasing data for residential work. Prerequisites: HEC 100, 300, 351, IEGM 240, 242.

445 Contract Design (1-3)
3 hrs. Fall
Analysis and process of space planning, design presentation alternates, and developing a purchasing procedure. Prerequisite: HEC 440.

450 Teaching Sex Education in the School (3-0)
3 hrs. Fall, Winter, Spring
Problems of establishing a sex education program in the school program with focus upon methods, materials and curriculum development at various grade levels. Prerequisite: HEC 220, or approval of the instructor.

460 Creative Interiors (1-3)
3 hrs. Winter
Investigation and execution of special problems in the field of interior design. Prerequisite: HEC 445.

475 Internship
6 hrs. Fall, Winter, Spring, Summer
Off campus supervised field experience with merchandising establishments. Prerequisite: FAS seniors only.

480 Marriage and Family in Maturity (3-0)
3 hrs. Winter—Odd Years
Marital and family interaction in middle and later years.
Industrial Education

John L. Feirer, Chair
Wayne A. Accardi
Michael B. Atkins
John L. Bendix
Phillip L. Bruce
Arvon D. Bye
Dennis Darling
Wallace F. Fillingham
Rex E. Hall
Gilbert R. Hutchings
Gordon O. Johnson
Waldemar E. Klammer
John R. Lindbeck
Erwin W. Rayford
Charles G. Risher
Walter Schwesinske
James L. Ulmer

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. Individuals must have a minimum of two-years relevant work experience. Students may enroll in a cooperative industrial program to secure the occupational experience or pass an appropriate competency examination.

3. Printing Management/Marketing is designed to prepare graduates for middle level management or sales positions in the graphic arts industries. Students may select either the management or marketing option.

4. The Industrial Technology Curriculum is a technology oriented curriculum built upon a balanced program of studies drawn from a variety of disciplines related to industry. Included are a sound knowledge and understanding of materials, production processes and principles of distribution and industrial practices. The development of technical skills along with a well-rounded general education will permit the graduate to cope with technical and production problems of industry.

5. Construction Supervision and Management curriculum prepares individuals to work in Residential and Light Commercial Construction Industries and related areas; such as, material suppliers, trade organizations and building code enforcement. Emphasis is placed on practical application as well as construction theory. The areas included are Construction Practices, Mechanical Systems, Supervision and Management Techniques, and Business Operation.

6. Other options

a. The Manual Arts Therapy curriculum is designed to prepare the Industrial Education student to work in the fields of mental and physical rehabilitation. Through an affiliation with the Veteran’s Administration Hospitals in Chicago and Battle Creek, clinical training is provided in place of directed teaching in the teacher education curriculum.

b. 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 and IED 344).
Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangement has been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided. Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Vocational Certification

Individuals desiring Vocational Certification in a technical area must complete the requirements for a degree and possess two-years relevant work experience in the technical major or minor area. 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. The graduate may obtain Vocational Certification upon fulfillment of work experience requirements and have a minor in area to be taught.

Counseling

Students interested in any of the above programs should contact the College of Applied Sciences' Counseling Office: (616) 383-0545. 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 any of the Industrial Education Department programs. To facilitate the transfer of credit, 2 + 2 programs have been established in Industrial Technology and suggested programs in Industrial Education are provided by most of the community colleges.

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. There are many opportunities for employment in business and industry for students prepared in a specific technical area.

Industrial Education Curriculum

Bachelor of Science Degree

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Minimum hours required for this curriculum</td>
<td>122 hrs.</td>
</tr>
<tr>
<td>B. General Education Requirements</td>
<td>40 hrs.</td>
</tr>
<tr>
<td>C. Technical Major in one of the following areas</td>
<td>30 hrs.</td>
</tr>
<tr>
<td>General Industrial Arts</td>
<td>30 hrs.</td>
</tr>
<tr>
<td>Drafting</td>
<td></td>
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<tr>
<td>Electricity-Electronics</td>
<td></td>
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<tr>
<td>Graphic Arts</td>
<td></td>
</tr>
<tr>
<td>Metalworking</td>
<td></td>
</tr>
<tr>
<td>Plastics (Minor only)</td>
<td></td>
</tr>
<tr>
<td>Power-Automotives</td>
<td></td>
</tr>
<tr>
<td>Woodworking</td>
<td></td>
</tr>
<tr>
<td>D. Technical Minor in any one of the above areas other than the major</td>
<td>20 hrs.</td>
</tr>
</tbody>
</table>

E. Professional Education Courses | 21 hrs. |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>ED 200 Human Development and Learning</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>ED 401 Seminar in Education</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>ED 450 School and Society</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>ED 470 Directed Teaching*</td>
<td>9 hrs.</td>
</tr>
</tbody>
</table>

F. Professional Industrial Education Courses | 6 hrs. |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>I ED 342 Course Construction</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>I ED 344 Teaching of Ind. Ed.</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

G. Physical Education | 2 hrs. |

Industrial Technology Curriculum

Bachelor of Science Degree

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<tr>
<td>B. General Education Requirements</td>
<td>40 hrs.</td>
</tr>
<tr>
<td>C. Technical specialty in one of the following areas</td>
<td>30-35 hrs.</td>
</tr>
<tr>
<td>Architectural Drafting</td>
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<tr>
<td>Building Construction</td>
<td></td>
</tr>
<tr>
<td>Electricity/Electronics</td>
<td></td>
</tr>
<tr>
<td>General Industry</td>
<td></td>
</tr>
<tr>
<td>Metal Manufacturing</td>
<td></td>
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<tr>
<td>Plastics</td>
<td></td>
</tr>
<tr>
<td>Power/Energy</td>
<td></td>
</tr>
<tr>
<td>Printing</td>
<td></td>
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<tr>
<td>Wood Manufacturing</td>
<td></td>
</tr>
<tr>
<td>E. Administration, Business, Manufacturing</td>
<td>15-20 hrs.</td>
</tr>
<tr>
<td>F. Written Communications—ENG 105, IEGM 102, or BUS 142</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>G. Mathematics—MATH 110-111 &amp; 101 or equivalent</td>
<td>8 hrs.</td>
</tr>
<tr>
<td>H. Science</td>
<td>4-8 hrs.</td>
</tr>
<tr>
<td>I. Physical Education</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>J. Electives</td>
<td>0-15 hrs.</td>
</tr>
</tbody>
</table>

Vocational-Technical Curriculum

Bachelor of Science Degree

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
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<tr>
<td>A. Minimum hours required for this curriculum</td>
<td>122 hrs.</td>
</tr>
<tr>
<td>B. Course Requirements</td>
<td>122 hrs.</td>
</tr>
<tr>
<td>1. General Education Requirements</td>
<td>40 hrs.</td>
</tr>
<tr>
<td>2. Mathematics (110, 111 &amp; 101 or equivalent)</td>
<td>8 hrs.</td>
</tr>
<tr>
<td>3. Technical Major in one of the following areas</td>
<td>30 hrs.</td>
</tr>
<tr>
<td>Drafting</td>
<td></td>
</tr>
<tr>
<td>Electricity/Electronics</td>
<td></td>
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<tr>
<td>Printing</td>
<td></td>
</tr>
<tr>
<td>Metalworking</td>
<td></td>
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<tr>
<td>Automechanics</td>
<td></td>
</tr>
<tr>
<td>Woodworking</td>
<td></td>
</tr>
<tr>
<td>4. Technical Minor in any one of the above areas other than the major</td>
<td>20 hrs.</td>
</tr>
<tr>
<td>5. Option I (Vocational-Industrial Education leading to Secondary Teaching Certificate)</td>
<td>27 hrs.</td>
</tr>
<tr>
<td>Professional Education Courses</td>
<td>18 hrs.</td>
</tr>
<tr>
<td>ED 200 Human Development and Learning</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>ED 301 Teaching and Learning</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>ED 410 Seminar in Education</td>
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<td>ED 470 Directed Teaching*</td>
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<tr>
<td>Professional Industrial Education Courses</td>
<td>9 hrs.</td>
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<tr>
<td>I ED 342 Course Construction</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>I ED 344 Teaching of Ind. Education</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

*Directed Teaching must be done in an approved vocational program.
6. Option II (Technical Education) without teaching certificate. ... 30 hrs.
IEGM 305 Work Analysis. ....... 3 None
IEGM 322 Safety in Industry .... 3 Upperclass
IEGM 326 Production Control .... 3 IEGM 100 or
MATH 260 or
MGMT 200
IEGM 328 Industrial Quality Control ....... 3 MATH 260 or
MGMT 200
IEGM 402 Supervision of Industrial Operations .... 3 Junior Standing
IEGM 403 Industrial Labor Relations .... 3 Senior Standing
D. Electives ................................ 10-11 hrs.
7. Physical Education .... 2 hrs.
C. Degree—Major consists of one of two options:
Vocational-Industrial Education (Certificate)
Technical Education (Non-Certificate)
Printing Management/Marketing Curriculum
Bachelor of Science Degree
Minimum hours required for this curriculum ... 122 hrs.
Core Courses 77 hrs.
A. General Education Requirements must be met ................................ 40 hrs.
(Includes 12 hours of courses required below)
B. Graphic Arts 35 hrs.
Course Hours Prerequisites
IED 150 Graphic Arts* .... 3 None
IED 152 Letterpress Presswork ... 3 IED 150
IED 250 Typographic Design ... 3 IED 150
IED 254 Machine Composition ... 3 IED 150
IED 350 Photolithographic Techniques .... 3 IED 150
IED 351 Lithographic Presswork ...... 3 IED 150
IED 450 Advanced Presswork ...... 3 IED 152, 351
IED 452 Estimating ... 3 Upperclass
IED 551 Halftone Photo Processes ... 3 IED 350
IED 552 Estimating ... 3 IED 452
IED 553 Printing Production Management ... 3 Senior Standing
PAPR 550 Paper Industry Processes ... 3 None
C. ECON 201 Principles of Economics ... 3 None
D. An Approved Writing Course** .... 3 None
E. Mathematics .................................................................................. 6 hrs.
MATH 110 Algebra I or equivalent .. 3 None
MATH 116 Finite Mathematics with Applications ... 3 MATH 110 or equivalent
F. Physical Education ........................................................................... 2 hrs.
Option I. Printing Management***
A. Core Courses .... 77 hrs.
B. General Business 15 hrs.
ACTY 201 Accounting Concepts & Applications ... 3 None
MGMT 200 Decision Making With Statistics ... 3 Math 116
MGMT 300 Fundamentals of Management ... 3 None
(MATH 201 recommended)
MGMT 102 Computer Usage ... 3 None
BED 261 COBOL ... 3 MGMT 102
C. Industrial Management 19-20 hrs.
IEGM 100 Introduction to Industry .. 3 None
IEGM 105 Industrial Calculations .... 1 MATH 110 or H.S. Trig.
Construction Supervision and Management
Bachelor of Science Degree
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 1 2 3 4 5 6 7 8 Semester
IEGM 100 General Woodworking ... 3 ... ... ... ... ... ...
IED 120 Survey of Drafting ... 3 ... ... ... ... ... ...
IED 200 Machine Woodwork ... 3 ... ... ... ... ... ...
IED 226 Industrial Graphics ... 3 ... ... ... ... ... ...
IED 305 Introduction to Building Practices ... 2 ... ... ... ... ... ...
IED 404 Concrete, Masonry, & Steel Const. Pract.** ... 3 ... ... ... ... ... ...
IED 506 Residential Building Construction ... 3 ... ... ... ... ... ...
IED 507 Finish Carpentry and Cabinetmaking ... 3 ... ... ... ... ... ...
IED 508 Related Building Trades ... 3 ... ... ... ... ... ...
IED 509 Estimating and Scheduling for B.C. ... 3 ... ... ... ... ... ...
### Course Descriptions
(Courses described in italics are approved for General Education.)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours). Courses will be offered during indicated semesters if warranted by student planning requests.

#### Drafting

**120 Survey of Drafting (1-5)**
3 hrs. Fall, Winter
A survey course in general technical drafting. Course content encompasses technical sketching, multiview drawing, sectional views, size description, developments, pictorial drawing, basic graphic analysis and technical design.

**226 Industrial Graphics (1-5)**
3 hrs. Fall, Winter
A study of industrial graphic practices and standards. Course content includes design sketching, view analysis, sections, primary and secondary auxiliaries, metric design, communication, dimensioning and tolerance specification, fasteners, pictorials and basic principles of descriptive geometry. New developments in standards and drafting are presented as they relate to industry. Prerequisite: IED 120 or equivalent.

**227 Technical Sketching (1-5)**
3 hrs. Winter
A study of freehand and mechanical methods of presentation drawing illustration. Primary consideration is given to isometric, dimetric, trimetric, oblique, angular and parallel perspective pictorials. Emphasis is placed on illustration techniques and media including shades and shadows, pencil and ink rendering, shading films, airbrush, and reproduction design consideration. Prerequisite: IED 120.

**326 Advanced Industrial Graphics (1-5)**
3 hrs. Fall
Advanced technical work for the specialist in drafting and design. Included are metric design production drawing, and applications of descriptive geometry, checking, mechanical component design, and computer graphics applications. Current developments in the field of drafting and their impact on industrial operation will be studied. Prerequisite: IED 226.

**520 Architectural Graphics (1-5)**
3 hrs. Fall, Winter
A graphic study of architectural plans and details of frame and masonry residential structures. Emphasis is placed on residential planning and design principles. Plans produced and studied include preliminary studies, floor plans, foundation plans, plot plans, electrical plans, elevations, and all necessary details and specifications for residential construction. Prerequisites: IED 120 or equivalent and IED 305 (can be taken simultaneously).

**522 Laboratory Practices in Drafting (1-3)**
2 hrs. Winter, Spring
Methods of planning for drafting operations. Emphasis is placed on a study of drafting media and equipment, accumulation of resource materials, review of reference standards, product and system design communication, drafting training methods and requirements, and independent study of specialty areas in drafting. Prerequisite: twelve hours credit in drafting and junior classification.

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*Four hours to be taken in the 300-500 level courses for Area I or Area II.
*ENG 105 or BED 142 or IEGM 102.
**To be taken Spring of Sophomore or Junior year.
The fundamentals of reproduction photography, darkroom composition methods and equipment will be stressed. Advantage, uses, limitations, and operation of photo processes, and to provide an introduction to the gravure and flexographic printing processes. Prerequisites: IED 152 and 351.

451 Printing Processes (1-3)
2 hrs. Fall
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 (3-0)
3 hrs. Fall
Study of methods used in estimating the price of printed matter before manufacture, and in the final pricing of that printed matter after manufacture. Prerequisite: Upperclass standing.

551 Halftone Photo Processes (1-5)
3 hrs. Winter
Emphasis on halftone reproduction and related photo techniques, posterization, duotones, basic color, and mechanical dropout will be included. Color separation processes will be investigated. Prerequisite: IED 350.

552 Estimating (2-0)
2 hrs. Winter
Continuation of Estimating 452. Special emphasis on use of printing industry production standards in pricing printed materials. Prerequisite: IED 452.

553 Printing Production Management (3-0)
3 hrs. Fall
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. Prerequisite: Junior standing.

Woodwork and Building Construction
100 General Woodworking (1-5)
3 hrs. Fall, Winter, Alternate Spring Beginning Spring 1977
A survey of woodworking with laboratory experiences and skill development and knowledge in planning and layout; lumber; purchasing lumber and plywood; methods of fastening; elementary finishing methods; and sizing stock and joinery, with hand tools; electric portable tools and machines.

200 Machine Woodwork (1-5)
3 hrs. Fall, Winter
Introduction to furniture design, construction, and finishing. Development of skills and knowledge on advanced joinery, using industrial machines and methods with discussion on the planning and purchasing of equipment. Prerequisite: IED 100.

201 Wood Finishing (1-3)
2 hrs. Winter
Finishing materials and their characteristics; equipment and methods of application; finishing schedules; and finishing characteristics of different species of wood. Prerequisites: IED 100 or IED 200.

300 Upholstering and Woodturning (1-5)
3 hrs. Fall
Mass production of frames and upholstering including springing, padding, and the application of the final cover. Skill development and knowledge in advanced techniques of woodturning including chucking, plug turning, mandrel turning, and special applications. Prerequisites: IED 100 and/or 200.
302 Wood and Related Materials for the Interior Designer (2-4)
3 hrs. Spring, Summer
This course is designed for interior design students as an introduction to woodworking materials, tools, and processes including related information and practical experience on both hand and machine tools. Information and experiences on residential building construction, upholstering and finishing techniques will also be included.

305 Introduction to Building Practices (1-2)
2 hrs. Fall, Winter
Basic structures, building materials, and techniques including surveying practices, blueprint reading, building and material specifications, estimating, national and local building codes, financing, utilities, and environmental control.

404 Concrete, Masonry and Steel Building Construction Practices (1-5)
3 hrs. Spring Alt. Years Beg. 1980
Covers areas relating to the use of concrete, brick, block and stone masonry, fireplaces, ceramic tile, and steel in the construction of residential and light commercial buildings. Prerequisite: IED 305.

500 Furniture Production (1-3)
2 hrs. Fall
Production of furniture, including the development of tooling and jigs and fixture design for mass production of a piece of furniture. Students will match the veneers and lay up the plywood for this piece of furniture. Prerequisite: IED 200.

502 Wood Technology (1-3)
2 hrs. Summer
Experience in and study of cellulose materials and their use in construction and manufacturing, including the characteristics of lumber, hand-made wood products, the materials related to the fabrication of wood products, applied research and testing. Prerequisite: IED 100.

506 Residential Building Construction (1-5)
3 hrs. Fall
Skill development and knowledge related to foundations, floor and roof framing, exterior doors, windows, roofing, siding, insulation, and preparation for interior wall coverings, trim and cabinets. Prerequisites: IED 100 or 200, and IED 305 (can be taken simultaneously).

507 Finish Carpentry and Cabinetmaking (1-5)
3 hrs. Winter
Development of skill and knowledge related to built-in cabinets, installation of prefabricated cabinets, wall coverings, finished flooring, floor coverings, fitting and hanging doors, interior trim and interior painting and finishing. Prerequisites: IED 100 and/or 200.

508 Related Building Trades (1-5)
3 hrs. Alternate Fall Beginning 1979
Covers areas related to residential and light commercial building construction, utilities, electrical wiring, plumbing, building sheet metal work, and environmental control. Prerequisite: IED 305.

509 Estimating and Scheduling for Building Construction (2-3)
Covers organization and management of firms involved in residential and light commercial construction. Includes methods of estimating and cost control. Also techniques of planning, scheduling and control of construction projects. Prerequisites: IED 305, 506, 507.

Metals
130 General Metals (1-5)
3 hrs. Fall, Winter, Even Springs
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 (1-5)
3 hrs. Fall, Winter
Modern metal machining techniques involving theory and practice in the application of machine tool metalworking principles.

235 Machine Tool Metalworking (1-5)
3 hrs. Winter
Advanced theory and practice in the application of machine tool metalworking processes and procedures, with emphasis on plastic tooling for plastic minors. Prerequisite: IED 234.

334 Metal Forming and Finishing (1-5)
3 hrs. Fall
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 setups; metal finishing with standard spray equipment and materials testing. Prerequisite: IED 130.

335 Patternmaking and Foundry (1-5)
3 hrs. Spring
Basic principles, techniques, and materials used in pattern construction. Theory and practice in metal casting principles and procedures using green sand, CO2 investment, centrifugal, and shell processes. Prerequisites: IED 100 and 130.

336 Hot Metalworking (Welding) (1-5)
3 hrs. Winter
Basic principles course in the joining of metals by fusion welding and brazing low temperature surface alloying materials. Included are practices in the use of materials, tools, and equipment for S.M.A., G.T.A., and G.M.A. welding, gas welding, brazing, off-hand and automatic flame cutting of ferrous metals, and heat treating. Prerequisite: IED 130.

338 Advanced Metalworking (1-5)
3 hrs. Fall
Metalwork involving brass, copper and aluminum etching, spinning, tooling, raising and other optional art metal activities based on individual needs of students enrolled. Prerequisite: IED 130.

538 Problems in Metalworking (1-3)
2 hrs. Spring
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 school students. Course content adapted to meet individual needs. Prerequisite: IED 234.

Plastics
174 General Plastics (1-5)
3 hrs. Fall, Winter
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.
84 COLLEGE OF APPLIED SCIENCES

274 Plastics Production Processing (1-5)
3 hrs. Winter
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 of product function and economy. Prerequisite: IED 174.

578 Plastics Technology (1-3)
2 hrs. Summer
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-Auto* *(Courses in Auto Mechanics can be obtained from the Transportation Technology Department or by transfer from community colleges.)

180 Power Technology (1-5)
3 hrs. Fall, Winter, Alternate Spring-Summer Beginning Spring 1977
A study of energy sources, energy conversion devices and power transmission. Experience with small engines and an introduction to alternative energy systems.

280 Applied Energy and Power (1-5)
3 hrs. Winter
The application of mechanical, electrical and fluid power principles to alternative energy systems. An economic and environmental comparison of renewable and nonrenewable resources use is included. Prerequisite: IED 180.

582 Applied Fluid Power (1-3)
2 hrs. Winter
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 (1-5)
3 hrs. Summer
Deals with recent technical developments, and current practices in automotive instruction.

585 Advanced Automotive Technology for Teachers (1-5)
3 hrs. Summer
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 (1-5)
3 hrs. Summer
Designed for technical school and/or community college transfer students. Emphasis on course development, teaching and evaluation methods, instructional materials and equipment selections. Includes laboratory practice applying teaching techniques. Prerequisites: IED 584 and IED 585 or equivalent.

588 Power Laboratory Techniques (1-3)
2 hrs. Summer
Advanced course treating recent applications of energy and power. Emphasis on laboratory planning and equipping, and instructional material evaluation and application to instruction. Prerequisite: IED 180, or consent.

Electricity-Electronics* *(Note: Additional courses in electricity-electronics can be obtained from the Electrical Engineering Department or by transfer from community colleges.)

160 Basic Electricity (1-5)
3 hrs. Fall, Winter, Alternate Spring, Summer Beginning Spring 1977
Theoretical and practical applications of basic electrical principles. The cause, effects, and control of electrical currents in circuits will be discussed and demonstrated. Practical experiences will include wiring, experimentation, repair, and maintenance of electrical equipment.

360 Electronic Servicing Techniques (1-5)
3 hrs. Winter
Designed to round out technical competencies of students to service electronic equipment. Laboratory problems will point toward individual needs in fundamental applications of electronic test instruments in diagnosing malfunctions in electronic equipment. Also included are fundamentals of ham radio. Prerequisite: 3 hrs. of electricity-electronics.

460 Laboratory Practices in Electricity-Electronics (1-5)
3 hrs. Fall
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 (1-3)
2 hrs. Summer
Designed for junior and senior high school laboratory teachers of electricity and electronics. Emphasis placed on new methods and materials. Laboratory practice will apply new techniques and develop teaching projects for electricity and electronics instruction.

Professional Industrial Education

342 Course Planning and Construction (3-0)
3 hrs. Fall, Winter, Spring
Principles of analyzing, selecting and arranging instructional materials for instruction purposes. (Lesson plans, unit plans and complete courses of study.) Prerequisites: Junior and 10 hours in technical courses.

344 Teaching of Industrial Education (3-0)
3 hrs. Fall, Winter, Spring, Summer
All aspects of teaching the practical subjects are covered. Included are the role of the teacher, instructional content, lesson presentation, evaluation, classroom and lab management and administration. Prerequisite: IED 342.

345 Plan and Organization of a School Shop (2-0)
2 hrs. (Continuing Education only)
Planning and organizing the school shop. Covers physical needs, shop layout, purchasing equipment, establishing a supply routine, planning personnel organization, and shop management. Prerequisite: Junior and consent.

444 Independent Study in Industrial Education 1-4 hrs. Fall, Winter
An independent study 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 (3-0)
3 hrs. Spring
541 Workshop in Vocational-Technical Education
1 hr. Fall, Winter, Spring, Summer (Continuing Education)
Designed to assist Vocational Education personnel meet Vocational Education program standards of quality mandated by the Vocational-Technical Education Service. Workshop topics will vary to meet Vocational Education personnel needs. Students may enroll for more than one topic, but in each topic only once, to a maximum of three hours credit. Prerequisite: Vocational Certification or consent.

545 Safety Education for Industrial Teachers (2-0)
2 hrs. Summer
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
24 hrs. Fall, Winter, Spring, Summer
Directed individual or small group study of topics or areas not otherwise treated in departmental courses. Consent of department head required.

Vocational
The following courses are designed for professional preparation in all Vocational-Technical Education programs including those in Agriculture, Distributive Education, Home Economics Education, Vocational-Technical Education, and Business Education Teaching Curricula.

510 Organization and Administration of Vocational Clubs (2-0)
2 hrs. Summer
Individual or small group study of the organization and administration of vocational youth organizations at the national, state, and local levels. Uses of youth organizations as public relations and/or teaching tools are emphasized.

511 Field Experience in Vocational Clubs (0-3)
1 hr. Summer
Directed individual study of the organization and administration of multi-sectional vocational student organizations. Includes organizational chart and lists duties of the several functions to be performed. Prerequisite: IED 510/concurrent.

512 Principles of Vocational Education (3-0)
3 hrs. Fall, Winter, Alternate Summer Beginning Summer 1977
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, distributive education, home economics, industrial subjects, office subjects, and administrators. For upperclass and graduate students.

General Industrial
170 Industrial Crafts Techniques (1-5)
3 hrs. Fall, Winter, Even year Spring
Introduction to the crafts areas; art metal, leather, woodcarving, and plastics. Applications and procedures will be stressed.

190 Childhood/Adulthood Crafts and Adapted Techniques (1-5)
3 hrs. Fall, Winter, Spring, Summer
Studies of crafts with emphasis on elementary, special therapeutic, and recreational activities with basic techniques and adaptive techniques in wood, leather, metal, graphics, electricity, ceramics, and plastics.

192 Related Arts and Crafts (1-5)
3 hrs. (Continuing Education only)
A course in arts and crafts including work in leather, plastic, wood, and other related craft activities.

193 Related Arts and Crafts (1-5)
3 hrs. (Continuing Education only)
Arts and crafts includes work in graphic arts, art metal, basketry, and other crafts.

195 Applied Arts and Crafts (0-2)
1 hr. Fall, Winter, Spring
A supplementary course for the practical application of Industrial Arts for the Elementary Teacher. Involves supervised teaching experience in local elementary school classrooms. Concurrent with IED 190 enrollment.

198 O.T. Woodworking (1-5)
3 hrs. Fall, Winter
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 (1-3)
2 hrs. Fall, Winter, Spring
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.

312 Industrial Field Experience
3 hrs. Fall, Winter, Spring
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.

370 Modern Manufacturing (1-3)
2 hrs. Fall, Winter, Spring
A study of the essentials and elements of industries such as manufacturing, transportation, construction, and communication. Laboratory experiences include research reports and the development and mass production of a school related product.

570 Arts and Crafts Techniques (1-3)
2 hrs. Spring, Summer
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 (2-0)
2 hrs. Fall, Winter, Spring, Summer
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 (1-3)
2 hrs. Spring, Summer
Installation, adjustment, preventive maintenance, conditioning of power equipment and tool maintenance included. Emphasis on relationship between proper installation and condition to efficient machine operation.

575 General Industrial Arts Laboratory Organization (1-3)
2 hrs. Spring
Experiences in drawing, woodworking, metalworking, electricity, and craftwork is desirable. Emphasis is on methods of organizing and operating multiple activity laboratories at the junior and senior high school levels.
Coursework includes development and preparation of appropriate instructional material and hands-on experiences in teaching multiple activities. Prerequisite: IED 342 and IED 344 (344 can be taken concurrently).

590 Industrial Arts for the Elementary Schools (1-3)  
2 hrs. (Continuing Education only)  
Deals with problems of organizing, correlating and teaching construction 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 (1-3)  
2 hrs. (Continuing Education only)  
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 and Adapted Techniques (1-3)  
2 hrs. Fall, Winter, Spring, Summer  
Covers craft techniques in sketching, leather, wood, and related experiences. Emphasis on teaching procedures, methods, and materials. No credit for Industrial Education majors or minors or TIE students.

596 Consumer Automobile Principles (1-2)  
2 hrs. Winter  
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. Not open to students with credit in IED 384, 584, 585 or 586; TRAN 121, 221, 222, 224, 322, 326 or 421.

Industrial Engineering
Frank K. Wolf, Chair

The Department of Industrial Engineering offers programs designed to prepare individuals for professional careers in engineering, design, and technical management fields. Bachelor of Science degree curricula are offered in Engineering Graphics, Industrial Design, and Manufacturing Administration as well as a Bachelor of Science in Engineering curriculum in Industrial Engineering. Graduates from these programs are employed in a wide variety of positions in both manufacturing and service industries.

A minor in Engineering Graphics or Industrial Engineering may be secured upon approval of the Industrial Engineering Department’s counselor and by completing fifteen to twenty semester hours of work. A minor in Industrial Engineering is available only to students majoring in mathematics with the statistic option.

Cooperative Education

Students enrolled in any Industrial Engineering Department 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.

Grand Rapids Degree Program

The Department of Industrial Engineering offers degree programs in Industrial Engineering and Manufacturing Administration in Grand Rapids. The program is offered primarily in the evening so as to be convenient to the individual working full-time. Additional information about this program can be obtained by calling the University Consortium Center in Grand Rapids (616) 459-7123.

Academic Counseling

Students should contact an Industrial Engineering 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. The academic counselor for all undergraduate programs offered by the Department of Industrial Engineering is Professor Roger Urich, whose counseling office is located in room 2038, Industrial and Engineering Technology Building (616) 383-0545.

Additional Information

General Information regarding counseling, scholarships, and special programs of interest to students in this department may be found at the beginning of the College of Applied Sciences’ section of the catalog.

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.
The Industrial Engineering curriculum provides the essential foundation, experience and understanding in science, mathematics, humanities and engineering so that graduates may find employment in production, health, service, and utility industries. This program is also a basis for graduate study. 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.

**Requirements**

Candidates for the degree of Bachelor of Science in Industrial Engineering must satisfy all of the following requirements in addition to the University requirements stated elsewhere in this bulletin.

1. A "C" average or better in courses with an EE, IEGM, or ME prefix.
2. No more than two grades of "0" in courses required for graduation may be counted for graduation.
3. Complete the following 128 semester credit hours (the schedule below is an example of one leading to graduation in eight semesters beginning in Fall):

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINEERING DESIGN</td>
<td>IEGM</td>
<td>305 Work Analysis</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>318 Statistical Quality Control</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>405 Work Systems Design</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>416 Operations Control in Industry</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>404 Plant Layout and Material Handling</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td>ENGINEERING SCIENCE</td>
<td>ME</td>
<td>270 Material Science</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ME</td>
<td>256 Statics</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EE</td>
<td>210 Circuit Analysis I</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EE</td>
<td>211 Machines &amp; Electronic Circuits</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>310 Engineering Economy</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ME</td>
<td>353 Strength of Materials</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
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<tr>
<td></td>
<td>ME</td>
<td>355 Dynamics</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
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<tr>
<td></td>
<td>ME</td>
<td>330 Thermo-Fluid Dynamics</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ME</td>
<td>372 Chemical Metallurgy OR</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ME</td>
<td>373 Physical Metallurgy</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>MATH</td>
<td>122 Calculus I</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH</td>
<td>123 Calculus II</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH</td>
<td>272 Vector and Multivariate Calculus</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH</td>
<td>374 Intro to Linear Algebra &amp; Differential Equations</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>103 General Chemistry</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>210 Mechanics and Heat</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>211 Electricity and Light</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>212 Atomic and Nuclear Physics</td>
<td>1 2 3 4 5 6 7 8</td>
<td>4</td>
</tr>
<tr>
<td>TECHNICAL COURSES</td>
<td>IEGM</td>
<td>131 Engineering Drafting</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ACTY</td>
<td>201 Accounting Concepts</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CS</td>
<td>106 BASIC for Engineers</td>
<td>1 2 3 4 5 6 7 8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>410 Senior Seminar</td>
<td>1 2 3 4 5 6 7 8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>402 Supervision of Industrial Operations</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>418 Report Preparation</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM</td>
<td>Elective (approved)</td>
<td>1 2 3 4 5 6 7 8</td>
<td>2</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION**

**AREA I**

- Humanities**
- 3 3

**AREA II**

- ECON 201 Principles of Economics
- 3 3
- ECON 202 Principles of Economics
- 3 3

**AREA III**

- Natural Science & Math (8 hrs. included in curriculum)
- 3 3

**AREA IV**

- Non-Western World
- 4 4

**AREA V**

- IEGM 102 Technical Communications
- 3 3

**PHYSICAL EDUCATION**

- PEGN Physical Education
  - 1 1

Total for Graduation—128 hrs.

*Process Elective* A three-hour elective (one course) from the courses listed below is required.

- ME 280 Metal Casting I
- ME 120 Machining Metals
- ME 121 Manufacturing Processes
- ME 221 Industrial Welding
General Education Electives Two courses to be taken in the 300-500 level courses in Area I.

Manufacturing Administration
(formerly Industrial Supervision)
Leo S. Rayl
Frank S. Scott
Bachelor of Science Degree

The Manufacturing Administration curriculum provides academic background in humanities, social sciences, communication, and technical subjects relating to manufacturing systems. Human relation skills used in industry when dealing with people are developed. The Manufacturing Administrators may direct production employees working on line operations or may direct staff personnel specifically assigned to assist the line in meeting its objectives. Employment may be in the general areas of manufacturing, health service, and utility industries.

A selection of one of two groups of courses provides the student an opportunity to concentrate on either the supervision of line/ manufacturing operations or of staff management functions directly applied to the line.

The Manufacturing Administration program is designed to accommodate students who have transferred from other institutions or programs. Questions concerning transfer of credits to this program can be answered by the Department advisor.

Requirements
Candidates for the degree of Bachelor of Science in Manufacturing Administration must satisfy all of the following requirements in addition to the University requirements stated elsewhere in this bulletin.

1. A "C" average or better in courses with an EE, IEGM, or ME prefix.
2. No more than two grades of "D" in courses required for graduation may be counted for graduation.
3. Complete the following 128 semester credit hours (the schedule below is an example of one leading to graduation in eight semesters beginning in Fall):

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Dept. No.</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Industry</td>
<td>IEGM 100</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
| Work Analysis | IEGM 305 | 2 | ...
| Production Control | IEGM 326 | ...
| Industrial Quality Control | IEGM 328 | ...
| Safety in Industry | IEGM 322 | ...
| Work Systems Design | IEGM 405 | ...
| Supervision of Indus Operations | IEGM 402 | ...
| Plant Layout & Material Handling | IEGM 404 | ...
| Conference Leadership | IEGM 422 | ...
| Industrial Labor Relations | IEGM 403 | ...
| Modern Industrial Practices | IEGM 420 | (Spring term of Senior Year) | 6 |
| 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.

Technical Electives Requirements

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Dept. No.</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Economy</td>
<td>IEGM 310</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Technical Drafting</td>
<td>ME 270</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Material Science</td>
<td>ME 280</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Metal Casting I or II</td>
<td>ME 120</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Machining Metals</td>
<td>ME 121</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Manufacturing Processes</td>
<td>ME 122</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Algebra II</td>
<td>CS 106</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BASIC for Engineers</td>
<td>MATH 200</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Analysis and Applications</td>
<td>MATH 260</td>
<td>4</td>
<td></td>
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<tr>
<td>Elementary Statistics</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>General Physics I</td>
<td>PHYS 110</td>
<td>4</td>
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<tr>
<td>General Physics II</td>
<td>PHYS 111</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Business and Prof. Speech</td>
<td>ACTY 210</td>
<td>3</td>
<td></td>
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<tr>
<td>Principles of Accounting</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>Legal Environment</td>
<td>BUS 340</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Industrial Psychology</td>
<td>PSY 540</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fundamentals of Circuits &amp; Electronics</td>
<td>EE 101</td>
<td>3</td>
<td></td>
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<tr>
<td>Engineering Economy</td>
<td>IEGM 310</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Metal Casting II</td>
<td>ME 380</td>
<td>3</td>
<td></td>
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<tr>
<td>Production Tooling</td>
<td>ME 220</td>
<td>3</td>
<td></td>
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<tr>
<td>Industrial Welding</td>
<td>ME 221</td>
<td>3</td>
<td></td>
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<tr>
<td>Pressworking of Metals</td>
<td>ME 320</td>
<td>3</td>
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</tr>
<tr>
<td>Fundamentals of Circuits &amp; Electronics</td>
<td>EE 100</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fundamentals of Circuits &amp; Electronics</td>
<td>EE 101</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Group A-Line Supervision/ Administration</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Manufacturing S.H.</td>
<td></td>
<td>6</td>
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<tr>
<td>Group B-Staff Supervision/ Administration</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Management S.H.</td>
<td></td>
<td>6</td>
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<tr>
<td>Course</td>
<td>Dept. No.</td>
<td>Course Title</td>
<td>Semester</td>
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<tr>
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<tr>
<td>GENERAL EDUCATION—DISTRIBUTION PROGRAM</td>
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</tr>
<tr>
<td>AREA I</td>
<td></td>
<td>Humanities*</td>
<td>1 2 3 4</td>
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<tr>
<td>AREA II</td>
<td></td>
<td>Social Science*</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>AREA III</td>
<td></td>
<td>Natural Science and Math</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>AREA IV</td>
<td></td>
<td>Non-Western World</td>
<td>1 2 3 4</td>
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<tr>
<td>AREA V</td>
<td></td>
<td>Optional Electives</td>
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<tr>
<td></td>
<td></td>
<td>(8 hrs. included in curr.)</td>
<td></td>
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<tr>
<td>PHYSICAL EDUCATION</td>
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<td>Physical Education</td>
<td>1 2 3 4</td>
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<tr>
<td>ELECTIVES</td>
<td></td>
<td></td>
<td>1 2 3 4</td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td>Total for Graduation</td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
<td>128 Hrs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ (Includes 6 hrs. to be taken during spring term)</td>
</tr>
</tbody>
</table>

*Four hrs. to be taken in 300-500 level courses in either AREA I or II.
**Eng. 105 or BED 142 or IEGM 102.

**Engineering Graphics**

Darryl F. Janowicz
George K. Steigman
Charles F. Woodward

Bachelor of Science Degree

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

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

Requirements

Candidate for the degree of Bachelor of Science in Engineering Graphics must satisfy all of the following requirements in addition to the University requirements stated elsewhere in this bulletin.

1. A "C" average or better in courses with an EE, IEGM, or ME prefix.
2. No more than two grades of "D" in courses required for graduation may be counted for graduation.
3. Complete the following 128 semester credit hours (the schedule below is an example of one leading to graduation in eight semesters beginning in Fall):

<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>MAJOR ENGINEERING GRAPHICS</td>
<td></td>
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<tr>
<td>IEGM 131</td>
<td></td>
<td>Engineering Drafting</td>
<td>1 2 3 4 5 6 7 8</td>
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</tr>
<tr>
<td>IEGM 136</td>
<td></td>
<td>Descriptive Geometry</td>
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<td>3</td>
</tr>
<tr>
<td>IEGM 330</td>
<td></td>
<td>Machine Drafting</td>
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<td>3</td>
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GENERAL EDUCATION—DISTRIBUTION PROGRAM

AREA I
Humanities* 3 4
AREA II
Social Sciences* 3
ECON 201 Principles of Economics 3

AREA III
Natural Sciences and Mathematics (8 hrs. included in curr.)

AREA IV
Non-Western World 4

AREA V
Optional Electives (8 hrs. included in curr.)
Writing Requirement** 3

PHYSICAL EDUCATION
PEGN
Physical Education 1 1 4 6

Approved Electives**

Total for Graduation—128 hrs. 15 15 17 18 16 16 15 16

*Four hours to be taken in the 300-500 level courses in either AREA I or AREA II.
**ENG 105 or BED 142, IEGM 102.
***At least seven hours must be courses approved for General Education.

Industrial Design

Darryl F. Janowicz
George K. Stegman
Charles F. Woodward

Bachelor of Science Degree

The curriculum in Industrial Design is a careful blend of technology, business, art, and general studies with courses in mechanical design, drafting, illustration, equipment studies, design philosophy and practices. The resulting Bachelor of Science degree in Industrial Design will produce designers with the aesthetic and technical potential to set new directions in product development and design, knowing full well the materials, processes, quality and production standards needed to comply with what government and consumer interest groups and our economy will be requiring in products.

Requirements

Candidates for the degree of Bachelor of Science in Industrial Design must satisfy all of the following requirements in addition to the University requirements stated elsewhere in this bulletin.

1. A "C" average or better in courses with an EE, IEGM, or ME prefix.
2. No more than two grades of "D" in courses required for graduation may be counted for graduation.
3. Complete the following 130 semester credit hours (the schedule below is an example of one leading to graduation in eight semesters beginning in Fall):

Course Dept. No. Course Title Semester Credit Hours
STUDIO IN IND DESIGN IEGM 238 Studio in Ind Design 1 2 3 4 5 6 7 8
Design Elective 1 1 1 1 1

TECHNICAL SUPPORT & DESIGN AREA—(46 Cr. Hrs.)

IEGM 131 Engineering Drafting 3
IEGM 136 Descriptive Geometry 3
IEGM 330 Machine Drafting 3
IEGM 236 Graphical Solutions 2
IEGM 331 Production Drafting 3
IEGM 434 Technical Illustration 3

BUSINESS MINOR

ACTY 210 Principles of Accounting 3
BUS 340 Legal Environment 3
MKTG 370 Marketing 3
MKTG 375 Principles of Retailing 3

ART MINOR

ART 101 Foundation Studio 3
ART 102 Foundation 2d Design 3
ART 104 Foundation Drawing 3
ART 105 Foundation 3d Studio 3
ART 245 Graphic Design 3
ART 248 Photography 3

PHYSICAL EDUCATION

PEGN
Physical Education 1 1
planned and supervised work experience in industry
A cooperative education program involves a full-time
outlines. Effective reading and listening.

300 Co-op Internship (Arr.)
A cooperative education program involves a full-time planned and supervised work experience in industry

GENERAL STUDIES

AREA I
Humanities & Fine Arts
6 Cr. Hr. Min.*

AREA II
Social & Behavioral Sciences
10 Cr. Hr. Min.*
Econ 201 Principles of Economics

AREA III
Natural Sciences & Math
6 Cr. Hr. Min.

AREA IV
Non-Western World
3 Cr. Hr. Min.*

AREA V
Optional Electives**

Semester Totals
16 16 17 16 17 16 16 16

Curriculum Total—130 Cr. Hrs.

*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.

***Must be approved for General Education.

Two-Year Certificate Program in Drafting and Design
Students may receive a two-year certificate in engineering drafting 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 program and work toward a Bachelor of Science degree.

Engineering Metallurgy
(See Mechanical Engineering Department for description of metallurgy and foundry courses.)

Course Descriptions
(Courses described in italics are approved for General Education.)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

General Engineering

102 Technical Communication (3-0)
3 hrs. Fall, Winter, Spring
Practical writing skills; bibliographical research; data analysis and presentation; format for problems, pages and outlines. Effective reading and listening.

105 Industrial Calculations (1-0)
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 110 or H.S. Trig. and Logarithms.

300 Co-op Internship (Arr.)
3 hrs. Fall, Winter, Spring, Summer
A cooperative education program involves a full-time planned and supervised work experience in industry

305 Work Analysis (3-0)
3 hrs. Fall, Winter, Spring, Summer
A specialized course dealing, each time it is scheduled, with some particular aspect of industrial engineering not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: permission of instructor.

405 Work Systems Design (2-3)
3 hrs. Fall, Winter
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.

310 Engineering Economy (3-0)
3 hrs. Winter
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.

318 Statistical Quality Control (3-0)
3 hrs. Winter
Methods of applying statistics and probability theory to control production processes. Application of computer programs to analyze quality control problems. Prerequisites: CS 106, MATH 360.

404 Plant Layout and Material Handling (4-0)
4 hrs. Fall, Winter
Comprehensive design of an industrial production system. Problems involved, and the interrelationship of plant location, product analysis, process design, equipment selection, materials handling and plant layout. Assignments include projects designed to include the application of previous industrial engineering courses. Prerequisites: IEGM 305, 326 or 416.

405 Work Systems Design (2-3)
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. Prerequisites: IEGM 404, 418 or 422.

490 Independent Research and Development (Arr.)
1-4 hrs. Fall, Winter, Spring, Summer
Individual research or special project in engineering. 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 chair. Students may register more than once, not to exceed 6 hours.

495 Special Topics in Industrial Engineering (3-0)
3 hrs. Fall, Winter, Spring
A specialized course dealing, each time it is scheduled, with some particular aspect of industrial engineering not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: permission of instructor.

498 Readings in Engineering (Arr.)
1-6 Hrs. Fall, Winter, Spring, Summer
Independent readings in engineering. 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 chair. Students may register more than once, not to exceed 6 hrs.

499 Studies in Engineering (Arr.)
1-6 hrs. Fall, Winter, Spring, Summer
Independent studies in engineering. Open only to students having the approval of the faculty member under whom the student will work and the approval of the department chair. Students may register more than once, not to exceed 6 hours.
410 Senior Seminar (1-0)
1 hr. Fall
A seminar for senior industrial engineering and manufacturing administration 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 Industry (3-3)
4 hrs. Fall
The function of production and inventory operations. Control of manufacturing production systems, modeling. Prerequisites: CS 106, MATH 350, IEGM 310.

418 Report Preparation (2-3)
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: IEGM 102 or equivalent.

419 Introduction to Operations Research (3-0)
3 hrs. Winter
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 (3-0)
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 (3-0)
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 318 or 328.

518 Engineering Valuation and Depreciation (3-0)
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.

542 Human Factors Engineering (2-3)
3 hrs. Winter
The adaptation of equipment, products, and environment to human capacities. Prerequisite: Permission of instructor. Cross listed with PSY 542.

542 Health Care Systems Improvement (3-0)
3 hrs. Fall, Spring
The work simplification philosophy and strategy as applied to health care systems. Techniques for systems and methods improvement. A field/clinical systems improvement project is required. Prerequisite: upperclass standing; NOT OPEN TO STUDENTS WITH CREDIT IN IEGM 305.

Manufacturing Administration
100 Introduction to Industry (2-0)
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.

322 Safety in Industry (3-0)
3 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.

326 Production Control (3-0)
3 hrs. Fall, 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.

328 Industrial Quality Control (3-0)
3 hrs. Fall, Spring
Techniques of controlling quality in manufacturing systems. Topics include organization of quality, methods of measurement and basic statistical tools. Prerequisite: MATH 260 or MGMT 200. Not open to industrial engineering majors.

402 Supervision of Industrial Operations (3-0)
3 hrs. Fall, Winter, Spring
Supervisory duties and responsibilities of foremen, engineers, and technicians in industrial operations. Prerequisite: junior standing.

403 Industrial Labor Relations (3-0)
3 hrs. Fall, Summer
Relationships between government agencies, labor organizations and management. Emphasis on development of collective bargaining procedures. Prerequisite: senior standing.

420 Modern Industrial Practices (4-6)
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 for transportation is required. Prerequisites: IEGM 318, 326, 402, 403, 404, 405 or consent.

422 Conference Leadership (3-0)
3 hrs. Fall, Winter
Basic methods of planning and presenting an industrial conference. Techniques of leadership with opportunity for practical application of these techniques. Prerequisites: CAS 104, upperclass.

500 Labor Management Relations (3-0)
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 (3-0)
3 hrs. Fall
The supervisor’s duties, obligations and responsibilities in his/her industrial role. The practical application of behavioral science principles to the industrial environment. NOT OPEN TO STUDENTS WITH CREDIT IN IEGM 402.

Engineering Graphics
130 Technical Drafting (1-3)
2 hrs. Fall, Winter, Summer
Basic principles and techniques of engineering drafting as related to industrial manufacturing processes. For students with no high school drafting.

131 Engineering Drafting (2-3)
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: high school drafting recommended.
136 Descriptive Geometry (2-3) 3 hrs. Fall
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.

140 Drafting for Interior Designers (2-3) 3 hrs. Winter
The course covers free hand technical sketching (multi-view and pseudo perspective), lettering, use of drafting tools and procedures with an orthographic projection, sections, plans and elevations, revolutions, standard air conditioning, plumbing and electrical symbols as they relate to interior design.

236 Graphical Solutions (1-3) 2 hrs. Winter
Use of graphics in solving engineering problems. Graphic methods of presenting and evaluating technical information, construction of charts, vector representation, force measurement, and nomograms. Prerequisite: IEGM 136.

238 Studio in Industrial Design (0-3) 4 hrs.* Winter
Must be taken in proper sequence. Industrial Design curriculum students only.

Studio in Industrial Design (1) IEGM-238-A (1 hr.)
Readings in industrial design. Philosophy of industrial design with visits to design studios and visits by practicing designers.

Studio in Industrial Design (2) IEGM-238-B (1 hr.)
Sketching, rendering and model building; skill development.

Studio in Industrial Design (3) IEGM-238-C (1 hr.)
Design methods, information gathering, storing and retrieval, design decision making and implementation procedures.

Studio in Industrial Design (4) IEGM-238-D (1 hr.)
Package, display and project presentation.

240 Housing (3-0) 3 hrs. Fall
A course designed to give an overview of basic principles, planning, financial and sociological aspects, zoning ordinances, building codes, and methods and materials used in residential building construction. Not for IED majors or minors.

242 Interior Design Graphics (2-3) 3 hrs. Winter
Development of basic skills and techniques used in developing various types of interior design presentations. Emphasis on freehand perspective, pencil and pen techniques, color mediums, shadows, and interior elevations. Prerequisite: IEGM 140.

243 Interior Design Graphics II (2-3) 3 hrs. Winter
An intensive study of the representation of furniture, accessories, and architectural elements as portions of room interiors through freehand and mechanical methods of delineation; highlighting blue line and sepia diazo prints; pen and ink, pencil, watercolor, and magic marker techniques; and matting formats. Prerequisite: IEGM 242.

330 Machine Drafting (2-3) 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 (2-3) 3 hrs. Fall
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 (1-3) 2 hrs. Fall
Principles of tooling practice. Elements of jigs and fixtures and their applications to product component manufacturing. Fixturing for numerical control omni-directional machining operations. Prerequisite: ME 121, 220; IEGM 330.

333 Design of Production Tooling II (1-3) 2 hrs. Fall
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.

434 Technical Illustration (2-3) 3 hrs. Spring
Techniques of illustrating for technical publications such as engineering reports, technical and service manuals and parts catalogs. Prerequisite: IEGM 131. (Offered alternate springs)

436 Introduction to Computer Graphics (2-3) 3 hrs. Winter
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 130, CS 306 (FORTRAN).

437 Computer Graphics Applications (2-3) 3 hrs. Fall
A study of applications programming in the field of computer graphics. Investigation of existing graphics packages and general software design. Development of individual applications programs in each student's major area of interest. Prerequisite: IEGM 436.

438 Industrial Design (2-3) 3 hrs. Winter
A study of the various aspects of industrial design. Materials, methods, human factors and other elements of product design and development will be considered. Models, mock-ups and prototypes will be constructed of students' designs. Prerequisite: IEGM 131.

439 Product Design and Development (2-3) 3 hrs. Fall
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 331.
Mechanical Engineering

James B. Matthews, Chair
Dean E. Bluman
Robert B. Day
Roscoe A. Douglas
Joseph H. Gill
Jerry H. Hamelink
G. Stewart Johnson
Dale D. King
Roy S. Klein
Loren R. Lane
Don W. Nantz
Arden Pridgeon
L. D. Ryan
Richard C. Schubert
William J. Stiefel, III
Roger R. Urich
William R. Weeks
Molly W. Williams

The Mechanical Engineering Department offers curricula leading to a Bachelor of Science in Engineering (Mechanical) degree as well as a Bachelor of Science in Engineering Metallurgy degree. The Engineering curriculum is structured to provide the necessary engineering expertise 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.

The Engineering Metallurgy 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.

Academic Counseling
Students should contact the Mechanical Engineering 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 is located in Room 2038, Industrial and Engineering Technology Building.

Cooperative Education
Students enrolled in Mechanical Engineering 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.

Students interested in a cooperative plan of study should contact the Director of Cooperative Education in Room 2038, Industrial and Engineering Technology Building.

Grand Rapids Degree Program
The Department of Mechanical Engineering offers in Grand Rapids a complete program leading to a degree in Mechanical Engineering. Courses are offered primarily in the evening, so as to be convenient to the individual who is working full-time.

Additional information can be obtained by calling the University Consortium Center in Grand Rapids (616) 459-7123.

Enrollment
Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Prerequisites
Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be approved by the Department Chair.

Additional Information
General information regarding counseling, scholarships, and special programs of interest to students in this department may be found in the catalog under the College of Applied Sciences.

Requirements
Candidates for the degree of Bachelor of Science in Engineering (Mechanical) must satisfy all of the following requirements in addition to the University requirements stated elsewhere in this bulletin.

1. A "C" average or better in required courses with an ME prefix.

2. No more than two grades of "D" in 300-level or higher courses required in the curriculum may be counted for graduation.

3. Complete the following program of 128 semester credit hours (the schedule below is an example of one leading to graduation in eight semesters beginning in Fall):
# Engineering Metallurgy

## Bachelor of Science Degree

The Engineering Metallurgy 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.

### Requirements

Candidates for the degree Bachelor of Science in Engineering Metallurgy must satisfy all of the following requirements in addition to the University requirements stated elsewhere in this bulletin.

1. A "C" average or better in courses with an EE, IEGM, or ME prefix.
2. No more than two grades of "D" in courses required for graduation may be counted for graduation.
3. Complete the following 128 semester credit hours. The schedule below is an example of one leading to graduation in eight semesters beginning in Fall:

### Course Schedule

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### RELATED ENGINEERING

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### MATHMATICIAN

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### SCIENCE

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*M.E. 359, 433, 451, 521, 533, 553, or 555 may be taken.
**CHEM 120 or GEOL 130 may be substituted for PHYS 212.
***IEGM 102, BED 142, or ENG 105.
****Two courses to be taken at 300-500 level.
<table>
<thead>
<tr>
<th>Course</th>
<th>Department</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
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<td>PHYS 110</td>
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<td>Mechanics and Light</td>
<td>4</td>
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<tr>
<td>PHYS 210</td>
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<td>Electricity and Light</td>
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<td>PHYS 111</td>
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<td>General Physics II</td>
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<td>PHYS 211</td>
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**GENERAL EDUCATION—DISTRIBUTION PROGRAM**

**AREA I**
- Humanities* 3 4

**AREA II**
- Social Sciences* 3 3

**AREA III**
- Natural Science and Math (8 hrs. included in curriculum)

**AREA IV**
- Non-Western World 4

**AREA V**
- Optional Electives (8 hrs. included in curriculum)
- Writing Requirement** 3

**PHYSICAL EDUCATION REQUIREMENTS**

PEGN
- Physical Education 1 1

**ELECTIVES**
- 2 2 3 6 3 4

Total for Graduation—128 Hrs. 16 16 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.

**Course Descriptions**

(Courses described in italics are approved for General Education.)

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
<th>Semester</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 Machining Metals (2-3)</td>
<td>3</td>
<td>Fall, Winter, Spring</td>
<td><strong>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.</strong></td>
</tr>
<tr>
<td>121 Industrial Manufacturing Processes (3-0)</td>
<td>3</td>
<td>Fall, Winter</td>
<td><strong>Introduction to industrial functions through current manufacturing practice. Analysis of product manufacturing procedure from marketing forecast to engineering design to manufacturing process to environmental testing to economic considerations to delivery.</strong></td>
</tr>
<tr>
<td>220 Production Tooling (2-3)</td>
<td>3</td>
<td>Fall, Winter</td>
<td><strong>Fundamentals of design of jigs and fixtures in production. Methods processing and cost analysis. Prerequisites: IEGM 131, ME 120.</strong></td>
</tr>
<tr>
<td>221 Industrial Welding (2-2)</td>
<td>3</td>
<td>Fall, Winter</td>
<td><strong>The processes, techniques, and materials used to fabricate metal products by welding. Laboratory experience in application, design, and mechanical properties.</strong></td>
</tr>
<tr>
<td>251 Statics and Strength of Materials (4-0)</td>
<td>4</td>
<td>Fall</td>
<td><strong>Forces on structures; moments, equilibrium. Stresses and deformation in axially-loaded members, torsion members and beams. Elementary design of structural members. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 200 or 101.</strong></td>
</tr>
<tr>
<td>256 Statics (3-0)</td>
<td>3</td>
<td>Fall, Winter, Spring, Summer</td>
<td><strong>Forces and moments acting upon structural bodies under static loads. Concepts of vectors, free-body diagrams, shear and moment diagrams, centroids, moments of inertia and friction. Prerequisite: MATH 123.</strong></td>
</tr>
<tr>
<td>259 Sound, Noise and Vibration Control (3-0)</td>
<td>3</td>
<td>Fall</td>
<td><strong>The effects of acoustical energy on the environment, methods of measurement, acoustical analysis, and governmental regulations are studied. Computer usage to develop empirical equations for noise analysis design is also covered. (Formerly ME 559.)</strong></td>
</tr>
<tr>
<td>261 Surveying (1-3)</td>
<td>2</td>
<td>Spring</td>
<td><strong>Operation of the transit, theodolite, level, steel tape and ancillary equipment with emphasis on construction surveying. Prerequisite: MATH 200 or 101.</strong></td>
</tr>
<tr>
<td>270 Material Science (3-3)</td>
<td>4</td>
<td>Fall, Winter, Spring</td>
<td><strong>An introductory course in the science of engineering materials. The relationships between metallurgical structure and the mechanical properties of metals, polymers and ceramics are developed and used in the selection of materials for various design requirements. Prerequisites: CHEM 103 and MATH 122 or MATH 200.</strong></td>
</tr>
<tr>
<td>271 Electrical and Mechanical Properties of Materials (2-3)</td>
<td>3</td>
<td>Winter</td>
<td><strong>Principles of physical metallurgy, emphasizing electrical and magnetic properties of materials.</strong></td>
</tr>
<tr>
<td>280 Metal Casting I (2-3)</td>
<td>3</td>
<td>Fall, Spring</td>
<td><strong>Introduction to cast metals technology and laboratory experience in industrial casting processes. Prerequisite: ME 270 or 271 or 371.</strong></td>
</tr>
<tr>
<td>320 Pressworking of Metals (2-3)</td>
<td>3</td>
<td>Winter</td>
<td><strong>Basic die design. Pressworking used in the design of blanking, shaving, piercing, and form dies. Press construction and safety features. Prerequisite: ME 120.</strong></td>
</tr>
<tr>
<td>321 Numerical Control of Production (2-3)</td>
<td>3</td>
<td>Fall, Spring</td>
<td><strong>Basic point-to-point programming systems applied to drill, mill, and turning applications. Economic analysis of numerical control. Prerequisite: ME 120.</strong></td>
</tr>
<tr>
<td>330 Thermo-Fluid Dynamics (4-0)</td>
<td>4</td>
<td>Winter, Summer</td>
<td><strong>Fundamentals of fluid mechanics, thermodynamics, and heat transfer using a unified approach. Prerequisites: ME 256, PHYS 210. (Not open to Mechanical Engineering majors.)</strong></td>
</tr>
<tr>
<td>332 Thermodynamics I (3-0)</td>
<td>3</td>
<td>Fall, Winter, Spring</td>
<td><strong>Fundamental laws of classic thermodynamics, including ideal and non-ideal processes. Applications are studied in relationship to the traditional thermodynamic cycles and to alternate energy systems such as solar and wind energy. Prerequisites: MATH 123, PHYS 210.</strong></td>
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</tbody>
</table>
335 Mechanical Engineering Laboratory (2-3)
3 hrs. Fall, Winter, Spring
Principles of measurement, testing and evaluation of mechanical engineering systems. (Formerly ME 435.)
Prerequisites: ME 353, ME 362.

336 Energy, Resources, and Pollution (3-0)
3 hrs. Fall
The energy problem from an engineering perspective, including technical, social, and economic aspects. Not open to students with credit in ME 330, 332, or equivalent.
Prerequisite: junior standing.

339 Solar Energy Systems (3-0)
3 hrs. Winter
Fundamental theory of solar energy for non-engineers which includes heat loads, insulation, system sizing and design. Prepared computer programs are used by the student in solar design analysis. NOT FOR ENGINEERING CREDIT.

351 Structural Theory and Design (2-2)
3 hrs. Winter
Design of beams, trusses, retaining walls, floor systems, columns in steel, reinforced concrete and timber. NOT FOR ENGINEERING CREDIT. Prerequisite: ME 251.

353 Strength of Materials (3-0)
3 hrs. Fall, Winter, Spring, Summer
Compressive, tension, shear, torsion, and bending in structural members, including stress distribution, deflection, buckling, and fatigue on engineering materials. Design and selection of simple machine members and a knowledge of design codes and standards is applied. Prerequisite: ME 256.

354 Testing of Materials (1-3)
2 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: ME 335, 270 or 373.

355 Dynamics (3-0)
3 hrs. Fall, Winter, Spring
Kinematics and kinetics of particles; rigid bodies in translation, rotation, and plane motion. Includes impulse-momentum and work-energy methods. Introduction to vibrations. Prerequisites: ME 256 and PHYS 210.

356 Fluid Mechanics (3-0)
3 hrs. Fall, Winter, Spring
Analysis of fluid systems and problems. Incompressible and compressible fluids, turbulent and laminar flows, subsonic and supersonic flows are covered. Pipe systems, flow orifices, and open channels. (Formerly 430.) Prerequisite: ME 256.

358 Mechanism Analysis (3-0)
3 hrs. Fall, Winter
Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis with computer applications. Prerequisites: ME 355 and CS 106.

359 Dynamics of Machinery (3-0)
3 hrs. Winter
Analysis of static, dynamic, and combined forces in the design of machines. Balancing of machines including multi-cylinder engines. Gyroscopic forces. Computer applications. Prerequisite: ME 358.

360 Control Systems (3-0)
3 hrs. Fall, Winter, Spring
Theory and analysis of linear closed-loop control systems containing electronic, hydraulic and mechanical components. Differential equations. LaPlace transforms, Nyquist and Bode diagrams are covered. Prerequisites: ME 355, MATH 374.

362 Theory of Engineering Experimentation (3-0)
3 hrs. Fall, Winter, Spring
Principles of experimental design using a statistical approach, statistical analysis of experimental data with computer applications. Prerequisites: MATH 123, CS 106, junior standing.

365 Machine Design (2-2)
3 hrs. Fall, Winter
The application of engineering principles to the fundamental design of machine mechanisms and basic systems. Prerequisites: IEGM 131, ME 353.

371 Metallurgy and Materials Failure (3-3)
4 hrs. Fall, Winter, Spring
Physical metallurgy, applications, and analysis of service failures of high strength to weight ratio materials used in the aviation industry.

372 Chemical Metallurgy (4-0)
4 hrs. Fall
Introduction to chemical thermodynamics, thermodynamic properties of the liquid and the solid states, extractive metallurgy, solidification of alloys, and electrochemistry. Prerequisites: CHEM 103, MATH 123.

373 Physical Metallurgy (3-3)
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: CHEM 103, MATH 123, and PHYS 110.

378 Development of American Technology (4-0)
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.

380 Metal Casting II (2-3)
3 hrs. Winter
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: ME 280.

420 Computer-aided Manufacturing (2-3)
3 hrs. Winter
A study and application of computer programming for numerically-controlled machine tools. Prerequisites: ME 321 or consent.

431 Heat Transfer (3-0)
3 hrs. Fall, Summer
Steady state and transient conduction, radiation functions, radiation networks, natural and forced convection, design of heat exchangers and computer applications. Prerequisites: ME 332, MATH 374, CS 106.

432 Thermodynamics II (3-0)
3 hrs. Winter, Summer
Advanced topics including gas-vapor mixtures, combustion, and compressible flow. Prerequisites: ME 332, 356.
433 Environmental Systems Design in Buildings (2-2) 3 hrs. Fall, Winter
Theory of the conditioning of air; applications to the design of systems to control temperature, humidity, distribution and ventilation. Computer simulation of buildings and systems. Prerequisites: ME 431, 432.

440 Computer Applications in Engineering (3-0) 3 hrs. Fall
Application of computer methods in the solution of engineering problems. Methods covered include finite difference, finite element and polynomial curve fitting. Prerequisite: for engineering students with senior class standing and knowledge of FORTRAN computer programming [or consent of instructor].

451 Design of Solar Systems (3-0) 3 hrs. Fall
Analysis of alternate energy options. Design of complete solar system including collector, storage, and controls. Economics and long-term performance of solar systems using computer-aided design programs. Prerequisites: ME 330 or 332, CS 106.

453 Product Engineering (2-2) 3 hrs. Fall, Winter, Spring
The application of mechanical engineering concepts to the design process. Evaluation of performance including computer simulation as it relates to product development. Prerequisites: ME 362, 365.

454 Air Pollution Control Systems (3-0) 3 hrs. Fall
The nature of air pollution and the methods of monitoring and controlling emissions, sampling and analysis techniques and devices are studied. Prerequisite: PAPR 251 or equivalent.

460 Mechanical Engineering Project (1-6) 3 hrs. Fall, Winter
To provide an engineering experience emphasizing an open-ended project design concept. Prerequisites: ME 431, 453.

470 Metal Fabrication (3-0) 3 hrs. Winter

485 Die Casting (2-3) 3 hrs. Spring Even Years
Production of die casting, including design, melting, casting and finishing processes emphasizing production of quality castings economically. Prerequisite: ME 280.

490 Independent Research and Development 1-4 hrs. Fall, Winter, Spring, Summer
Individual research or special project. Only by special arrangement with an instructor and approved by the department chair. Prerequisite: department approval.

495 Topics in Mechanical Engrg: Variable Topics 1-4 hrs. Fall, Winter, Spring, Summer
A specialized course dealing with some particular area of mechanical engineering not included in other course offerings. May be repeated for credit with a different topic up to six credits. Prerequisite: Consent of instructor.

498 Independent Readings 1-6 hrs. Fall, Winter, Spring, Summer
An independent readings assignment, the description and purpose of which will be set forth on a form available at the departmental office.

499 Independent Studies 1-6 hrs. Fall, Winter, Spring, Summer
An independent studies assignment, available only by special arrangement with an instructor and approved by the department chair.

521 Welding Design Analysis (3-0) 3 hrs. Winter—Odd Years
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: ME 221, 353; ME 270 or 373.

533 Industrial Ventilation (3-0) 3 hrs. Winter
Design and testing of systems to control air quality in laboratories and industrial environments. Prerequisite: ME 356 or consent.

553 Advanced Product Engineering (3-0) 3 hrs. Fall—Even Years
An engineering design project from concept to adoption. Static and dynamic analysis. Mechanical systems design and layout. Prerequisites: ME 360, 453.

555 Mechanism Synthesis (3-0) 3 hrs. Fall—Odd Years
Type, number and dimensional synthesis of planar mechanisms by graphical and analytical methods. Computer design using optimization methods. Prerequisite: ME 358.

558 Mechanical Vibrations (3-0) 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: ME 355, MATH 274.

560 Engineering Analysis (3-0) 3 hrs. Fall
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ME 360 or equivalent.

572 X-Ray Diffraction (2-3) 3 hrs. Fall—Even Years
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 (3-0) 3 hrs. Spring—Odd Years
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: ME 373.

584 Casting Design (2-3) 3 hrs. Fall—Odd Years
Engineering design of castings based on stress analysis and capabilities of production casting processes. Prerequisites: ME 280, 256.

589 Studies in Cast Metals Technology (Arr.) 1-3 hrs. Winter, Spring
Metallurgy of ferrous casting and melting. Solidification, risering, gating, ferrous castings, sand control and sand cases. Prerequisite: consent of instructor.
Military Science

LTC Ronald L. Kirshman, Chair
MAJ Douglas D. Walterhouse
CPT Roy Aslian
CPT Michael J. O'Shea
CPT Thomas Edmonds
SGM William R. Harden
MSG Wade Jackson
SFC Steve Anderson

The Department of Military Science offers all male and female students 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 ROTC scholarships, membership on the Smallbore Rifle Team, Orienteering Team and Western’s Rangers. Advanced Course students are eligible for a commission as a Second Lieutenant in the United States Army, either on active duty or in the National Guard or Army 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 $2.25 per semester is charged for support of Military Science activities such as field training exercises and orientation visits.

Minors in Military Science are available as shown here.

### Military Science Minors

A department minor slip is required.

#### A. Four Year Program

**Freshman Year**
- MLSC 100 or MLSC 101 or PEGN 175: 1 or 2 or 3 hours

**Sophomore Year**
- MLSC 202 and MLSC 203: 4 hours
- Junior Year: 6 hours
- MLSC 302 and MLSC 303: 4 hours
- Senior Year: 3 hours
- HIS 319 or 395 or 594: 16-17 hours

#### B. Two Year Program*

**Junior Year**
- MLSC 302 and MLSC 303: 6 hours
- MGMT 352 or CAS 335 or MLSC 390: 3 hours
- Senior Year: 4 hours
- MLSC 401 and MLSC 420: 3 hours
- HIS 319 or 395 or 594: 16-17 hours

*(Prerequisite: Veteran, or 3 yrs. JROTC, or Basic Camp, or On-Campus Summer Program, or approval of department head.)*

#### 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. First year students take Military Fitness (PEGN 175) or MLSC 100 and MLSC 101. Sophomore students take MLSC 202 during the Fall and MLSC 203 during the Winter. Exceptions may be approved by the professor of military science. Students 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 or on-campus summer program 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. Foreign students should contact the Department Chairman prior to enrolling in Military Science courses.

*(Courses described in italics are approved for General Education.)*

Numbers following course title indicate hours of lecture and laboratory hours per week during a semester (lecture-lab hours).

100 Contemporary Roles of National Defense (3-0)
- 3 hrs. Fall, Winter

The study of foundations of defense and subjects of current national military implication and interest. Subject material includes military involvement around the world, and other topics of current U.S. Military/Civilian interest.

101 Military Aspects of National Power (2-0)
- 2 hrs. Fall, Winter

A study of the factors contributing to national and international power; and introduction to the principles of warfare and the causes of international conflict.

110 Military Career Opportunities (1-0)
- 1 hr. Summer

An examination of all branches of the Service and the wide variety of careers available to military personnel.

120 Military Fitness I (2-0)
- 1 hr. Fall, Spring

Classes which combine physical and leadership training. Students will have an opportunity to rappel, orienteer, and receive basic rifle marksmanship instruction. 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.)

202 Basic Leadership (2-0)
- 2 hrs Fall, Winter, Summer

A study of leadership principles and methods of instruction. Includes a study of the evolution, purpose and organization of the military.

203 Advanced Leadership & Management (2-0)
- 2 hrs. Winter, Spring

Studies of authority and responsibility, span of control, planning, coordination, and decision-making with emphasis on practical application to military situations.
220 Military Fitness II (2-0)  
1 hr. Winter  
A continuation of Military Fitness I. Emphasis is placed on 
military related physical activities such as riflery, 
orienteeering, and survival training. This course is taught in 
junction with the General Physical Education 
department and must be registered for under PEGN 175 
Special Activities. (See current Schedule of Classes.)

290 Basic Leadership Field Experience  
3 hrs. Spring, Summer  
A six-week Summer Camp designed for students who were 
unable to take the Military Science Basic Program on 
campus. The students receive practical experience and 
instruction in tactical and technical subjects, with specific 
emphasis on leadership training in the form of problem 
analysis, decision making, and troop leading procedures. 
Travel to and from camp, room and board are provided at 
no expense to the student. Prerequisite: Approval of 
Department Head.

299 Studies in Military Science (Variable 2 or 3 hrs.)  
Fall, Winter, Spring, Summer  
An opportunity for students who have been unable to take 
Military Science courses in sequence to obtain needed 
course work at more convenient times. Course content is 
adapted to meet the individual needs of the student. 
Prerequisite: Approval of Department Head.

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 27 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 $345.00 monthly while in camp, and 
are given a travel allowance to the summer camp and 
return. 

One overnight field training exercise will be conducted 
each semester. The training will be a practical exercise 
emphasizing previous classroom instruction.

302 Fundamentals of Tactical Employment and Land 
Navigation (3-0)  
3 hrs. Fall  
A study of tactical considerations and employment of small 
military units to include their movement based on topographic 
map reading and land navigation techniques. Prerequisite: 
Approval of Department Head.

303 Advanced Concepts of Tactical Employment (3-0)  
3 hrs. Winter  
A study of tactical situations. Development of planning and 
coordination sequences applicable to the employment of 
military resources. Prerequisite: MLSC 302 or consent.

390 Advanced Military Leadership (4-0)  
4 hrs. Spring  
A six-week training session designed to supplement 
campus instruction by providing the cadet practical 
experience and instruction in tactical and technical 
subjects with specific emphasis on leadership training in 
the form of problem analysis, decision making and troop 
leading experience. Prerequisite: Approval of Department Head.

400 Military History  
3 hrs. Fall, Winter  
Students will enroll in either History 319 (America and 
War), or History 594 (War in the Modern World), or History 
395 (History of War).

401 Command and Staff (3-0)  
3 hrs. Fall  
A comprehensive course in the fundamentals of military 
administrative management and military law. Prerequisite: 
MLSC 302-MLSC 303 or approval of Department Head.

420 Practicum in Leadership (1-0)  
1 hr. Winter  
A study of the functions of the staff and its relationship to 
the commander. Students are placed in actual positions to 
supervise the Cadet Corps. Prerequisite: Approval of 
Department Head.

499 Studies in Military Science  
1-4 hrs. Fall, Winter, Spring, Summer  
An opportunity for students who have been unable to take 
Military Science courses in sequence to obtain needed 
course work at more convenient times. Course content is 
adapted to meet the individual needs of the students. 
Topics may vary from semester to semester and students 
may repeat the course. Prerequisite: Approval of 
Department Head.

Two Year Program  
For the students transferring into the University and 
currently enrolled 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 or an equivalent on-
campus summer program. Attendance and successful 
completion of basic summer camp or summer program 
then is substituted for the basic course classes; therefore, 
the student has only to complete the advanced course 
classes while he or she is finishing the 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), 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 or she will also receive travel pay plus a salary of 
approximately $374.00 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 in the Scholarships portion of this catalog.
Paper Science and Engineering

Richard B. Valley, Chair
Lyman C. Aldrich
John M. Fisher
Raymond L. Janes
Robert E. Kinsey
James E. Kline
Duane W. Marshall
David K. Peterson
Richard G. Simms

The Department of Paper Science and Engineering offers three B.S. programs and a M.S. program which provide extensive 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 into graduate school in the sciences.

Academic Counseling

Student should contact the Paper Science and Engineering 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 to help solve academic problems. Substitutions and transfer credit must be approved by the departmental counselor. The academic counselor, Dr. Raymond L. Janes, is located in Room 2690, Paper Science and Engineering, McCracken Hall.

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 outstanding pilot plant papermaking and coating machines of the department. An extensive recycled fiber pilot plant is also available. The pilot plant and laboratory facilities are among the best in the world.

Enrollment

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Students not attending courses for whatever reasons are responsible for processing drop slips with the Registration Office if fees are to be refunded and an “X” grade avoided.

Prerequisites

Prerequisites are designed to both increase the probabilities of successful completion of the course as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this department may be found in the beginning of the College of Applied Sciences’ section of the catalog.

A minor in Paper Science may earned by completing the following 19 semester hours of departmental courses: 100, 101, 203, 204, 340 and 342. Prerequisites for the above courses must be completely satisfied except for those who substitute Physics 106 for 210 and Organic Chem 365 for 360 and 361.

Requirements

Candidates for the Bachelor of Science degree must satisfy all of the following requirements in addition to university requirements stated elsewhere in this bulletin:

1. Students must earn a “C” or better grade in PAPR 203, 204, 251 and 306.
2. A maximum of two “D” grades will be allowed to stand in courses other than Technical Professional Electives and General Education of the required curriculum in order to graduate.

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 eight semesters beginning Fall):

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPER SCIENCE—35 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAPR 100</td>
<td>100</td>
<td>Introduction to Pulp and Paper Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 101</td>
<td>101</td>
<td>Laboratory Problems in Pulp and Paper Manufacture</td>
<td>1</td>
</tr>
<tr>
<td>PAPR 203</td>
<td>203</td>
<td>Pulp Manufacture</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 204</td>
<td>204</td>
<td>Paper Manufacture</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 305</td>
<td>305</td>
<td>Mechanics and Optics of Fiber Systems</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 340</td>
<td>340</td>
<td>Science/Engineering Experience</td>
<td>1</td>
</tr>
<tr>
<td>PAPR 342</td>
<td>342</td>
<td>Converting Processes</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 440</td>
<td>440</td>
<td>Coating Processes</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 470</td>
<td>470</td>
<td>Senior Thesis I</td>
<td>3</td>
</tr>
<tr>
<td>IED 451</td>
<td>451</td>
<td>Printing Processes</td>
<td>2</td>
</tr>
<tr>
<td>PAPR 471</td>
<td>471</td>
<td>Senior Thesis II</td>
<td>3</td>
</tr>
<tr>
<td>CHEMISTRY—34 Hours</td>
<td>101</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 120</td>
<td>120</td>
<td>General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 360</td>
<td>360</td>
<td>Organic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 361</td>
<td>361</td>
<td>Organic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 222</td>
<td>222</td>
<td>Quantitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 333</td>
<td>333</td>
<td>Chemistry of Wood and Pulp</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 530</td>
<td>530</td>
<td>Polymer and Surface Chemistry</td>
<td>3</td>
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### Course Selection

<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>CHEM 430</td>
<td></td>
<td>Physical Chemistry I</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>CHEM 431</td>
<td></td>
<td>Physical Chemistry II</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>CHEM 436</td>
<td></td>
<td>Physical Chemistry Laboratory</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>ENGINEERING—11 Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAPR 306</td>
<td></td>
<td>Process Engineering I</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 307</td>
<td></td>
<td>Process Engineering II</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
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<tr>
<td>PAPR 251</td>
<td></td>
<td>Intro. to Industrial</td>
<td>1 2 3 4 5 6 7 8</td>
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### Mathematics—21 Hours

<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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<tbody>
<tr>
<td>CS 106</td>
<td></td>
<td>BASIC for Engineers</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>MATH 122</td>
<td></td>
<td>Calculus I</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>MATH 123</td>
<td></td>
<td>Calculus II</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>MATH 272</td>
<td></td>
<td>Vector and Multivariate</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>MATH 374</td>
<td></td>
<td>Intro. Linear Algebra and</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diff. Equations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 364</td>
<td></td>
<td>Statistical Methods</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
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</table>

### Physics—8 Hours

<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>PHYS 210</td>
<td></td>
<td>Mechanics and Heat</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PHYS 211</td>
<td></td>
<td>Electricity and Light</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
</tbody>
</table>

### Technical-Professional—6 hrs.

<table>
<thead>
<tr>
<th>Electives*</th>
<th>Semester</th>
<th>Credit Hours</th>
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</table>

### General Education—Distribution Program—19 Hours

<table>
<thead>
<tr>
<th>AREA I</th>
<th>Humanities</th>
<th>1 2 3 4 5 6 7 8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA II</td>
<td>Social Science (Incl. ECON 201)</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>AREA III</td>
<td>Natural Science and Mathematics</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
</tbody>
</table>

### Physical Education—2 Hours

<table>
<thead>
<tr>
<th>Total for Graduation—136 Hours</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>

*Select from Paper Science, Chemistry, Engineering or Business courses. All electives need approval of Department.

**Two courses at 300-500 level.

***Select from IEGM 102, BEO 142, or ENG 105.

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### Paper Engineering

**Bachelor of Science in Engineering (Paper) 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 eight semesters beginning Fall):

<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>PAPER SCIENCE—29 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAPR 100</td>
<td></td>
<td>Introduction to Pulp and Paper Manufacture</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 101</td>
<td></td>
<td>Laboratory Problems in Pulp and Paper Manufacture</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 203</td>
<td></td>
<td>Pulp Manufacture</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 204</td>
<td></td>
<td>Paper Manufacture</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 305</td>
<td></td>
<td>Mechanics and Optics of Fiber Systems</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 310</td>
<td></td>
<td>Science/Engineering Experience</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 340</td>
<td></td>
<td>Converting Processes</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 342</td>
<td></td>
<td>Coating Processes</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 440</td>
<td></td>
<td>Current Topics in Paper and Pulp</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>IED 451</td>
<td></td>
<td>Printing Processes</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
</tbody>
</table>

### Basic Sciences—19 Hours

<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>CHEM 101</td>
<td></td>
<td>General Chemistry</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>CHEM 102</td>
<td></td>
<td>General Chemistry II</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 333</td>
<td></td>
<td>Chemistry of Wood and Pulp</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PHYS 210</td>
<td></td>
<td>Mechanics and Heat</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PHYS 211</td>
<td></td>
<td>Electricity and Light</td>
<td>1 2 3 4 5 6 7 8</td>
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</table>

### Engineering Sciences—32 Hours

<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>PAPR 251</td>
<td></td>
<td>Intro. to Industrial Environmental Engrg.</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 306</td>
<td></td>
<td>Process Engineering I</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PAPR 307</td>
<td></td>
<td>Process Engineering II</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>ME 256</td>
<td></td>
<td>Statics</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>ME 353</td>
<td></td>
<td>Strength of Materials</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>ME 355</td>
<td></td>
<td>Dynamics</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>EE 210</td>
<td></td>
<td>Circuit Analysis I</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>EE 211</td>
<td></td>
<td>Machines and Electronic Circuits</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>EE 221</td>
<td></td>
<td>Electronics I</td>
<td>1 2 3 4 5 6 7 8</td>
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</tr>
</tbody>
</table>

### Mathematics—17 Hours

<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>CS 106</td>
<td></td>
<td>BASIC for Engineers</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
</tbody>
</table>

---

*Select from IEGM 102, BEO 142, or ENG 105.
### Environmental Engineering

Bachelor of Science in Engineering (Environmental) 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 eight semesters beginning Fall):

<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>PAPR 251</td>
<td></td>
<td>Intro. to Indl. Envir. Engrg.</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 350</td>
<td></td>
<td>Water Quality and Microbiology</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 353</td>
<td></td>
<td>Waste Water Treatment Systems</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 450</td>
<td></td>
<td>Solid Waste Treatment</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 470</td>
<td></td>
<td>Senior Thesis I</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 471</td>
<td></td>
<td>Environmental Process Design</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>ME 454</td>
<td></td>
<td>Air Pollution Control Systems</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 100</td>
<td></td>
<td>Intro. to Pulp and Paper Manufacture</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 101</td>
<td></td>
<td>Laboratory Problems in Pulp and Paper Manufacture</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 203</td>
<td></td>
<td>Pulp Manufacture</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 204</td>
<td></td>
<td>Paper Manufacture</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 306</td>
<td></td>
<td>Process Engineering I</td>
<td>4</td>
<td>3</td>
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<tr>
<td>PAPR 307</td>
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<td>Process Engineering II</td>
<td>4</td>
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<td>PAPR 590</td>
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<td>Instrumentation and Process Control</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PAPR 440</td>
<td></td>
<td>Current Topics in Paper and Pulp</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 131</td>
<td></td>
<td>Engineering Drafting</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>ME 256</td>
<td></td>
<td>Statics</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>ME 353</td>
<td></td>
<td>Strength of Materials</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 101 or 102</td>
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<td>General Chemistry</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 120</td>
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<td>Qualitative Analysis</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 222</td>
<td></td>
<td>Quantitative Analysis</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 365</td>
<td></td>
<td>Introduction to Organic Chemistry</td>
<td>4</td>
<td>3</td>
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<tr>
<td>CHEM 535</td>
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<td>Introduction to Physical Chemistry</td>
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<td>3</td>
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<tr>
<td>BIO 105</td>
<td></td>
<td>Environmental Biology</td>
<td>4</td>
<td>3</td>
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</tbody>
</table>

*Select from Paper Science, Chemistry, Engineering, or Business courses. All electives need approval of Department. Two courses at 300-500 level. Select from IEGM 102, BED 142, or ENG 105.
## Course Descriptions

(Courses described in italics are approved for General Education.)

Numbers following course title indicate hours of lecture and laboratory per week during each semester (lecture hours—lab hours).

**100 Introduction to Pulp and Paper Manufacture (2-3)**
3 hrs. Fall
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, CHEM 101 or 102 concurrent.

**101 Laboratory Problems in Pulp and Paper Manufacture (Arr.)**
1 hr. Winter
A continuation of the laboratory studies of PAPR 100. The student should acquire an understanding of the basic tests and test procedures used in the pulp and paper industry and their significance. Prerequisite: PAPR 100.

**150 Environmental Engineering Fundamentals (3-0)**
3 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.

**203 Pulp Manufacture (3-5, Alternate Weeks)**
4 hrs. Fall
An advanced study of the processes involved in the production of paper making fibers. Areas covered include wood yard operations, pulping, bleaching, stock preparation, chemical recovery and alternate fiber sources. Analysis is made using chemical, physical and engineering principles. Lectures are augmented by laboratory exercises and field trips. Prerequisites: PAPR 100, CHEM 101 or 102.

**204 Paper Manufacture (3-5, Alternate Weeks)**
4 hrs. Winter
An advanced study of the processes involved in the formation, consolidation and drying of a web of paper. Areas covered include refining, fourdrinier and multi-ply operation, pressing and drying. Internal and surface treatment of the paper is discussed along with the effects of additives and fiber types. Analysis is made using chemical, physical and engineering principles. Lectures are augmented by laboratory exercises and field trips. Prerequisite: PAPR 100.

**251 Introduction to Industrial Environmental Engineering (3-0)**
3 hrs. Winter
The effects, regulations and control processes for gas, liquid and solid by-products of industries and municipalities are discussed. Legal and economic implications will be included in evaluation of applicable emission reduction and control techniques or processes. Prerequisites: MATH 123, CHEM 101 or 102. PHYS 210 or 110.

**305 Mechanics and Optics of Fiber Systems (3-3)**
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, basics of color measurement and light scattering and the use of the Kubelka-Munk Theory. Prerequisite: PAPR 204.
306 Process Engineering I (3-3)
4 hrs. Fall
Fundamentals of chemical engineering dealing with behavior of gases, thermophysical properties of gases, liquids and solids, thermochemistry, and associated problem solving. Emphasis is on mass and energy balances. The laboratory period is utilized as a problem solving workshop. Prerequisites: CHEM 101 or 102, MATH 123, PHYS 210.

307 Process Engineering II (3-3)
4 hrs. Winter
A continuation of 306 dealing with the unit operations of chemical engineering in the areas of fluid mechanics and heat transfer. Emphasis is on principles and equipment design and application. The laboratory period is devoted to problem solving and equipment design. Prerequisite: PAPR 306.

310 Science/Engineering Experience
1 hr. Spring and/or Summer
Full time employment in a pulp and/or paper mill or related industry that provides first-hand experience in a job capacity directly related to the student's major. A written report is required. (Departmental consent is required. Open only to department majors of Junior or Senior standing.)

333 Chemistry of Wood and Pulp (3-0)
3 hrs. Fall
Consideration of the chemistry of wood, pulp, and pulp by-products. Included topics are cellulose, lignin, accessory carbohydrates, extractives, and spent liquor utilization. Prerequisites: PAPR 203.

340 Converting Processes (2-3)
3 hrs. Fall
Covers the machinery and processes involved in the converting of paper and board. Also covered will be the application of the principles of materials handling and process flow to the design and operation of the converting plant. Laboratory time will be devoted to converting plant visits and evaluation techniques. Prerequisite: PAPR 204.

342 Coating Processes (3-3)
4 hrs. Winter
A lecture-lab course dealing with the fundamentals of pigmented and functional coating of paper and board. Coating rheology, evaluation of coated paper and the performance of paper in the graphic arts will also be covered. Prerequisite: PAPR 305.

350 Water Quality and Microbiology (2-3)
3 hrs. Fall
A study of the physical, chemical and biological characteristics of water. Topics stressed include: hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. Prerequisite: CHEM 101 or 102.

351 Water Quality and Microbiology (2-0)
2 hrs. Fall
A discussion of the physical, chemical and biological characteristics of water. Topics stressed include: hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. (This is a non-laboratory course offered for adult education. Credit may not be earned in PAPR 351 by Paper Science and Engineering department majors.)

352 Fiber Resource Conservation and Recycling (2-2)
3 hrs. Winter
Consideration of the recovery of waste paper and other fiber sources for use in the manufacture of paper and paperboard. Topics include waste fiber collection, contaminant removal, in-plant reuse, effect on the processes and the products, and the economics involved.

353 Waste Water Treatment Systems (3-3)
4 hrs. Winter
A study of the fundamental principles, design considerations, and use of the unit processes and operations employed in waste water treatment. Physical, physiochemical, and biological treatments are considered. Prerequisite: PAPR 350.

440 Current Topics in Paper and Pulp (1.5-0)
1 hr. Fall, Winter
This course will be handled on a seminar basis using guest speakers, University staff, and students. Its purpose is to add depth and breadth to the background of students.

450 Solid Waste Treatment (1-3)
2 hrs. Fall
The practice, technology, and economics of the treatment of solid wastes generated by municipal and industrial sources are studied. Discussion will include treatment, disposal, in-process utilization, and conversion to useful by-products for solid and semi-solid wastes. Prerequisite: Junior standing.

451 Environmental Process Design (3-3)
4 hrs. Winter
The design and operational factors of a number of unit processes and operations used in pollution control are studied. The principles acquired in previous courses will be applied to the design of environmental control systems. Prerequisites: PAPR 307, PAPR 353.

470 Senior Thesis I (0-6 Min.)
3 hrs. Fall, Winter, Spring, Summer
This course is intended to increase the student's ability to solve a research or technical problem. The student will critically analyze a selected problem, use this analysis to design an experimental investigation, carry out the experiments and present the completed program effectively in both written and oral form. About one-half of the semester is spent developing the problem and completing the literature search, the other half is devoted to planning and initiating the experimental work. Prerequisite: Senior standing.

471 Senior Thesis II (0-6 Min.)
3 or 4 hrs. Fall, Winter, Spring, Summer
A continuation of PAPR 470, including completion of the laboratory work and preparation of the final reports. Oral presentation to be arranged. Prerequisite: Satisfactory completion of PAPR 470.

499 Independent Studies (0-6)
1-6 hrs. Fall, Winter, Spring, Summer
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 and Surface Chemistry (3-0)
3 hrs. Winter
Molecular, bulk, and solution properties of high molecular weight compounds and their characterization. Structure and properties of colloids and other surfaces are related to adsorption, wetting, detergency, and adhesion behavior. Prerequisite: CHEM 361 or 365.

550 Paper Industry Processes (2-2)
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.
Transportation Technology

Harley D. Behm, Chair
John W. Cummings
Thomas L. Deckard
Herbert E. Ellinger
Richard B. Hathaway
Arthur W. Hoadley
Forrest O. Hutchins
LaVerne M. Krieger
David P. Krueger
Richard L. Kugel
Herman W. Linder
Ronald L. Sackett
Pat D. Schiffer
Curtis N. Swanson
James VanDePolder

The Department of Transportation Technology offers the following curricula:

- Aircraft Engineering—B.S. in Engineering (Aircraft) Degree
- Automotive Engineering—B.S. in Engineering (Automotive) Degree
- Transportation Systems—B.S. Degree
- Automotive Management and Service—B.S. Degree
- Aviation Technology and Management—B.S. Degree
- Flight Technology—B.S. Degree

These programs are designed to provide graduates with the background necessary to successfully assume a variety of positions in transportation-related industries. The combination of specialized and general education is intended to allow employment flexibility, although most graduates are placed in the automotive or aviation industries.

Academic Counseling

Students should contact a Transportation Technology academic counselor as soon 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. Failure to work with the department counselor and participate properly in the academic planning system may result in difficulty in receiving requested class schedules.

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 areas such as manufacturing, product development, maintenance management, field service divisions of major companies, and aviation education. Students interested in a cooperative plan of study should contact the Director of Cooperative Education, Room 2038 I&ET Building, or one of the Departmental academic counselors.

Enrollment

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours, unless prior arrangements have been made with the instructor. Students not attending courses, for whatever reasons, are
responsible for processing drop slips with the Registration Office if fees are to be refunded and an "X" grade avoided.

Satisfactory completion of first year courses is required before enrollment in subsequent courses.

Enrollment in flight courses is subject to a waiting list which is maintained at the aviation building and administered according to Departmental policy.

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.

Prerequisites
Prerequisites are designed to both increase the probabilities of successful completion of the course, as well as to insure the proper conduct of the course. Therefore, prerequisites will be strictly enforced in all Departmental courses. Exceptions must be accepted by the course instructor no later than the end of the "add" period of the semester or session.

Additional Information
General information regarding counseling, scholarships, and special programs of interest to students in this Department may be found at the beginning of the College of Applied Sciences section of the catalog.

Flight and aircraft technology courses are offered under Technical School and Airman Agency Certification by the Federal Aviation Administration (F.A.A.). All of the aviation curricula permit students to qualify for the F.A.A. Airframe and Powerplants License with some additional course work. This specially approved curriculum must be completed prior to taking the F.A.A. examination. Qualified students will be admitted to the program by Departmental counselors.

Additional Costs
Special lab fees are in effect for flight courses to cover the cost of airplane operation. The fee is subject to change without notice and currently varies from $250 to $1090, depending on the course.

Students are required to have their own tools for aviation courses in airframes and powerplants. A basic set of required tools may be purchased for less than $100. Class-related charges are assigned for some laboratory courses to help cover cost of materials.

Aircraft Engineering
Bachelor of Science in Engineering (Aircraft) Degree

The Aircraft Engineering curriculum offers preparation for careers in the aviation industry in manufacturing, product development, technical sales, and other areas requiring application of engineering skills and knowledge.

Requirements
Candidates for the Bachelor of Science Degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. A "C" average or better must be earned in required courses with a TRAN prefix.
2. A maximum of two "D" grades are allowed in curriculum requirements.
3. Complete the following program (the schedule below is an example of one leading to graduation in eight semesters, beginning with Fall):

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>
| TRAN 110 | Aeroscience | 3 |...
| TRAN 117 | Aircraft Reciprocating Powerplants | 3 |...
| TRAN 118 | Aircraft Structures | 3 |...
| TRAN 213 | Airframe, Hydraulic, Pneumatic & Auxiliary Systems | 4 |...
| TRAN 222 | Fuels & Lubricants | 3 |...
| TRAN 223 | Fuel Metering Systems | 3 |...
| TRAN 231 | Powerplant Systems Lab | 2 |...
| TRAN 313 | Aircraft Electrical Systems | 4 |...
| TRAN 315 | Aircraft Turbine Engines | 4 |...
| EE 210 | Circuit Analysis I | 4 |...
| EE 211 | Machines & Electronic Circuits | 4 |...
| ME 256 | Statics | 3 |...
| ME 332 | Thermodynamics I | 3 |...
| ME 353 | Strength of Materials | 3 |...
| ME 355 | Dynamics | 3 |...
| TRAN 327 | Instrumentation & Testing | 3 |...
| ME 356 | Fluid Mechanics | 3 |...
| ME 371 | Metallurgy & Materials Failure | 4 |...
| ME 432 | Thermodynamics II | 3 |...
| ME 358 | Mechanism Analysis | 3 |...
| ME 365 | Machine Design | 3 |...
| TRAN 410 | Aerodynamics & Structural Design | 3 |...
| TRAN 419 | Aircraft Engineering Lab | 3 |...
| ME 453 | Product Engineering | 3 |...
| CS 106 | BASIC for Engineers | 1 |...
| MATH 122 | Calculus I | 4 |...
| MATH 123 | Calculus II | 4 |...
| MATH 274 | Differential Equations | 3 |...
| CHEM 103 | General Chemistry I | 4 |...
| PHYS 210 | Mechanics & Heat | 4 |...
| PHYS 211 | Electricity & Light | 4 |...
| TRANSPORTATION TECHNOLOGY | 107 |
Automotive Engineering

Bachelor of Science in Engineering (Automotive) Degree

The Automotive Engineering curriculum offers career preparation for design, development, testing, manufacturing or service engineering positions within automotive-related industries.

Requirements Candidates for the Bachelor of Science Degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:
1. A "C" average or better must be earned in required courses with a TRAN prefix.
2. A maximum of two "D" grades are allowed in curriculum requirements.
3. Complete the following program. The schedule below is an example of one leading to graduation in eight semesters, beginning with Fall:

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester</th>
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<td>AUTOMOTIVE CORE COURSES</td>
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<td>TRAN 124</td>
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<td>Automotive Engines</td>
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<td>TRAN 121</td>
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<td>Automotive Chassis</td>
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<td>TRAN 221</td>
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<td>Automatic Transmissions</td>
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<td>TRAN 222</td>
<td></td>
<td>Fuels &amp; Lubricants</td>
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</tr>
<tr>
<td>TRAN 223</td>
<td></td>
<td>Fuel Metering Systems</td>
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<td>TRAN 324</td>
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<td>Automotive Electronics</td>
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<td>ENGINEERING SCIENCES</td>
<td>ME 270</td>
<td>Materials Science</td>
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<tr>
<td>EE 210</td>
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<td>Circuit Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>EE 211</td>
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<td>Machines &amp; Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ME 256</td>
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<td>Statics</td>
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<td>ME 332</td>
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<td>Thermodynamics I</td>
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<td>IEGM 102</td>
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<td>Technical Communication</td>
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<tr>
<td>IEGM 131</td>
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<td>Engineering Drafting</td>
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<td>AREA I</td>
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<td>Humanities</td>
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</tr>
<tr>
<td>AREA II</td>
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<td>Social &amp; Behavioral Sciences</td>
<td>(To include one Economics course)</td>
</tr>
<tr>
<td>AREA IV</td>
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<td>Non-Western World</td>
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<td>PHYSICAL EDUCATION</td>
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<td>APPROVED ELECTIVE</td>
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<tr>
<td>Total for Graduation—</td>
<td>16 16 17 16 17 16 16 14</td>
<td>128 Hours</td>
<td></td>
</tr>
</tbody>
</table>
Transportation Systems
Bachelor of Science Degree

The Transportation Systems curriculum provides a broad background related to transportation and allows skill development for specific career areas such as traffic safety, transit planning, and traffic engineering. Blocks of approved technical electives allow concentration in engineering design or operations, planning, systems analysis, or management.

Candidates for the Bachelor of Science degree must complete the following program. The schedule below is an example of one leading to graduation in eight semesters beginning with Fall:

<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>ANALYSIS AND SYSTEMS</td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
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<tr>
<td>MATH 122</td>
<td></td>
<td>Calculus I</td>
<td>4</td>
<td>4</td>
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<tr>
<td>MATH 123</td>
<td></td>
<td>Calculus II</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>MATH 230</td>
<td></td>
<td>Elementary Linear Algebra</td>
<td>4</td>
<td>4</td>
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<tr>
<td>MATH 272</td>
<td></td>
<td>Vector &amp; Multivariate Calculus</td>
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<td>4</td>
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<tr>
<td>MATH 360</td>
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<td>Probability &amp; Statistics for</td>
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<tr>
<td>CS 106</td>
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<td>BASIC for Engineers</td>
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<td>1</td>
</tr>
<tr>
<td>CS 306</td>
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<td>Introductory Programming—</td>
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<tr>
<td>IEGM 310</td>
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<td>Engineering Economy</td>
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<tr>
<td>IEGM 419</td>
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<td>Introd to Operations Research</td>
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<td>3</td>
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<tr>
<td>TRAN 370</td>
<td></td>
<td>Traffic Engineering</td>
<td>3</td>
<td>3</td>
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<tr>
<td>TRAN 470</td>
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<td>Transportation Systems Design</td>
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<td>3</td>
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<tr>
<td>TRAN 474</td>
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<td>Transportation Engineering</td>
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<tr>
<td>TRAN 498</td>
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<td>Studies in Transportation</td>
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<tr>
<td>TRANSPORTATION TECHNOLOGY</td>
<td>Course</td>
<td>Dept. No.</td>
<td>Course Title</td>
<td>Semester</td>
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<tr>
<td>GEOF 544</td>
<td>GEOG 222</td>
<td>Studies in Economic Geography-</td>
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<td>3</td>
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<td>GEOF 556</td>
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<td>Transportation</td>
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<td>PSCI 504</td>
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<td>Making of Public Policy in U.S.</td>
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<td>GENERAL EDUCATION—DISTRIBUTION PROGRAM</td>
<td>AREA I</td>
<td>Humanities</td>
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<td>4</td>
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<tr>
<td></td>
<td>AREA II</td>
<td>Social Science</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>AREA III</td>
<td>Natural Science &amp; Math</td>
<td>3</td>
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<td>POLICY, ECONOMICS, AND PLANNING</td>
<td>TRAN 270</td>
<td>Transportation in the U.S.</td>
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<td>3</td>
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<tr>
<td>POLICY, ECONOMICS, AND PLANNING</td>
<td>SOC 200</td>
<td>Principles of Sociology</td>
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<td>POLICY, ECONOMICS, AND PLANNING</td>
<td>ECON 201</td>
<td>Principles of Economics (Micro)</td>
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<td>POLICY, ECONOMICS, AND PLANNING</td>
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<td>Principles of Economics (Macro)</td>
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<td>POLICY, ECONOMICS, AND PLANNING</td>
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<td>Environmental Economics</td>
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<td>POLICY, ECONOMICS, AND PLANNING</td>
<td>ECON 445</td>
<td>Economics of Transportation &amp; Public Utilities</td>
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Course

<table>
<thead>
<tr>
<th>Dept. No.</th>
<th>Course Title</th>
<th>Semester</th>
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<tbody>
<tr>
<td>E 105</td>
<td>Technical Communications**</td>
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<tr>
<td>CAS 104</td>
<td>Business &amp; Professional Speech</td>
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<tr>
<td>BED 242</td>
<td>Business Communication</td>
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</tr>
<tr>
<td>TRAN 110</td>
<td>Aeronautics</td>
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<td>4</td>
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<tr>
<td>TRAN 118</td>
<td>Aircraft Structures</td>
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<td>TRAN 117</td>
<td>Aircraft Reciprocating</td>
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<td>3</td>
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<tr>
<td>TRAN 213</td>
<td>A/F Hydraulic, Pneumatic and</td>
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<tr>
<td>TRAN 230</td>
<td>Auxiliary Systems</td>
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<td>TRAN 231</td>
<td>Powerplant Systems</td>
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<td>TRAN 234</td>
<td>Powerplant Systems Lab</td>
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<tr>
<td>TRAN 243</td>
<td>Powerplant Evaluation &amp; Testing</td>
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<td>TRAN 307</td>
<td>Airframe Electrical Systems</td>
<td>4</td>
<td>4</td>
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<tr>
<td>TRAN 315</td>
<td>Aircraft Turbine Powerplants</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**NOTE:** These course requirements, along with curricular requirements, will satisfy General Education-Distribution program requirements, provided that at least two 300-500 level General Education courses are completed.

**ENG 105 or BED 142 may be substituted.**
<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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<tr>
<td>IEGM 422</td>
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<td>BUSINESS ECONOMICS</td>
<td>ACTY 201</td>
<td>Accounting Concepts and Applications</td>
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<td></td>
<td>ECON 201</td>
<td>Principles of Economics (Micro)</td>
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<td></td>
<td>ECON 202</td>
<td>Principles of Economics (Macro)</td>
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<td></td>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
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<td></td>
<td>TRAN 344</td>
<td>Air Transportation</td>
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<td>MKTG 370</td>
<td>Marketing</td>
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<td>MATHEMATICS AND SCIENCE</td>
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<td>Analysis and Applications</td>
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<td>MATH 260</td>
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<td>PHYS 106</td>
<td>Elementary Physics</td>
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<td>GENERAL EDUCATION—DISTRIBUTION PROGRAM*</td>
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<td>Humanities</td>
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<td>AREA IV</td>
<td>Non-Western World</td>
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<td>4</td>
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<td></td>
<td>AREA V</td>
<td>Optional Electives</td>
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<td>4</td>
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<tr>
<td>PHYSICAL EDUCATION</td>
<td></td>
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<tr>
<td>APPROVED ELECTIVES</td>
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<td>3</td>
<td>2 3 3</td>
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<tr>
<td>Total for Graduation—128 Hrs.</td>
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<td>16 16 16 16 17 15 16 16 16</td>
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</tbody>
</table>

*NOTE: These course requirements, along with curricular requirements, will satisfy General Education-Distribution program requirements, provided that at least two 300-500 level General Education courses are completed.

**ENG 105 or BED 142 may be substituted.

**Flight Technology**

Bachelor of Science Degree

This professional pilot program is oriented toward career-pilot positions in general aviation. Appropriate electives allow preparation for careers in fields such as aviation operations and business, aviation education, or as a pilot/mechanic.

Requirements

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to university requirements stated elsewhere in this bulletin:

1. A private pilot license is required to enroll in flight courses in this curriculum.
2. A "C" average or better must be earned in required courses with a TRAN prefix.
3. A maximum of two "D" grades are allowed in curriculum requirements.
4. Complete the following program. The schedule below is an example of one leading to graduation in eight semesters, beginning with Fall:

<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>TRAN 110</td>
<td></td>
<td>Aeroscience</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 117</td>
<td></td>
<td>Aircraft Reciprocating Powerplants</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 118</td>
<td></td>
<td>Aircraft Structures</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 205</td>
<td></td>
<td>Aviation Safety</td>
<td></td>
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<tr>
<td>TRAN 230</td>
<td></td>
<td>Powerplant Systems</td>
<td></td>
<td>3</td>
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<tr>
<td>TRAN 222</td>
<td></td>
<td>Fuels and Lubricants</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 300</td>
<td></td>
<td>Navigation Systems and Weather</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 301</td>
<td></td>
<td>Commercial Flight I</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 213</td>
<td></td>
<td>A/F Hydraulic, Pneumatic and Auxiliary Systems</td>
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<tr>
<td>TRAN 234</td>
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<td>Powerplant Evaluation and Testing</td>
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<td>TRAN 303</td>
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<td>Commercial Flight II</td>
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<tr>
<td>TRAN 305</td>
<td></td>
<td>Commercial Flight III</td>
<td></td>
<td>3</td>
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<tr>
<td>TRAN 344</td>
<td></td>
<td>Air Transportation</td>
<td></td>
<td>3</td>
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<tr>
<td>TRAN 400</td>
<td></td>
<td>Aerodynamics &amp; Flight Principles</td>
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<tr>
<td>TRAN 313</td>
<td></td>
<td>Airframe Electrical Systems</td>
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<td>4</td>
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<td>TRAN 315</td>
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<td>Aircraft Turbine Powerplants</td>
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<tr>
<td>TRAN 350</td>
<td></td>
<td>Approved Electives (29 hours)</td>
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<td></td>
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<td>(See Elective Sequence Listed Below)</td>
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<tr>
<td>ENGINEERING AND TECHNOLOGY</td>
<td>EE 100</td>
<td>Fund of Circuits and Electronics</td>
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<tr>
<td></td>
<td>IEGM 130</td>
<td>Technical Drafting</td>
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<tr>
<td></td>
<td>ME 371</td>
<td>Metallurgy and Material Failure</td>
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<tr>
<td>ECONOMICS</td>
<td>ECON 201</td>
<td>Principles of Economics (Micro)</td>
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<tr>
<td></td>
<td>ECON 202</td>
<td>Principles of Economics (Macro)</td>
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<tr>
<td>MATHEMATICS AND SCIENCE</td>
<td>CS 106</td>
<td>BASIC for Engineers</td>
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<td></td>
<td>MATH 200</td>
<td>Analysis and Applications</td>
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<td></td>
<td>PHYS 106</td>
<td>Elementary Physics</td>
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<td></td>
<td>CHEM 103</td>
<td>Chemistry</td>
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<td></td>
<td>GEOG 105</td>
<td>Our Physical Environment</td>
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<td>4</td>
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<tr>
<td></td>
<td>GEOG 225</td>
<td>Intro to Meteorology and Climatology</td>
<td></td>
<td>4</td>
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</tbody>
</table>
Course Descriptions

(Courses with descriptions in italics are approved for General Education.)

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

General Interest Courses

100 Private Pilot Ground School (3-0)
3 hrs. Fall, Winter
A beginning course for students engaged in primary flight instruction or interested in such instruction. Topics include flight theory, Federal air regulations, aviation weather, navigation, performance factors, and weight and balance. Upon completion, the student may take the Federal Aviation Administration written examination for private pilots.

101 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 introductory cross-country flying experience. Approximately 20 hours of flight time. Prerequisites: Third-class medical certificate prior to enrollment and completed TRAN 200 or taking concurrently. May not be applied toward graduation requirements in Flight Technology.

102 Primary Flight (0-4.5)
3 hrs. Fall, Winter, Spring, Summer
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. Prerequisites: Faculty approval, TRAN 100 and 101. May not be applied toward graduation requirements in Flight Technology.

183 Principles of Auto Maintenance (2-0)
2 hrs. Fall, Winter
A course to help the consumer become aware of automobile maintenance which can help him/her minimize the cost and maximize the dependability and service life of his/her automobile. Not open to Automotive Engineering Technology (AUE) curriculum majors.

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.

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.

495 Topics in Transportation Technology
1-4 hrs. Fall, Winter, Spring, Summer
A specialized course dealing with some particular area of transportation technology not usually included in other course offerings. May be repeated for credit with different topic up to 6 credits. Prerequisite: Consent of department.

499 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
Curriculum Courses

110 Aeroscience (3-0)
3 hrs. Fall
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. Prerequisite: PHYS 106 or taking concurrently.

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 or taking concurrently.

117 Aircraft Reciprocating Powerplants (2-1)
3 hrs. Fall, Winter
Reciprocating aircraft engine principles, their design and operation. Laboratory work involving disassembly, visual and mechanical inspection, reassembly and operation. Prerequisite: TRAN 110 or taking concurrently.

118 Aircraft Structures (2-2)
3 hrs. Fall, Winter
Airframe structures and coverings, including fabric, sheet metal, honeycomb, plastics, and hardware. Laboratory practice in preventive maintenance and inspection. Prerequisite: TRAN 110.

119 Reciprocating Powerplant Overhaul (0-5)
2 hrs. Fall
Comprehensive laboratory study of aircraft reciprocating powerplants involving inspection, repair, and overhaul procedures. Prerequisites: 117 and Consent of Department.

120 Aircraft Structural Repair Lab (0-6)
3 hrs. Fall, Winter
Laboratory experience in major structural repairs including metal, plastic, honeycomb, wood and fabric. Prerequisites: 118 and Consent of Department.

121 Automotive Chassis (2-3)
3 hrs. Fall, Winter
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, calculation of loads, and operations needed to restore to service.

124 Automotive Engines (2-3)
3 hrs. Fall, Winter
The design, dynamic characteristics, elementary thermodynamics, and basic service techniques for 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 111 or equivalent.

205 Aviation Safety (2-0)
2 hrs. Fall, Winter
Physiological and psychological factors relating to flight safety emphasizing cause and effect of airplane accidents and related problem-solving processes. Includes a systems approach to safety program development and management. Prerequisite: Private pilot license or departmental approval.

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 119 and 233.

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
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. Prerequisite: TRAN 116 and seeking A & P License.

218 Aircraft Servicing (2-10)
5 hrs. Spring, Summer
Provides the student with an opportunity to conduct 100 hour and annual inspections, routine and preventative maintenance, minor repairs on certificated flying aircraft, and a review of FAA publications. The student will also have the opportunity to learn servicing techniques for aircraft. Required for all students who plan to qualify for the FAA Airframe and Powerplant Mechanics certificate. Prerequisites: TRAN 119, 120, 214, 231, 313.

221 Automatic Transmissions (2-2)
3 hrs. Fall, Winter
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. Prerequisite: PHYS 106.

222 Fuels and Lubricants (2-2)
3 hrs. Fall, Winter
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. Prerequisite: Chem 103.

223 Fuel Metering Systems (2-2)
3 hrs. Winter
The design and operation of fuel management systems, including induction, fuel metering, and exhaust systems. Carburetion, fuel injection, injection carburetion, emission reduction, manifold design, and volumetric and thermal efficiencies as applied to naturally aspirated and supercharged gasoline and diesel engines, as well as gas turbine engines. Prerequisites: TRAN 124 or TRAN 117 and TRAN 222.

224 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. Prerequisites: EE 100, 101.

230 Powerplant Systems (3-0)
3 hrs. Fall, Winter
Basic principles of aircraft reciprocating engine, ignition systems, carburetion and induction systems including theory of operation and servicing of float type and pressure type carburetors, direct fuel injection, and superchargers. Prerequisites: TRAN 110, 114 or 117.
231 Powerplant Systems Laboratory (0-6)
2 hrs. Fall, Winter
Practical laboratory work in fuel metering, induction and ignition systems, including inspections, overhaul and installation of float and pressure carburetors, fuel injection, supercharger and magneto. Prerequisite: TRAN 230 or taken concurrently.

233 Powerplant Troubleshooting Lab (0-6)
2 hrs. Fall, Winter
A study of and laboratory practices covering engine ground operation. Diagnosis and troubleshooting with extensive use of engine analyzers, test equipment and recorders to isolate engine malfunction. Prerequisites: TRAN 231, 234.

234 Powerplant Evaluation and Testing (2-0)
2 hrs. Fall, Winter
Theory and application of engine operation, performance evaluation and testing. Instrumentation, dynamometers and other test equipment is used to evaluate engine performance and efficiencies. Prerequisites: TRAN 230, CS 106.

300 Navigation Systems and Weather (3-0)
3 hrs. Fall
Advanced navigation systems and equipment including area navigation, pictorial displays, flight directors, and airborne radar application and interpretation, aviation weather analysis and interpretation, relationship of weather patterns to aircraft accidents. Prerequisite: TRAN 205 or private pilot license.

301 Commercial Flight I (0-5.5)
3 hrs. Fall, Winter, Spring, Summer
Initial flight and ground instruction in aeronautical skills and knowledge necessary for commercial flying application. Includes introduction to high performance aircraft and instrument flight. Prerequisite: Private pilot license and second class medical certificate.

303 Commercial Flight II (0-5.5)
3 hrs. Fall, Winter, Spring, Summer
Continuing flight/ground instruction in aeronautical skills, knowledge, and experience pursuant to commercial-instrument pilot certification. Particular emphasis upon use of air traffic control facilities and airways in visual as well as instrument environment. Prerequisites: TRAN 300, 301.

305 Commercial Flight III (0-5.5)
3 hrs. Fall, Winter, Spring, Summer
Completion of instruction and experience requirements for commercial and instrument pilot certification. Includes flight and ground preparation for Federal tests and licensing. Prerequisite: TRAN 303.

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, EE 101 or EE 211.

315 Aircraft Turbine Powerplants (3-3)
4 hrs. Fall, Winter
Reaction engine principles, gas turbine engine construction, design, operation and testing jet aircraft powerplant systems and their operation. Prerequisites: CS 106, MATH 200, TRAN 234.

319 FAA Maintenance Regulations (4-0)
4 hrs. Fall
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 special program.

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.

324 Automotive Electronics (2-2)
3 hrs. Fall
Application of electricity and electronics to the design, operation and service requirements of automotive systems, circuits, and operating devices. Emphasis on analysis of system functions and design parameters. Prerequisites: TRAN 124 and EE 101 or EE 211.

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, 124, 221, 222, 224.

327 Instrumentation and Testing (2-2)
3 hrs. Fall, Winter
Principles of engineering measurements as applied to engine and structure testing. Laboratory assignments include calibration of instruments, obtaining data, dynamometer operation, and engine testing. Data will be analyzed with the aid of the computer. Graphing and analysis techniques will be utilized in formal written reports. Prerequisites: Junior standing in TRAN courses, ME 356, CS 106.

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.

344 Air Transportation (3-0)
3 hrs. Winter
Regulation, organization, and operations peculiar to the air transport industry. Includes a study of legal aspects of air transportation and fundamentals of the air traffic control system.

370 Traffic Engineering (3-0)
3 hrs. Fall
Traffic characteristics and their measurement, engineering analysis of transportation objectives, intersection and interchange designs, traffic control and intersection control. Prerequisites: CS 106, MATH 123.

384 Automechanics for Teachers (1-5)
3 hrs. Fall
Advanced laboratory course for high school and community college automotive teachers. Emphasis on instructional materials and evaluation instruments. Prerequisites: IED 342, TRAN 121, 124, 224.

400 Aerodynamics and Flight Principles (2-0)
2 hrs. Winter
Aerodynamics and flight principles related to airplane operation and performance. An advanced course for pilots to enable them to understand and predict airplane performance in a wide range of flight applications. Prerequisites: TRAN 303, MATH 200.
401 Instrument Flight (0-4.5)  
3 hrs. Fall, Winter, Spring, Summer  
Attitude instrument flying; ATC system utilization, hazards  
and risk management, and techniques. Procedures and  
regulations concerned with instrument flight operations.  
Prerequisite: TRAN 102 or equivalent.

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. Prerequisites: TRAN 305 or equivalent.

403 Flight Instruction Fundamentals (1-5)  
3 hrs. Fall, Winter, Spring, Summer  
A study of airplane performance skills, flight maneuvers,  
critical situations, and airplane type differences,  
emphasizing instructional methods and techniques. Features  
flight instruction, solo flight practice, ground instruction,  
and actual teaching experience after certification.  
Prerequisites: TRAN 205, 305, TEED 301.

404 Instrument Flight Instructing (1-1)  
1 hr. Fall, Winter, Spring, Summer  
Techniques of flight instruction applied to instrument flying.  
Designed to upgrade an airplane flight instructor to an  
instructor instrument. Instructional techniques of attitude  
instrument flying, flight simulator utilization, instrument  
enroute procedures, radio navigation, critical situations, and  
performance analysis. After certification, supervised  
teaching experience is required. Prerequisite: TRAN 403 or  
equivalent.

410 Aerodynamics and Structural Design (3-0)  
3 hrs. Winter  
Aerodynamic characteristics of airfoils, wings, and  
fuselages, and the effect on aircraft performance,  
structural design, and material requirements. Prerequisites:  
TRAN 110, ME 356, 358, 365.

419 Aircraft Engineering Lab (0-6)  
3 hrs. Winter  
Aerodynamic and structural analysis of aircraft. Emphasis  
on design and application of wind tunnel and flight testing  
techniques. Prerequisites: TRAN 327, 410.

421 Automotive Analysis (2-2)  
3 hrs. Winter  
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. Winter  
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/her project. Written reports including  
project request, progress reports, and final reports are  
required. Prerequisite: TRAN 325.

424 Vehicle Dynamics (3-0)  
3 hrs. Fall  
Design of automobile and truck suspensions, steering,  
brakes, drive lines, and frames. Vehicle handling, structural  
requirements and safety systems. Prerequisites: Junior  
standing in TRAN courses, ME 358, 365.

429 Automotive Engineering Lab (0-6)  
3 hrs. Winter  
Special topics in automobile design, including problems of  
performance and economy, compatibility of engine and  
transmission, aerodynamic design applications and noise  
and vibration control. Prerequisites: TRAN 327, 424.

455 Advanced Engine Systems (2-2)  
3 hrs. Winter  
Experimental study of engine design, including power  
measurement, thermal and mechanical efficiency,  
combustion variables, engine mapping, emission analysis  
and alternate powerplant systems. Prerequisites: TRAN 327,  
ME 432, and a basic engine course or consent of  
Department.

470 Transportation Systems Design (3-0)  
3 hrs. Winter  
A review of planning considerations including demand  
forecasting, network analysis and evaluation of alternatives.  
Study of transportation network design with examples of  
current technology. Prerequisites: CS 306, TRAN 270, IEGM  
419.

474 Transportation Engineering (3-0)  
3 hrs. Fall  
The design of streets, highways, and railways, pipelines, air  
transportation facilities and water transportation facilities. A  
familiarization with specific procedures and design criteria  
will be included. Prerequisites: TRAN 370, ME 330, 353.
Departments:
Anthropology
Biology
Biomedical Sciences
Chemistry
Communication Arts and Sciences
Computer Science
Economics
English
Geography
Geology
History
Languages, Modern and Classical
Linguistics
Mathematics
Philosophy
Physics
Political Science
Psychology
Religion
Sociology
Black Americana Studies
Institute of Public Affairs
Interdisciplinary Programs
International and Area Studies Programs
The Medieval Institute

The College of Arts and Sciences at Western Michigan University offers undergraduate courses and programs in the humanities, the social and behavioral sciences, and the physical, biological, and mathematical sciences. The goals of the College for the undergraduate student can be seen as liberal, professional, pre-professional or vocational, depending on the student's motivation for enrolling in a particular course or program. In addition to providing specialization in its many disciplines the College contributes to the basic knowledge and the general education of students throughout the University.

The College of Arts and Sciences expects that its students will develop self-confidence through what they learn as well as a proper awareness of the extent of the knowledge they do not yet possess. It provides students with the tools to explore and master knowledge in areas beyond their present grasp. Thus it hopes to encourage the growth of persons who are competent, humane, and sensitive to the human condition, and who therefore will make effective and substantial contributions to society.

Curricula
College of Arts and Sciences

CURRICULUM ASC ARTS AND SCIENCES

Majors: AMS American Studies
        ANT Anthropology
        BIO Biology
        BMS Biomedical Sciences
        CHM Chemistry
        CAS Communication Arts and Sciences
        CPS Computer Science
        EAR Earth Science
        ECO Economics
        ENG English
        FRE French
        GEG Geography
        GEL Geology
        GEP Geophysics
        GER German
        HCY Health
        HIS History
        LAT Latin
        LIN Linguistics
        MAT Mathematics
        MEV Medieval Studies
        PHI Philosophy
        PHY Physics
        POL Political Science
        PSY Psychology
        REL Religion
        RUS Russian
        SOS Social Science
        SOC Sociology
        SOA Sociology and Anthropology
        SPA Spanish
        STB Statistics

Co-ordinate

Majors* AFS African Studies
        AIS Asian Studies
        CLH Classical Humanities
        CCS Comparative/Cross-Cultural Studies
        EVT Environmental Studies
        EUR European Studies
        LMS Latin American Studies

CURRICULUM LA LIBERAL ARTS
Major: Must elect major and minor from the Arts and Sciences Curriculum.

CURRICULUM CRJ CRIMINAL JUSTICE
Major: CRJ Criminal Justice

CURRICULUM EVS ENVIRONMENTAL STUDIES
Major: EVS Environmental Studies

CURRICULUM PAP PUBLIC ADMINISTRATION
Major: PPA Political Science in Public Administration

*These are majors to be selected only along with a standard major.
The Arts and Sciences Curriculum

Bachelor of Arts or Bachelor of Science Degree

The Arts and Sciences Curriculum requires:
1. A major in the College of Arts and Sciences
2. A minor in any of the Colleges of the University.
3. Eight hours of a foreign language or two years of a foreign language in high school (for B.A. degree only).
4. General Education Requirement, see General Information section of this catalog (one of the following options).
   a. General Studies Program
   b. Distribution Program
   c. Integrated Program
5. Two hours of physical education.
6. Electives and/or additional cognates required by major or minor to make a total of 122 hours.

Liberal Arts

For a Bachelor of Arts or a Bachelor of Science Degree:
1. Seventy (70) hours in the College of Arts and Sciences.
2. One course in Science or Mathematics
   One course in Social Sciences
   One course in the Humanities (excluding language courses)
   One course in the Fine Arts
   (These requirements are in addition to the General Education requirements.)
3. Major and Minor in the College of Arts and Sciences.
4. A minimum of fifty (50) hours of 300, 400, or 500 level courses.
5. Sixteen (16) hours of a foreign language or proficiency by exam.
6. General Education requirement thirty-five (35) hours. Consult the curriculum adviser.
7. Two (2) hours of Physical Education.
8. Electives and/or cognates required by major or minor to make a total of 122 hours.

Other Curricula

For the other curricula offered by the College of Arts and Sciences see the respective programs on the following pages. Advice regarding these programs may be obtained from the appropriate curriculum adviser listed with each program.

All College Courses

Arts and Sciences 100
Career Development for the Undecided Student
1 hr. (Credit/No Credit)
This course is designed to help the undecided student assess and develop skills in self-awareness, career awareness, decision-making and planning. It will include activities to identify and explore the following areas: values, interests, career information, decision-making and University resources. Homework assignments will involve written exercises and research in the Career Media Center.

Arts and Sciences 201
Introduction to Canadian Studies
3 hrs.
Introduction to Canadian Studies is a survey of contemporary Canada as seen by faculty members from the departments of history, geography, sociology, political science, English, economics and business.

Arts and Sciences 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.

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 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 chairperson 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 Communication Arts and Sciences, English, Languages (Modern and Classical), Linguistics, Philosophy, Religion and the departments of the College of Fine Arts if the credit is approved by the chairperson of the department prior to registering for the seminar. May be repeated for credit.

The Academic Advising Office

George H. Demetrakopoulos, Director
William S. Fox
Paul E. Holkeboer
Imy V. Holt
2060 Friedmann Hall
383-6122

Students in the Arts and Sciences Curriculum and the Liberal Arts Curriculum should see a college adviser to plan their degree program. The staff of the College of Arts and Sciences Advising Office also advises students concerning General Education requirements and helps students set up their General Education program. An appointment with an adviser should be scheduled early in a student's academic career.
Inter-Disciplinary Programs

1. American Studies Program
2. Black Americana Studies
3. Classical Humanities Program
4. Environmental Studies Program
5. Integrated Language Arts Minor
7. The Medieval Institute
8. Women’s Studies Minor
9. World Literature Minor
10. Group Majors and Minors

American Studies Program
Lewis Carlson, Director and Advisor
216 Moore Hall (383-1843)

Students in American Studies follow an interdepartmental program bringing to bear the insights of art, music, drama, literature, and the social sciences on the problems of American life. A broad-ranging study of American culture can provide an excellent background for students preparing for careers in education, advertising, journalism, research organizations and publishing houses, politics, public relations work in government and industry, the Foreign Service, mass communications, law, or library work. American Studies also offers perceptive students an opportunity to evaluate the forces shaping their own culture and to assess their personal role in a complex society.

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 216 Moore Hall.

Arts and Sciences Courses
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, approval by a faculty supervisor, and approval from the office of the dean.

501 Studies in American Culture
1-3 hrs.
An interdisciplinary study of perennial issues in American life. The materials for this course are drawn from literature, the arts, the social sciences, philosophy, and religion. This course must be approved by the Program Advisor.

Black Americana Studies
LeRoi R. Ray, Jr., Director
814 Sprau Tower
(616) 383-8015

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. Black Americana Studies core courses 200 Black Presence and 300 Black Experience have been approved for General Education credit.

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. (Approved for General Education credit.)

210 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.

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. (Approved for General Education credit.)

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.

350 Blacks in Michigan 3 hrs.
A survey of the significance of Blacks in the making of Michigan history. We will trace the movement of Blacks into Michigan, investigate patterns of settlement, reactions to the emigrés, and the development of the Black families and church as principal forces in the Black community. We will study the political, social, and economic implications of being Black in Michigan, both in urban and rural areas from 1790 to the present. The student will be introduced to the varieties of historical sources available for such study.

500 Black Humanism 3 hrs.
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 emergency 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 availability 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?

510 Multicultural Education 3 hrs.
This course is designed to prepare teachers and administrators who will work in a multicultural setting. The course is primarily aimed at helping teachers at any level who teach a social studies component, but teachers of all other subjects, e.g., physical and biological sciences and special education and school administrators will find the course useful. Students will learn how to compile data on the ethnic makeup and resources of the local community, developing instructional packages for use in multicultural courses and for evaluating materials prepared.

598 Independent Study 1-4 hrs.
This course is designed to allow undergraduate or graduate students to work independently under staff supervision in a research or reading project dealing with an aspect of the Black community, Black experience, or the achievement of a Black individual. Approval of the instructor involved and the chairperson of the department must be secured prior to registration.

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.
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, 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.

Note: The Classical Humanities program is not yet approved as a teaching minor. The request for state certification is in process.

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 or other methods course) 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, students may elect those courses which they have not previously used to satisfy other requirements, e.g. in their majors or minors. They will be advised to broaden their areas of interest in the humanities scope.

### Classical Studies Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>100 Basic Greek</td>
<td>4</td>
</tr>
<tr>
<td>101 Basic Greek</td>
<td>4</td>
</tr>
<tr>
<td>100 Basic Latin</td>
<td>4</td>
</tr>
<tr>
<td>101 Basic Latin</td>
<td>4</td>
</tr>
<tr>
<td>200 Intermediate Latin (Vergil)</td>
<td>4</td>
</tr>
<tr>
<td>201 Intermediate Latin (Lyric Poetry)</td>
<td>4</td>
</tr>
<tr>
<td>250 Ancient-Modern Studies</td>
<td>3</td>
</tr>
<tr>
<td>324 Latin Literature (Selections from Prose and Poetry)</td>
<td>4</td>
</tr>
<tr>
<td>350 Classical Art and Architecture of the Aegean World</td>
<td>3</td>
</tr>
<tr>
<td>360 The Role of Women in Ancient Greece and Rome</td>
<td>3</td>
</tr>
<tr>
<td>375 Classical Drama in English Translation</td>
<td>3</td>
</tr>
<tr>
<td>450 Greek and Roman Mythology</td>
<td>3</td>
</tr>
<tr>
<td>550 Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>557 Teaching of Latin</td>
<td>3</td>
</tr>
<tr>
<td>560 Medieval Latin</td>
<td>3</td>
</tr>
</tbody>
</table>

### Historical-Humanistic Cognate Courses

<table>
<thead>
<tr>
<th>Anthropology</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>210 Introduction to Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>220 History of Art</td>
<td>3</td>
</tr>
<tr>
<td>551 History of Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td>596 History of Architecture</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>English</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>332 English Renaissance Literature</td>
<td>4</td>
</tr>
<tr>
<td>410 Special Topics in Literature</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>100 The Early Western World</td>
<td>4</td>
</tr>
<tr>
<td>306 Main Currents of Western Thought</td>
<td>3</td>
</tr>
<tr>
<td>350 Ancient Greece</td>
<td>3</td>
</tr>
<tr>
<td>351 Ancient Rome</td>
<td>3</td>
</tr>
<tr>
<td>551 Imperial Rome (The First Century)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linguistics</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 The Nature of Language</td>
<td>4</td>
</tr>
<tr>
<td>201 Introduction to the Study of Language</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Music</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>270 Music History and Literature</td>
<td>3</td>
</tr>
<tr>
<td>347 Music in the Humanities in Secondary Schools</td>
<td>2</td>
</tr>
<tr>
<td>551 Music Literature: Western Art Music</td>
<td>4</td>
</tr>
<tr>
<td>579 Operatic Literature</td>
<td>2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Philosophy</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>301 History of Modern Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>350 Historically Oriented Studies—Variable Topics</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Political Science</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>360 Introduction to the History of Political Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Religion

301 Protohistoric Religions: Ancient Near East, Greece and Rome, Meso-America

Environmental Studies

Robert W. Kaufman, Director
Marcy Brooks, Advisor
118 Moore Hall
Phone (616) 383-3984

The Environmental Studies Program (EVS) was designed by students and faculty to respond to a critical need for concern and action about the earth's environment and to place more emphasis on the quality of life. The EVS Program offers the student a choice of:

1. Bachelor's degree in Environmental Studies through the EVS Curriculum major;
2. Bachelor's degree with EVS Area of Concentration through the Division of Continuing Education's General University Studies (GUS) Curriculum;
3. Coordinate major with a disciplinary or program major in any College of the University;
4. Non-teaching minor;
5. Teacher Certification in Environmental Studies for Elementary and Secondary Education (teaching minor).

The Program seeks to provide students with a variety of intellectual and practical experiences designed to provoke thought about humanity, our relationship to society, and our relationship to the natural environment.

The objectives of the Program are to:

1. Define, analyze and evaluate the environmental challenge;
2. Suggest an individual responsibility to help in the amelioration of environmental problems;
3. Equip students to make professional contributions in resolving environmental problems;
4. Prepare leaders for environmental education and action;
5. Develop students the habit of critical thinking about existing social institutions; and
6. Develop ability in students to devise creative solutions to problems.

The student-faculty cooperation which marked the origin of the EVS Program has continued in its development and governance. The Program is guided by an Executive Committee made up of faculty and students. The students continue to make important contributions to the development and evaluation of the Program.

The Program encourages students to take courses with field trips and
practical experience when they are available. Practical experience, internships, and other forms of involvement may be available on an independent study basis through Arts and Sciences 399, General Studies 499, and departmental independent study courses.

The scope of exposure in the Environmental Studies Program may range from global implications of resource depletion to the social effects of local urbanization. Such knowledge of physical, social, economic, and political dimensions of environmental issues benefits not only those seeking graduate study and/or careers in industry, government, education and the professions, but also those concerned about the environment and their roles in it, regardless of profession.

Students in all options of the EVS Program must earn at least a grade of 'C' in their required and core courses.

Student Advisor Service
To avoid complications, those who intend to pursue any of the EVS programs are expected to see the Program Advisor no later than the first semester of the sophomore year and prior to taking courses used to satisfy this Program. At such time an individual file will be started. This record is updated with each successive visit and used for further counseling, letters of recommendation, and as the official record submitted for a graduation audit.

Students are encouraged to confer with the EVS Advisor at least once a year. Such meetings ensure that programs reflect students' own interests and goals, while, at the same time, minimizing any conflicts in program guidelines or requirements.

Environmental Studies Program Options

Bachelor's Degree—Environmental Studies (EVS) Curriculum
This degree program is intended for students committed to careers in environmental areas. It does not, however, train specialists in any specific field; the additional disciplinary major required in the EVS curriculum serves that function.

Students may enroll in the EVS curriculum after a written Statement of Intent has been approved by the Program Director. This statement should explain why the student wants the interdisciplinary EVS degree, what she or he expects to gain from it, what anticipated use will be made of it, and how it will help in pursuing further study or a career. This process encourages prospective curriculum majors to think through their academic and career goals.

Successful completion of the requirements below results in a Bachelor of Science or Bachelor of Arts degree for the EVS curriculum major.

A. An Environmental Studies concentration consisting of at least 45 semester hours of approved course work, one-half of which must be taken at the 300-400-500 level, to include:
   1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
   2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
   3. The appropriate set of Core Courses (see below)
   4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total a minimum of 45 hours;

B. A disciplinary major chosen from any College of the University at the student's discretion;

C. Eight hours of a foreign language or two years of a foreign language in high school (for a B.A. degree only);

D. General Education requirements as described in this bulletin;

E. At least two hours of physical education;

F. Electives and/or additional cognates required by major or minor to total no less than 122 semester hours.

Bachelor's Degree—General University Studies (GUS) Curriculum
Requirements are described in this bulletin under the Division of Continuing Education.

Coordinate Major
The coordinate major is intended for students who want more environmental knowledge than they can acquire through their disciplinary majors. Focused on environmental problems, courses in the coordinate major will expose students to the concepts and methodologies of the many subject areas relevant to environmental issues.

The coordinate major consists of at least 20 semester hours to include:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 30 hours.

All coordinate majors are expected to pursue a disciplinary major in any College of the University, except the College of Education.

Minor—Teaching and Non-Teaching
The minors in Environmental Studies are intended for students who are unable to pursue a major but still seeking insights into environmental challenges.

The 20-hour non-teaching minor and the 24-hour teaching minor (for students enrolled in elementary or secondary education curricula) consists of:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 20 hours (24 hours for students in education curricula).

Core Courses
Each student must take one of the two sets of Core Courses. Core A should be taken by majors in the social sciences, humanities, business or related fields. Core B should be taken by majors in the life sciences, physical sciences, engineering or related programs. The intention of this requirement is to expose non-science majors to the scientific dimensions of environmental issues and science majors to the non-science dimensions.

Core A (for social science, business, humanities majors): Biology 105: Environmental Chemistry 140: Introductory

Core B (for science and engineering majors): Anthropology 100: Man in Evolutionary Perspective Geography 350: Principles and Practice of Conservation and Environmental Management

General Studies (Social Science) 360: Explorations in Urban Environments and Ecological Studies

The 20-hour non-teaching minor and the 24-hour teaching minor (for students enrolled in elementary or secondary education curricula) consists of:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 30 hours.

All coordinate majors are expected to pursue a disciplinary major in any College of the University, except the College of Education.

Minor—Teaching and Non-Teaching
The minors in Environmental Studies are intended for students who are unable to pursue a major but still seeking insights into environmental challenges.

The 20-hour non-teaching minor and the 24-hour teaching minor (for students enrolled in elementary or secondary education curricula) consists of:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 20 hours (24 hours for students in education curricula).

Core Courses
Each student must take one of the two sets of Core Courses. Core A should be taken by majors in the social sciences, humanities, business or related fields. Core B should be taken by majors in the life sciences, physical sciences, engineering or related programs. The intention of this requirement is to expose non-science majors to the scientific dimensions of environmental issues and science majors to the non-science dimensions.

Core A (for social science, business, humanities majors): Biology 105: Environmental Chemistry 140: Introductory

Core B (for science and engineering majors): Anthropology 100: Man in Evolutionary Perspective Geography 350: Principles and Practice of Conservation and Environmental Management

General Studies (Social Science) 360: Explorations in Urban Environments and Ecological Studies

The 20-hour non-teaching minor and the 24-hour teaching minor (for students enrolled in elementary or secondary education curricula) consists of:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 30 hours.

All coordinate majors are expected to pursue a disciplinary major in any College of the University, except the College of Education.

Minor—Teaching and Non-Teaching
The minors in Environmental Studies are intended for students who are unable to pursue a major but still seeking insights into environmental challenges.

The 20-hour non-teaching minor and the 24-hour teaching minor (for students enrolled in elementary or secondary education curricula) consists of:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 20 hours (24 hours for students in education curricula).

Core Courses
Each student must take one of the two sets of Core Courses. Core A should be taken by majors in the social sciences, humanities, business or related fields. Core B should be taken by majors in the life sciences, physical sciences, engineering or related programs. The intention of this requirement is to expose non-science majors to the scientific dimensions of environmental issues and science majors to the non-science dimensions.

Core A (for social science, business, humanities majors): Biology 105: Environmental Chemistry 140: Introductory

Core B (for science and engineering majors): Anthropology 100: Man in Evolutionary Perspective Geography 350: Principles and Practice of Conservation and Environmental Management

General Studies (Social Science) 360: Explorations in Urban Environments and Ecological Studies

The 20-hour non-teaching minor and the 24-hour teaching minor (for students enrolled in elementary or secondary education curricula) consists of:

1. ENVS 110 "Fundamentals of Environmental Studies"—3 hrs.
2. ENVS 400 "Senior Seminar in Environmental Studies"—3 hrs.
3. The appropriate set of Core Courses (see below)
4. Remaining hours selected from the list of approved EVS electives, in consultation with the Program Advisor, to total at least 30 hours.
and either of the following:
Religion 333: Religion and Ecological Awareness 4 hrs.
or
English 311: Perspectives Through Literature: Man’s Place in Nature 4 hrs.
In addition, science and engineering majors should demonstrate knowledge comparable to Core A.

Course Descriptions

110 Fundamentals of Environmental Studies 3 hrs.
This is a formal interdisciplinary introduction to the study of the environment. Fundamentals of Environmental Studies is offered to students taking a major or minor in Environmental Studies. The concepts of ecology, evolution and culture will be presented as integrating ideas which cross disciplinary lines. A survey of environmental topics will include: politics, ethics, food, natural resources, population pressures, sources of energy, air, water and land pollution, and land use planning. Type of instruction is primarily lecture and discussion.

111 Fundamentals of Environmental Studies—Discussion 1 hr.
A discussion section to accompany ENV 110. Weekly meetings will explore the political, social, economic and ecological ramifications of problems discussed in lectures.

210 Introduction to Appropriate Technology 3 hrs.
An academic inquiry into the environmental, ethical, technological and socio-political aspects of "appropriate technology." Such technologies are designed to fit local environments and to be consistent with the resources and values of respective cultures. Lectures will review the development of appropriate technology, its importance in today’s world, and its role in creating a livable future.

310 Homesteading Theory 4 hrs. Winter
An introduction to modern homesteading as a self-sufficient way of life, its importance in our time, and how it can be done. The new homesteading movement is viewed as a complex cultural and agricultural phenomenon which reflects the pastoral ideal in American life, a concern for working out more ecological agricultures, and the search for a rural way of life and appropriate technologies which are less demanding of energy and material resources.

350 Homesteading Practice 4-16 hrs.
Spring, Summer and/or Fall
A field experience course in arts and skills of self-sufficient living which requires fulltime residence on a homesteading farm during Spring, Summer and/or Fall. Learning activities, consisting of regular farm and household chores and whatever farm work is in season, are supervised by qualified instructors who suggest readings to complement farm activities, arrange for regular class discussions, and evaluate student performance. Students are provided with room and board in exchange for their work and a modest fee. Prerequisite: Environmental Studies 310, Homesteading Theory, or approved equivalent.

398 Readings in Environmental Problems 1-4 hrs.
This course is designed as an interdisciplinary reading course for students majoring or minoring in Environmental Studies. It will permit students to study in depth some aspects of their environmental specialization under the direction of a faculty member. They may work alone or with a small group. Prerequisite: Approval of the instructor and the Director of the Environmental Studies Program.

400 Senior Seminar in Environmental Studies 3 hrs.
A team-taught, integrated seminar in which the subject material will be built around the orienting concepts of ecology, evolution and culture. Students will develop a project which demonstrates ecological relationships.

550 Contemporary Environmental Projects 1-4 hrs.
Contemporary Environmental Projects is designed for students who wish to carry on advanced interdisciplinary work in Environmental Studies under the direction of a faculty member. Work will be geared to a single project in which there is outside investigation, research, field experiences, and/or workshop experiences. Students selecting this course will work on projects especially designed for their programs. The goal of this course is to identify a problem, outline the approach to study, and consider paths to solving the problem. The course is repeatable for up to eight hours of academic credit. Prerequisite: Consent of instructor and approval of the Director of the Environmental Studies Program.

Elective Courses
The following is a list of courses which may be taken as electives for the Environmental Studies Program. They have been categorized into the following areas: Humanities, Social Sciences, Sciences, Applied Sciences/Professional, and Interdisciplinary.

In selecting electives, students should choose courses from those sections other than their major area of interest. For example, a biology major would fall within the Science area. Therefore, the elective courses of this student would emphasize the other four areas.

Before registering for elective courses, students should confer with the Program Advisor to ensure that program guidelines are met and that any potential problems are avoided.

Note: * Indicates courses containing rotating or multiple topics; available as elective only when topic is environmentally related.

1. Humanities

   English 311*, 410*
   General Studies (Humanities) 407
   Philosophy 314*
   Religion 333, 530*

2. Social Science

   Anthropology 100, 340, 345*, 540
   Black Americana Studies 320
   Communication Arts and Sciences 549
   Economics 319, 419, 447
   General Studies (Social Science) 123, 256,
   History 305

3. Science

   Biology 101, 102, 105, 107, 225, 234, 301, 502, 509, 512, 530, 538, 548, 549, 552, 553, 554, 557, 558
   Biomedical Sciences 230, 555
   Chemistry 140
   General Studies (Science) 133, 430
   Geography 100, 105, 204, 205, 206, 225, 226, 350, 361, 365, 553, 554, 556, 557, 560, 570, 580, 582
   Geology 100, 130, 131, 300, 312, 339*, 544
   Physics 102

4. Applied Sciences/Professional

   Agriculture 320, 323, 324, 520
   General Business (Law) 311
   Home Economics 212
   Management 400*, 430, 520
   Mechanical Engineering 338, 339, 454, 554
   Paper Science and Engineering 150, 251, 350, 351, 353, 450, 451
   Professional Recreation 276
   Transportation Technology 270, 495*
5. Interdisciplinary

Environmental Studies 110, 111, 210, 310, 398, 400, 550
General Studies (Social Science) 360
General Studies (Science) 433, 435, 436

Integrated Language Arts Minor
Maryellen Hains, Coordinator
924 Sprau Tower
(616) 383-0972

An interdisciplinary program of:
COLLEGE OF ARTS AND SCIENCES
COLLEGE OF EDUCATION
COLLEGE OF HEALTH AND HUMAN SERVICES
Speech Pathology and Audiology

This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of language learning. This program satisfies the guidelines of the Michigan Department of Education for competency based programs and provides opportunities for a wide variety of individual interests and alternative learning styles.

The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each course.

Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each course is taught by a faculty member with interdisciplinary expertise from one of the departments participating in the minor. Each course focuses on a particular aspect of language development which will be presented through a balance of lectures, discussions and workshops together with opportunities for student initiated learning.

Students can enter the program in their sophomore year. In general, Human Development and Learning, ED 250 (or its equivalent), is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Office of the College of Arts and Sciences or the Teacher Education Department and from the Integrated Language Arts (ILAM) Coordinator, Maryellen Hains, 924 Sprau Tower, 383-0972.

Minor slip required. Students must see an advisor before they have completed eight hours in the minor.

Program

This 24-hour interdepartmental minor for elementary education students consists of the following:

Entry Courses—must be taken concurrently:
ILAM/ED 260 Cognitive Development of the Child ............. 2 hrs.
ILAM/SPPA 260 Linguistic Development of the Child ............. 2 hrs.

Intermediate Courses:
ILAM/ENG 375 Acquisition of Literacy and the Early Elementary Child .......... 4 hrs.
ILAM/ENG 376 Acquisition of Literacy and the Later Elementary Child .......... 4 hrs.

Capstone—to be taken after at least 16 hours of the minor are completed:
ILAM/ED 460 Integrated Language Arts Seminar ............. 4 hrs.

For individual course descriptions see catalog listings under the participating department.

International and Area Studies

AFRICAN STUDIES PROGRAM—Alan Jacobs, Chair
ASIAN STUDIES PROGRAM—David Dickason, Chair
COMPARATIVE/CROSS-CULTURAL STUDIES PROGRAM—Charles O. Houston, Chair
EUROPEAN STUDIES PROGRAM—George Klein, Chair
LATIN AMERICAN STUDIES PROGRAM—Contact the College of Arts and Sciences Advising Office

The International and Area Studies Programs were established by the Trustees and Administration of Western Michigan University as interdisciplinary programs devoted to the study of cultures located geographically outside the continental United States. In general, the programs coordinate activities of an international character sponsored by Western Michigan University.

There are 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 co-ordinate majors of 30 semester hours, (2) undergraduate minors of 20-24 semester hours, including minors approved for the Elementary and Secondary Education Curricula. Students who enroll in any of these co-ordinate majors must also enroll in a standard major in any College in the University.

The International and Area Studies Programs are a joint endeavor by faculty and students designed to provide a curricular framework within which to examine, analyze and—hopefully—understand the peoples and institutions of the world in cross-disciplinary perspective.

The programs seek to provide students with a broad variety of intellectual and experiential stimuli designed to promote an understanding of areas—their history, literature and fine arts, social institutions, political processes, major intellectual currents, geography, economic problems, linguistic heritage—and the relationship of these factors to the role of these nations in the world community.

Students enroll in relevant departmental courses including readings and independent courses.

The International and Area Studies Programs are designed for those undergraduate students who plan to pursue careers in education, industry, government, or the professions in which success would be enhanced by an understanding of peoples whose values, traditions, customs and institutions differ markedly from those with which most of us are familiar.

These programs seek to promote the following educational objectives:
1. To assist Western Michigan University students achieve a better understanding of other peoples and institutions.
2. To explore, analyze and evaluate the impact of specific areas on the course of world events.
3. To stimulate acquisition of foreign language skills by Western Michigan University students.
4. To provide a forum for the exchange of views between students and faculty concerned with contemporary world affairs.
5. To encourage cross-disciplinary research and study by both students and faculty of issues affecting the contemporary world.

A language is required in some majors. However, any student planning the study of an area at the graduate level or the pursuit of a foreign-related career should obtain as much fluency in a language as possible as an undergraduate. To avoid studying a language only makes the successful pursuit of a related career more difficult.

The International and Area Studies Programs hope to develop and promote opportunities for students enrolled in these programs to study and travel in foreign
countries—thereby acquiring a firsthand understanding of contemporary conditions while further developing facility in one or more foreign languages. Academic credit earned as a result of study or research undertaken abroad may be accepted toward completion of requirements for the Co-ordinate Major or Minor.

Students should consult the appropriate adviser for the development of a program of study and for each registration if necessary.

African Studies Program

Co-ordinate Major

Adviser: Alan H. Jacobs
(Anthropology)
125 Moore Hall
383-8177

In consultation with the program Adviser, a student in the African Studies concentration selects at least 30 semester hours from the list of African Studies Core and Cognate courses; no less than 20 of the 30 hours must be selected from the list of African Studies Core courses and in each case include four of the following five courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 335</td>
<td>Cultures of Africa</td>
<td>3</td>
</tr>
<tr>
<td>Geography 386</td>
<td>Sub-Saharan Africa: Man, Environments, Resources</td>
<td>3</td>
</tr>
<tr>
<td>History 386</td>
<td>Introduction to African History and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 341</td>
<td>African Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>Sociology 535</td>
<td>Changing Social Systems—Sub-Saharan Africa</td>
<td>3</td>
</tr>
</tbody>
</table>

N.B. The African Studies Committee strongly recommends the study of African languages or European languages widely spoken on the continent, e.g. French; up to 8 hours of language study may be included in the African Studies concentration.

Advisement

Students enrolled in this program will be aided in the selection of African Studies Core courses by the Adviser; those who wish to enroll in the African Studies Co-ordinate Major are required to make this intention known to the Adviser by no later than the first semester of their junior year—and preferably earlier.

Minor Program

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of African Studies Core and Cognate courses are required for completion of a Minor 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 Adviser.

Students who enroll in the African Studies Minor must elect at least three of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Anthropology 335</td>
<td>Cultures of Africa</td>
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<tr>
<td>Political Science 341</td>
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<tr>
<td>Sociology 535</td>
<td>Changing Social Systems—Sub-Saharan Africa</td>
<td>3</td>
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</tbody>
</table>

African Studies Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Anthropology 335</td>
<td>Cultures of Africa</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 500*</td>
<td>Topics in Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 545*</td>
<td>Topics in Ethnology</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 598</td>
<td>Readings in Anthropology</td>
<td>4</td>
</tr>
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Arts and Sciences

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Sociology 504</td>
<td>Foreign Studies Seminar</td>
<td>1-6</td>
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Economics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Economics 585</td>
<td>The Economics of Sub-Saharan Africa</td>
<td>3</td>
</tr>
<tr>
<td>Economics 598</td>
<td>Readings in Economics</td>
<td>1-3</td>
</tr>
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</table>

English

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English 314</td>
<td>African Literature</td>
<td>4</td>
</tr>
<tr>
<td>English 519*</td>
<td>Non-Western Literature in Translation</td>
<td>4</td>
</tr>
<tr>
<td>English 598</td>
<td>Readings in English</td>
<td>1-4</td>
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General Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GHUM 205</td>
<td>The Arts and Cultures of Africa</td>
<td>4</td>
</tr>
<tr>
<td>GHUM 303</td>
<td>African Traditions</td>
<td>4</td>
</tr>
<tr>
<td>GHUM 413</td>
<td>Modern African Artists</td>
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Geography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Geography 309*</td>
<td>Studies in Regional Geography</td>
<td>2-3</td>
</tr>
<tr>
<td>Geography 386</td>
<td>Sub-Saharan Africa: Man, Environments, Resources</td>
<td>3</td>
</tr>
<tr>
<td>Geography 387</td>
<td>The Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>Geography 598</td>
<td>Readings in Geography</td>
<td>1-3</td>
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History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>History 386</td>
<td>Introduction to African History and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>History 388</td>
<td>Modern Africa</td>
<td>3</td>
</tr>
<tr>
<td>History 502*</td>
<td>Studies in Non-Western History</td>
<td>3</td>
</tr>
<tr>
<td>History 587</td>
<td>Ancient and Medieval Africa</td>
<td>3</td>
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<tr>
<td>History 598</td>
<td>Independent Reading in History</td>
<td>2-3</td>
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African Studies Cognate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Linguistics 301</td>
<td>Basic Critical Languages (Swahili, Arabic)</td>
<td>4</td>
</tr>
<tr>
<td>Linguistics 302</td>
<td>Basic Critical Languages</td>
<td>4</td>
</tr>
<tr>
<td>Linguistics 501</td>
<td>Intermediate Critical Languages</td>
<td>4</td>
</tr>
<tr>
<td>Linguistics 502</td>
<td>Intermediate Critical Languages</td>
<td>4</td>
</tr>
<tr>
<td>Linguistics 508</td>
<td>Reading Critical Languages</td>
<td>4</td>
</tr>
<tr>
<td>Linguistics 509</td>
<td>Writing Critical Languages</td>
<td>4</td>
</tr>
</tbody>
</table>

Political Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Religion 307</td>
<td>The Islamic Tradition</td>
<td>4</td>
</tr>
<tr>
<td>Religion 500*</td>
<td>Historical Studies in Religion</td>
<td>2-4</td>
</tr>
<tr>
<td>Religion 598</td>
<td>Readings in Religion</td>
<td>Var</td>
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</table>

Sociology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Sociology 371*</td>
<td>Dynamics of Contemporary Social Change</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 430*</td>
<td>Social Forces in Developing Areas</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 534</td>
<td>Studies in Ethnic Relations: Designated Areas</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 535</td>
<td>Changing Social Systems—Sub-Saharan Africa</td>
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African Studies Inter-Disciplinary Programs

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Economics 585</td>
<td>Principles of Cultural Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>Economics 534</td>
<td>Peasant Societies in the Developing World</td>
<td>3</td>
</tr>
<tr>
<td>Economics 539</td>
<td>Economic Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>Black Americana Studies</td>
<td>Black Presence</td>
<td>3</td>
</tr>
<tr>
<td>Black Americana Studies</td>
<td>Black Nationalism in America</td>
<td>3</td>
</tr>
<tr>
<td>Black Americana Studies</td>
<td>Black Experience</td>
<td>3</td>
</tr>
<tr>
<td>Black Americana Studies</td>
<td>Ecology and the Black Community</td>
<td>3</td>
</tr>
<tr>
<td>Black Americana Studies</td>
<td>Black Humanism</td>
<td>3</td>
</tr>
<tr>
<td>Economics 588</td>
<td>Economic Development</td>
<td>4</td>
</tr>
<tr>
<td>Geography 361</td>
<td>Population: The Crowding World</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics 552</td>
<td>Sociolinguistics</td>
<td>4</td>
</tr>
</tbody>
</table>
**Asian Studies Program**  
David G. Dickason (Geography), Adviser  
343 Wood Hall  
383-1834

**Co-ordinate Major**  
Undergraduates interested in Asian affairs and culture, or who hope to pursue an Asia-related career, may choose an interdisciplinary co-ordinate major in Asian Studies. This is a double major program. Not only is a disciplinary major in any college of the university required, but also the co-ordinate major in Asian Studies requires 30 credit hours of approved Asian Studies courses. (A student must, of course, complete all other requirements in his or her respective college.) At least one-half of any student’s Asian Studies courses (15 credit hours) must be selected from courses listed as “Disciplinary Courses on Asia”—category one in the list of approved Asian Studies courses below. In addition, at least one course should be taken from each of the following groups of disciplines: 1) Geography & History; 2) the Humanities; and 3) the Social Sciences.

An Asian language is not required for this major. It is strongly recommended, however, for any student planning an Asia-related career or Asian Studies at the graduate level. Students interested in studying particular Asian languages should express their interest directly to the Critical Languages Supervisor in the Linguistics Department.

**Minor Program**  
Undergraduates in any college of the University may choose an interdisciplinary minor in Asian Studies. Twenty semester hours (24 for students enrolled in Education curriculum) of approved Asian Studies courses are required. At least one-half of any student’s Asian Studies courses (12 credit hours) must be selected from courses listed as “Disciplinary Courses on Asia”—category one in the list of approved Asian Studies courses below. The minor in Asian Studies has been approved by the State Board of Education for teacher certification at both the elementary and secondary education levels.

**Asian Studies Courses**  
150 China and India in American Perspective  
3 hrs.  
An interdisciplinary introduction to the worlds of China and India, in light of their interaction with American life and thought. Comparative views of the cultural distinctiveness of these civilizations with emphasis on their mutual impacts on each other and the Occident through transfer of ideas and technology.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>309 Studies in Regional Geography: Asia</td>
<td>3</td>
</tr>
<tr>
<td>385 Pacific Realm</td>
<td>3</td>
</tr>
<tr>
<td>387 Middle East and North Africa</td>
<td>3</td>
</tr>
<tr>
<td>389 Southeast Asia</td>
<td>3</td>
</tr>
<tr>
<td>390 Indian Subcontinent: Peoples and Resources</td>
<td>3</td>
</tr>
<tr>
<td>550 Studies in Historical Geography: Asia</td>
<td>3</td>
</tr>
<tr>
<td>349 Ancient Near East</td>
<td>3</td>
</tr>
<tr>
<td>380 Introduction to Asian History &amp; Civilization</td>
<td>3</td>
</tr>
<tr>
<td>381 Modern Far East</td>
<td>3</td>
</tr>
<tr>
<td>389 Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>581 Modern China</td>
<td>3</td>
</tr>
<tr>
<td>583 Modern Japan</td>
<td>3</td>
</tr>
<tr>
<td>584 Modern Korea</td>
<td>3</td>
</tr>
<tr>
<td>585 Southeast Asia in the Twentieth Century</td>
<td>3</td>
</tr>
<tr>
<td>313 Asian Literature</td>
<td>4</td>
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<tr>
<td>519 Chinese Literature in Translation</td>
<td>4</td>
</tr>
<tr>
<td>519 Indian Literature in Translation</td>
<td>4</td>
</tr>
<tr>
<td>302 Religion in the Indian Tradition</td>
<td>4</td>
</tr>
<tr>
<td>303 Chinese Religion</td>
<td>4</td>
</tr>
<tr>
<td>307 Islamic Tradition</td>
<td>4</td>
</tr>
<tr>
<td>308 Japanese Religion</td>
<td>4</td>
</tr>
<tr>
<td>500 Zen Buddhism</td>
<td>4</td>
</tr>
<tr>
<td>500 Islamic Mysticism</td>
<td>4</td>
</tr>
<tr>
<td>500 Hindu Devotionalism</td>
<td>4</td>
</tr>
<tr>
<td>500 New Religions—Japan</td>
<td>4</td>
</tr>
<tr>
<td>510 Yoga</td>
<td>4</td>
</tr>
<tr>
<td>510 Great Islamic Thinkers</td>
<td>4</td>
</tr>
<tr>
<td>334 Cultures of North Africa and the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>336 Cultures of Asia</td>
<td>3</td>
</tr>
<tr>
<td>500 Pacific Cultures</td>
<td>3</td>
</tr>
<tr>
<td>501 Rise of Civilization—Asia</td>
<td>3</td>
</tr>
<tr>
<td>545 Changing Cultures—Persia</td>
<td>3</td>
</tr>
<tr>
<td>587 Studies in Asian Economics</td>
<td>3</td>
</tr>
<tr>
<td>342 The People and Politics of Asia</td>
<td>4</td>
</tr>
<tr>
<td>345 India and the Islamic World</td>
<td>3</td>
</tr>
<tr>
<td>346 Case Studies in East Asian Politics</td>
<td>3</td>
</tr>
<tr>
<td>370 Middle East and Power Politics</td>
<td>3</td>
</tr>
<tr>
<td>548 Asian Communism</td>
<td>3</td>
</tr>
<tr>
<td>549 Problems of Foreign Political Systems: Asia</td>
<td>3-4</td>
</tr>
<tr>
<td>336 Modern Japanese Society</td>
<td>3</td>
</tr>
<tr>
<td>337 Modern Arab Societies</td>
<td>3</td>
</tr>
<tr>
<td>531 Studies in Social Change: Asia</td>
<td>3</td>
</tr>
<tr>
<td>534 Studies in Ethnic Relations: Asia</td>
<td>3</td>
</tr>
<tr>
<td>306 Asian Thought: China</td>
<td>4</td>
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<tr>
<td>301-302 Basic Chinese, Japanese, Korean, Hindi-Urdu, Arabic, Sanskrit, Persian, Tibetan</td>
<td>4</td>
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<tr>
<td>501-502 Intermediate Critical Languages</td>
<td>4</td>
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<tr>
<td>508 Reading Critical Languages</td>
<td>4</td>
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<tr>
<td>509 Writing Critical Languages</td>
<td>4</td>
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<tr>
<td>571 Languages of Asia</td>
<td>4</td>
</tr>
<tr>
<td>150 China, India and the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>204 Arts and Culture of India</td>
<td>4</td>
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<tr>
<td>304 Asian Traditions</td>
<td>4</td>
</tr>
<tr>
<td>112 Food and Asian Culture</td>
<td>2</td>
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<tr>
<td>504 Foreign Studies Seminar: Asia</td>
<td>1-6</td>
</tr>
<tr>
<td>505 Foreign Studies Seminar: Asia</td>
<td>1-6</td>
</tr>
<tr>
<td>504 International Business Seminar: Asia</td>
<td>1-6</td>
</tr>
<tr>
<td>220 Cultural Anthropology</td>
<td>3</td>
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<tr>
<td>534 Peasant Societies in the Developing World</td>
<td>3</td>
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<tr>
<td>539 Economic Anthropology</td>
<td>3</td>
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<tr>
<td>540 Cultural Ecology</td>
<td>3</td>
</tr>
<tr>
<td>480 International Economics</td>
<td>4</td>
</tr>
<tr>
<td>484 Comparative Economic Systems</td>
<td>3</td>
</tr>
<tr>
<td>588 Economic Development</td>
<td>4</td>
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<tr>
<td>205 Our Human World</td>
<td>3</td>
</tr>
<tr>
<td>244 World Patterns of Economic Activity</td>
<td>3</td>
</tr>
<tr>
<td>361 Population: The Crowding World</td>
<td>3</td>
</tr>
<tr>
<td>544 Studies in Economic Geography</td>
<td>3</td>
</tr>
<tr>
<td>552 Sociolinguistics</td>
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</table>
Sociology
171 Social Impacts of Science and Technology .............................. 3
531 Studies in Social Change: Designated Areas .......................... 3 and/or
532 Introduction to Comparative Sociology ................................. 3

Minor Program
Twenty semester hours (24 semester hours for students enrolled in any curriculum in the College of Education) taken from the above list of courses, are required for completion of a Minor concentration in Comparative/Cross-Cultural Studies. Students wishing to enroll in this minor program should consult the Advisor before registering. The advisor maintains records of those in the Minor in order that it may be verified before graduation.

European Studies Program
Co-ordinate Major
George Klein (Political Science), Advisor
5017 Friedmann Hall
383-0494
1. A minimum of 30 hours will be required for the completion of the Co-ordinate Major in European Studies.
2. The European Studies Co-ordinate Major will be offered in the following options:
   - British Studies
   - Germanic Studies
   - Romance Studies
   - Slavic Studies
   - General Option
3. Each regional option will require eight hours of an appropriate language. Language study can be undertaken in the Department of Modern and Classical Languages or in the Department of Linguistics. Students with the knowledge of an appropriate language may have their requirement waived.
4. Candidates for a coordinate major degree must select three courses appropriate to their area of interest from among the core courses listed below.
5. The remaining hours are elective with the requirement that they have relevance to the European area and are to be selected in consultation with the student's advisor. Students who elect the general option of the coordinate major must select an advisory committee. The committee shall consist of the European Studies Advisor or an advisor pertinent to the student's general option, and a third member to be jointly agreed upon by the student and the European Studies Advisor.

Minor Program
Twenty semester hours (24 hour Slavic minor for students enrolled in Education curricula) taken from the list of European Studies courses are required for completion of a Minor concentration in European Studies. Eight hours of language and one course, drawn from each of two disciplines listed in the core, will be part of the requirements. The language requirement can be waived only by written approval of the European Studies Advisor. In case the student obtains permission to waive language, the required hours will be drawn from an appropriate list of core courses by the European Studies Advisor.

Note: Courses marked with an * may be included in the student's program when concentrating on Western Europe or Eastern Europe and the Soviet Union—and with approval of the Advisor.

Required Courses
- Geog 383 Western and Southern Europe ............... 3
- Geog 384 Soviet Peoples and Landscapes ............... 3
- Hist 341 The Soviet Union ........................................ 3
- Hist 583 Europe since 1945 ............... 3
- Political Science 340 Western Europe Political Systems ............... 4
- Political Science 344 Soviet and East European Political Systems ............... 4

European Studies Courses
Anthropology 333, 520, *545
Art 220, 221, *520, 521, 585, 586, 588, 589, 590, 597
Arts and Sciences 504, 505
Business 504, 521, 543, 575
Economics 480, 484, 580
French 200, 201, 316, 317, 320, 322, 328, 329, 375, 544, 550, 551, 552, 556
Geography 383, 384, 550
German 200, 201, 316, 317, 326, 327, 375, 510, 528, 529, 550, 552, 553, 559, 560
Music 270, 271, 351, 573, 574, 578, 579
Philosophy 301, 303, 307, 498
Religion 305, 330, 498, 500, 510, 520
Russian 104, 200, 201, 310, 316, 317, 328, 550, 552, 560
Spanish 200, 201, 316, 317, 322, 328, 550, 552, 560
Latin American Studies Program

Co-ordinate Major

Adviser: Contact the College of Arts and Sciences Advising Office 383-6122

Students enrolled in this Co-ordinate Major must select at least 30 hours from the Core and Cognate Courses listed below. Students must demonstrate intermediate-level proficiency in Spanish or Portuguese.

Students electing a co-ordinate major must also have a disciplinary major. Students enrolled in the Latin American Studies Co-ordinate Major will be assisted in the selection of appropriate Latin American Studies Core and Cognate courses by the Latin American Studies Adviser.

Students wishing to enroll in the Latin American Studies Co-ordinate Major are required to make this intention known to the Latin American Studies Adviser by no later than the first semester of their junior year—and preferably earlier.

Honors Certificate Program

A Certificate in Latin American Studies will be awarded from Western Michigan University on graduation to those who have completed the 30 hour Co-ordinate Major requirements as well as an oral and written examination by three members chosen from the Latin American Studies Committee. A grade point average of 3.50 and intermediate level proficiency in Spanish is a prerequisite in this program. The Certificate is designed for students whose interest in Latin America goes beyond the usual academic programs. The program is flexible involving independent studies, seminar classes, and is above all, tailored to each individual’s interest.

Latin American Studies Minor

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of Latin American Studies Core and Cognate 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 a proficiency in Spanish.

Students wishing to enroll in this Minor concentration are required to make this desire known to the Latin American Studies Adviser before courses employed to satisfy this program are taken; records of the Minor are maintained and verified by the Latin American Studies Adviser.

Latin American Studies Core Courses

310 Latin America: Development and/or Domination
3 hrs.

An interdisciplinary inquiry into the predominant approaches to the problem of growth and development in Latin America and attempt to assess the consequence—Development and/or Domination as viewed from alternate frames of reference. Prerequisite: consent of instructor.

Note: Courses marked with an * may be included in a student’s program when the course deals with Latin America.

Anthropology

337 Cultures of Mexico and Central America 
338 Cultures of South America 
345* Topics in Anthropology 
500* Topics in Archaeology 
501 The Rise of Civilization 
545* Topics in Ethnology 
598 Readings in Anthropology

Arts and Sciences

504 Foreign Studies Seminar

Economics

419 The Political Economy of Food and Nutrition
480* International Economics
589 The Economics of Latin America
598 Readings in Economics

Geography

309* Studies in Regional Geography
381 South America
382 Mexico and the Caribbean
550* Studies in Historical Geography
598 Readings in Geography

History

370 History of Latin America
371 Contemporary Latin America
571 Mexico: The Building of a Nation
598 Independent Reading in History

Honors College

490 Honors Seminar: Mexico and/or Guatemala

Languages

316 Spanish Composition
317 Spanish Conversation
323 Life and Culture of Latin America
375 Spanish-American Literature in English Translation
528 Survey of Spanish American Literature to Modernism
529 Survey of Spanish American Literature From Modernism to the Present

552 Advanced Spanish Composition
553 Advanced Spanish Conversation
560 Studies in Spanish Literature

Linguistics

301 Basic Critical Languages I (Brazilian Portuguese)
302 Basic Critical Languages II (Brazilian Portuguese)
501 Intermediate Critical Languages I (Brazilian Portuguese)
502 Intermediate Critical Languages II (Brazilian Portuguese)
508 Reading Critical Languages (Brazilian Portuguese)
509 Writing Critical Languages (Brazilian Portuguese)
511 Methods of Teaching English as a Second Language or Dialect
515 Methods of Teaching Critical Languages (Brazilian Portuguese)

Political Science

343 Latin American Political Systems

General Social Science

126 History of the Chicano
226 The Chicano in Contemporary Society

Sociology

335 Modern Latin American Societies
354* Population and Society
371 Dynamics of Contemporary Social Change
430 Social Forces in Developing Countries
531* Studies in Social Change: Designated Areas
534* Studies in Ethnic Relations: Designated Areas
556 Social Stratification
598 Directed Individual Study
632* Studies in Comparative Sociology: Variable Topics

Latin American Studies Cognate Courses

Anthropology

534 Peasant Societies in the Developing World

Economics

538 Economic Development

Geography

361 Population: The Crowding of the World

Linguistics

552 Sociolinguistics

Political Science

542 Administration in Developing Countries
544 The Military and Political Systems
545 Theories of Political Development
The Medieval Institute
Otto Gründler, Director and Adviser

Knowledge of medieval and Renaissance culture is being increasingly recognized as essential to an understanding of modern Western 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 organizes and hosts the annual International Congress on Medieval Studies which has brought the University wide recognition throughout the United States, Canada, and Europe. The Institute’s publishing program, Medieval Institute Publications, publishes significant current research in all areas of medieval studies. In addition, the Institute conducts an annual summer program abroad at Castle Neuburg near Passau, Bavaria, in collaboration with the Michigan Consortium for Medieval and Early Modern Studies.

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 another history course chosen with the approval of the adviser.
2. One literature course chosen from the approved list, or another literature course chosen with the approval of the adviser.
3. One course in intellectual history, philosophy, or theology chosen from the approved list, or a similar course chosen with the approval of the adviser.
4. One course in fine arts chosen from the approved list, or another 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 another history course chosen with the approval of the adviser.
2. One literature course chosen from the approved list, or another literature course chosen with the approval of the adviser.
3. One course in intellectual history, philosophy, or theology chosen from the approved list, or a similar course chosen with the approval of the adviser.
4. Electives from the approved list (or others with the approval of the adviser).

Course Descriptions

(Course described in italics is approved for General Education. Students must refer to the General Education Distribution Program Guide for course grouping restrictions and other enrollment information.)

145 Heroes and Villains of the Middle Ages 3 hrs.

An interdisciplinary course designed to introduce beginning students to the medieval roots of the individual, social, and institutional ideals and values of modern Western culture as they are expressed and exemplified in the images of medieval heroes and their counterparts. Faculty from different departments will deal with the topic of the course by examining and interpreting the evidence in light of their respective fields of study such as art, history, literature, music, religion, and sociology.

500 Interdisciplinary Studies in Medieval Culture 3 hrs.

An interdisciplinary course organized around selected topics in medieval and Renaissance studies. The focus may be in a specific period (The Twelfth Century), a religious movement (Monasticism), a political structure (Venice—A Renaissance city-state), or the social fabric (Medieval Man: Image and Reality). In each case faculty from several departments will approach the semester’s topic from the perspective and with the methodological tools of their respective disciplines, such as art, history, literature, music, philosophy, political science, and religion.

The overall aim of the course is to demonstrate to students why one needs to acquire a variety of disciplines to understand a single complex problem, and how to put traditional building blocks together in new ways. The course may be repeated for credit with a different topic.

Approved Courses

Art
220 History of Art (to the Renaissance) ..... 3
520 Independent Study in Art History ..... 2-3
583 History of Medieval Art ..... 3
585 History of Renaissance Art ..... 3

Arts and Sciences
504 Foreign Studies Seminar: Social Sciences ..... 1-6
505 Foreign Studies Seminar: Humanities ..... 1-6

English
252 Shakespeare ..... 4
332 English Renaissance Literature ..... 4
372 Development of Modern English ..... 4
452 Shakespeare Seminar ..... 4
510 Special Topics: Norse Literature and Mythology ..... 4
529 Medieval English Literature ..... 4
530 Medieval Continental Literature in English Translation ..... 4
531 Chaucer ..... 4
532 Sixteenth Century Literature ..... 4
543 Elizabethan and Jacobean Drama ..... 4
554 Milton ..... 4
555 Dante ..... 4
598 Readings in English ..... 1-4

History
352 Early Medieval History ..... 3
353 Later Medieval History ..... 3
470 Independent Research in History ..... 2-3
534 Medieval France ..... 3
535 Medieval England ..... 3
552 The Medieval Church ..... 3
553 Life in the Middle Ages ..... 3
554 The Renaissance ..... 3
555 The Reformation ..... 3
587 Ancient and Medieval Africa ..... 3
592 Historical Literature ..... 3
598 Independent Reading in History ..... 2-3

Languages, Modern and Classical
French
550 Independent Study in French (Medieval) ..... 1-3
560 Studies in French Literature (Medieval) ..... 3
560 Studies in French Literature (Renaissance) ..... 3
Women's Studies Minor
Laurina Manis, Counseling Center, Advisor
Change in the role of women, whether in response to the reawakening of feminism or the pull of new technology, is a significant element in our current period of social flux. The challenge these issues pose, with implications which few individuals can avoid dealing with either at a personal or intellectual level. The definition of self, and interpersonal and institutional relationships are all extensively affected by the move away from tradition.

The Women's Studies minor is designed to aid students in the area of personal growth by fostering the development of their capacity to make intelligent choices in considering their own adjustments to life and its demands.

The program seeks to provide students an expanded view of their cultural heritage, enhancing their capacity for objective and critical thinking through the examination of previously unexamined assumptions and knowledge about themselves and their past history. In so doing, the student is better prepared to deal in a creative fashion with the content and methodology of the various disciplines.

Additionally, the Women's Studies minor is designed to enhance career preparation by preparing students to deal with others in non-stereotypic fashion in their future professions.

The Women's Studies Minor may be used in all Curricula other than Education. Students must select courses to be used in the minor in consultation with their advisor. Exceptions, such as the inclusion of independent studies through departmental reading courses, may be made with the approval of the advisor. For specific descriptions of the courses consult the departmental sections of the catalog.

The minor consists of 20 hours.

**Required**

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>General Studies 222</th>
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<td>Status of Women</td>
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(Requirement may be waived by approval of the advisor).

**Electives to total 16 hrs. selected from the following**

**College of Arts and Sciences Hrs.**

| Anthropology 345 | Topics: Women in Other Cultures | 3 |
| Classics 360 | The Role of Women in Ancient Greece and Rome | 3 |
| English 111 | Contemporary Topics: Man and Woman in Literature | 4 |
| English 410 | Special Topics: Women in Literature | 4 |
| History 303 | Women in the Western World | 4 |

**Philosophy 314** Philosophy and Public Affairs (Topic to be announced in the schedule of classes. Check with the advisor if the topic will be applicable towards the minor.) | 4 |

**Political Science 270** Political Topics: Women in Politics | 1 |

**Religion 510** Femininity as a Religious Form | 4 |

**Sociology 190** | Men and Women in Contemporary Society | 3 |

**Sociology 495** Special Topic: Women | 1-3 |

**Sociology 510** Studies: Older Women | 3 |

**College of General Studies Hrs.**

| Humanities 409 | Women: Past, Present and Future | 4 |
| Social Science 423 | Role Portrayal in Mass Media | 4 |
| Social Science 444 | Psychology and Women | 4 |

**World Literature Minor**

William Combs, English Department, Adviser
Joseph Reish, Department of Modern and Classical Languages, Adviser

This is an interdepartmental program administered jointly by the English Department and the Department of Modern and Classical Languages.

Studying the literature of other peoples of the world is one of the best ways to begin to know them. A great body of the world's literature is available for study in English translation in a variety of courses and departments at Western Michigan University. The World Literature Minor grows out of and is based on these courses.

This minor should be of value to students who have a general interest in literature and are curious about the world, especially that major part which does not have English as its literary language.

Any student, including those majoring or minoring in English or Modern and Classical Languages, may elect the World Literature Minor. The minor should be of obvious value to students preparing to teach humanities or literature (at any of several levels), but Education curricula students should understand that this minor is not yet a teaching minor.

The World Literature Minor can provide useful background to students interested in foreign affairs, law, politics, journalism, mass communication, and theatre. It should also be of interest to students in business, scientific, and engineering curricula who wish to do a minor outside their main field.

The minor should interest students who, whatever their career plans or major, wish the varied view and mixture of experiences of an interdepartmental program. Also, the
2. Two courses selected from the following list:
   1. English 312 Western World Literature or 313 Asian Literature or 314 African Literature
   1. Two courses selected from the following list:
      - English 110 Literary Interpretation
      - English 210 Film Interpretation
      - English 252 Shakespeare
      - English 312 Western World Literature, if not used under Requirement (1)
      - English 313 Asian Literature, if not used under Requirement (1)
      - English 314 African Literature, if not used under Requirement (1)
      - English 315 The English Bible as Literature
      - English 410 Special Topics in Literature (If the topic is appropriate it may be approved by the minor adviser. A regularly offered approved topic is Introduction to Folklore)
      - English 442 Modern Drama
      - English 510 Non-Western Literature in Translation
      - English 520 Special Topics in Literature (If the topic is appropriate it may be approved by the minor adviser. A regularly approved topic is Norse Literature and Mythology)
      - English 519 Non-Western Literature in Translation
      - English 530 Medieval Continental Literature in English Translation
      - English 538 Modern Literature
      - English 555 Studies in Major Authors (If the authors studied are appropriate, this course may be approved by the minor adviser)

3. Three courses selected from the following list:
   - French 375 French Literature in English Translation
   - German 375 German Literature in English Translation
   - Russian 375 Russian Literature in English Translation
   - Spanish 375 Spanish-American Literature in English Translation
   - Classics 350 Classical Art and Architecture of the Aegean World
   - Classics 360 The Role of Women in Ancient Greece and Rome
   - Classics 375 Classical Drama in Translation
   - Classics 450 Classical Greek and Roman Mythology

**Permissible Substitutions For Required Courses**

With the approval of a minor adviser, students may:

1. Substitute one of the following courses for one course listed above in either Requirement 2 or Requirement 3:
   - Religion 312 Religious Forms in Modern Literature
   - Religion 331 The Religious Quest in Modern Literature
   - Theatre 370, 371 Theatre Backgrounds I, II
   - Theatre 570 Development of Theatre Arts

2. Substitute an advanced literature course in a foreign language for one of the courses listed above in either Requirement 2 or Requirement 3.

3. Substitute a course or courses (maximum of 4 hours), not presently listed in the catalog, which may be offered as a special or temporary course and which is deemed by the advisers appropriate to the World Literature Minor.

**Group Majors and Minors**

**Group Science Majors and Minors**

Departmental major and minor requirements are listed under the individual Science Departments (Biology, Chemistry, Geography, Geology, Mathematics, Physics, and Psychology), and students must consult departmental advisers concerning them. Group majors and minors are intended for students in Elementary and Junior High School Education curricula. Group Science minors are also available for students in Special Education and Dietetics. Group science programs will not ordinarily be approved for students in other curricula, except in rare cases with special permission of the Group Science Advisor. For information contact College of Arts and Sciences Advising Office.

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.

**Note:** Courses marked with an * are recommended for Group Science minor.
Physical Science:

A. CHEM 103 General Chemistry I ....... 4
B. CHEM 140 Environmental Chemistry .... 4

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 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 a major or minor 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.

Science and Mathematics Teaching Minor
Adviser—Orientation and Advisement Office

This minor is open only to students enrolled in the Elementary Education Curriculum. Advising is through an Elementary Education Adviser, Orientation and Advisement Office, 2305 Sangren Hall. Transfer students will need to have their previous course work in Sciences and Mathematics evaluated by the Orientation and Advisement Office prior to enrolling in this minor.

Because of the inter-disciplinary and sequential nature of this minor, courses must be taken in sequence going from Level I to IV. For example, BIO 107 Biological Science, Level I, must be completed before enrolling in BIO 220 or BIO 234 at Level II.

Level I
Select one course from the following list:
BIO 107 Biological Science
(See class schedule for section designated) .... 4
GEO 107 Planetary Science in Elementary Education .... 4
GSCI 131 Physical Science in Elementary Education .... 4

Level II
A. Select two courses from the following list:
Only one course from any one department may be chosen:
BIO 220 Applied Botany .... 4
BIO 234 Outdoor Science .... 4
GEO 237 Environment Earth Science .... 4
CHEM 140 Environmental Chemistry .... 4
GSCI 231 Concepts in Physical Science .... 4

B. Required:
MATH 151 Geometry for Elementary Teachers .... 3
MATH 265 Probability and Statistics for Elementary Teachers .... 4

Level III
C. Required:
ED 401 Teaching Elementary School Science .... 3
MATH 552 Teaching of Elementary Mathematics .... 3

Level IV
D. Required:
ED 402 Seminar in Elementary Science and Mathematics .... 2

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 (1402 Sangren Hall).

Major and minor programs should be arranged in conference with the Adviser indicated above by the fourth semester of the student's college career.

1. Requirements for the Major in Social Science
   a. At least 36 hours credit in the Social Science departments listed above. Courses listed under “General Studies” may not be counted toward the major in Social Science.
   b. The following basic courses must be completed. They may be applied towards either the Social Science major or a minor in one of the
is designed for students possessing an Associates Degree in Criminal Justice, Law Enforcement or Police Science from a community college who desire the Bachelor’s Degree in this field. For more detailed information see a description of these programs in the undergraduate catalog under the heading “Division of Continuing Education” (or contact one of the Western Michigan University Regional Centers in Battle Creek, Benton Harbor, Grand Rapids or Muskegon), (or contact the adviser indicated above).

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.

510 Studies in Teaching Social Science: Variable Topics
3 hrs.
A specialized course for Social Studies teachers, dealing with an examination of selected areas of concern not intensively covered in survey courses. Specific topic will be designated in course title when scheduled. Specific topics may include: Simulation Games, Social Science Course Objectives & Accountability, Measurement & Evaluation. May be repeated for credit with a different topic. Prerequisite: Teaching Methods.

3. Related Course Offering

Additional Social Science Programs
Two additional interdisciplinary Social Science programs are available through the Division of Continuing Education listed under General University Studies Curriculum. The first is Social Science Studies—Interdisciplinary, the second is Criminal Justice. The latter program...
110 World Prehistory
3 hrs.
An introduction to the archaeological record relating to the development of culture from its stone age origins through the development of village agriculture and the beginnings of urban life.

120 Peoples of the World
3 hrs.
A general survey of the rich variety and types of traditional and contemporary societies in major culture areas of the world, such as hunting and gathering peoples, nomads, small-scale versus large-scale societies, and Non-Western kingdom states. Intended as a general introduction to the field of ethnography, with emphasis on detailed descriptions of representative societies.

210 Introduction to Archaeology
3 hrs. Fall, Winter
The science of archaeology is explored in terms of the methods and concepts used to discover and interpret past human behavior. Select portions of the Old and New World prehistoric cultural sequences provide the frame of reference.

220 Cultural Anthropology
3 hrs. Fall, Winter
A survey of the role and relevance of "culture" in various societies throughout the world, with emphasis on the nature and function of particular cultures and their interrelationship with environment, society and the individual. (Does not count for Anthropology major/minor program.)

240 Principles of Cultural Anthropology
3 hrs. Fall, Winter
An introduction to the basic concepts, theoretical approaches, and methodological strategies employed in the study of traditional and contemporary sociocultural systems throughout the world. Attention given to research techniques and the insights derived from detailed case studies and cross-cultural comparisons. (Course intended as general introduction to the field for Anthropology majors and minors, combined Sociology/Anthropology majors, Social Science and Honors College students.)

250 Introduction to Physical Anthropology
4 hrs. Fall, Winter
A survey of physical anthropology; hominid and primate evolution; the living primates, human osteology, human genetics and population variation.

300 The Prehistory of North America
3 hrs.
A survey of the major prehistoric cultures of North America north of Mexico, including American Indian origins, early big-game hunters of the Great Plains, ecological adaptations of the Archaic stage, the complex burial mound and temple mound cultures of the East, and prehistoric Pueblo cultures of the Southwest.

310 Method and Interpretation in Archaeology
3 hrs.
An introduction to formal archaeological research design and an examination of the interpretive processes used in the analysis and synthesis of material culture. Topics to be discussed include fieldwork strategy, survey and excavation techniques, classification, systems theory, model building and the reconstruction of prehistoric social organizations. Prerequisite: Anthro. 210 or consent of instructor.

325 Social Structure
3 hrs.
A study of the various social groups and institutions by which diverse societies and cultures throughout the world are organized, with emphasis on the nature and role of kinship, territoriality, ethnicity and other principles in ordering relations both within and between various groups and societies, with particular attention given to the various analytic concepts and theoretical approaches that are relevant to such studies. Prerequisite: Anthro. 240, 220 or consent of instructor.

331 Art and Culture
3 hrs.
A study of artistic activity in cultures of Africa, Oceania and the Americas, with attention to prehistoric as well as recent products. Relations between the visual arts and other aspects of culture. Prerequisite: Anthro. 240, 220 or consent of instructor.

333 Cultures of Europe
3 hrs.
A study of cultural characteristics of the various peoples of Europe, both East and West, with special emphasis placed on the comparison of world views, life styles and problems of cultural change among peoples of divergent historical and political backgrounds.

334 Cultures of North Africa and the Middle East
3 hrs.
A study of the peasant, urban, and nomad cultures from Morocco to Afghanistan, including consideration of Islamic civilization and recent ideological trends.

335 Cultures of Africa
3 hrs.
A study of the major culture areas and diverse societies of sub-Saharan Africa, with emphasis on the interrelationship of traditional beliefs and social practices viewed in historical and ecological perspectives as well as in the context of contemporary development problems.

336 Cultures of Asia
3 hrs.
A study and comparison of the social and cultural characteristics of the various peoples of Asia (e.g. China, India, Middle East, Central Asia, etc.), with concern for both the Great Civilizations and the lesser known tribal cultures.

337 Cultures of Mexico and Central America
3 hrs.
A study of the cultures of Mesoamerica with attention to both their indigenous historical development, their ethnic diversity and complexity, and the effect of Hispanic influences as well as their role in the contemporary life of Middle America today.

338 Cultures of South America
3 hrs.
A study of the various indigenous cultures of South America, their historical development and ecological adaptations and the impact of Hispanic/Iberian influences on them as well as their role in the contemporary life of particular South American countries today.

339 Native Cultures of North America
3 hrs.
A survey of the rich heritage of American Indian cultures north of Mexico. Ethnographic, ethnohistoric, and archaeological materials will be utilized to examine regional differences in cultural patterns.

340 Culture, Energy and Environment
3 hrs.
A study of the interrelationships among particular cultures, their traditional energy systems and specific environments, with emphasis on cross-cultural comparisons and the role of socio-cultural processes in both shaping and defining particular environments and the flow of energy through them.

345 Topics in Anthropology
3 hrs.
An intensive study of selected topics or emerging fields in anthropology, such as visual anthropology, museology, voluntary associations, population genetics, women and culture, socialization, and occult or utopian movements. Topics will vary
and be announced each semester. (May be repeated for credit with different topics.)

350 Human Evolution 3 hrs.
Study of both the indirect evidence and the fossil evidence concerning human evolution, including comparison with other primates, living and extinct, and a consideration of the present-day human variation. Prerequisite: 250 or consent of instructor.

370 Culture and Communication 3 hrs.
A consideration of the nature and role of various symbolic systems of communication, especially non-verbal, such as food, dress, art forms, use of space, mythology and folklore. Intended as a general introduction to such fields as semiotics, proxemics, structuralism, ethnosemantics, and modern linguistic theories of communication as they relate to cultural systems of cognition and social organization.

490 Undergraduate Seminar in General Anthropology 2-4 hrs.
An informal seminar oriented to the integrative and synthesizing dimensions of Anthropology. Through classroom discussions of readings, papers, and talks on various current concepts and topics in Anthropology, students and faculty explore the relevance of the anthropological perspective for an understanding of both the general human situation and their professional development. Course required for all Anthropology majors; open to other students with Consent. Variable credit depending upon extent of oral and written presentations by student. Prerequisite: Consent.

498 Honors Study 2 hrs.
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 Topics in Archaeology 3 hrs.
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: Varies with topic.

501 The Rise of Civilization 3 hrs.
The archaeological 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.

502 The Origins of Agriculture 3 hrs.
An intensive study of the human transition from hunting-gathering to cultivation during the post-Pleistocene period. Topics to be treated include: both archaeological and botanical models to explain these processes; the comparison of agricultural systems in various parts of the world; the geographic distribution and biosystematics of selected cultivars; and the cultural systems which have arisen from the economic foundations of plant domestication. Prerequisite: Anthro 210 or consent of instructor.

510 Field Methods in Archaeology I 3 hrs. Spring
Instruction in the archaeology of a particular area (e.g., the Great Lakes, Midwest Riverine area) with emphasis on cultural processes and ecological relationships as these emerge during the course of field work on the specific problems. (May be repeated for credit.) Prerequisite: consent of instructor.

511 Field Methods in Archaeology II 3 hrs. Spring
Implementation of the field research strategy. Instruction in the basic skills of site excavation, mapping and retrieval and recording of data; also laboratory analysis, including classification and cataloging of artifacts. Depending upon the problem orientation in a given field season, instruction may include site location survey, site sampling techniques, and paleoenvironmental reconstruction. To be taken concurrently with 510. (May be repeated for credit.) Prerequisite: consent of instructor.

520 History of Ethnological Theory 3 hrs.
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: Anthro. 240, 220 or consent of instructor.

522 Methodology in Ethnographic Research 3 hrs.
Emphasis is on quantitative and qualitative research materials as the basis for successful description and hypothesis testing in cultural anthropology. Considers the importance of research design and operations in generating more accurate observations on which theory building and testing rest. Includes introduction to ethnographic research techniques, e.g., participant-observation, structured and semi-structured interviews, questionnaires, sampling, technical equipment, etc. Prerequisite: Anthro. 240, 220 or consent of instructor.

523 Ethnographic Field Session 3-6 hrs. Summer
Supervised field examination of human communities in respect to specific ethnographic questions, analysis of field data, and report writing. (May be repeated for credit up to a total of six hours.) Prerequisite: consent of instructor.

531 Medical Anthropology 3 hrs.
An examination of anthropological research relating to cross-cultural beliefs and practices about health and illness and the relationship between folk and scientific medical care systems. Included is analysis of public health programs in Western and developing societies, the effect of institutional/bureaucratic social structure on the adequacy of health care systems, and patients' rights in this age of extraordinary medical technology. Prerequisites: Anthro. 220 or 240, or consent of instructor.

532 Culture and Personality 3 hrs.
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: Anthro. 240, 220 or consent of instructor.

534 Peasant Societies in the Developing World 3 hrs.
A cross-cultural study of peasants as a cultural type, with emphasis on the contemporary world. Includes discussion of the history and development of peasant societies, but theoretical and substantive concentration is on the role of peasant groups in urbanized national societies. Prerequisite: Anthro. 240, 220 or consent of instructor.
535 The Anthropology of Religion
3 hrs.
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: Anthro. 240, 220 or consent of instructor.

536 Cultural Evolution
3 hrs.
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: Anthro. 240, 220 or consent of instructor.

537 Political Anthropology
3 hrs.
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: Anthro. 240, 220 or consent of instructor.

538 Law and Culture
3 hrs.
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: Anthro. 240, 220 or consent of instructor.

539 Economic Anthropology
3 hrs.
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. 240 or 220; Econ 201 and 202; or consent of instructor.

540 Social Impact Assessment
3 hrs.
The application of anthropological knowledge to assess and evaluate the sociocultural effects of proposed developmental policy, programs or projects as they relate to environmental impact assessment while in the planning stage, to improve project design and mitigate undesired secondary effects.

545 Topics in Ethnology
3 hrs. Fall
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: Anthro. 240, 220 or consent of instructor.

549 Anthropology of Education
3 hrs.
Insights into the formal and informal educative processes in cultural and cross-cultural perspectives. Conceptualization of education as a replicative and innovative aspect of all individual and group development.

550 The Primates
3 hrs.
A study of the Order Primates with emphasis on the similarities and differences in the physical features of hominids, 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 early Homo Sapiens. Prerequisite: Anthro. 250 or consent of instructor.

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

555 Topics in Physical Anthropology
3 hrs.
A consideration of the biological relationships of specific population groups or general problems in human biology (e.g., human genetics, human growth and constitution, palaeopathology, dental anthropology). Topic will be announced each semester. May be repeated for credit with different topics. Prerequisite: Anthro. 250.

598 Readings in Anthropology
1-4 hrs.
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.
Secondary education majors or minors may not use the Botany or Zoology minor.

Only those biology courses in which a "C" or better is obtained may be counted toward a major or minor.

An Honors Program in Biology is available for students who demonstrate superior abilities during their first year of college work.

Students are assigned to an advisor in their area of interest by the Biology Information Office, Room 100, Wood Hall.

**SUGGESTED SEQUENCE OF COURSE WORK FOR BIOLOGY MAJORS IN THE ARTS AND SCIENCES CURRICULUM.**

*Note* Students contemplating majoring in Biology should contact the Biology Information Office (Room 100, Wood Hall) as early as possible so that they can be assigned to their Department Adviser.

**General Education electives should be determined in consultation with the student's Biology Department Adviser and General Education Counselors, so that they can best reflect the student's own interests and complement his major and minor areas.**

The mathematics requirement consists of at least eight credit hours of mathematics at the level for which the student is adequately prepared.

**First year:**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Biology 101 or 102</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemistry 101 or 102</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Education Electives**</td>
<td>6-8</td>
<td></td>
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<tr>
<td></td>
<td>Physical Education</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hrs.</td>
<td>15-17</td>
<td></td>
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<tr>
<td>Winter</td>
<td>Biology 102 or 101</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemistry 120</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mathematics 120, 122, 110 or 200***</td>
<td>4</td>
<td></td>
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<tr>
<td></td>
<td>General Education elective**</td>
<td>3-4</td>
<td></td>
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<tr>
<td></td>
<td>Physical Education</td>
<td>1</td>
<td></td>
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<tr>
<td></td>
<td>Hrs.</td>
<td>16-17</td>
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**Sophomore year:**

<table>
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<th>Semester</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Physiology requirement</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemistry 360 or 365</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mathematics 121, 123, 111, or 260***</td>
<td>4</td>
<td></td>
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<tr>
<td></td>
<td>General Education elective**</td>
<td>3-4</td>
<td></td>
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<tr>
<td></td>
<td>Hrs.</td>
<td>14-16</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>Genetics requirement</td>
<td>3-5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology elective</td>
<td>3-4</td>
<td></td>
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<tr>
<td></td>
<td>Physics 110 or 210</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Education Elective**</td>
<td>3-4</td>
<td></td>
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<tr>
<td></td>
<td>Hrs.</td>
<td>13-17</td>
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**Junior year:**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Biology requirement</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology elective**</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physics 111 or 211</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign language (for B.A. degree only)**</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hrs.</td>
<td>14-15</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>Biology elective(s)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Education elective(s)**</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign language (for B.A. degree only)</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Senior year:**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology elective(s) to complete 30 hrs. Complete General Education requirements Complete minor or second major requirements Completion of 122 credit hours Liberal Arts Curriculum students add the following requirements:</td>
<td></td>
</tr>
<tr>
<td>One course in the Social Sciences. One course in the Humanities One course in the Fine Arts. Electives in 300, 400, or 500 courses to make a total of 50 hours. Additional work in a foreign language—total of 16 hours.</td>
<td></td>
</tr>
<tr>
<td>General Counseling. Biology Staff Transfer Students. Consult with your adviser at the Biology Department before registering for classes. Students In Specialized Curricula. Your faculty adviser in Biology is: Secondary Education Dr. Leo C. Vander Beek Room 151, Wood Hall</td>
<td></td>
</tr>
<tr>
<td>Delays in fulfilling requirements for graduation are almost certain for students who do not plan their curriculum with the assistance of a Biology Department adviser.</td>
<td></td>
</tr>
</tbody>
</table>

**Science and Mathematics Teaching Minor**

The Department of Biology participates in the Science and Mathematics Teaching Minor for students in the Elementary Curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

**Course Descriptions**

(Courses described in italics are approved for General Education.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 Animal Biology</td>
<td>4 hrs.</td>
<td>A review of the field of zoology including some research topics. A taxonomic survey of the animal kingdom, discussing characteristics, importance and behavior of different groups.</td>
</tr>
</tbody>
</table>

**BIOLOGY 137**
234 Outdoor Science
4 hrs.
A course designed to increase the student's awareness and appreciation of the biological environment. Lectures provide introductions to basic ecological principles. Weekly field trips to a variety of environments involve identification and ecology of local aquatic and terrestrial plants and animals.

301 Ecology
3 hrs.
An introduction to the relationships of organisms to their environment and to one another. Interrelationships of individuals and the physical environment, dynamics of populations, and structure and function in the community and ecosystem are considered. Prerequisite: At least 9 hours of biology.

302 Heredity in Plants and Animals
3 hrs.
A beginning course in genetics covering patterns of heredity, DNA as the genetic material, induction of genetic changes, the genetic basis of evolution, developmental genetics, behavioral genetics and the role of environment in genetic expression.

315 Cell and Molecular Biology
3 hrs.
The cell is examined as the setting for the components and the processes of the cell, as well as their function, are discussed. The elements and compounds that make up living systems are described and followed through important processes, such as the control of DNA over the synthesis of proteins, photosynthesis, and various types of respiration. The student is also introduced to genetics. The lab encourages the development of scientific reasoning, in the context of learning more about the components and the processes of the cell, as well as about biological tools and techniques. Prerequisites: Biology 101 and 102, Chemistry 101 or equivalent.

317 General Physiology
4 hrs.
The field of comparative animal physiology is reviewed. Organs having various physiological functions are compared and considered in their function of maintenance of homeostasis (healthful state). Structure and physiology study is combined in lecture and coordinated laboratory experiences. Emphasis is placed on the experimental investigations of physiological processes, laboratory instrumentation and scientific writing. Prerequisites: Organic Chemistry, introductory physics, and one year of biology or consent of instructor.

342 Comparative Chordate Anatomy
4 hrs.
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 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 people. Prerequisites: Biology 101 and 102.

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.

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. These studies are carried out outside of class time, utilizing procedures outlined by the instructor. Primarily for teachers. Prerequisite: consent of instructor.

501 Ecological Adaptations of Organisms
3 hrs.
An investigation of the many environmental factors (light, temperature, time, magnetism, and others) that influence the life and behavior of organisms. A study will be made of the strategies used by organisms to adapt to these factors. Adaptation will be considered as adjustments in both behavior and physiology. Ecological interactions between the environment and the organisms at the molecular, cell, and organ levels will be studied. Plants, animals, and microorganisms will be used as examples. Prerequisites: consent of instructor.

502 Human Ecology
3 hrs.
A study of the human-dominated biotic community of civilization and its interrelationships. Lectures, assigned readings, group and individual field work. Prerequisite: at least a minor in biology or consent of instructor.

507 The Biology of Addictive Drugs
3 hrs.
The principles of pharmacology (modes of action and effects of drugs) as related to abuse drugs, such as marijuana, alcohol, heroin, methadone, LSD, amphetamines (Speed), and cocaine. The course is designed primarily for non-science majors to give them an understanding of the objective and subjective effects of drug use. Legal and social implications of illegal drug use are discussed. No prerequisites.

508 Recent Advances in Biology
3 hrs.
Recent research findings at the frontiers of biology reported in periodicals, symposia and scientific 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 humanity. Genetic principles needed for an understanding of evolution are covered. Prerequisite: Biology 101 and 102 or consent of instructor.

512 Environment and Health Problems
3 hrs.
The impact of the environment on the health of the individual and of populations, the resulting physiological and anatomical difficulties, and the various means employed in meeting these challenges.

515 Plants for Food and Industry
3 hrs.
Representative cereal, fiber, and industrial plants of primary economic importance will be examined, such as wheat, rice, wood and its products, soybeans, and grapes. Following a discussion of plant composition and of the main variables involved in growing plants, each selected plant will be studied with regard to its botanical characteristics, its distribution, the spacial aspects of its composition responsible for the economic prominence, and some of its cultural practices and problems. The course is enriched with demonstrations. Prerequisites: Biology 102, Chemistry 101 or consent of instructor.
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.

521 Phylogeny 3 hrs.
Studies in the classification, structure, physiology, ecology and economic importance of the freshwater algae. Prerequisite: Biology 301.

523 Heredity and Plant Breeding 3 hrs.
Principles of plant breeding. Quantitative genetics, population genetics, systems of mating, heterosis, and the genetics of pathogenic organisms are discussed. The basic unity of methods used in breeding self-pollinated and cross-pollinated species is considered. Prerequisite: 8 hours Biology.

525 Biological Constituents 3 hrs.
The chemical elements in plants and animals, as well as the synthesis, characterization, and degradation products of the more important compounds. Prerequisites: 12 hours of biology and one year of chemistry or consent of instructor.

526 Plant Diseases 3 hrs.
Considers plant diseases as a set of phenomena within the much larger complex of the biological sciences. Rather than being a catalog of diseases, their causes, characteristics and control, it portrays plant pathology in general terms. Prerequisite: 8 hours Biology.

527 Plant Physiology 3 hrs.
Investigations into plant functions. Basic principles are examined intensively, advantage is taken of the discoveries and unifying principles of modern biochemistry. Prerequisites: Biology 102 and Chemistry 101 or consent of instructor.

528 Biology of Non-Vascular Plants 3 hrs.
The ecology, reproductive cycles and classification of algae, fungi, and bryophytes are studied in depth both in the field and laboratory. Independent projects involving the culture of some of these organisms occupy part of the laboratory experience. A paper is required.

529 Biology of Vascular Plants 3 hrs.
Detailed comparative studies are made of the structure, reproductive cycles and phylogeny of vascular plants involving both field (in season) and laboratory observations. Independent projects and a paper may be required.

530 Environmental Education 3 hrs.
A review of ecological principles basic to understanding environmental problems. A survey of environmental problems through readings, discussions, and field experiences. The goal of this survey is to define problems and consider paths to solutions. Students are expected to plan and, if possible, to initiate environmental education programs in their own professional areas.

533 Neuroendocrinology 3 hrs.
Neuroendocrinology is designed to acquaint the student with the interrelationships of the environment and the organisms as mediated by the neuroendocrine system. The physiology and morphology of the neuroendocrine system will be studied, as well as the chemical structure of the neurohormones. Regulation of cellular chemistry by the neuroendocrine products will be emphasized. Prerequisites: a course in physiology, Organic Chemistry or consent of instructor.

535 Plant Nutrition 3 hrs.
The elements essential for plant growth and development and their primary functions in the metabolism of the plant are examined. The uptake of ions and their translocation in the plant are studied, while maintaining a balance between theory and application. The cycling of elements in nature provides perspectives into ecological aspects of plant nutrition. The course is enriched with demonstrations. Prerequisites: Biology 102, Chemistry 101, or consent of instructor.

538 Field Natural History 3 hrs.
A study of biological communities, with particular emphasis on those accessible for use by public schools, e.g., school grounds, vacant lots, roadsides, parks, and undeveloped areas. Primarily for teachers.

539 Animal Behavior 3 hrs.
Animal behavior with emphasis on evolution and ecology. Includes an introduction to the ethological point of view. One student project. Prerequisites: eight hours of biology or 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: twelve hours of biology, including Biol. 101.

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 included. Prerequisite: eight hours of biology including Biol. 101.

543 Protozoology 3 hrs.
Field and laboratory studies of both free-living and parasite protozoans, including taxonomy, morphology, life histories and ecology. Prerequisite: Biology 101.

544 Developmental Biology 3 hrs.
Theories and phenomena of differentiation, cytodifferentiation and morphogenesis; concepts of inducers, and organizers. 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.

546 General Cytology 3 hrs.
A study of the nuclear and cytoplasmic structures of the cell involving cytchemistry and histochemistry. Principles of classical and electron microscopy will be considered. Prerequisites: Eight hours of 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.

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. Prerequisites: A course in ecology and some course work in taxonomic biology, geology, or geography.
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. Prerequisite: Biology 102.

551 Parasitology
3 hrs.
A study of parasites and host-parasite relationships illustrated by representatives of the major parasite groups. Special attention is given to the parasites of humans. Prerequisite: Twelve hours of biology including Biology 101.

552 Plant Ecology
3 hrs.
A consideration of the organization of vegetation and casual relationships between environmental factors and vegetation. Prerequisites: Biology 301 and a course in systematic botany.

553 Limnology
3 hrs.
Biological, chemical, and physical aspects of lakes, ponds, and streams. Ecological relationships of invertebrate animals and lower plants are emphasized. Prerequisite: Biology 101 and 102, Chemistry 101 recommended.

554 Water Pollution Biology
3 hrs.
A comparison of organisms which live in clean waters as contrasted to those in polluted waters. Streams, lakes and ponds will be studied. Water conditions will be analyzed, and the use of biological indicators will be studied. The course will include field trips, laboratory work and lecture presentations. Prerequisites: Biology 101 and 102.

555 Marine Biology
3 hrs.
A survey of marine environments and organisms. Special adaptations of the organisms and their community organization are emphasized. Assigned readings, a term paper and an oral report will be required.

556 Tropical Marine Ecology
3 hrs.
A study of the complex interrelationships of marine life off the coast of Central America. 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 instructor.

558 Tropical Terrestrial Ecology
3 hrs.
A study of the terrestrial ecology in various regions of Central America. Several locations will be selected to investigate the structure and dynamics of a variety of tropical ecosystems. Prerequisites: Biology 301 and consent of instructor.

559 Radiation Biology
3 hrs.
A study of the fundamentals of radiobiology including radioactive decay, radiation measurements, radiation and interaction in living matter, isotopes, technology as well as health and safety regulations in the laboratory. Prerequisites: Twelve hours of 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
3 hrs.
Continuation of Biology 561.

598 Readings in Biology
1-3 hrs.
APPROVED APPLICATION REQUIRED.

599 Independent Studies in Biology
1-4 hrs.
APPROVED APPLICATION REQUIRED. For students who wish to carry on advanced work in special fields. Prerequisite: consent of instructor.

Biomedical Sciences

Darwin A. Buthala, Chair
Leonard J. Beuving
Robert C. Eisenberg
Gyula Ficsor
Stephen B. Friedman
Leonard C. Ginsberg
Cecil McIntire
Phoebe Rutherford
Marjory A. Spradling
Jack S. Wood

The Biomedical Sciences programs are designed to prepare students for biomedical careers by providing them with an effective foundation in the basic biologically related sciences, including physiology, microbiology, genetics and cell biology, coupled with extensive training in modern laboratory techniques associated with the above disciplines. Two options are available, the General Option and the Medical Service Representative Option. The specific objectives of the General Option include: 1) producing students with technical training applicable to employment in hospitals, clinical and basic research laboratories, industrial laboratories and state and federal agencies; 2) producing highly qualified students interested in pursuing training in the health sciences at the graduate or professional levels, i.e., M.S., Ph.D., MD, DDS, or DVM; 3) providing students in the education curricula with courses for specialized science training in the areas of human biology and health education (although the Biomedical Sciences major and minor are not yet approved for the Elementary or Secondary Education Curricula).

The specific objective of the Medical Service Representative Option is to produce students with a sound understanding of the biomedical sciences who are also knowledgeable in law, accounting, economics, psychology, marketing and interpersonal communication. Such students would be employable as technical representatives in the pharmaceutical or biomedical-industrial field.

All major and minor programs are taken under the direction of and with the approval of a Biomedical Sciences advisor. Students who want to major in either of the Biomedical Sciences options must see the Biomedical Sciences advisor during their first semester.

Only BMED courses in which a grade of "C" or better is obtained may be counted towards a major or minor in Biomedical Sciences.
Requirements for the Major—General Option

Biomedical Sciences requirements: A major in Biomedical Sciences (BMED) consists of a minimum of 30 credit hours in BMED courses, including the basic core curriculum and electives. The electives must include a 3 credit BMED laboratory course, and at least 6 credit hours of electives must be at the 500 level (excluding 598 and 599). A maximum of 6 credit hours of approved W.M.U. courses outside the Biomedical Sciences curricular offerings may be applied toward the major. A student may also be eligible for equivalency and transfer credit toward the major. (See Transfer Students.)

Core curriculum for a major: BMED 112, 113, 200, 250, 312 and 350. BMED 112 and 113 are not required of students demonstrating satisfactory performance on proficiency exams covering the content of these courses.

Cognate requirements for a major: 15 hours of college chemistry including organic chemistry and biochemistry, 8 hours of college mathematics (excluding Math 110 and 111), and 8 hours of general physics.

Requirements for the Major—Medical Service Representative Option

Biomedical Sciences Requirements: A major in Biomedical Sciences with a Medical Service Representative Option consists of a minimum of 33 credit hours in BMED courses, including a core curriculum and selective electives. The electives must include 2 of the following: BMED 518, 534, 560 or 574.

Core Curriculum: BMED 112, 113, 200, 250, 312, 350 and 536. BMED 112 and 113 are not required of students demonstrating satisfactory performance on proficiency exams covering the content of these courses. BMED 597 (seminar) is also required.

Cognate Requirements: 15 hours of college chemistry including organic chemistry and biochemistry, 8 hours of college mathematics (excluding Math 110 and 111), and 8 hours of general physics.

Transfer Students

Proficiency examinations covering the content of BMED 112 and 113 will be available to all students transferring into the Biomedical Sciences degree major program who wish to waive the requirements of taking these courses. The proficiency examinations will be offered at predetermined periods throughout the year. Successful passage of the examinations provides a waiver and not academic credit for BMED 112 and 113. The students will be provided with a signed waiver form, which will become part of his/her Major Slip. The proficiency exam may be repeated only once. There will be no charge for the exams.

Equivalent courses taken elsewhere may be substituted for BMED 112 and 113. These and other substitutions will require approval of the Biomedical Sciences Advisor.

Exceptional transfer students may petition the Biomedical Sciences Curriculum Committee to waive BMED 200. Following submission of a "Permission to waive BMED 200" form, a quorum of the curriculum committee will meet with the students for the purpose of determining the students' competence in the subject matter covered in BMED 200. The student will be asked to show such competence both verbally and by demonstration. An affirmative vote by a majority of the committee present will be required for waiver of the BMED 200 requirement. A successful waiver of BMED 200 does not provide for academic credit. The student will be provided with a signed waiver form which will become part of his/her Major Slip. This waiver option is not available to majors who have taken BMED 112 and 113. A minimum of 15 hours in the major, including BMED 200, and 6 hours in the minor must be earned at Western Michigan University.
## Suggested Sequence of Course Work for Biomedical Sciences Majors—Medical Service Representative Option.

### Freshman Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Biomedical Sciences 112</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Mathematics*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Psychology 150</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Winter</td>
<td>Biomedical Sciences 113</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 120</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Mathematics*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Psychology 194</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education</td>
<td>1</td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Biomedical Sciences 200</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 360 or 365</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4-8**</td>
</tr>
<tr>
<td></td>
<td>Communication Arts and Sciences 104</td>
<td>3</td>
</tr>
<tr>
<td>Winter</td>
<td>Biomedical Sciences 250</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 361 or 222</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Biomedical Sciences 350</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Communication Arts and Sciences 170</td>
<td>3</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Biomedical Sciences 312</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Biomedical Sciences 518 or 536</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Economics 201</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>6-8</td>
</tr>
<tr>
<td>Winter</td>
<td>Biomedical Sciences 560 or 574</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 110</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Economics 202</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 450</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3-4</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Biomedical Sciences 536 or 518</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 111</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Accounting 201</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biomedical Sciences 597</td>
<td>2</td>
</tr>
</tbody>
</table>

### Winter

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSCI 434</td>
<td>4</td>
</tr>
<tr>
<td>Marketing 270</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Business 340</td>
<td>3</td>
</tr>
<tr>
<td>Biomedical Sciences 597</td>
<td>2</td>
</tr>
</tbody>
</table>

## Description of Courses

### 112 Introduction to Biomedical Sciences

**3 hrs. Fall, Winter**

A course designed to provide a natural science foundation for majors, minors, and general education students. Through analysis of health and medically related topics, foundation concepts in physiology, microbiology, genetics, anatomy and related disciplines are presented for students who do not have strong biology and chemistry backgrounds. This class provides a better understanding of the biomedical sciences and a conceptual framework for more advanced study.

### 113 Cell Biology

**3 hrs. Fall, Winter**

An introduction to the major concepts of cell biology necessary to understand the working principles of modern biomedical science. Concepts which are stressed are cell structure and function, cell types, cell chemistry, cell reproduction, the transfer of information, and cell-cell interaction. This course serves two functions: (1) to provide the foundation on which further study in genetics, microbiology, and animal physiology is based, and (2) to represent the major biological principles appropriate for a terminal biological science course for the serious liberal arts student (or Honors College student). A college course in general chemistry is strongly recommended for liberal arts students as a prerequisite to this course.

### 200 General Biomedical Sciences Laboratory

**3 hrs. Fall, Winter**

A laboratory course covering the principles and biomedical applications of microscopy, molecular separation methods, spectrophotometry and radiometric methods. Prerequisites: BMED 112 and 113 and introductory chemistry.

### 209 Genetics, Evolution and Society

**3 hrs. Fall**

The mechanisms of human inheritance. Topics of social, medical and evolutionary importance are emphasized. Credit does not apply toward a major in Biomedical Sciences but does apply toward a minor.

### 210 Mammalian Anatomy

**4 hrs. Fall, Winter**

A study of the gross structure of the organ systems of the mammalian body with special reference to man.

The laboratory experience utilizes pre-dissected cats. Prerequisite: BMED 112 or equivalent.

### 230 Microbiology and Man

**3 hrs. Fall**

A course describing the nature of microorganisms, their harmful and beneficial effects on humanity and their role in nature. Not for credit towards a Biomedical Sciences major but does apply toward a minor.

### 232 Microbiology and Infectious Diseases

**3 hrs. Winter**

An introductory microbiology course emphasizing characteristics and modes of transmission of those microorganisms which cause human disease. Credit does not apply toward a major or minor in Biomedical Sciences. For Bronson Hospital nurses or by consent of instructor.

### 240 Human Physiology

**4 hrs. Fall, Winter**

This course is designed to provide non-majors with an understanding of the basic functioning of the organ systems of the human body and their regulation and control. The molecular and cellular mechanisms involved are emphasized. Applications to exercise physiology are made. Clinical applications are introduced where they provide additional insight into basic function and regulatory mechanisms. Prerequisite: BMED 112.

### 250 General Genetics

**3 hrs. Fall, Winter**

A study of the mechanisms of heredity at the level of cells, individuals, families and populations. Prerequisite: 2 courses in Biomedical Sciences or Biology.

### 299 Selected Topics in Biomedical Sciences

**1-3 hrs.**

### 310 Anatomical Techniques

**3 hrs. Fall, Winter**

This is a laboratory course designed for the student to gain an expertise in dissection techniques and experience in presenting laboratory material. Prerequisite: BMED 210.

### 312 Microbiology

**5 hrs. Fall, Winter**

An introduction to the fundamental relationships among microbes with an emphasis on unifying principles. Laboratory work deals with techniques basic to bacteriology. Prerequisites: BMED 200, 250, and a course in organic chemistry, or consent of instructor.

### 319 Clinical Physiology

**4 hrs.**

A study of the functioning and regulation of the organ systems and
the application of this knowledge to an understanding of their malfunctions. The molecular and cellular mechanisms involved are emphasized. Must be in Physicians' Assistants curriculum.

330 Clinical and Pathogenic Microbiology
4 hrs. Winter
A course dealing with infectious diseases and their etiology. Emphasis will be placed on epidemiology, pathogenesis and pathology, diagnosis and treatment of various diseases. Laboratory will employ current methods utilized for cultivation and identification of most common pathogens and non-pathogens encountered in a clinical microbiology laboratory. Prerequisites: BMED 312.

350 Human Physiology for Majors
4 hrs. Fall, Winter
An introduction to the function and interrelationships of the human body organ systems with description of various physiological malfunctions. The laboratory provides experience with some types of clinical measurements, laboratory instrumentation, data organization and scientific writing. Prerequisites: BMED 250 and organic chemistry.

401 Principles and Techniques of Laboratory Diagnosis
3 hrs.
This course describes the common diseases and their treatment with emphasis on the significance of laboratory findings in their diagnosis. Must be in Physicians' Assistants curriculum or permission of instructor.

430 Hematology—SeroLOGY
4 hrs. Fall
The principles of normal blood cell maturation, morphology and function will be discussed. Additional consideration will be given to various blood dyscrasias and immunological deficiencies. Laboratory will include an introduction to a variety of hematological and serological procedures routinely employed in hospitals and clinics, with special emphasis on the principles involved and interpretation of the test results. Prerequisites: BMED 350, Chemistry 450 and 456.

518 Endocrinology
3 hrs. (alternate years)
A survey of the hormonal integration of organ-system function including the chemical nature of these secretions, the cellular and biochemical mechanisms of hormone actions and the endocrine feedback control mechanisms. The regulatory nature of hormones in developmental processes, in adaptation and in disease processes will be stressed. Prerequisite: BMED 350, biochemistry is recommended.

519 Endocrinology Laboratory
3 hrs. Winter (alternate years)
Laboratory experience in endocrinological concepts involved in endocrine research and clinical testing. Prerequisite: BMED 518 or 560.

520 Human Genetics
3 hrs. Winter (alternate years)
The principles of human heredity with particular emphasis on the clinical significance of biochemical and chromosomal variation. Abnormalities of development and methods of risk analysis in genetic counseling are discussed. Prerequisite: BMED 250 or consent of instructor, biochemistry recommended.

522 Cyto genetics
3 hrs. Winter (alternate years)
The molecular, morphological and dynamic aspects of chromosomes, nucleus and allied structures in the nucleate organisms are considered. The chromosomal basis of transmission genetics involving normal, mutant and ploidy genomes is presented. Prerequisite: Biology 250 or equivalent.

524 Microbial Genetics
3 hrs. (alternate years)
A molecular approach to microbial genetics, dealing primarily with bacterial and viral systems. Emphasis is placed on current literature and on the application of concepts to biomedical research. Prerequisites: BMED 250 and 312 or consent of instructor. Biochemistry recommended.

525 Genetics Laboratory
3 hrs. Winter (alternate years)
Students will acquire techniques currently used in the field of genetics. Although all areas of genetic interest will be presented, emphasis will be placed on the areas of cytogenetic, biochemical genetic, genetic toxicology and genetic counseling techniques which are currently used in medical, industrial biomedical research areas. In addition, time will be provided for in-depth experimentation. Prerequisite: BMED 250 or equivalent.

531 Biology of Aging
3 hrs.
This course is designed to provide non-majors with an understanding of the aging process. The lectures will emphasize the anatomical, physiological and molecular changes which occur in cells and organs with aging. Clinical applications are introduced where they provide additional insight into the aging process. Prerequisites: Consent of instructor.

532 Bacterial Physiology
3 hrs. Winter
Lectures on bacterial cytology, physiology, and metabolism with an emphasis on biochemical aspects. The course is designed for advanced undergraduates and beginning graduate students. No general textbook is required and considerable reference is made to the scientific literature. Prerequisites: BMED 312 and a course in biochemistry.

534 Virology
3 hrs. Winter
A study of the classification, structure and chemistry of viruses. Emphasis will be placed on the cell-virus interaction leading to the disease process or cellular alterations in mammalian systems. Prerequisite: BMED 312, biochemistry recommended.

536 Immunology
3 hrs. Fall
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens and their interaction. Emphasis will be placed on in vitro and in vivo humoral and hypersensitivity reactions. Prerequisite: BMED 312, biochemistry recommended.

537 Histology
3 hrs. Fall
A study of the function and microscopic anatomy of mammalian tissues. Prerequisite: BMED 210 or consent of instructor.

540 Cell and Organ Culture
3 hrs. Fall
The purpose is to introduce the student to the fundamental procedures of cell and organ cultures of mammalian tissue. The application of cell and organ culture to routine clinical research or drug screening procedures will be emphasized as well as specialized procedures employed to solve specific biomedical research problems. Prerequisite: consent of instructor.

554 Histological Techniques
2-3 hrs. Winter (alternate years)
A variety of techniques including cellloidin, paraffin, decalcification and special stains will be used to prepare mammalian tissues for histological examination. Prerequisites: BMED 537 or consent of instructor.

555 Human Environmental Physiology
3 hrs. Fall (alternate years)
A study of the physiological and behavioral adaptation and responses of organisms to external environmental factors. Some attention is given to artificial environments and the problems involved. Prerequisite: BMED 350.
Chemistry

Robert C. Nagler, Chair
Robert H. Anderson
Donald C. Berndt
Donald J. Brown
Dean W. Cooke
J. Lindsley Foote
Robert E. Harmon
Paul E. Holkeboer
Thomas House
James A. Howell
Don C. Iffland
Adi S. Kana’an
Joseph M. Kanamueler
George G. Lowry
Michael E. McCarrville
Ralph K. Steinhaus
Jochanan Stenesh
H. Dale Warren

Students majoring in chemistry may prepare for a career in high school teaching, industrial laboratory work, or graduate work in departments of chemistry or medical colleges. The course offerings for the undergraduate attempt to give a broad but thorough grounding in the elements of chemistry. They should be fortified by a minor in physics, mathematics or biology. Most students who intend to do advanced work in chemistry should plan to obtain a reading knowledge of a European language. At the present time German is preferred but French or Russian might well be taken.

The Chemistry Department is accredited by the American Chemical Society. Students who follow the American Chemical Society certification course sequence below are 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:

First year:
- General Chemistry I 101 or 102
- General Chemistry II 120
- Mathematics 122, Mathematics 123

Sophomore year:
- Organic Chemistry I 360, Organic Chemistry II 361, Mathematics 272, Physics 210, Physics 211

Junior year:
- Quantitative Analysis 222, Physical Chemistry I 430, Physical Chemistry II 431, Physical Chemistry Lab 436 (2 hrs.)

Senior year:
- Instrumental Methods 520 and Inorganic Chemistry 510 or Biochemistry I 550 or 552.

In addition, two 3 or 4 hour advanced electives from 500 level chemistry or mathematics or physics as approved by the Chemistry adviser. Reading knowledge of German or Russian is required for A.C.S. certificates.

The Arts and Sciences Curriculum Chemistry Major requires 34 hours in chemistry including the basic sequence as in the A.C.S. Certificate program through Physical Chemistry; two 3 or 4 hour courses at the 500 level, chosen from at least two areas of chemistry.

Secondary Education chemistry majors require 30 hours of chemistry courses as in the Arts and Sciences Curriculum including a minimum of 4 hours of Physical Chemistry.

The Health Chemistry Major is designed to meet the needs of chemistry background for the preprofessional degree leading to health science areas such as medicine, dentistry, veterinary medicine, nutrition, clinical chemistry, toxicology, pharmacology, etc. A minimum of 33 chemistry credit hours must be selected according to the following: General Chemistry I and II (101 or 102, 120); Organic Chemistry I and II (360, 361); Quantitative Analysis (222); Intro. Biochem. and Lab (450, 456) or Biochem. I and II with Lab (552, 556); Intro. Phys. Chem. and Lab (535, 436) or Phys. Chem. I with Lab (430, 436); Chem. Lab Safety (506) or Drugs and Pesticides (564); and additional 500 level chemistry electives if necessary for minimum hours.

Other specialized chemistry programs such as Chemistry Business can be developed through the Undergraduate Chemistry Advisor, Dean Cooke, room 4040 McCracken Hall.

All chemistry majors must satisfactorily complete one of the following writing courses prior to their senior year: English 105 or 305; Business Education 142 or 242; or General Engineering and Technology 102; or equivalent courses.

A minimum chemistry minor will contain at least eighteen hours. Chemistry minors in Secondary Education are required to take twenty hours of chemistry and to complete one year of physics before student teaching.

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 adviser.
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.

**Science and Mathematics Teaching Minor**

The Department of Chemistry participates in the Science and Mathematics Teaching Minor for students in the Elementary Curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

**Course Descriptions**

(Courses described in italics are approved for General Education.)

100 Introduction to General Chemistry 4 hrs. Fall
A course for students with insufficient background for college level chemistry which develops skills essential to a working understanding of the science of chemistry. Instruction and practice in the fundamental tools for solving chemical problems: chemical formulas, chemical equations, stoichiometry, measurement units, conversions. An introduction to the nature of matter is developed. Enrollments are restricted to students without high school chemistry and to those who demonstrate inadequate retention of their chemistry background. This course credit will not apply to curricular requirements of chemical science at this university and should be followed by Chemistry 101.

101 General Chemistry I 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 two or more additional courses in chemistry. Credit for 101 is equivalent to the level of completion of Chemistry 102. Prerequisite: Chemistry 100 or one unit high school algebra and chemistry, with low pass on the chemistry placement examination. This course includes lecture and laboratory.

102 General Chemistry I 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 chemistry placement examination at upper level. Students well prepared may earn credit by taking examination. This course includes lecture and laboratory.

103 General Chemistry I 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. Prerequisite: One unit high school algebra. This course includes lecture and laboratory.

107 Chemistry of Textiles and Design Media 4 hrs. Winter
A course in which the concepts needed to understand the chemical properties of textile and design media are developed in a non-mathematical manner. Textile fibers, textile finishing, dyes, plastics, rubber, paint, paper, leather, metals, cleaning agents, ceramics, glass, cosmetics, and wood are considered. This course is designed to meet the needs of students of home economics who plan a career in merchandising, or other students of art and applied science who handle the materials being considered. Not applicable for a major or minor in chemistry nor as a prerequisite to other chemistry classes, this course includes lecture and laboratory.

120 General Chemistry II 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 in the laboratory. The chemical relationships in the periodic table, electrochemistry, and the equilibrium principle are also treated. Prerequisite: Chem. 101, 102, or 103.

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.

206 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.

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 in the laboratory. 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 I 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 and laboratory. Prerequisite: Chem. 120.

361 Organic Chemistry II 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, which includes laboratory, will not serve as prerequisite for 361. Prerequisite: Chem. 120.

390 Special Problems in Chemistry 2 hrs. Fall, Winter
This course is designed to give students that have completed basic chemistry an opportunity to receive
credit for experience in chemical laboratory independent study in association with a faculty member. May be repeated once. Prerequisite: 18 hours of chemistry, with approval of the Department Chairperson and a faculty director.

430 Physical Chemistry I
3 hrs. Fall
Lectures on kinetic theory of gases, thermodynamics, 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 120.

431 Physical Chemistry II
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 re-enrolled for a total of 2 credit hours. Prerequisite: Chem. 222 and 430 or 535. 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.

456 Introductory Biochemistry Laboratory
2 hrs. Winter
Basic biochemical laboratory techniques: isolation and properties of proteins, enzymes, carbohydrates, lipids and nucleic acids; studies of metabolism; determinations of clinical interest involving blood, urine, liver and brain. Prerequisite or corequisite: Chem. 450 or 550.

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. Prerequisite: 16 hours of chemistry.

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.

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.

530 Introduction to Spectroscopy and Molecular Structure
3 hrs.
Introduction to the basic principles of atomic and molecular spectroscopy with emphasis on quantum concepts; interpretation of spectra in relation to changes in atomic and molecular energies; elucidation of molecular structure from interactions with electromagnetic radiation in the ultraviolet, visible, infra-red and u-wave regions and with magnetic fields as applied to nuclear magnetic resonance and electron spin resonance. Prerequisite: 431.

535 Introduction to Physical Chemistry
3 hrs.
Theory and applications of chemical structure, energetics, and rates and mechanisms of processes as a basis for understanding the principles of chemistry. Laboratory credit is obtained by taking Chemistry 436, Physical Chemistry Laboratory. This course may not be applied to a graduate curriculum in chemistry. Prerequisites: 16 hours chemistry. Math 123, Physics 111 or 211.

550 Biochemistry I
3 hrs. Fall
The chemistry, properties, and molecular biology of proteins and nucleic acids. Includes discussions of amino acids, enzymes and biochemical energetics.

552 Biochemistry I with Laboratory
4 hrs. Fall
This course consists of 550 + lab. Experiments involve more advanced techniques and instrumentation than in 456 laboratory. Emphasis will be on purification and properties of proteins and nucleic acids. Prerequisite: 361 and 430 or 535.

554 Biochemistry II
3 hrs. Winter

556 Biochemistry II with Laboratory
4 hrs. Winter
This course consists of 554 plus laboratory. Experiments will involve more advanced techniques than 456 laboratory. Emphasis will be on metabolism of carbohydrates, lipids, proteins and nucleic acids. Prerequisites: 550 or 552.

560 Qualitative and Spectroscopic Analysis of Organic Compounds
4 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.

564 Drugs and Pesticides
3 hrs.
This course introduces students to the chemical nature and uses of drugs and pesticides. Abuses and potential toxicological hazards are also discussed in respect to biological-chemical properties and the behavioral-sociological implications. Prerequisites: 361 or 365.

570 Polymer Chemistry
3 hrs.
The aspects of macromolecular chemistry which are significantly different from the chemistry of small molecules are studied. In particular, mechanisms and techniques involved in the synthesis of macromolecules, and the structure, composition, mechanical properties, and solution properties of polymers are studied in terms of the organic, physical, and analytical chemistry involved. Prerequisites: Chem. 361 or 365, and Chem. 431 or 535.
Communication Arts and Sciences

Richard J. Dieker, Chair
Roy Beck
Charles T. Brown
William E. Buys
June Cottrell
Loren Crane
George Custen
Ruth Heinig
Charles Helgesen
James Jaksa
George Murdoch
Leon Nobes
Peter G. Northhouse
Thomas F. Pagel
Beatrice H. Prussion
Steven C. Rhodes
George Robeck
Jules Rossman
Barry Sherman
Thomas Sili
Robert L. Smith
Ernest L. Stech
Shirley A. Van Hoeven
Earl Washington
Shirley C. Woodworth
Paul Yelsma

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 places a large share of responsibility on students in designing their own program; students planning to Major or Minor in CAS should discuss their program needs and interests with a Departmental adviser at the earliest possible date. Appointments to see Departmental advisers may be made at the Departmental office, 300 Sprau Tower.

The Department includes five areas: Interpersonal Communication, Organizational Communication, Mass Communication, Oral Interpretation and Communication Education. The majority of students choose to spread their course work over two or more areas in designing their Majors/Minors. Some students, about thirty percent, prefer to select most of their course work in one of the five areas. Students who wish to familiarize themselves with area programs may wish to contact the chairpersons of the areas in which they are interested. Office hours of area chairpersons are available in the Departmental office, 300 Sprau Tower.

The 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 community service projects, readers theatre, oral interpretation festivals and consultant services for campus organizations. Academic credit may be earned for significant participation in many of these communication activities.

General Program Requirements

1. All Major/Minor programs must be approved by a departmental adviser.
2. Students must earn a grade of "C" or better in all course work applied toward a Major/Minor program.

Majors*

Two Majors are available. Following the declaration of a Major in Communication Arts and Sciences, Majors are required to complete at least 18 semester hours toward completion of their program within the Department.

1. Communication Arts and Sciences Major
   A Communication Arts and Sciences Major requires 30 semester hours of CAS, including CAS 170 and 27 hours of electives to be arranged in consultation with the Departmental adviser.

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, CAS 562 (for the Secondary Education Major) or CAS 561 (for the Elementary Education Major) and 23 hours of electives to be arranged in consultation with a Departmental adviser. Students should note that methods courses are offered only once yearly: 561 Fall Semesters and 562 Winter Semesters.

Minors*

Two Minors are available. Following the declaration of a Minor in Communication Arts and Sciences, Minors are required to take at least 11 semester hours toward completion of their Minor within this 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.

*Note: Petitions for exceptions to these policies should be directed to the Department Chairperson.
Course Descriptions

(Courses described in italics are approved for General Education.)

Note: Of courses CAS 104 and 130, only one may be taken for academic 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
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
3 hrs.
Self discovery of the individual's relationships 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/her powers of speech to increase his/her effectiveness in interpersonal relationships through understanding of self and others.

210 Oral Interpretation I
3 hrs.
Emphasis is placed on developing the student's appreciation of literature and his/her skill in analysis and oral reading of representative works in prose and poetry.

211 Oral Interpretation II
3 hrs.
A continuation of CAS 210. CAS 211 introduces the individual reading of dramatic scenes and the basic theory of readers theatre. Class activities include group reading of prose, poetry and drama. Prerequisite: CAS 210.

232 Discussion
3 hrs.
Study and practice in discussion and conference. Skill in participation, leadership, group thinking, and evaluation are emphasized. Recommended for students whose vocational plans involve work with groups.

236 Social Issues and Action Laboratory
1 hr.
A laboratory designed to offer experience in analyzing and participating in the communication processes related to current social issue programs. Students may accumulate a maximum of 4 hours credit.

240 Broadcast Communication
3 hrs.
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.

241 Film Communication
3 hrs.
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.

246 Broadcast Operations
3 hrs.
Introduction to the electronic theory, equipment, operating procedures and personnel involved in radio/television production, storage and distribution.

247 Radio Production
3 hrs.
Analysis of sound as a creative element in radio broadcasting and production. Studio experience in writing and producing radio formats, commercials, drama, documentary and other types of aural messages. Prerequisite: CAS 246.

270 Interpersonal Communication II
3 hrs.
A continuation of CAS 170 with a more intensive analysis exploring further dimensions of interpersonal relationships, with particular emphasis on listening. Prerequisite: CAS 170 or consent of instructor.

302 Introduction to Communication Theory
3 hrs.
An examination of theories of perception, cognition, motivation and social psychology which relate to the process of communication.
305 Special Topics in Communication
1-3 hrs.
Group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes; some are added during the semester. Further information and a full listing of topics may be obtained from the Departmental offices, 300 Sprau Tower. Six hours of CAS 305 and 505 may be accumulated as credit toward a Major or Minor in CAS.

307 Intrapersonal Communication
3 hrs.
The examination of intrapersonal communication models showing how imagery and symbolic processes organize patterns of thinking that permit self-direction and regulation.

311 Readers Theatre
3 hrs.
Selecting and arranging materials for readers theatre; directing and participating in performances. Prerequisite: CAS 210 or consent.

312 Oral Interpretation of Drama
3 hrs.
Development of skills in oral presentation of dramatic forms of literature, through class analysis and individual presentation of dramatic scenes. Prerequisite: CAS 211 or consent.

313 Persuasive Speaking
3 hrs.
The study and application of logical, emotional and ethical principles of persuasion.

334 Argumentation and Debate
3 hrs.
Theory and practice in argumentation and debate. Included are the analysis of propositions and the use of logic and evidence. Students will build, present, and defend cases. Debate is taught as a process of inquiry and advocacy.

335 Leadership
3 hrs.
A study of the characteristics and behaviors of leaders with emphasis on the development of leadership abilities in the individual for different group situations.

346 Film Production
3 hrs.
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 $30.00 per student. Prerequisite: CAS 241.

347 Television Production
3 hrs.
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 $10.00 per student. Prerequisite: CAS 246.

348 Television Writing and Continuity
3 hrs.
Explores the problems and techniques of combining sound and visual elements in the creative preparation of television broadcast formats, commercials, dramatic scripts, station continuity and documentaries.

349 Broadcast Journalism
3 hrs.
Study of radio and television as news media; principles of news reports, newscasts, news commentary, on-the-spot coverage and features.

365 Oral Communication and the Early Elementary Child
4 hrs.
This course focuses on the oral communication processes, particularly as they relate to personal and social development. Particular attention is paid to the acquisition and development of oral communication by the young child; the role of oral communication in the teaching/learning environment; and the relationship between oral language and reading and writing. Deals with the child from birth through seven years. (This course is required for the Integrated Language Arts Minor.)

366 Oral Communication and the Later Elementary Child
4 hrs.
This course focuses on the oral communication processes; particularly as they relate to personal and social development. Particular attention is paid to the development of oral communication by the older child; the role of oral communication in the teaching/learning environment; and the relationship between oral language and reading and writing. Deals with the child from age seven through twelve years. (This course is required for the Integrated Language Arts Minor.)

360 The Teacher as Communicator
3 hrs.
A course in speech communication for those preparing to teach. The course examines the basic elements of speech communication and their specialized application to the various communicative roles of the teacher.

372 Introduction to General Semantics
3 hrs.
A study of the functions of language. The course deals with the nature and meaning of symbols and differences between the communication systems of the human animal and other species. Examines the assumptions held by Western man about the structure/function of his universe as reflected in language; the problem of "reality" as distinct from "meaning." The purpose of the course is to increase the student's awareness of his/her effectiveness as a thinker or symbol-user.

373 Communication Skills and Career Planning
3 hrs.
A systematic self-assessment and job search, making use of intrapersonal and interpersonal communication skills. The student attempts to fit his/her personality with specific favorable job environments, researches those jobs, and builds a resume to communicate these findings. The course makes use of real interviews and outside resource people as an integral part of the experience.

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 consent of instructor.

448 Television Performance
2 hrs.
Exercises in television performance, stressing the special problems of the video performer. Prerequisite: Consent of 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

505 Special Topics in Communication
1-3 hrs.
Advanced group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes; some are added during the semester. Further information and a full listing of topics may be obtained from the Departmental offices, 300 Sprau Tower. Six hours of CAS 305 and 505 may be accumulated as credit toward a Major or Minor in CAS.

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:
1. Oral Interpretation of Shakespeare
2. Oral Interpretation of the Bible

530 Studies in Attitude Change: Variable Topics
3 hrs.
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 CAS 530. In addition to the topics listed, additional topics are offered from time to time and will be listed in the Schedule of Classes.
1. Ethics and Freedom of Speech
2. Historical Bases of Rhetoric

540 Studies in Mass Communication: Variable Topics
3 hrs.
Analysis in depth of continuing issues in mass communication. Topics vary from semester to semester and students may take one or all topics for credit. Topics include:
1. Teaching Mass Media in the School
2. Television and Politics

541 Broadcast Regulation
3 hrs.
The laws and issues of broadcasting regulation regarding licensing, ownership, programming, political broadcasting, advertising, and the role of the FCC, the FTC, the NAB, and other agencies and regulatory departments.

542 Mass Media and the Child
3 hrs.
Assesses the impact that mass media fare from radio, television, films, comics, and other media may be having on the minds and behaviors of children.

543 Mass Communication and Social Change
3 hrs.
The course examines the role of the mass media in diffusing information and persuasive messages, and the effects of these messages on individuals, groups and institutions. The fields of politics, advertising, and public relations are studied from the communication/change viewpoint of the practitioner and the consumer.

544 Mass Communication and Public Affairs
3 hrs.
The course examines the role of the media in covering public affairs news and disseminating it to the public. Questions related to media access, fairness, media regulation and message production are discussed in light of current events.

545 Television Criticism
3 hrs.
Examines the various functions and writings of contemporary television critics, and establishes criteria for evaluating television programs and program criticism. Students will view and analyze various television program types, including documentary, drama, visual essay and other entertaining and educational programs.

546 Mass Entertainment
3 hrs.
This course examines the role and function of mass entertainment fare in modern society. Major topics include mass entertainment as part of leisure; the social and psychological functions of mass entertainment; measuring mass taste; and in-depth study of popular mass media formats such as soap operas, detective, western, popular music, etc.

547 Organizational Uses of Radio and Television
3 hrs.
Applications of radio and TV technology for the business professional, educator, media specialist and the clinician. Utilization of electronic media for training, research, observation and instruction. In addition to required text materials, students must provide supplies averaging about $10.00 per student.

548 Broadcast Management
3 hrs.
A study of the duties of a broadcast station manager. Students examine philosophies and theories of management, programming, audience research, budgeting and accounting principles, sales and regulatory functions.

549 Public Relations and Organizations
3 hrs.
The course will examine the role of public relations and public information in a variety of organizations with a communication theory perspective. The course is designed to prepare individuals for positions in public relations and public information, or for other positions in organizations concerned with the flow of information across organization boundaries.

560 Studies in Communication Education: Variable Topics
3 hrs.
Selected studies in background, methods, materials and procedures in any one of the several speech areas. Possible topics include directing speech activities, communication behaviors of change agents, as well as others. Topics will vary from semester to semester and students may take one or all topics for credit.

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. The undergraduate student must have completed at least twelve hours of work in CAS or obtain consent of instructor. Prerequisite: TEED 300. Offered Fall semesters only.
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 fifteen hours of work in CAS and, ideally, take the course immediately prior to student teaching. Prerequisite: TEED 301. Offered Winter semesters only.

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 CAS 570. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the Schedule of Classes.
1. Group Training, Theory and Practice
2. Family Communication

571 Theories of Interpersonal Communication
3 hrs.
A study of the dynamics of interpersonal communication from various theoretical perspectives. Emphasis is on the assumptions, conceptualizations and models which explain how people interact at the content and relationship levels.

572 Non-Verbal Communication
3 hrs.
The course examines theory and research in the nature and function of nonverbal message systems. Topics include: the role of nonverbal communication in the developmental stages of humans; individual differences in ability to interpret messages; the relationship of nonverbal communication to the concept of culture; extensions of a person such as space, clothing, possessions; and specific messages related to the face and body.

573 Personality and Communication
3 hrs.
The course examines the major personality theories as they contribute to an understanding of the role of communication in self-development. Particular emphasis is given to humanistic theories.

574 Intercultural Communication
3 hrs.
An examination of the factors contributing to effective communication in an intercultural context. The course focuses on such topics as ethnocentrism, cultural perceptions, values and beliefs, language and meaning, and nonverbal factors. Communication systems of selected countries are described and analyzed.

581 Communication in Organizations
3 hrs.
A study of communication practices and problems found within organizations with emphasis given the three aspects of organizational communication: development of theoretical perspectives; application of communication skills; and, awareness of audit and research methodologies. Students will study the relationship between communication and management/employee effectiveness.

582 Group Problem Solving
3 hrs.
Study and practice of the dynamics of groups of various kinds, as well as the methods of arriving at group decisions. Includes the understanding of leader and participant roles.

591 Introduction to Communication Research
3 hrs.
In this introductory course, students will acquire skills and knowledge of basic research design, data collection, data analysis, computer usage, and report writing needed for the completion of a research project.

598 Independent Study
1-4 hrs.
A program for advanced students with an interest in pursuing independently a program of readings, research or projects in areas of special interest. To be arranged in consultation with a member of the staff and the Department Chairperson.

Computer Science
Kenneth Williams, Chair
David Hamilton
John Herman
Mark Kerstetter
Dionysios Kountanis
Jack Meagher
Dalia Motzkin

Computer Science is the study of the uses of digital computers for the effective processing of information. Degree programs offered are primarily concerned with the uses of computers (software aspects) rather than the physical construction of computers (hardware aspects).

Several introductory courses in computer programming are offered as well as complete programs which provide a major or minor in Computer Science.

Students considering a major or minor in Computer Science should make an appointment with the departmental office to see an advisor as soon as possible—certainly within the second semester the student is enrolled in Computer Science Courses. Eligibility requirements for admittance to a major or minor program are available from a computer science advisor.

Students majoring in Computer Science are required to complete a minor in mathematics. In addition, students in this program are urged to consider completion of a second minor in some application field of interest to them. Graduates of this program should be qualified for jobs in industry and government as well as in computer consulting and software firms.

The minor in Computer Science is appropriate for students in a variety of fields. Graduates holding minors should be particularly qualified for applications programming positions in their major areas.

Requirements for Major

Computer Science Courses
CS 111. ........................................ 3
CS 112. ........................................ 3
CS 115. ........................................ 3
CS 223. ........................................ 3
CS 224. ........................................ 3
CS 331. ........................................ 3
CS 342. ........................................ 3
CS 485. ........................................ 3
CS 490. ........................................ 1
Approved electives ........................................ 6

Mathematics Courses
Calculus through Math 123 .............. 8
Math 230 or 374 .............. 4
Math 310. ........................................ 3
Math 362 or 364 .............. 3-4
Approved electives can be CS 495, 506, 544, 554, 572, MATH 507, 574. Electives should be approved in advance by the student’s advisor.

Requirements for Minor

Computer Science Courses
- CS 111 .................. 3
- CS 112 .................. 3
- CS 223 .................. 3
- CS 224 .................. 3
- CS 331 .................. 3
- Approved elective ...... 3

Mathematics Courses
- Math 121 or 122 or 200 .... 4

The elective may be CS 115 or 506

Course Descriptions

(Courses described in italics are approved for General Education)

105 Introduction to Computers
2 hrs.
The BASIC programming language is used to acquaint students with the capabilities of computers. The course consists of one hour of lecture and one hour in a recitation section each week. Computer terminology and capabilities are explored. Student-written computer programs are executed and related to a variety of computer applications. Illustrations will be given of programming techniques and the significance of computers in contemporary society. Prerequisite: 1½ years of high school algebra or Math 111.

106 BASIC for Engineers
1 hr.
This course provides an introduction to programming in the BASIC language and an introduction to the WMU computer system. It is designed primarily to give students in certain engineering programs enough background so they can use BASIC in further coursework. Corequisite: Math 121, 122 or 200.

111 Computer Programming I
3 hrs.
A first course in the process of programming digital computers. Analysis of problems and development of correct procedures for their solution will be emphasized along with the expression of algorithmic solutions to problems in a structured computer language. Applications will involve the use of specific computer languages to solve numerical and non-numerical problems on the computer. Prerequisite: 2 years of high school math or Math 111.

112 Computer Programming II
3 hrs.
This course is a continuation of Computer Programming I with more emphasis on top-down structured design and the techniques involved in the production of large modular computer programs. Problems will be done in FORTRAN. Team projects will be assigned. Prerequisite: CS 111. Corequisite: Math 121, 122 or 200.

115 Structured COBOL
3 hrs.
Computer programming using the COBOL language. Structured programming concepts will be followed in the development of algorithms. Programs oriented toward non-numerical applications will be prepared for the DEC SYSTEM-10 computer system and the IBM 370 computer system. Prerequisite: A programming course.

223 Computer Organization
3 hrs.
The structure and internal organization of digital computers will be emphasized. Additional topics include addressing techniques; internal machine representation of numbers, characters, and programs; program control; arithmetic and logical operations; input-output; subroutines and linkage; system control programs in time-sharing and batch environments. An introduction to assembly languages will be given. Prerequisite: CS 111.

224 Assembly Language
3 hrs.
This course is a continuation of Computer Organization. An in-depth study of the assembly language of the DEC System-10 will be made. Topics included will be subroutine linkage, monitor calls, input-output routines for disk, teletypes etc., macros, commonly used codes (such as ASCII), number representation, stacks and lists. Students may not receive credit for both 224 and 508. Prerequisite: CS 223.

306 Introductory Programming: FORTRAN
2 hrs.
An introduction to computer programming using the FORTRAN language (FORmula TRANslator). Prerequisite: 1½ years of high school algebra or Math 111.

309 Introductory Programming: ALGOL
2 hrs.
An introduction to computer programming using the ALGOL language (ALGOrithmic Language). Prerequisite: A programming course.

331 Data Structures and Algorithms
3 hrs.
Various data structures such as stacks, queues, lists, trees and graphs will be modeled and implemented. Algorithms to manipulate structures will be studied and analyzed. Memory management systems as well as techniques for searching and sorting will be discussed. The idea of a data base will be introduced. Prerequisite: CS 112 and 223.

342 Software and File Systems
3 hrs.
Programming projects will be assigned to give students experience in systems programming and file processing. Topics will include: records, file blocking, data base management systems, characteristics of storage media, algorithms to process direct access devices, inverted lists, multilists, indexed sequential and hierarchical structure. Prerequisites: CS 224 and 331.

406 Special Programming Languages
2 hrs.
Each section of this course will be devoted to a discussion of a special programming language. Prerequisite: One course in programming.

485 Programming Languages
3 hrs.
Properties of various programming languages including scope of declarations, storage allocation, control structure and formal parameters will be studied, as well as run time representation of programs and data structures. A study of compilers and interpreters will be made. This will include loading, execution, storage allocation, symbol tables, lexical scan, parsing and object code generation. The relation of automata to formal languages and grammars will be stressed. Prerequisites: CS 331 and Math 310.

495 Topics in Computer and Information Science
3 hrs.
The content of this course varies. It is intended to introduce the student to significant topics which are not normally offered as separate courses. This course may be taken more than once with the approval of the student’s advisor. Prerequisite: Approval of Department.

499 Senior Seminar
1 hr.
An introduction to a variety of advanced topics in Computer and Information Science will be given. Several instructors may present the material. Prerequisite: Senior status.

506 Scientific Programming
3 hrs.
Designed to give preparation in the organization and general use of digital computers for scientific and engineering computations. The FORTRAN language will be used.
Problems such as series evaluation, multiplication and inversion of matrices, numerical integration and pointwise differentiation as well as general numerical approximation will be prepared for the computer. Prerequisites: (Math 230 or 374) and (CS 112 or 306). Jointly listed with Mathematics.

508 MACRO-10 Programming 3 hrs.
A study of MACRO-10, the assembly language of the PDP-10 Computer. Students may not receive credit for both 224 and 508. Prerequisites: CS 306 or equivalent.

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. Prerequisites: CS 506 and 508.

544 Advanced Programming 3 hrs.
A course in advanced computer programming which will provide practice in designing and programming large software systems. Concepts covered will include team programming, top down program design, and structured programming. Emphasis will be placed on solution of large software projects using the team approach. A variety of programming languages may be used. Prerequisites: CS 331 or 509.

554 Operating Systems 3 hrs.
Fundamentals are stressed. A historical survey of the development and growth of operating systems is given to lend perspective to the ideas that follow. Basic concepts and terminology will be emphasized. Programming assignments leading to the construction of a simple operating system are required. Processes, communication and synchronization, shared resources, memory management, resources allocation, scheduling, deadlocks, file management, and protection are discussed. Applications to a real system are investigated to motivate the ideas presented in the text and lectures. Prerequisites: CS 331 or 509.

572 Analysis of Algorithms 3 hrs.
Methods will be developed for analyzing a variety of numerical and non-numerical algorithms in terms of efficacy and efficiency. Students will implement a number of algorithms on a computer. Worst case and expected case analyses will be carried out under various assumptions. Turing machines will be studied as a model for computation. The questions of deterministic and non-deterministic algorithmic complexity will be considered. Students may be asked to present the results of special projects to the class. Prerequisites: CS 331 and Math 310.

599 Independent Study in Computer Science 1-3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic of special interest. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Written approval of instructor.

Economics
Raymond E. Zeider, Chair
Robert S. Bowers
Philip Caruso
John A. Copps
Wayland Gardner
Salim E. Harik
Alfred Ho
Louis Junker
Gangaram K. Kripalani
Robert C. Krol
Myron Ross
Werner Sichel
Brice M. Stone
Jared Wend
J. Steven Winrich
Stephen L. Zabor
David Zinn

Courses are designed (1) to contribute to General Education by providing basic understanding of the economy; (2) to fulfill the requirements for the training of teachers in certain professional groups, such as social sciences, business studies, and business administration; (3) to furnish courses and explore areas of economic thought which are prerequisite to graduate study in economics; and (4) to provide areas of study as pre-professional training for business administration, engineering, foreign service, journalism, law and social work.

A minor in Economics consists of a minimum of 15 hours in the Department.

A major in Economics consists of a minimum of 30 hours of work in the Department. The following are required courses for majors: Principles of Economics (201, 202), Income Analysis and Policy (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 Undergraduate Advisor 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.
Course Descriptions

(Courses described in italics are approved for General Education.)

Principles and General Theory

100 Contemporary Economic Problems
3 hrs. Fall, Winter
Focuses on several of the most important economic problems confronting our society—for example, unemployment, environmental pollution, 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. Cannot be used to satisfy major or minor program requirements in Economics.

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 microeconomic 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, Math. 116, and Mgmt. 200, or equivalent.

501 Studies in Economic Problems: Variable Topics
3 hrs.
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.
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. Fall
An introductory course to acquaint the student with the application of basic mathematical concepts to economic analysis including such topics as revenue curves, cost curves, capital assets, growth models, and multipliers and accelerators. Prerequisites: Econ. 201 and 202, Math. 122 or consent of instructor.

505 History of Economic Thought
4 hrs.
A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mercantilism and the evolution of the philosophy of natural liberties special emphasis will be placed on the contributions of significant economic thinkers and the influence of various schools of economic thought on national policy and economic development. Prerequisites: Econ. 201 and 202.

508 Institutional Economics
4 hrs. Winter
An intensive examination of heterodox economic theory, conceived in terms of the basic social concepts of institutions and technology, and utilizing developments in modern social science for the resolution of persistent economic problems. Prerequisites: Econ. 201 and 202.

509 Econometrics
3 hrs. Winter
An introductory course in analytical and quantitative methods in economics. Applied economic problems like linear programming and 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.

530 Economic Anthropology
3 Hrs.
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 and 240. Econ. 201 and 202, or consent of instructor.

545 The Economics of Location
3 hrs.
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 effects of various economic activities. Prerequisites: Econ. 201 and 202.

Labor And Resource Economics

313 Poverty and Economic Security
3 hrs. Fall
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
3 hrs.
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. Fall, Winter
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.

419 The Political Economy of Food and Nutrition
3 hrs.
An examination of the economic and socio-political aspects of food, diet and nutritional patterns in the U.S. and world economies. Prerequisites: Econ. 201 or 202, or consent of instructor.

512 Collective Bargaining
3 hrs. Fall
An analysis of the major problems in present-day collective bargaining, including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisites: Econ. 201 and 202, or consent of instructor.

515 Economics of Human Resources
3 hrs.
The course will examine the development and utilization of manpower in the United States, including such topics as labor force components, contributors to productivity such as education, training, health and mobility, and issues of manpower policy. Prerequisites: Econ. 201 and 202.

516 Collective Bargaining in Public Employment
3 hrs. Winter
This course examines collective bargaining developments in local, state and federal governments, including bargaining units, negotiations, grievance procedures, strikes and dispute settlements. Prerequisites: Econ. 201 and 202, or consent of instructor.

517 Economics of Health and Human Services
3 hrs.
Economic problems of health and human services will be considered. Alternative policy solutions are viewed from the economist's point of view. Not open to Economics graduate students.

Money, Credit And Finance
420 Money and Credit
4 hrs. Fall, Winter
An analysis of the role of money and its impact on the economy—on inflation, unemployment, interest rates, income, and foreign exchange. The operations and relationships of commercial banks and the Federal Reserve are examined. 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 in the size of urban areas, 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.

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. The role of government in maintaining competition in American industry is examined. Each student is required to study a particular industry to determine its current structure, conduct and performance. Prerequisite: Econ. 201.

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.

452 Business and Government
4 hrs.
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
386 Economics of the Soviet Union and Eastern Europe
3 hrs.
A study of Soviet and East European planning practices including an examination of the development in commerce, agriculture and industry in these areas. Trade among the several Eastern bloc nations will also be covered. Prerequisite: Econ. 201.
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480 International Economics
4 hrs. Winter
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
3 hrs.
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 and 202 or consent of instructor.

580 International Trade: Theory and Policy
3 hrs.
This course is designed to study the pure theory of international trade and trade policy. Prerequisite: Econ. 480 or consent of instructor.

585 The Economics of Sub-Saharan Africa
3 hrs.
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: Econ. 201 and 202.

588 Economic Development
4 hrs. Fall
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.
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 Department 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 Department Honors Committee.

500 Continuing Education in Economics: Variable Topics
1-3 hrs.
Application of economic principles and analysis to selected topics of interest to students in Continuing Education courses and workshops. Topics will vary and course may be repeated twice. May not be counted in fulfilling economics major, minor, or M.A. requirements.

591, 592 Guest Economist Seminar
1 hr.
Seminar series on a topic of current interest featuring invited visiting economists. Topics will vary and courses may be repeated. Prerequisites: Econ. 201 and 202.

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 Chairperson of Department.
humane perceptions and the skills of communication are important.

Special Note To Non-Majors

The English Department offers many courses, including a variety of writing courses, suitable for students not majoring in English: 105 Thought and Writing, 107 Good Books, 110 Literary Interpretation, 111 Contemporary Topics in Literature, 150 Literature and Other Arts, 210 Film Interpretation, 222 American Literature and Culture, 223 Black American Literature, 239 Contemporary Literature, 252 Shakespeare, 264 Journalism, 266 Writing Fiction and Poetry, 282 Children's Literature, 305 Practical Writing, 307 Good Books II, 309 The American Novel Today, 311 Perspectives Through Literature, 312 Western World Literature, 313 Asian Literature, 314 African Literature, 315 The English Bible as Literature, and other advanced courses, as appropriate to the interests and background of the student.

Many of these English courses may be used to satisfy General Education requirements.

English advisors will help any student select courses in writing, English language, or literature which will be useful in General Education or as background for a career.

Advisors' offices are on the sixth floor of Sprau Tower (phone 383-1684).

Majors And Minors In English

1. The requirements for the English majors (listed below) are flexible enough to allow students to follow individualized courses of study. As soon as a student decides to become an English major, he or she should confer with one of the English advisors, who can help plan the major. All major programs must be approved by an English advisor. Students should see the advisor early enough to leave at least twelve credits to complete after declaring the major. Minor slips are required for students electing the minor with writing emphasis, the minor in journalism, or the practical writing minor.

2. A minimum of 30 hours is 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 additional work in preparation.

3. No more than four hours of "D" credit may be applied to an English major or minor.

4. Foreign Language Requirement: English majors must have at least 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 additional work in the language 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 or minoring in English should consult with one of the department's undergraduate advisors (383-1684) about transferring credit in English courses from other colleges. An early conference will enable the student to avoid duplication of courses and possible loss of transfer credit and may enable the student to bypass 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 one of several 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 the 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 to work out an individualized honors program.

English Majors

30 hours required

Arts and Sciences, Liberal Arts, other non-teaching curricula

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 English course other than 410 or 462 or 497.
5) 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 other basic requirements of the major may be included in this total). One of these 300, 400, or 500 level courses must be chosen from those indicated with an asterisk (*) in the description of courses (*courses emphasize literature written before 1900).

English advisors (383-1684) will help plan individualized programs.

Secondary Education Curriculum

All of the above requirements for Arts and Sciences Curriculum and Liberal Arts majors with three variations: (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 required (322 American Literature: Major Writers is especially recommended); (3) at least two of the following four courses in the teaching of English are required: 381, 382, 383, 385 (two credits each). (It is advisable to take more if possible). These courses do not count toward the 30 credits in English required for the major.

The Department strongly recommends that majors in secondary education see an English advisor before completion of the first twelve hours of the major.

Elementary Education Curriculum

1) 110 Literary Interpretation;
2) 373 Reading and Writing as Psycholinguistic Processes;
3) 369 Writing for Elementary Teachers;
4) 282 Children's Literature;
5) Two literature courses in addition to 110 and 282;
6) One 400- or 500-level English course other than 497, 597, or 582;
7) Plus electives to complete the 30 hours.

No more than two of the following courses may be counted toward the 30 credits required in the major: 282 Children's Literature, 283 Literature for Adolescents, 582 Studies in Children's Literature. The 400- or 500-level English course for requirement 6 may count toward requirement 5 as well, if appropriate.

An alternative option for the 282, 369, 373 core listed above is the ILAM/ENGL 375-376 sequence plus one course selected from 282, 369, or 373. Both 375 and 376 must be taken, at no credit toward the major will be given under this option. This option requires a major slip. The student should see an advisor before completing the first eight hours of course work under this option.

Elementary education English majors should not register for
courses in the teaching of English (381, 382, 383, 385) without consulting with an English advisor.

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 advisor, from English 264, 266, 362, 364, 365, 366, 367, 368, and 566. In addition the student must satisfy the basic requirements (above) for an English major in the desired curriculum, except that English 266 may substitute for 110. Major slips are required for the writing emphasis; the best time to consult the advisor is generally after the first writing course.

English Minors

20 hours required

Arts and Sciences, Liberal Arts, 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 (110) 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. To discuss these possibilities, see an English advisor (383-1684).

Secondary Education Curriculum

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, but they will strengthen a student's professional preparation.

The Department strongly recommends that minors in secondary education see an English advisor before completion of the first twelve hours of the minor.

Elementary Education Curriculum

Required: 110 Literary Interpretation; 373 Reading and Writing as Psycholinguistic Processes; 369 Writing for Elementary Teachers; 282 Children’s Literature; plus electives to complete the 20 hours.

No more than one of the following courses may be counted toward the 20 credits required in the minor: 282 Children’s Literature, 283 Literature for Adolescents, 582 Studies in Children’s Literature.

An alternative option for the 282, 369, 373 core listed above is the ILAM/ENGL 375-376 sequence plus one course selected from 282, 369, or 373. Both 375 and 376 must be taken, or no credit toward the major will be given under this option. This option requires a minor slip. The student should see an advisor before completing the first eight hours of course work under this option.

Elementary education minors should not register for courses in the teaching of English (381, 382, 383, 385) without consulting with an English advisor.

English Minor with Writing Emphasis

Students in the Arts and Sciences, 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 advisor, from English 264, 266, 362, 364, 365, 366, 367, 368, and 566), plus 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.

Practical Writing Minor

Students in the Arts and Sciences, Liberal Arts, or other non-teaching curricula may elect to take a Practical Writing Minor, consisting of a cumulative series of upper-level courses in writing and analyzing English. Required: one course in English language or literature, to be taken early in the sequence from those courses which presently count toward an English major or minor, approved by an English advisor prior to enrollment plus at least twelve hours to be selected from English 305 Pre-Professional Writing, 305 Research and Report Writing, 305 Other topic listed in schedule (e.g. Analytical Writing), 364 Feature and Article Writing, 482 Advanced Writing (recommended as capstone), plus one other course in the department, including any of the above not already taken, to be selected in consultation with an English advisor. Minor slips are required for the Practical Writing Minor.

World Literature Minor

The Department of English and the Department of Modern and Classical Languages offer jointly a World Literature Minor (20 hours). For description and requirements, see "Inter-Disciplinary Programs" section of the College of Arts and Sciences section of this catalog, or consult Dr. Combs, 721 Sprau.

Fine Arts Appreciation Minor

The English Department is one of the academic units participating in the Fine Arts Appreciation Minor, a program available for students who want to increase their appreciation of the arts and develop an understanding of aesthetics and artistic processes. For full information see the description of this minor in the College of Fine Arts section of this catalog or consult Dr. Small, 918 Sprau.

Integrated Language Arts Minor

The Department of English is one of five participating departments in the Integrated Language Arts Minor—a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the "Inter-Disciplinary Programs" section of the College of Arts and Sciences or its listing in the College of Education or the College of Health and Human Services.

Journalism Minor

20 hours required

In response to the growing interest in journalism at Western, the English Department has established a journalism minor. This minor, which can include key courses outside the department, is useful preparation not only for prospective reporters and editors but also for people who plan careers in broadcasting and the media, advertising, marketing, public relations, business, industry, and government. Courses within the program may also make good choices for anyone who wants to understand a vital subject: the ways we communicate in our society.

The minor allows great flexibility in course selection so that students can combine the journalistic skills and insights of their minor with any of a wide variety of majors or programs: political science, engineering, economics, business, and history, for example.

Minor slips are required; see an English advisor (383-1684).

Basic Requirements

1. 264 Basic Journalism
2. 265 Journalism Laboratory
3. 363 Advanced Reporting and Editing
4. Electives to complete the 20 hours, selected in consultation with the advisor, from at least two of the following three groups:
GROUP I: SPECIALIZED COURSES IN JOURNALISTIC WRITING

English 364 Feature and Article Writing
English 365 Reviewing for the Press
CAS 349 Broadcast Journalism

GROUP II: RELATED COURSES IN WRITING

English 362 Advanced Writing
English 266 Writing Fiction and Poetry
CAS 348 Broadcast Writing and Continuity

GROUP III: RELATED COURSES IN MEDIA AND COMMUNICATIONS

CAS 240 Broadcast Communication
CAS 540 Studies in Mass Communication
(option as approved in advance by advisor)
GHU 316 Mass Media: Messages and Manipulation

Course Descriptions

(Courses described in italics are approved for General Education.)

100 Basic Writing Skills 4 hrs. (Credit/No Credit)
A writing course designed to help students develop basic writing skills. Emphasis is on English usage, sentence structure, and paragraph development. Does not count toward English major or minor.

105 Thought and Writing: Variable Topics 4 hrs.
A writing course in which the student will work closely with the instructor to develop his/her sense of language as a means for shaping and ordering his/her experience and ideas, and to develop imagination, thought, organization, and clarity in his/her written work. The student has a choice of options which vary in emphasis and approach. Current options are Writing-Exposition, Writing-Description, and Writing and Science. May be repeated for credit, but may be counted only once toward fulfillment of General Education requirements. Does not count as credit toward English major or minor.

107 Good Books 4 hrs.
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 Literary Interpretation 4 hrs.
An introduction to the study of literature, aimed at developing sensitivity and skill in the critical interpretation of poetry, drama, and prose fiction.

111 Contemporary Topics in Literature 4 hrs.
Exploration of fiction, poetry, drama, and film related to current concerns. Topics are: A. Myth and Folk Literature. B. Man, Woman, and Marriage in Literature.
An exploratory course for the general student rather than the student who plans to specialize in the study of literature. Credit toward English major or minor by permission of the department only.

150 Literature and Other Arts 4 hrs.
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 4 hrs.
Studies in the motion picture as art form.

222 American Literature and Culture 4 hrs.
A study of some of the recurrent themes in American life as seen in American literature.

223 Black American Literature 4 hrs.
A survey of important black American writers and the historical development of the black image and experience in American literature and culture.

239 Contemporary Literature 4 hrs.
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 4 hrs.
A survey of Shakespeare's art through study of selected tragedies, histories, and comedies.

264 Basic Journalism 4 hrs.
Basic principles and practice of news gathering, news writing, copy editing, news evaluation, page layout, headline writing; introduction to feature and editorial writing.

265 Journalism Laboratory 4 hrs.
Instruction and extensive practical experience, under supervision, in copy editing, rewrite, typography, headline writing, and layout. Prerequisite: 264 Journalism Laboratory counts toward a journalism minor but not toward an English major or minor.

266 Writing Fiction and Poetry 4 hrs.
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) Modern English Structure 4 hrs.
A study of the sound, word, and sentence structures (phonology, morphology, and syntax) of modern English.

282 Children's Literature 4 hrs.
An exploration of the human and literary values in the best of children's books. Emphasis is on critical sensitivity and techniques necessary for interpreting and evaluating works representative of the major forms of children's literature—folktale and fantasy, fiction and non-fiction, myth and poetry.

If this course is counted toward the English major or minor, 283 Literature for Adolescents may not be counted, except by elementary education English majors proceeding under 1975-76 and later catalogs.

283 Literature for Adolescents 4 hrs.
Critical analysis of those genres read by youth from twelve to sixteen: fiction (especially that of maturation, adventure, history, and fantasy)—drama, poetry, myth and legend, biography, and other non-fiction.

If this course is counted toward the English major or minor, 282 Children's Literature may not be counted, except by elementary education English majors proceeding under 1975-76 and later catalogs.

305 Practical Writing: Variable Topics 4 hrs.
A practical course for juniors and seniors who wish to develop their skills in writing. Emphasis is on understanding and writing forms of
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non-fictional prose such as research papers and reports; personal writing, pre-professional writing (for students planning careers in business, social service, industry, law, the arts, or other professions). Topics vary and will be announced each year. Does not count as credit towards an English major or minor except for the Practical Writing Minor. May be repeated for credit, but may be counted only once toward fulfillment of General Education requirements.

307 Good Books II
4 hrs.
An advanced version of English 107 Good Books; more challenging books for more experienced readers. No prerequisite. Does not count toward English major or minor.

309 The American Novel Today
4 hrs.
A reading of fiction published in the United States in the past few years, selected from works of both established and beginning writers. For the general student. Does not count toward English major or minor.

310 Literary History and Criticism
4 hrs.
Discussion of important topics and problems, both historical and critical, involved in the systematic study of literature. Emphasis includes study in the chronology of English literature, its development and continuity, and an introduction to the nature and uses of formal literary criticism. Prerequisite: 110.

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 are: A. The Irrational. B. The Quest for the Self. C. Science Fiction and Fantasy. D. Man’s Place in Nature. 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 Western World Literature
4 hrs.
Study of works selected from the Western literary tradition, excluding those from Great Britain and the U.S.A. Selections may range from biblical literature and great works of Greece and Rome through classics of the Middle Ages and Renaissance to major works of the present. Works will be studied in English. Approved for General Education under Area I.

313 Asian Literature
4 hrs.
Study of works selected from the great literature of Asia, especially the Chinese, Japanese, and Indian traditions. Works will be studied in English. Approved for General Education under area IV (Non-Western World).

314 African Literature
4 hrs.
Study of works selected from the great literature of Africa, including both traditional and contemporary material. Works will be studied in English. Approved for General Education under Area IV (Non-Western World).

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.
A 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.

363 Advanced Reporting and Editing
4 hrs.
Practice in interpretive reporting for newspapers and magazines, with emphasis on analysis and interpretation of data, researching the background for the news, and news evaluation; feature, editorial, and column writing; editing wire copy and pictures; news display. Prerequisite: 264.

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.

368 Playwriting
4 hrs.
An introductory course in the writing of drama, with class discussion and criticism of each student’s writing, and including study of selected examples of drama in print and in production. Prerequisite: English 266, Theatre 376, or permission of the department.

369 Writing for Elementary Teachers
4 hrs.
A course intended to develop the writing skills of prospective teachers and to explore the means by which the writing ability of elementary school children can be encouraged, developed, and evaluated.

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.

373 Reading and Writing as Psycholinguistic Processes
4 hrs.
A study of the processes of reading and writing English as these are explained by developments in linguistics and psycholinguistics.
Particular attention is paid to the degree of complexity in sentence structure as it affects writing maturity, writing style, and reading.

375 Acquisition of Literacy and the Early Elementary Child 4 hrs.
This course focuses on the psycholinguistic nature of the reading and writing process, emphasizing how literacy builds upon oracy. Particular attention is paid to literature for the young child and to how children's literature can further the acquisition of literacy. Deals with the child from birth through seven years. (This course is required for the Integrated Language Arts Minor.)

376 Acquisition of Literacy and the Later Elementary Child 4 hrs.
This course focuses on the psycholinguistic nature of the reading and writing processes, emphasizing how children can be helped to develop their reading and writing abilities. Particular attention is paid to literature for children and to how that literature can further not only their reading and writing but also their development of artistic and human values. Deals with the child from seven through twelve years. (This course is required for the Integrated Language Arts Minor.)

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, 271, or 373.

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.

452 Shakespeare Seminar 4 hrs.
Intensive study of selected aspects of Shakespeare's poetic and dramatic art. Prerequisite: 110 or 252.

462 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.

496 English Honors Seminar 4 hrs.
Special studies in selected topics. Open only to majors working for honors in English, or by permission of the instructor.

497 Studies in English: Variable Topics 1-3 hrs.
Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.

499 English Seminar 4 hrs.
Special studies in literature or English language for small groups (limited to 16) of junior and senior English majors and minors. Intended for students who wish to pursue intensive discussion, criticism, and research on the announced topic. Descriptions of each topic are available in advance of registration. Prerequisite: limited to juniors and seniors with at least 16 hours of previous English credit.

510 Special Topics in Literature 4 hrs.
Study of a literary movement, theme, or genre, such as classicism, the Arthurian tradition, the lyric. May be repeated for credit as long as the topics are different. Prerequisite: 110 or permission of the department.

519 Non-Western Literature in Translation 4 hrs.
Studies of significant literary forms and works in Chinese, Indian, and other non-western literatures and of their relation to the values and patterns of the societies which produced them.

522 Topics in American Literary History* 4 hrs.
Study of a movement or a recurrent theme in American literature, such as romanticism, realism, naturalism, humor, racial issues. Prerequisite: 110.

529 Medieval English Literature* 4 hrs.
Studies in Old and Middle English literature, excluding Chaucer, read either in the original or in modernized versions. Prerequisite: 110.

530 Medieval Continental Literature in English Translation* 4 hrs.
Readings in medieval European literature (in English translation), excluding that of England. Prerequisite: 110.

531 Chaucer* 4 hrs.
Readings in Chaucer, with emphasis on Troilus and Criseyde and The Canterbury Tales. Prerequisite: 110.

532 16th Century Literature* 4 hrs.
Selections from the major works in both prose and verse, by such writers as Wyatt, More, Sidney, and Spenser. Prerequisite: 110.

533 17th Century Literature* 4 hrs.
Selections from the major works in both prose and verse from 1600 to the Restoration, by such writers as Bacon, Browne, the metaphysical poets, and Milton. Prerequisite: 110.

534 Neo-Classical Literature* 4 hrs.
English literature from the Restoration through Pope and Swift. Prerequisite: 110.
162 COLLEGE OF ARTS AND SCIENCES

535 18th Century Literature* 4 hrs.
Readings in major English authors of the mid and late Eighteenth Century, with emphasis on such writers as Johnson, Boswell, Goldsmith, Gray, Fielding, Sterne, and Smollett. Prerequisite: 110.

536 Romantic Literature* 4 hrs.
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. Prerequisite: 110.

537 Victorian Literature* 4 hrs.
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, Browning, and Arnold. Prerequisite: 110.

538 Modern Literature 4 hrs.
Readings in major authors of the 20th Century, with some attention to literary and intellectual backgrounds of the international modern movement. Prerequisite: 110.

543 Elizabethan and Jacobean Drama* 4 hrs.
Studies in the non-Shakespearian drama in England during the Elizabethan and Jacobean periods, by such dramatists as Kyd, Marlowe, Jonson, Webster, Tourneur, and Ford. Prerequisite: 110.

554 Milton* 4 hrs.
A study of Milton’s major works, with emphasis on Paradise Lost and the major poetry. Prerequisite: 110.

555 Studies in Major Writers 4 hrs.
Study of the works of classical, European, or American writers. Limited to one or two authors. Prerequisite: 110.

566 Creative Writing Workshop 4 hrs.
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 4 hrs.
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 4 hrs.
An application of the concepts of linguistics to the teaching of language, literature, composition and reading in the English curriculum. Prerequisite: 270, 271, 373, or an introduction to linguistics course, or permission of the department.

582 Studies in Children’s Literature 4 hrs.
A study in depth of significant themes, movements, types in children’s literature. Prerequisite: 282 or permission of the department.

597 Studies in English: Variable Topics 1-3 hrs.
Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.

598 Readings in English 1-4 hrs.
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.

Geography
Joseph P. Stoltman, Chair
David G. Dickason
Val L. Eichenlaub
Rainer R. Erhart
Charles F. Heller
George Hegner
Thomas W. Hodler
Oscar H. Horst
Eugene C. Kirchherr
Phillip P. Micklin
Eldor C. Quandt
Henry A. Raup
George Vulich

Programs for Majors and Minors
These programs are designed to provide students with an improved understanding of humanity’s physical and cultural surroundings and the interrelationship of these. Students are prepared through geography as a physical and social science for careers in such diverse fields as urban and regional planning, cartography, environmental studies and analysis, teaching in elementary and secondary schools, and travel planning and counseling. A program is also available for those who desire to continue in graduate studies.

A core of three courses (Geography 105, 205, 203) is required of majors. A non-specialization major in Geography with specialization provides for a minimum of 30 hours. It is recommended that 6 additional hours of work from complementary disciplines be taken in support of the area of specialization. An internship for variable credit (Geography 412) may be arranged 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 advisor 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.
A course will be selected from Geography Group III if the student chooses to waive or substitute Geography 460 for Education 507, Teaching of Social Studies in the Elementary Schools (3 hrs.). It is also acceptable to take both courses.

Secondary Education
Major 30 Hours
Same requirements as elementary major.

Secondary Education
Minor 20 Hours
105 Our Physical Environment .. 4 hrs.
205 Our Human World ........... 3 hrs.
and One of the following: GEOG 203, 365, 560, 566, or 582
Remaining courses to be selected with consent of adviser.

Non-teaching Minor—
with Specialization
30 Hours
The areas of specialization are: Urban and Regional Planning, the Environment, Geographic Techniques, Physical Geography, Regional Geography, and Travel Planning and Counseling. A program of courses is provided for each of these areas.

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. It is recommended that 6 additional hours of work from complementary disciplines be taken in support of the area of specialization.

105 Our Physical Environment . 4 hrs.
205 Our Human World ........... 3 hrs.
203 Geographic Inquiry ........... 3 hrs.
and Geography courses 100, 105, 204, 206, 225, 226, 350, 365, 551, 553, 554, 555, 557, 560, 568, 580, and 582 are acceptable for science credit in appropriate science sequences.

Science and
Mathematics Teaching
Minor
The Department of Geography participates in the Science and Mathematics Teaching Minor for students in the Elementary Curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Science Credit
The Geography courses 100, 105, 204, 206, 225, 226, 350, 365, 551, 553, 554, 555, 557, 560, 568, 580, and 582 are acceptable for science credit in appropriate science sequences.

Science and
Geography
4 hrs.
(Science credit) A geographic approach will be used to interpret selected characteristics of humanity and the 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.

102 World Geography Through
Media and Maps
3 hrs.
This course presents an introduction to the geography of the earth. This includes the earth as the home of humans, major urban concentrations, descriptive physical characteristics of continents and countries, political subdivision, and general man-land relationships which reflect cultural preferences. Information delivery will be through textual material with a major concentration of carefully selected audio-visual and map study activities to enhance investigating the character of distant places.

105 Our Physical Environment
4 hrs.
(Science credit) A study of the physical environment of human beings. 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. Artificially 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.
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 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 the efforts
 of humans to cope with the
 environment. Included are population
 and settlement forms, the utilization
 of resources, the impact of
 technology on human occupation 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 people, 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 people. Prerequisite:
 Geography 105 or consent.

 226 Physical Geography
 3 hrs.
 (Science credit) This course
 introduces the major element of
 physical environment of humans.

 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.

 237 Environmental Earth Science
 4 hrs.
 An interdisciplinary environmentally
 oriented science offering for students
 in the Elementary Education and
 Mathematics Minor. The course
 integrates the environmental aspects
 of meteorology and geology. The
 students spend 7 1/2 weeks in
 environmental geology and 7 1/2
 weeks in environmental meteorology.
 Techniques for presenting the
 content of the course will model the
 ways in which environmental earth
 science can be presented to
 elementary students. The course is
 taught by cooperating faculty from
 Geography and Geology. Prerequisite:

 244 Geographic 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.

 350 Principles of Conservation
 and Environmental Management
 3 hrs.
 (Science Credit) Critical evaluation of
 the major natural resources of the
 United States, particularly soils,
 water, forests, wildlife, and minerals;
 examination of the utilization of these
 resources so as to yield the
 maximum benefit to people.
 Emphasis is placed on principles,
 policies and issues in the
 management of natural resources.

 360 Northlands Frontier
 3 hrs.
 Emphasizes the underlying issues
 responsible for change in the world's
 Northlands (Asia, Scandinavia,
 Greenland, and North America), as
 well as policies affecting their
 current and future use. Among topics
 discussed are resource exploitation,
 changes in the physical landscape,
 cultural attitudes, and the need for
 environmental protection policies.

 361 Population: The Crowding
 World
 3 hrs.
 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.

 521 Studies in Climatology &
 Meteorology
 3 hrs.
 (Science Credit) Studies at an
 advanced level in climatology and
 meteorology. Topics of current
 interest to atmospheric scientists are
 examined in depth. Dynamic,
 complex, and synoptic methods of
 climatic description are also
 examined, and regional climatic
 phenomena and their relation to
 atmospheric circulation patterns are
 investigated. Prerequisites: Geog. 225
 or consent.

 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-
 geographical relationships.

 543 Cultural Geography
 3 hrs.
 Techniques of spatial analysis
 applicable to the study of humans
 and their adjustment to different
 environments. The place of origin,
 diffusion, and present distribution of
 selected cultural patterns will be
 traced with emphasis given to
 cultural traits which strongly
 influence human occupancy of the
 earth's surface.

 544 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. Industry. 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.

554 Outdoor Recreation: Resources and Planning 3 hrs.  
(Science Credit) Examination of extensive, resource-based outdoor recreation (such as parks, wilderness, wild rivers, hunting and fishing, hiking, etc.) with emphasis upon recreational planning. Topics include supply and demand for outdoor recreation, identification of present and future recreational needs, policy considerations, administration of recreational land uses, and various problems associated with outdoor recreation. Readings, discussion, and student-designed and executed individual studies provide professional orientation.

555 Contemporary Issues in Resources Management 3 hrs.  
(Science credit) Examination of selected contemporary natural resource and environmental problems, such as questions of natural resource adequacy, environmental pollution, energy shortages, political and economic problems related to resource management, and individual studies of local environmental problems. Prerequisite: Geography 350 or consent.

556 Studies in Urban and Regional Planning 3 hrs.  
Each of the courses listed under this number focuses on a major aspect of planning, including a review of the objectives of the planning process, legislation pertaining to planning operations, and methods of field and library investigation required for analysis and policy formulation in matters related to planning.

A. Urban Planning and Zoning. A survey of American planning thought and practice: the background of planning and zoning in American municipalities; traditional and contemporary approaches to the comprehensive plan; elements of land, use and transportation planning; the legal foundations of zoning; and the organization of the planning agency.

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.

557 Environmental Impact Assessment 3 hrs.  
(Science credit) Alteration of the natural and human environment for perceived economic and social benefits often has significant adverse consequences. Recognition of this problem is reflected in federal, state, and local laws and regulations requiring environmental impact statements. This course provides an introduction to the analysis and preparation of environmental impact statements. Prerequisites: Senior standing and Geography 350 or permission.

570 Cities and Urban Systems 3-4 hrs.  
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 methods of analysis utilized in urban geography.

Group II  
Regional Geography

309 Studies in Regional Geography 2-3 hrs.  
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 3 hrs.  
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 United States and Canada 3 hrs.  
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 3 hrs.  
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 3 hrs.  
Systematic consideration of the physical environment of Mexico, Central America and the West Indies. A problems approach is utilized to reckon with the economic, social and political trends of the region.

383 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 human beings and the 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 regionalization movements, and the impact of the Muslim World on the current political scene.

389 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: Peoples and Resources 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 3 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.

365 Map, Chart, and Air Photo Reading 2-3 hrs.
(Science credit) The course introduces the student to a variety of maps, charts and aerial photographs. Information recognition and analysis from map, chart and photo form are emphasized for various uses. Included are terrain analysis, military grid system, scale determination and conversion, marine and aerial navigation applications, recreation uses, orienteering, landscape and vegetation analysis, and basic mapping skills.

410 Seminar in Travel Planning and Counseling 1 hr.
The course is designed for students specializing in Travel Planning and Counseling. Emphasis is placed upon the utilization and interpretation of major travel industry trade manuals, including foreign, international, and national regulations governing travel activities via air, sea, and land modes.

412 Professional Practice 2-6 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 Chairperson.

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 the history of cartography, drafting techniques, lettering and symbolization, the concept of scale and scale transformations, map layout and design, processes of map reproduction, the employment of projections, and the compilation procedures and creation of various map products. One hour lecture and two two-hour laboratory periods.

566 Field Geography 2-4 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.

568 Quantitative Methodology 3 hrs.
The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography ranging from the use of common statistical techniques to methods of model formation in the analysis of spatial interaction. Prerequisite: A course in statistics or consent.

580 Advanced Cartography 3 hrs.
(Science credit) The compilation of data and the design of maps and graphs for research papers and the application of statistical techniques in mapping geographic phenomena are applied to the more advanced cartographic techniques and photogrammetry. Students are assigned special problems to develop their proficiency in the use of cartography as a tool in research. One hour of lecture in conjunction with independent student projects. Prerequisite: Geography 560 or consent.

582 Remote Sensing of the Environment 3 hrs.
(Science credit) The student will acquire proficiency in the fundamental techniques and skills of photogrammetry and photointerpretation during the first part of the course. The remainder of the semester will be spent in interpreting photos dealing with such topics as geomorphology, archaeology, vegetation and soils, water resource, rural and urban land use as well as topics adapted to the interest and anticipated future work of the student.

598 Readings in Geography 1-3 hrs.
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. Schmatz, Chair  
James Akers (Adjunct)  
Ronald B. Chase  
John D. Grace  
William B. Harrison, III  
W. David Kuenzi  
Richard Sims (Adjunct)  
W. Thomas Straw

#### Geology Major

**Minimum 35 Hours**

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Geology 130</td>
<td>4</td>
</tr>
<tr>
<td>Earth History and Evolution 131</td>
<td>4</td>
</tr>
<tr>
<td>Mineralogy 335</td>
<td>3</td>
</tr>
<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
</tr>
<tr>
<td>Structural Geology 430</td>
<td>3</td>
</tr>
<tr>
<td>Inverterebrate Paleontology 433</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Geology Minor</td>
<td></td>
</tr>
<tr>
<td><strong>Total Required Hours</strong></td>
<td>35</td>
</tr>
</tbody>
</table>

A minimum of a “C” is required in each of the required courses.

**Supporting required courses:**

- Chemistry 101 or 102 (for students with a high school chemistry background), and 120, Physics 110 and 111, or 210 and 211; Biology 101 or as arranged by counselor; and Mathematics 122 and 123 and Introduction to Computers CS 106.

Some modification of these requirements may be made in consultation with the student's departmental counselor. A summer field course in geology is strongly recommended for all geology majors; and is indispensable for students planning professional careers. In addition, at least one year of foreign language is recommended.

Geology majors should elect minors of mathematics, chemistry, physics, or biology. Students electing one of the above minors must still complete all other supporting required courses. Students not electing one of the above minors may elect the group science minor for geology majors (see below).

Suggested 4-year program of study for geology majors including all required supporting courses.

#### Freshman Year

**Fall**

- Physical Geology 130  
- Mathematics 122

**Winter**

- Earth History and Evolution 131  
- Mathematics 123  
- Geology 101

#### Sophomore Year

- Mineralogy 335  
- Chemistry 101 or 102  
- Invertebrate Paleontology 433  
- Geology 105

#### Junior Year

- Optical Mineralogy 336  
- Surfacial Processes and Groundwater Geology 532  
- Invertebrate Paleontology 433  
- Exploration Geophysics 560

#### Senior Year

- Terrigenous Depositional Systems 535  
- Structural Geology 430  
- Exploration Geophysics 560

### 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**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Physical Geology 130</td>
<td>4</td>
</tr>
<tr>
<td>Earth History and Evolution 131</td>
<td>4</td>
</tr>
<tr>
<td>One of the following options is recommended:</td>
<td></td>
</tr>
<tr>
<td>Mineralogy 335</td>
<td>4</td>
</tr>
<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
</tr>
<tr>
<td>Surfacial Processes and Groundwater Geology 532</td>
<td>4</td>
</tr>
<tr>
<td>Invertebrate Paleontology 433</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Required Hours</strong></td>
<td>21</td>
</tr>
</tbody>
</table>

Course substitution from other geology offerings can be made with the consent of counselor (e.g., a geography major minoring in geology might elect Regional Geomorphology, Surfacial Processes and Groundwater Geology, or Glacial Geology).

### Geophysics Major

The Geophysics Department offers a program of study leading to a major in Geophysics. Students choosing this program of study are also required to take mathematics courses which correspond to a minor in mathematics. Students contemplating a Geophysics major should contact the Geophysics Department as early as possible for advising.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Earth History and Evolution 131</td>
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</tr>
<tr>
<td>Geology 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Minerals and Rocks 301</td>
<td>3</td>
</tr>
<tr>
<td>Invertebrate Paleontology 433</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Major Hours: 44-50</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Group Science Minor

#### For Geology Majors

**Minimum 24 Hours**

The group science minor is designed for students not electing a mathematics, chemistry, physics or biology minor. Some modification of these requirements may be made in consultation with the student's departmental advisor. This minor is not acceptable for education majors and minors.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>4</td>
</tr>
<tr>
<td>Animal Biology</td>
<td>4</td>
</tr>
<tr>
<td>General Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Qualitative Analysis 120</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Minor Hours: 21</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Required Hours: 69-75**

### Group Science Minor

**Recommended: Field course in geology, 6-8 hours.**

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### Mathematics Minor (Required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH Calculus 1, 122</td>
<td>4</td>
</tr>
<tr>
<td>MATH Calculus 2, 123</td>
<td>4</td>
</tr>
<tr>
<td>MATH Vector and Multivariate Calculus 272</td>
<td>4</td>
</tr>
<tr>
<td>CS Introduction to Programming: Fortran 306</td>
<td>2</td>
</tr>
<tr>
<td>MATH Linear Algebra and Differential Equations 374</td>
<td>4</td>
</tr>
<tr>
<td>MATH/CS Scientific Programming 506</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Minor Hours: 21</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Required Hours: 69-75**

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### Chemistry

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Qualitative Analysis 120</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Hours: 69-75</strong></td>
<td></td>
</tr>
</tbody>
</table>

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### Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanics and Heat 210</td>
<td>4</td>
</tr>
<tr>
<td>Electricity and Light 211</td>
<td>4</td>
</tr>
<tr>
<td>Introductory Modern Physics 212</td>
<td>4</td>
</tr>
<tr>
<td>Instrumentation in Physics 198</td>
<td>3</td>
</tr>
<tr>
<td>Electronics 342</td>
<td>3-5</td>
</tr>
<tr>
<td><strong>Total Hours: 69-75</strong></td>
<td></td>
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</tbody>
</table>

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### One of the following:

- Thermodynamics and Kinetic Theory 330
- Optics 352
- Electricity and Magnetism I 540
- Applied Spectroscopy 552

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### Total Major Hours: 44-50

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### Geology

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Geology 130</td>
<td>4</td>
</tr>
<tr>
<td>Earth History and Evolution 131</td>
<td>4</td>
</tr>
<tr>
<td>Minerals and Rocks 301</td>
<td>3</td>
</tr>
<tr>
<td>Structural Geology 430</td>
<td>3</td>
</tr>
<tr>
<td>Exploration Geophysics 560</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours: 69-75</strong></td>
<td></td>
</tr>
</tbody>
</table>

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### Total Minor Hours: 21

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### Required Supporting Course:

- Chemistry 101 or 102 (4 hours)

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### Total Required Hours: 69-75

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### Geophysics Major

- Physical Geology 130  
- Earth History and Evolution 131  
- Minerals and Rocks 301  
- Structural Geology 430  
- Exploration Geophysics 560  
- **Total Hours: 69-75**
Electives
At least 4 credit hours selected from the physical or biological sciences with approval of student's advisor.

Earth Science: Teaching Major and Minor
The earth science teaching 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.

Major (30 hours) Hrs.
Required Courses
Astronomy 104 or 105 3-4
Introduction to Meterology and Climatology 225. 4
Physical Geology 130. 4
Earth History and Evolution 131. 4
Oceanography 300. 3
Minerals and Rocks 301. 3
Teaching of Earth Science 307. 2
Elementary Field Geology 339. 3
Electives 3-4

Minor (20-21 hours) Hrs.
Required Courses
Astronomy 104 or 105 3-4
Introduction to Meterology and Climatology 225. 4
Physical Geology 130. 4
Earth History and Evolution 131. 4
Oceanography 300. 3
Teaching of Earth Science 307. 2

Earth Science: Non-Teaching Major and Minor
The non-teaching earth science major and minor program is a broad and flexible course of instruction for students anticipating careers in conservation, related professions, 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. Courses are selected in consultation with the earth science advisor in order to design programs which will satisfy students' needs and professional objectives. A complete list of approved courses is available from the Department of Geology. A minimum of 15 credit hours in Geology is required for a major and 10 credit hours for a minor including Geology 130, 131 and 301 and/or 339.

Science and Mathematics Teaching Minor
The Department of Geology participates in the Science and Mathematics Teaching Minor for students in the Elementary Curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Course Descriptions
(Courses described in italics are approved for General Education.)

100 Earth Studies
4 hrs. Fall, Winter, Spring
The earth we live on is both friend and foe. It provides us only if we understand it. If not, it becomes a harsh environment which permits us only to eke out a primitive existence. Geology 100 introduces students to the materials 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 lives. Included are such topics as rocks and minerals, earthquakes and the structure of the earth, water occurrences and resources, glaciers, volcanoes, oceanography, mineral resources and fossil fuels, plate tectonics, and continental drift, and the origin and evolution of life. Students intending to major or minor in earth science or related sciences should take Geology 130.

107 Planetary Science in Elementary Education
4 hrs. Fall, Winter
An interdisciplinary study of the earth, atmosphere, solar system and universe, and their relationships and interactions. 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.

129 Physical Geology Laboratory
1 hr.
A laboratory experience covering minerals and rocks, and the interpretation of topographic and geologic maps. Prerequisite: Minimum 3 hours of nonlaboratory geology.

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.

237 Environmental Earth Science
4 hrs.
An interdisciplinary environmentally oriented science offering for students in the Elementary Education and Mathematics Minor. The course integrates the environmental aspects of meteorology and geology. The students spend 7½ weeks in environmental geology and 7½ weeks in environmental meteorology. Techniques for presenting the content of the course will model the ways in which environmental earth science can be presented to elementary students. The course is taught by cooperating faculty from Geography and Geology. Prerequisite: Planetary Science 107.

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 100 or 130.

307 Teaching of Earth Science
2 hrs. Winter
Philosophy, objectives, and methods of teaching secondary school earth science. Designed for earth science majors and minors. One hour lecture and two hours of lab. Prerequisites: 16 hours of Earth Science (including Geology 100 or 130) or consent.

312 Geology of the National Parks and Monuments
2-3 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
335 Mineralogy
4 hrs. Fall
Introduction of crystallography, crystal chemistry, and determinative mineralogy. Physical and chemical properties, occurrence, uses and determination of about 100 minerals. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 131 or consent of instructor.

336 Optical Mineralogy
3 hrs. Fall
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. Fall
Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Lecture 2 hours a week. Laboratory 2 hours a week. Prerequisites: Geology 131 or consent of instructor.

433 Invertebrate Paleontology
4 hrs, Winter
Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Three lectures and a three-hour laboratory. Prerequisite: Geology 131 or consent.

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. Winter
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.

502 Problems in Geology and 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.

505 Regional Geomorphology of the United States
3 hrs.
A study of geomorphic processes and landforms by consideration of geologic regions of the United States. Prerequisite: Geology 131 or consent.

520 Economic Geology
3 hrs.
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, and mineral fuels. Lecture 3 hours a week. Prerequisite: Geology 335, or consent of instructor.

530 Plate Tectonics and Earth Structure
3 hrs. Fall
Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenents of plate tectonics. Prerequisites: Geology 131, 301, or 335.

532 Surficial Processes and Ground-water Geology
3 hrs. Winter
Detailed consideration of fluvial, eolian and glacial processes and the geologic aspects of surface water and ground-water hydrology. Qualitative and quantitative aspects of ground-water movement, location, and evaluation and the influences of man on the hydrologic system.

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 Terrigenous Depositional Systems
4 hrs. Fall
Processes, characteristics, and relationships among fluvial, deltaic, strand plain, lagoon, shelf, and slope terrigenous depositional systems. Laboratory includes textural analysis; sedimentary structures; paleocurrent analysis; electric logs, subsurface maps, and application of statistical and computer methods to the solution of sedimentologic problems; and basin analysis. Course includes a 3-day field trip. Three lectures and one three-hour laboratory per week. Prerequisite: Geology 131.

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. Prerequisites: Geology 131 and consent of instructor.

543 Paleoecology
3 hrs.
Study will include the ecology, life, habits and environmental interactions of ancient organisms. Prerequisite: Geology 533 or Biology 541.

544 Environmental Geology
3 hrs. Fall
Geology related to human affairs and land use planning. Includes engineering properties of earth materials, waste disposal systems, slope stability, floods, erosion and sedimentation, land subsidence, volcanic hazards, earthquakes, and urban geology. Field trips required. Prerequisite: Geology 131 or consent.

545 Carbonate and Evaporite Depositional Systems
3 hrs.
Processes, characteristics, and relationships of modern and ancient platform and basin carbonate and evaporite facies. Course includes an 11-day field trip (Spring Vacation) to investigate Holocene, Pleistocene, and Tertiary carbonate environments and facies in Florida; and a 3-day trip to northern Indiana and Ohio to examine Silurian Platform carbonates. Student projects include logging; description, and interpretation of core and slabs at the mesoscopic level. Two 2-hour meetings per week. Prerequisites: Geology 533, Geology 535 and consent.

560 Exploration Geophysics
3 hrs. Winter
Introduction to geophysical exploration methods including seismic reflection and refraction, gravity, electric, and electro magnetics. Prerequisites: Physics 111; Mathematics 106, 123; Geology 130.
History

Ernst A. Breisach, Chair
George T. Beech
Alan S. Brown
Walter J. Brunhumer
Richard T. Burke
Albert E. Castel
Sherwood S. Cordier
Ronald W. Davis
Edward O. Elsasser
Ross Gregory
Robert J. Hahn
H. Nicholas Hammer
Robert W. Hannah
Graham P. Hawks
Paul L. Maier
Gilbert W. Morell
Howard A. Mowen
Andrew C. Nahm
Emanuel Nodel
Dale P. Pattison
Peter Schmitt
John Yzenbaard

The Department of History offers training in several broad professional and preparatory areas:

1. Historical Administration: historic preservation, museum administration, development and administration of archives and manuscript collections;
2. Education: teaching of History at various levels, role of historians in curricular and administrative activities within education;
3. Research: preparation of historical studies for government departments and agencies and for private enterprise;
4. Pre-Professional and Graduate: preparation for graduate study in History, law, theology, and related fields;
5. Liberal Education: development in every student of historical awareness and perspective, an autonomous structure of understanding which taps the vast human experience which no longer can be observed directly.

Majors and Minors in History

Ronald Davis, Undergraduate Adviser
4075 Friedmann Hall (383-1731)

The Department has a single set of major and minor requirements which apply to all students. However, depending upon your objectives course selection will vary considerably. Frequent and regular consultation with the Undergraduate Adviser in the Department of History is essential if you wish to maximize your chances for employment in the highly competitive historical professions. This consultation should begin immediately upon your arrival at Western Michigan. Second majors, minors, cognate courses, electives, and courses to meet General Education requirements should be chosen in consultation with the Undergraduate Adviser, as well as the courses to be included in the History major or minor.

During your initial meeting with the Undergraduate Adviser you will fill out a major or minor slip. A completed major or minor slip is required for your graduation audit.

Requirements for the Major

1. Basic Courses:
   - 100 Early Western World, . . . 4 hrs.
   - 101 Modern Western World, .4 hrs.
   - 201 Historians in the Modern World, . . . . 1 hr.
   - 210 United States to 1877, . . . 3 hrs.
   - 211 United States since 1877, . . . . 3 hrs.

2. Advanced Courses:
   - Five additional courses chosen so that at least one course comes from each of three of the following areas:
     A. North America (United States and Canada)
     B. Europe (Ancient, Medieval, Modern)
     C. Non-Western World (Africa, Asia, Latin America)
     D. General History (Topical)

3. History As A Discipline
   - Courses taken by correspondence may not be used to fulfill major or minor requirements.

Honors Program

The Honors Program in History enriches the major with opportunities for additional advanced course work, independent research, and major programs which may deviate from normal requirements in order to provide a more intensive undergraduate preparation. Students normally are eligible for admission to the Honors Program after completion of six semester hours in History at Western Michigan University with a minimum GPA of 3.5. However, faculty who recognize exceptional students at any point are urged to recommend them for the Honors Program. Inquiries about the Honors Program should be addressed to the Undergraduate Adviser. It is not necessary to be enrolled in the Honors College in order to participate in the Honors Program in the Department of History.

Graduation with Honors in History requires the following:

1. A minimum GPA in History and overall of 3.5.
2. Completion of History 470 and/or History 490.
3. A minimum of 36 hrs. of course work in History.

Course Descriptions

(Courses described in italics are approved for General Education.)

Basic Courses

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, tastes, and problems of that period. This course shows specifically how the effects of wars, revolutions, depressions, machines, and social conditions are reflected in novels and other writings. How people have reacted to their problems in the past will suggest how we may deal with those of the present. Cannot be applied toward a History major or minor.

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 a clearer and deeper understanding of great contemporary problems such as the relationship between the West and the Third World, the balance of power between the U.S., U.S.S.R., and China, the stabilization of Europe, and the new ecological situation. Cannot be applied toward a History major or minor.

104 America and Her Minorities 3 hrs.
This course will focus on mainstream America and 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. Cannot be applied toward a History major or minor.

201 Historians in the Modern World 1 hr.
A survey of the historical professions and the academic preparation needed to enter them.

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 demonstrate the American heritage.

211 United States since 1877 3 hrs.
The story of how modern America was shaped with an emphasis upon the emergence of the United States as a world power and the consequences of this development. The focus is upon selected themes such as urbanization, industrialization, and reform that reveal continuities in the American experience. Particular attention is given to various attempts to interpret twentieth century American development.

North America
310 History of Michigan 3 hrs.
The development of Michigan from a primitive wilderness to an industrial state, with emphasis on the relation of the history of the state to that of the nation.

312 Representative Americans 3 hrs.
An examination of important themes and movements in American history through the reading and discussion of the biographies of representative figures. The pattern of topics may vary from year to year, but the staples are Puritanism, the Founding Fathers, Jacksonian democracy, the Civil War, industrialization, Progressivism, the New Deal, and the Negro Revolution.

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 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.

317 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?

318 Popular Culture in 20th Century America 3 hrs.
This course includes a brief introduction to the various elements of popular culture (pulp fiction and best-sellers, comics, cartoons, mass circulation periodicals, movies, radio, television, music, humor, sports, and advertising) and applies these elements to the historical study of 20th Century America.

319 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
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.

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 Delaney, W. E. B. DuBois, Marcus Garvey, and Malcolm X challenge widely held beliefs about the past and provide fresh perspectives on contemporary America.

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.

Colonial America
3 hrs.
The American colonies as part of the British empire; their founding, and their political, social, and economic growth to the eve of the American Revolution.

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.

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.

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.

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.

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.

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 the political leaders, social and economic aspirations, religious devotions, international hopes and fears, and popular entertainments.

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 1970'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.

Europe

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.

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.

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.

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 country? What is treason? What makes for a good life? Why work hard at anything? How free is anyone 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.

347 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.

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 society 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 dissidents. We will also briefly consider how medieval attitudes changed during the crisis of the Fourteenth Century, the Renaissance, and the Reformation.

501 Studies in European History 3 hrs.
The topics will 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 will be chosen from those areas of European history which are not adequately covered by regularly scheduled courses.

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 3 hrs.
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 national language and literature.

538 Victorian England: The Era of the Middle Class 3 hrs.
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 3 hrs.
An exploration of the history of Great Britain during the crucial years of challenge to its position as a world power, to its position as head of the empire, to its democratic monarchy; and consideration of the ways in which these challenges were met, two world wars successfully fought, a Commonwealth organized with all subjects 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.

541 The Soviet Union in World Affairs 3 hrs.
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 national and international events during the leadership of Lenin, Stalin, Khroushchev, and Brezhnev-Kosygin is studied.

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 3 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, 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
3 hrs.
Between 1300 and 1517 great changes in European life were brought about by the catastrophic Black Death, the activities of merchant venturers, the coming of gunpowder and diplomacy, the state as a new form of life as well as by new ideas about humanity, God, and the universe and by the geniuses of the brilliant Italian Renaissance (Petrarach, Giotto, Michelangelo, Leonardo da Vinci, and others).

555 The Reformation
3 hrs.
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.

558 Eighteenth Century Europe
3 hrs.
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
3 hrs.
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
3 hrs.
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
3 hrs.
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
3 hrs.
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.

Non-Western World

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 Iberian ancestry to its contemporary expression in national entities. Attention is given to people and motives as well as institutions and attitudes insofar as each of them determined the character of a given epoch and contributed to the pattern of overall development.

371 Modern 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 humanity. 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.

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 Confucian, the Buddhist, and the Shinto 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.
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.

Historical background of the major issues of contemporary Africa including colonialism and neo-colonialism, Pan-Africanism, and nationalism. Examination of major problems including such past issues as Congolese and Nigerian civil wars, as well as conflict, which may be seen as the clash of the major forces shaping the modern Middle East, including Arab nationalism, Zionism, and colonialism.

The topics will 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 so long as the subject matter is different. Topics will be chosen from those areas of African, Latin American, and Asian History which are not adequately covered by regularly scheduled courses.

A review of the 19th century gropings 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.

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.

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.

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.

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.

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.

Variable topics in historical studies including problems in applications, public historical awareness, local history, and historical analysis of issues in the contemporary world. Repeatable for separate credit so long as the topic varies. Consult Schedule of Classes for topics.

The theorist who devises the ritual of healing agency, and the ordinary person who is sustained, fellows-all are familiar figures in Western history, and historical analysis of issues in the contemporary world. Extensive use will be made of the 'case' study method in order to come to some conclusions about women's contributions to Western history and culture.

What did a woman have to be or do in order to be valued in a male dominated culture? This course is designed to explore the condition of women in various periods of European and American history from ancient Greece to America of the '70's. Attention will be given to women's roles and status in each period in order to come to some conclusions about women's contributions to Western history and culture.

This course will focus on business and business leaders as an integral part of society. Extensive use will be made of the 'case' study method and business biography to explore questions of production, distribution, finance, management, and industrial and public relations in a variety of historical settings. The case study topics will cover the whole range of Western history with a special emphasis on the American experience, one which cannot be properly understood without taking business and its development into account.
305 Man and Environment Throughout History
3 hrs.
An examination of the relationship between man and 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.

306 Main Currents of Western Thought
3 hrs.
This course treats the ideas and values which have shaped Western life from the ancient world to today. It investigates the origin of ideas, their meaning, and their impact on human life. Groups of interlocking ideas are shown to form currents of Thought which have shaped all of Western man's activities. Objects of study are: the Judeo-Christian concepts; the Greek philosophical revolution; the medieval synthesis; the Humanist revision; the Scientific Revolution; the Enlightenment; Romanticism: the modernisms (such as liberalism, socialism, fascism); and the contemporary world views.

308 Mainstreet U.S.A.: 1850-1970
3 hrs.
"Community history" can often provide insight into the way that ordinary Americans have lived and worked and responded to national issues. Students will assess the impact of literature, movies, radio and television as they examine the role of the mass media in small-city culture through a focus on such topics as World War I, the Twenties, the Depression, World War II, and the Television Generation. In addition, they will learn to use archival materials, public records, and oral history to explore the effect of government policies, population movements, railroads and highways, steam and electric power, communications improvements, industrialization, etc., on the development of cities of less than 300,000 people.

395 History of War
3 hrs.
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.

500 Problems in History
1-3 hrs.
Variable topics in historical studies including problems in applications, public historical awareness, local history, and historical analysis of issues in the contemporary world. Repeatable for separate credit so long as the topic varies. Consult Schedule of Classes for topics.

509 Myth and Reality in the American Past
3 hrs.
Americans have often portrayed their past in light of their ideal 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.

594 War in the Modern World
3 hrs.
Select topics in modern war and current military developments. Topics for each semester will appear in the Schedule of Classes. The course may be repeated for separate credit as long as the topic varies.

History as a Discipline
390 Introduction to the Study of History
2 hrs.
Through the ages man has asked why heroes, dynasties, and empires rise and fall, revolutions occur, populations grow and recede, and ever new ways have been devised to "make a living." Man has tried hard to find order and meaning in the maze of events. This course deals with the many human attempts first to reconstruct what happened and then with the interpretations given to make sense of the past.

392 Great Historians
3 hrs.
Historical writings arise from a curiosity about the human condition. Can a person do good? What is the source of evil in life? What happens to people in social situations? Does a person make his/her own fate and is it deserved? Historical writings suggest the problems in any search for truth, its description, and its evaluation. The course includes a survey of historical writings and an opportunity to read from within their wide variety.

398 Historians as Educators
2 hrs.
This course introduces students to the many opportunities and problems encountered by historians in secondary and elementary education. It surveys the role of History teaching in the history of education in general, the roots of various attitudes toward historical studies and methods of dealing with them. It prepares students to see themselves not only as teachers of History but as leaders in assessing educational policies and curricular developments as they pertain to the teaching of history.

399 Current Developments in Historical Theory and Practice
2 hrs.
This course surveys the major theoretical, technical, and interpretive issues in the field of History as they emerge from ongoing research. It assesses the impact of such disciplines as archaeology, geography, computer science, environmental studies, and psychology upon History, the development of new techniques for evaluating all forms of historical documentation and data, and the major historical interpretations currently before the academic world and the public.

470 Independent Research in History
2-3 hrs.
Research and writing on some selected period or topic under the supervision of members of the Department of History. Requires approval, prior to registration, of the Undergraduate Adviser and the faculty member(s) supervising the experience.

490 History Honors Variable Credit
This course number provides students in the History Honors Program with opportunity to participate in course experiences not normally available to undergraduates, such as seminars, research methods, interinstitutional study, and so forth. Requires approval of the Undergraduate Adviser prior to registration. Prerequisite: Junior standing and enrollment in the History Honors Program.

510 Professional and Field Experience in History Variable Credit
Upon prior approval by the Department of History students may earn credit toward the History major or minor through appropriate professional experiences such as museum internships, work in archives and manuscript collections, historic preservation advocacy, or other meaningful activities. Prerequisite: Junior standing.

511 Introduction to Archives
3 hrs.
Theory, techniques, and practice in the development and administration of archives and archival materials.
Modern and Classical Languages

Roger L. Cole, Chair
Elsa Alvarez
John Benson
Gary E. Bigelow
Mercedes Cardenas
Benjamin Ebling
Robert Felkel
Jeffrey Gardiner
Elizabeth Giedeman
Robert Griffin
Robert M. Henkels, Jr.
Johannes Kissel
Peter W. Krawutschke
Paule M. Miller
Genevieve Orr
George F. Osmun
Joseph Reish
James D. Semelroth
Irene V. Storoshenko
Herman Teichert
Robert Felkel
Gary E. Bigelow
Robert M. Henkels, Jr.

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 (either entering or advanced) 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 for specific language requirements. 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 the required level is reached.

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/she chooses to omit the course, he/she is eligible to receive credit, but must check with the Placement Director. 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 included. All majors and minors are below.

Classical Humanities Major
Thirty hours in Latin including 100-level (basic) courses or equivalent. Latin 200-201 required; remaining hours from the core and cognate groups (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 in Latin including 100-level (basic) courses or equivalent. Latin 200-201 required; remaining hours from the core and cognate groups (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 580). 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 including 100-level (basic) courses or equivalent; remaining hours from 200-500 series. Teaching majors must include 200, 201, 324, 550, 557 and 560.
Latin Minor
Twenty hours including 100-level (basic) courses or equivalent; remaining hours from 200-500 series. Teaching minors must include 200, 201, 324, 550 or 560.

Russian Major
Thirty hours including 100-level (basic) courses or equivalent; remaining hours from 200-500 series.

Russian Minor
Twenty hours including 100-level (basic) courses or equivalent; remaining hours from 200-500 series.

Spanish Major
Thirty hours beyond the 100-level to include 322 or 323, 325 and three 500-level courses (to include 6 hrs. of 526, 527, 528, 529 or 560). Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558 which will be accepted in place of one 500-level literature course.

Spanish Minor
Twenty hours beyond 100-level to include 6 hrs. of 322, 323 or 325. Modern Language Instruction 558 may not be counted toward a minor.

Foreign Literature in English Translation
(Courses described in italics are approved for General Education.)

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 French Literature in English Translation
3 hrs.
A thematic and stylistic analysis of major French writers from LaFayette 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 German Literature in English Translation
3 hrs.
A comparative study of literary themes and techniques of major German writers from Hauptmann to the present, including Mann, Brecht, Kafka, and Borchert. This course does not apply toward a major or minor in German. 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, 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. No prerequisite.

Spanish 375 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 Hispanic America. This course does not apply toward a major or minor in Spanish. No prerequisite.

Spanish 376 Spanish Literature in English Translation
3 hrs.
Selected Spanish prose and poetry from the Middle Ages to the twentieth century. The course will include, but will not be restricted to, works by Lope de Vega, Cervantes, St. Teresa, Calderon de la Barca, Unamuno and Garcia Lorca, as well as the anonymous Poem of the Cid and Lazarillo de Tormes. This course does not apply toward a major or minor in Spanish. No prerequisite.

Classics Courses in English
(Courses described in italics are approved for General Education.)

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 five courses listed below will be taught entirely in English, have no foreign language requirement, and are open to any student.

250 (Classics) Ancient-Modern Studies
3 hrs.
The course is designed to examine the Greco-Roman world and its influence on the modern world in as many perspectives as possible. Examples: the rebel in society, concepts of justice, ancient literary criticism, ancient and modern technology. Topics vary and will be announced each year. May be repeated for credit with different topics.

350 (Classics) Classical Art and Architecture 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 (Classics) Classical Drama in Translation
3 hrs.
Reading and analysis of selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes as dramas and as expression of the Greek view of life. Some attention to Roman drama. No prerequisite.

450 (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
(5 hrs.
Required for modern language teaching majors; recommended for teaching minors (but may not be counted in the minor). This course will acquaint prospective language teachers with various approaches and strategies involved in modern language teaching. Specifically, in a performance oriented program, students will learn theory and practice related to teaching the listening, speaking, reading and writing skills, as well as the culture component. Preferably, students should complete this course before beginning directed teaching. This course will be offered regularly.

The comparable methods course for Latin, 557 Teaching of Latin, is described under Classical Languages.

Course Descriptions
(Courses described in italics are approved for General Education.)

Classical Studies

Greek
100 Basic Greek
4 hrs.
Fundamentals of classical Greek; readings emphasize Greek thought, culture, and civilization.

101 Basic Greek
4 hrs.
Continuation of 100. Prerequisite: Greek 100 or equivalent.

200 Intermediate Greek
3 hrs.
Review of basic grammar and syntax. Selections from Xenophon and Plato. Prerequisite: Greek 101 or equivalent.

201 Intermediate Greek
3 hrs.
Continuation of 200. Prerequisite: Greek 200 or equivalent.

Latin
100 Basic Latin
4 hrs.
Fundamentals of Latin; readings emphasize Roman thought, culture, and civilization.

101 Basic Latin
4 hrs.
Continuation of 100. Prerequisite: Latin 100 or equivalent.

200 Vergil
4 hrs.
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.

201 Lyric Poetry
4 hrs.
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.

324 Latin Literature
4 hrs.
Selections from Latin prose and poetry from the beginning of Latin literature through the Silver Age. Prerequisite: Latin 200 or 201 or equivalent.

550 Independent Study in Latin
1-3 hrs.
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.

557 Teaching of Latin
3 hrs.

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, 324 or equivalent or permission of instructor.

Classics Courses in English
250 (Classics) Ancient-Modern Studies
3 hrs.
350 (Classics) Classical Art and Architecture 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 Interdisciplinary Programs of the College.)

French
100 Basic French
4 hrs.
Fundamentals of French with audiolingual emphasis. French cultural readings.

101 Basic French
4 hrs.
Continuation of 100. Prerequisite: French 100 or equivalent.

104 Mini-French for Fashion Merchandising Majors
1 hr.
This course is specifically designed for students with careers in fashion merchandising and will include exposure to relevant fashion terminology, cultural insights, and practice in written and spoken French.

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 or 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. Emphasis on oral aspects of the language. Prerequisite: French 201 or equivalent. (French 320 may be taken concurrently with French 201.)

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.

344 Seminar in France
4 hrs.
A summer study of French language, literature, and culture concentrated at Grenoble and Paris. The course consists of formal study at the University of Grenoble with regularly scheduled lectures and discussions in the French language. The session at Grenoble is supplemented by an organized tour of Paris with full explanations by an instructor for all points visited. Each student submits a term paper investigating one phase of his/her studies of particular interest. Prerequisite: French 200 or equivalent or permission of instructor.

Open to Upperclass Students

400 Elementary French for Reading Proficiency
4 hrs.
Intensive grammar and elementary reading for translation and research purposes. The course is primarily for

the graduate who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. Undergraduates must secure a "C" card. No oral work.

401 Intermediate French for Reading 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. Undergraduates must secure a "C" card.

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, such as chansons de geste, romans courtois, didactic works, farces, and poetry.
- Renaissance Literature—Outstanding works from the period, to include Montaigne, Rabelais and the Pleiade.
- Seventeenth Century Literature—Literary trends of the seventeenth century to include Corneille, Moliere, Racine, Pascal, and La Rochefoucauld.
- Eighteenth Century Literature—Literature and philosophies of the French Enlightenment, to include major works by Voltaire, Rousseau, Diderot and Montesquieu.

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
3 hrs.
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
3 hrs.
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 3 hrs.
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 Advanced Undergraduates
400 Elementary German for Reading Proficiency 4 hrs.
Intensive grammar and elementary reading for translation and research purposes. The course is primarily for the graduate student who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. Undergraduates must secure a "C" card. No oral work.

401 Intermediate German for Reading 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. Undergraduates must secure "C" card.

528 Survey of German Literature 3 hrs.
A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: German 316, 317, and 325 or equivalent.

529 Survey of German Literature 3 hrs.
A comprehensive study of German literature from German Realism to the present. Prerequisites: German 316, 317, and 325 or equivalent.

550 Independent Study in German 1-3 hrs.
Directed individual study of a specific topic in a German literary or linguistic area. Departmental approval is required for admission. Prerequisite: One 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 3 hrs.
Intensive practice in composition and stylistics directed towards appreciation of literary and other written expression in German with work in free composition at an advanced level. Prerequisites: German 316 and 317.

553 Advanced German Conversation 3 hrs.
Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: German 316 and 317.

559 History of the German Language 3 hrs.
Survey of the development. Prerequisite: 6 hours of 300-level German or above.

560 Studies in German Literature 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisites: German 316, 317, and 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, Grillparzer, Hebbel, and Hauptmann.
- Twentieth Century Drama—Representative selections.

Greek
(See Classical Studies.)

Italian
100 Basic Italian 4 hrs.
Fundamentals of Italian with audiolingual emphasis. Italian cultural readings.

101 Basic Italian 4 hrs.
Continuation of 100. Prerequisite: Italian 100 or equivalent.

Latin
(See Classical Studies.)

Russian
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.

102 Russian for Travel 2 hrs.
This course is specifically designed for students, faculty, and individuals outside the University community who wish to acquire the reading and basic communication skills necessary to derive the fullest possible benefit from a trip to the Soviet Union and to permit free movement within a Russian city without a guide.

104 Scientific Russian 4 hrs.
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.

200 Intermediate Russian 4 hrs.
Level two Russian. Review and furthering of oral and reading skills based upon increasingly advanced oral and written exercises. Prerequisite: Russian 101 or equivalent.

201 Intermediate Russian 4 hrs.
Continuation of 200. Prerequisite: Russian 200 or equivalent.

310 Russian Civilization 3 hrs.
A study of selected aspects of Russian life and culture and their historical settings. Course taught in English and open to all students.

316 Russian Composition 4 hrs.
Emphasis on increasing the student's command of written Russian. Prerequisite: Russian 201 or equivalent; required for majors and minors.

317 Russian Conversation 4 hrs.
Emphasis on increasing the student's command of spoken Russian. Prerequisite: Russian 201 or equivalent; required for majors and minors.

328 Introduction to Russian Literature 3 hrs.
Selections of Russian prose and poetry in the original that represent contemporary, modern, and classical Russian writers. Prerequisite: Russian 201 or its equivalent; required for majors and minors.

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, 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.

Open to Advanced Undergraduates

550 Independent Study in Russian 1-3 hrs.
Directed individual study of a specific topic in a Russian literary or linguistic area. Departmental approval required for admission. 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 Russian Composition and Conversation 3 hrs.
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.

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, 326, 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 Poetry: Form, content and history.

Spanish

100 Basic Spanish 4 hrs.
Fundamentals of Spanish with audiolingual emphasis.

101 Basic Spanish 4 hrs.
Continuation of 100. Prerequisite: Spanish 100 or equivalent.

200 Intermediate Spanish 4 hrs.
The development of spoken and written expression in the Spanish language with an emphasis on grammar review. Prerequisite:

Spanish 101 or 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 Spanish civilization in terms of its geography, history and art, and how these factors illuminate the character and tradition of the Spanish people. Prerequisite: 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 Literature 3 hrs.
An appreciation of Spanish literature through reading and critical interpretation of selected works of various literary types. Prerequisites: Spanish 316 and 317 or equivalent.

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 Modernismo 3 hrs.
A survey of Spanish American literature from its origin to the era of Modernismo (late 19th century). Prerequisites: Spanish 316, 317, and 325.

529 Survey of Spanish American Literature from Modernismo to the Present 3 hrs.
A survey of Spanish American literature from late 19th century to the present. Prerequisites: Spanish 316, 317, and 325.

Open to Advanced Undergraduates

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, or 529 or departmental permission. Representative topics which may be treated in this area include:

- Cervantes—Don Quijote and other works of Cervantes together with his life and thought.
Linguistics

Robert A. Palmatier, Chair
D.P.S. Dwarkesh
Daniel P. Hendriksen

Linguistics is the scientific study of language—its nature and development, its universal properties, its diversified structures and their dialectal variants, its acquisition by children and non-native speakers, its systems of writing and transcription, its cultural role in the speech community, and its application to other areas of human knowledge.

The 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 six 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-four hours of credit in Linguistics Department courses and up to 6 hours of credit in "cognate" courses. One college year of a "critical" 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/her major concentration. The minor program requires completion of twenty hours of credit in the five undergraduate "core" courses: 100, 321, 331, 421, 597.

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. Only those Linguistics courses in which a 'C' or better is obtained may be counted toward a major or minor.

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.

Programs

Linguistics Major and Minor

I. Core Courses in Linguistics (20 hrs. required for both majors and minors)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>100 The Nature of Language</td>
<td>4</td>
</tr>
<tr>
<td>321 Structure of Language I: Phonology and Morphology</td>
<td>4</td>
</tr>
<tr>
<td>331 Structure of Language II: Syntax and Semantics</td>
<td>4</td>
</tr>
<tr>
<td>421 Development of Language: History and Dialects</td>
<td>4</td>
</tr>
<tr>
<td>597 Seminar in Linguistics</td>
<td>2-4</td>
</tr>
</tbody>
</table>

II. Elective Courses in Linguistics (Majors must take at least 4 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>301 Basic Critical Languages I</td>
<td>4</td>
</tr>
<tr>
<td>511 Methods of Teaching English as a Second Language or Dialect</td>
<td>4</td>
</tr>
<tr>
<td>512 Principles of TESL</td>
<td>4</td>
</tr>
<tr>
<td>515 Methods of Teaching Critical Languages</td>
<td>2</td>
</tr>
<tr>
<td>540 Generative Grammar</td>
<td>4</td>
</tr>
<tr>
<td>551 Psycholinguistics</td>
<td>4</td>
</tr>
<tr>
<td>552 Sociolinguistics</td>
<td>4</td>
</tr>
<tr>
<td>571 Languages of Asia</td>
<td>4</td>
</tr>
</tbody>
</table>

III. Cognate Courses in Other Departments (Majors may take up to 6 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>370 Culture and Communication</td>
<td>3</td>
</tr>
<tr>
<td>302 Intro to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>372 Intro to General Semantics</td>
<td>3</td>
</tr>
<tr>
<td>572 Non-Verbal Communication</td>
<td>3</td>
</tr>
<tr>
<td>574 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>271 Structure of Modern English</td>
<td>4</td>
</tr>
<tr>
<td>372 Development of Modern English</td>
<td>4</td>
</tr>
<tr>
<td>373 Reading and Writing as Psycholinguistic Processes</td>
<td>4</td>
</tr>
<tr>
<td>572 American Dialects</td>
<td>4</td>
</tr>
<tr>
<td>574 Linguistics for Teachers</td>
<td>4</td>
</tr>
</tbody>
</table>

Modern and Classical Languages

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 French Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>558 Modern Language Instruction</td>
<td>3</td>
</tr>
<tr>
<td>559 History of the German Language</td>
<td>3</td>
</tr>
</tbody>
</table>
Critical Language Minor

I. Introductory Linguistics Course (to be taken during first year of minor) ..................... 4 hrs.
Ling. 100 The Nature of Language ............... (4 hrs.)
II. Basic Courses (both in the given language) ..................... 8 hrs.
Ling. 301 Basic Critical Languages I ............ (4 hrs.)
AND Ling. 302 Basic Critical Languages II ........ (4 hrs.) (Prereq.: 301)
III. Intermediate Courses (both in the given language) ........ 8 hrs.
Ling. 501 Intermediate Critical Languages I .... (4 hrs.) (Prereq.: 302)
AND Ling. 502 Intermediate Critical Languages II .... (4 hrs.) (Prereq.: 501)
IV. Literacy Courses (optional—see below) ............ 4 hrs.
Ling. 508 Reading Critical Languages ............. (4 hrs.) (Prereq.: 502)
Ling. 509 Writing Critical Languages ............. (4 hrs.) (Prereq.: 502)
TOTAL: 20 hrs.

Admission to the Program: Undergraduate students (including Linguistics Majors and Minors) may be admitted to the Critical Language Minor at any level, provided that they are not in a Teacher Education curriculum and are not native, fluent, and literate speakers of the language.

Eligible Languages: The eligibility of languages varies from year to year. Languages currently scheduled by name are automatically eligible. The eligibility of others depends on available resources. Contact the Critical Languages Supervisor in the Department of Linguistics for up-to-date information.

Linguistics Majors and Minors: Undergraduate Majors and Minors in Linguistics, who are already required to take an introductory Linguistics course for their program, must take a literacy course in the given language (508 or 509), or Ling. 571 in order to complete the requirements for the Critical Language Minor.

Credit by Examination: Undergraduate students who feel that they possess the equivalent of 301, 302, 501, 502, 508, or 509 may "comp out" of these courses for credit, provided that they pay the fees and pass an examination with a grade of "C" or better.

Involvement in Integrated Language Arts Minor

The Department of Linguistics is one of five participating departments in the Integrated Language Arts Minor—a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the "Interdisciplinary Programs" section of the College of Arts and Sciences or its listing in the College of Education or the College of Health and Human Services.

Course Descriptions
(Courses described in italics are approved for General Education.)

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.

321 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 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.

421 The Development of Language: History and Dialects 4 hrs.
An examination of the processes of language change and dialect development and the principles which govern the historical and comparative study of languages and dialects. 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.

511 Methods of Teaching English as a Second Language or Dialect 4 hrs.
Study of the application of linguistics and other disciplines to the teaching of Standard American English to speakers of other languages and of non-standard American English dialects, with emphasis on current methods and materials for instruction and testing. Course work will include tutorial experience.

512 Principles of Teaching English as a Second Language 4 hrs.
Study of the linguistic theory and historical development of the teaching of English to speakers of other languages, as well as an examination of second language acquisition and the various aspects of bilingualism. Prerequisite: an introductory course in linguistics.

515 Methods of Teaching Critical Languages 2 hrs.
Study of the application of linguistics to the teaching of one or more "critical" languages (e.g. Latvian, Hebrew, Japanese, Arabic, Korean, etc.). Emphasis will be on modern and traditional methods and materials for instruction and testing. Course work will include tutorial experience. May be repeated for credit for a different language. Prerequisite: Ling. 502 or equivalent.

540 Generative Grammar 4 hrs.
An examination of the theories of Transformational Grammar and Generative Semantics, and a study of their origins, development, modifications, and applications. Prerequisite: Ling. 500 or equivalent.

551 Psycholinguistics 4 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.

552 Sociolinguistics 4 hrs.
A systematic study of the linguistic correlates of social behavior and the influence of society on the nature of language.

571 Languages of Asia 4 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.

597 Seminar in Linguistics—Variable Topics 2-4 hrs. Each seminar will deal with a selected topic relating to language and/or linguistics. Since content will vary from semester to semester, students are advised to check course descriptions in the Department office. The Department will welcome suggestions for seminar topics from students. Prerequisite: major or minor status or permission of instructor.

598 Readings in Linguistics 1-4 hrs. An opportunity for advanced students with good scholastic records to pursue the independent study of a linguistic subject not specifically covered by any of the courses in the Linguistics Department. Prerequisite: Permission of instructor and chairperson.

English as a Second Language Courses (for foreign students)

Intermediate-level instruction in oral and written Standard American English for speakers of other languages or of non-standard American English dialects. An attempt will be made to provide individual tutoring where necessary. Credit/No Credit only.

Advanced-level instruction in oral and written Standard American English for speakers of other languages or of non-standard American English dialects. A continuation of Ling. 111, with emphasis on advanced reading and writing skills. Prerequisite: Ling. 111 or equivalent. Credit/No Credit only.

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.)

Critical Languages

Arabic Brazilian Portuguese Chinese (Mandarin) Hebrew Hindi-Urdu Japanese Korean Latvian Persian Polish Sanskrit Serbo-Croatian Swahili

301 Basic Critical Languages I 4 hrs.
Study of a critical language at the elementary level with emphasis on conversation. The writing system will be introduced at an appropriate time, depending on the nature of the individual language.

302 Basic Critical Languages II 4 hrs.
Continuation of 301. Prerequisite: Ling. 301 or equivalent.

501 Intermediate Critical Languages I 4 hrs.
Continuation of Ling. 302, with greater attention to achieving self-reliance in conversation and to increasing reading and writing skills with the help of a dictionary. Prerequisite: Ling. 302 or equivalent.

502 Intermediate Critical Languages II 4 hrs.
Continuation of 501. Prerequisite: Ling. 501 or equivalent.

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. 502 or equivalent.

509 Writing Critical Languages 4 hrs.
Intensive practice in writing a critical language to improve the student’s ability to express himself/herself effectively and to develop an individual style of composition. Prerequisite: Ling. 502 or equivalent.

MATHEMATICS 185

Mathematics

James H. Powell, Chair
Yousef Alavi
Robert Blefko
Joseph T. Buckley
Gary Chartrand
Janice DuBien
Paul Eenigenburg
Lawrence Fialkow
Anthony Gioia
S.F. Kapoor
Christian Hirsch
Philip Hsieh
Robert Laing
Stanislav Leja
Don R. Lick
Michael McAsay
Joseph McCully
Joseph McKean
Jack Meagher
Ruth Meyer
Donald Nelson
Jack Northam (Adjunct)
John W. Petro
James Riley
Erik A. Schreiner
Robert Sechler
Gerald Sievers
Arthur Stoddard
Michael Stoline
Walter Turner
Arthur White
Aiden Wright
Kung-Wei Yang

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, applied mathematics, and statistics. Mathematics and Statistics Minors are quite flexible, allowing students to concentrate on areas which complement their major area of study.

Major and Minor requirements in Mathematics and Statistics are summarized in the following tables. Students considering a Mathematics or Statistics Major or Minor should contact an 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.

Information on “Programs in Computer Science” is listed elsewhere in this catalog.
Mathematics Major Options

General Mathematics Option
Calculus through Math 123 ........................ 8
CS 105 or 306 ................................... 2
Math 230 ........................................ 3
Math 314 ........................................ 4
Math 330 ........................................ 4
Math 272 ........................................ 4
Math 570 or 571 .................................. 3
Approved electives ............................ 9

Approved electives can be Math 274, 340 or 342, 362, 440, 490, 506, 520, 530, 574, 576 or 580. (At least two electives must be at 400 level or above.)

Secondary Teaching Option
Calculus through Math 123 ................. 8
CS 105 or 306 .................................. 2
Math 230 ........................................ 4
Math 314 ........................................ 3
Math 330 ........................................ 4
Math 340 or 342 ................................ 3
Math 550 (see course description for an alternative program which includes teaching experience in public schools) ............. 3
Approved electives ............................ 9
Approved electives can be Math 272, 364, 408, 440, 490, 506, 530, 540, 570 or 580. (At least one elective must be at the 400 level or above.)

Applied Mathematics Option
Calculus through Math 123 ................. 8
CS 306 ........................................ 2
Math 230 and 274, or 374 .................... 7-4
Math 310 or 314 ................................ 3
Math 272 ........................................ 4
Math 364 ........................................ 4
Math 506 ........................................ 3
Approved Electives .......................... 6-9
Approved electives can be Math 408, 490, 507, 574, 575 or 576.

Note: Any student considering graduate work should also elect Math 330 and Math 570.

Mathematics Minor Options

General Minor
Calculus through Math 123 ................. 8
CS 105 or 306 .................................. 2
Math 230 or 374 .............................. 4
Approved electives ........................ 6

Teaching Minor: Secondary
Calculus through Math 123 ................. 8
CS 105 ......................................... 2
Math 230 ....................................... 4
Math 314 ....................................... 3
Approved electives ........................ 3-4

Teaching Minor: Elementary
(fore students in elementary education curricula only)
Math 150 .................................... 4
Math 151 .................................... 3
Math 122 or 200 ............................ 4
Math 265 .................................... 4
Math 552 .................................... 3
Math 553 or 595 ............................ 2

Honors in Mathematics
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/her superior performance and interest in mathematics warrants. Students who are enrolled in, or have completed, Mathematics 314 or 230 may be recommended by a member of the mathematics faculty for consideration as honors students. For further information, see the Chairperson of the Departmental Honors Program.

Programs in Statistics
The field of Statistics is concerned with the collection of numerical data, with various descriptive and inferential methods of analyzing the data and with the proper interpretation of the results. The Department of Mathematics offers a major and a minor in Statistics. These programs include coursework in mathematics, computer science and statistics. Graduates of these programs should be qualified for positions in government and industry and for entrance into graduate programs in Statistics and related fields.

It is important for statistics majors to choose a minor in a field that has statistical applications. There are special combined programs available with other departments for students interested in particular fields of application. The Statistics major is available as a major for students earning a BBA degree in the College of Business. For more information see a faculty advisor.

Several introductory courses in statistics are available for students in other programs.

Statistics Major Requirements

CS 306 ..................................... 2
Calculus through Math 123 ................. 8
Math 230 .................................... 4
Math 272 .................................... 4
Math 362 .................................... 3
Math 364 .................................... 4
Math 460 .................................... 3
Math/CS 506 ................................ 3
Math 567 .................................... 4
Math 568 .................................... 3
Approved Elective ........................... 3

With approval of advisor, an elective emphasizing statistical application may be from another discipline or area.

Statistics Minor Requirements

Math 260, 364 or 366 ........................ 4
Math 362 .................................... 3
Math 567 .................................... 4
CS 306 ..................................... 2
Approved elective .......................... 3-4

The elective would normally be selected from the following list of courses: Math 123, 490, 562, 566 and 599. An approved introductory course in statistics may substitute for either 260, 364 or 366.

Science and Mathematics Teaching Minor

The Department of Mathematics participates in the Science and Mathematics Teaching Minor for students in the Elementary Curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

Course Descriptions

Students who fail to earn a "C" or better grade in Mathematics 110, 111, 120, 121, 122 or 123 will not be permitted to enroll in the next sequence course.

(Courses described in italics are approved for General Education.)

090 Mathematical Skills
No Credit
A remedial course in arithmetic and elementary algebra. This course is designed as preparation for Math 150, Structure of Arithmetic, and enrollment is restricted to students in programs requiring Math 150.

098 Skills: Special Topics
No Credit

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. Prerequisite: Three years of college preparatory mathematics or Math 111.
110 Algebra I
3 hrs.
A course in algebra at the level usually covered in high school. Review and practice with basic algebraic skills. Topics include arithmetic foundations of algebra, properties of real numbers, linear equations and inequalities, and systems of linear equations. This is a continuous progress, mastery-based course.

111 Algebra II
3 hrs.
A continuation of Math 110. Topics include polynomials, fractional and radical equations, logarithmic and exponential functions, complex numbers, quadratic equations, and systems of quadratic equations.

116 Finite Mathematics with Applications
3 hrs.
This course is designed to give the 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 110. Prerequisite: 2 years of high school algebra.

120 Mathematics IA
4 hrs.
Substantial review of algebra with discussion of sets, relations, absolute values 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 110 or 111. Students will not receive credit for both Math 120 and (122 or 200).

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. Students will not receive full credit for both Math 121 and (122 or 200).

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. Math 101 can be taken concurrently. (It is recommended that CS 106 be taken concurrently.) Students will not receive full credit for both Math 122 and (120 or 121 or 200). (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, applications to elementary differential equations. Prerequisite: Math 122 or 121 (CS 106 recommended). Students will not receive full credit for Math 123 and 200.

150 Structure of Arithmetic
4 hrs.
This course is designed to provide the elementary teacher with a minimum foundation in the structure of arithmetic. Included will be a discussion of sets, relations, and properties of natural numbers, integers, rational numbers and real numbers, as well as selected topics from number theory and algebra. This course can only be applied to the mathematics requirements of a program leading towards elementary teacher certification. Prerequisite: Math 90 or adequate performance on admissions test.

151 Geometry for Elementary Teachers
3 hrs.
This course is devoted to an analysis of geometric figures in the plane and space and to an investigation of geometric and topological transformations, their invariants and related topics; including symmetry, symmetry groups and measurement. Emphasis will be on the active participation of the student in the process of discovering and communicating mathematical ideas. Prerequisite: Math 150.

190 Survey of Mathematical Ideas
4 hrs.
A survey of significant, active areas of mathematics with the emphasis on concepts rather than calculations. The historical origin and development of certain mathematical ideas will be included. The areas of mathematics investigated will include topics from set theory, probability theory, number theory, computer mathematics, and graph theory. This course will not satisfy any program requirements in mathematics.

200 Analysis and Application
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 110. Prerequisite: Math 110, or 1 1/2 years high school algebra and 1 year high school geometry. Students will not receive full credit for Math 200 and (120 or 121 or 122 or 123).

230 Elementary Linear Algebra
4 hrs.
Vectors and geometry in two and three dimensions, systems of linear equations, matrix algebra, linear transformations in R2 and R3, generalizations to the vector spaces Rn, 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, F distributions; interval estimates; tests of hypotheses. Students can receive credit for only one of 260, 360, 364, 366. Prerequisite: Math 200 or 122.

265 Probability and Statistics for Elementary Teachers
4 hrs.
The topics in this course will include the organization of statistical data into graphs and tables, descriptive statistical measures, probability and decision making, testing hypotheses, and correlation. Students will learn the rudiments of a programming language and subsequently use computer techniques to assist in data analysis. The problems of teaching probability and statistics to
elementary school children will be considered. Prerequisite: Math 151.

272 Vector and Multivariate Calculus
4 hrs.
Vector calculus, functions of several variables, partial differentiation, multiple integration. Prerequisite: Math 123.

274 Introduction to Differential Equations
3 hrs.
Techniques of solving differential equations. Prerequisite: Math 123.

310 Discrete Mathematical Structures
3 hrs.
Sets, relations, functions, counting techniques, proof techniques and mathematical induction; algebraic flowchart language; graphs, directed graphs and labeled trees; Boolean algebras. The relationship of these related concepts with computer science will be emphasized. MATH 310 and 314 may not both be used for the same major or minor. Prerequisite: Math 230 or 374 and an introductory programming course.

314 Fundamental Concepts of Mathematics
3 hrs.
The prime objective of this course is to involve the students in mathematical proofs and their presentations. Various mathematical subjects, which may include logic, set theory, relations and functions may be used to provide a framework for the course. It is intended that the course proceed with thoroughness and depth rather than attempting to survey a large number of topics. MATH 314 and 310 may not both be used for the same major or minor. Prerequisites: Math 123 and 230 or 374.

330 Modern Algebra
4 hrs.
Introduction to groups, rings, integral domains, fields. Emphasis will be placed on the integers and polynomial rings over a field. Prerequisite: Math 314 or consent of instructor.

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 374.

342 Introduction to Projective Geometry
3 hrs.
A survey of affine and projective geometry using methods of elementary linear algebra. Prerequisite: Math 230 or 374.

360 Probability and Statistics for Engineers
4 hrs.
The purpose of this course is to provide the engineering student with an adequate background in probability and a brief introduction to the methods of statistical inference. Topics include: discrete probability spaces, conditional probability, discrete and continuous random variables, joint distributions, population moments, special distributions, sampling distributions, interval estimation, hypothesis testing. Students can receive credit for only one of Math 260, 360, 364, 366. Prerequisite: Math 272.

362 Probability
3 hrs.
Discrete probability spaces, conditional probability, discrete and continuous random variables, expectations, joint distributions, special distributions. Prerequisite: Math 123.

364 Statistical Methods
4 hrs.
This course treats both the theory and applications of statistics. Topics include: empirical distributions, discrete probability, random variables and probability distributions, special distributions, the central limit theorem, sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, correlation and regression, the design of experiments. Students can receive credit for only one of Math 260, 360, 364, 366. Prerequisite: Math 123.

366 Introduction to Statistics
4 hrs.
An introductory course in statistics for upper level 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, tests of hypotheses, correlation and regression. This course will not count toward a mathematics major. Students can receive credit for only one of Math 260, 360, 364, 366.

374 Introduction to Linear Algebra and Differential Equations
4 hrs.
This course covers elementary linear algebra and differential equations, applying techniques of linear algebra to the solution of differential equations. Topics chosen from: first order equations and applications, matrices, vector spaces, linear transformations, linear differential equations, systems of differential equations, and series solutions. Students cannot receive credit for both 274 and 374, or 230 and 374. Prerequisite: Math 272.

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.

395 Practicum in Mathematics
1 hr.
Students enrolled in this course will normally work in the modular math program. The course may be repeated. Prerequisite: Consent/Instructor.

408 Linear Programming
3 hrs.
Linear inequalities, convex geometry, optimization in linear systems, zero-sum games. Applications. Prerequisites: Math 230 or 374.

440 Graphs and Graph Models
3 hrs.
Elements of graph theory: transportation problems; trees; matchings; games and puzzles; directed graphs; applications to social psychology; planar graphs and coloring problems. Prerequisite: Math 230 (310 or 314 recommended).

460 Introduction to Mathematical Statistics
3 hrs.
Topics to be included are multivariate probability distributions, sampling distributions, asymptotic theory, theory of estimation, and likelihood ratio tests. Prerequisites: Math 230, 272, 362 and 364.

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 Scientific Programming
3 hrs.
Designed to give preparation in the use of numerical methods on digital computers for scientific and engineering applications. The FORTRAN language will be used. Problems such as series evaluation, multiplication and inversion of matrices, numerical integration and pointwise differentiation as well as general numerical approximation will be prepared for the computer. Prerequisite: (Math 230 or 374) and CS 112 or 306. Jointly listed with Computer Science.
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. Prerequisites: 272, and a programming course, (274 recommended).

510 Multivariate Mathematical Methods 3 hrs.
Topics from multivariate calculus, including Jacobians and optimization techniques, and from linear algebra, including eigenvalues, idempotent matrices and generalized inverses. Emphasis on applications and examples from statistics. Prerequisite: Math 230 and 272.

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.

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 semester. Contact the Departmental Office at least one semester in advance for additional information. Prerequisite: Math 330.

551 Participation in Teaching Secondary Mathematics 2 hrs.
School experiences and related seminar designed to provide the prospective teacher of secondary mathematics with tutorial, small group and a limited amount of total class teaching experience in the junior or senior high school mathematics classroom. Enrollment is restricted to students concurrently enrolled in Math 550. Can be elected on Credit/No Credit basis only. Prerequisite: Approval of instructor.

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. Can be elected on Credit/No Credit basis only. 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.

567 Applied Statistics 4 hrs.
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.

A continuation of Math 567. Students will study statistical methodology using case study and computer techniques. Prerequisite: Math 567 or permission of instructor.

570 Advanced Calculus 3 hrs.
Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisites: Math 272 and 300.

571 Foundations of Analysis 3 hrs.
Fundamental concepts of real analysis, functions of one variable, topology of E^n, Reimann-Stieltjes integral. Prerequisite: Permission of Instructor.

574 Ordinary Differential Equations 3 hrs.
Methods of solution, linear differential equations, ordinary and singular points, series solutions. Bessel and Legendre functions, boundary value problems, systems of equations, non-linear equations. Prerequisites: Math 230 and 274, or 374, or consent of instructor.

575 Introduction to Partial Differential Equations 3 hrs.
Quasi-linear equations of the first order, linear and quasi-linear equations of the second order, separation of variables and Fourier series; solutions of Laplace equations, heat equations and wave equations as examples of elliptic, parabolic and hyperbolic equations. Prerequisite: Math 574 or consent of instructor.

576 Introduction to Complex Analysis 3 hrs.
Complex numbers, elementary functions, differentiation of complex functions, integration, series, residue theory, conformal mappings. Graduate students should not elect both 576 and 676. Prerequisite: Math 272.
Philosophy

Michael Fritchard, Chair
John Dilworth
Joseph Ellin
Arthur Falk
Richard Pulaski
Gregory Sheridan
Dale Westphal

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," described in the General Information section of this catalog. The Philosophy Department encourages these concentrations and members of the staff will be happy to serve as advisers 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 descriptions 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/her 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 the 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/her interests, ability, and intellectual maturity, there are no required courses in philosophy. Instead, students majoring in philosophy must plan their program with a faculty adviser. Every faculty member serves as a student adviser and normally students may select any adviser they prefer. The adviser 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 an adviser as soon as he/she is fairly certain that he/she intends to major in philosophy. Normally this would not occur until after he/she has taken at least one, and possibly two, philosophy courses. Every major must choose and consult with an adviser 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 ADVISER 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 advisers frequently, but consultation should occur at least once every academic year.

A major consists of a minimum of 28 hours in philosophy. Philosophy 100 and 200 cannot both be taken towards a major or minor.

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 chairperson.

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 the student's record indicate that the course when repeated differed substantially in content from the identically numbered course previously completed.

Course Descriptions

(Courses described in italics are approved for General Education.)

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 prevent 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 of propositions. Open to first-year students. Students with a background in college mathematics should take Introduction to Formal Logic.

300 Level Courses

All courses at the 300-level presuppose some preparation either in philosophy or in some other field. Except for Philosophy 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, Peirce, James, Santayana, 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 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 Philosophy and Public Affairs
4 hrs.
A philosophical examination of principles and values underlying contemporary social issues. The course will focus on specific issues such as racial and sexual equality, abortion, privacy, censorship, violence and goals and methods of social change, as well as social movements such as Marxism, the women's movement, and various utopian ideals. Topics to be announced in the time schedule.

320 Introduction to Formal Logic
4 hrs.
The study of general methods of analyzing and validating deductive reasoning. Arguments expressed in everyday language are analyzed and translated into the symbolic notation of logic, and calculations are performed in this notation to check the validity of the arguments. The course may include a brief consideration of the application of logic to computers. Open to qualified first-year students.

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;" teleological and mechanistic explanations of behavior, including "behaviorism," and "functionalism;" machine-models of thinking, "thinking machines," 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. Suggestions 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.

500 Ancient and Medieval Philosophy
4 hrs.
A study of the history of selected philosophical topics up to the sixteenth century. Great thinkers, such as Plato, Aristotle, Augustine and Aquinas will be emphasized.

534 Moral and Philosophical Foundations of Health Care
4 hrs.
In this course philosophical reflection and biological science are combined in a critical examination of the nature and purpose of the health sciences. Topics to be considered include: the aims of the health sciences; the interplay of fact and value in health care; competing images of humankind embedded in health science; patient autonomy, dignity, and medical paternalism. This is a cross-college interdisciplinary course which is team taught with faculty from the General Studies Science Area.

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.
The Department of Physics offers two programs of study leading to a major in physics. One program is the physics major in the Arts and Sciences Curriculum (ASC) 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, and 566, Advanced Lab.

The ASC 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, to use modern laboratory instrumentation. Students completing this option will receive recognition on their transcript. Details of the program are available from the Department Chairperson.

The Physics Department is concerned about the science education of every student and offers several introductory-level courses approved for general education. The descriptions of such approved courses are italicized in the course listings below. A conference with the Department Chairperson or the Undergraduate Adviser will ensure a selection appropriate to the student's interest and experience.

The required courses for physics majors are:

**ASC Physics Major**

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<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>211 Mechanics and Heat</td>
<td>4</td>
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<tr>
<td>211 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>212 Introductory Modern Physics</td>
<td>4</td>
</tr>
<tr>
<td>342 Electronics</td>
<td>5</td>
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<tr>
<td>520 Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>540 Electricity and Magnetism I</td>
<td>3</td>
</tr>
<tr>
<td>560 Modern Physics I</td>
<td>3</td>
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**Secondary Education Physics Major**

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<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
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<tr>
<td>211 Electricity and Light</td>
<td>4</td>
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<tr>
<td>212 Introductory Modern Physics</td>
<td>4</td>
</tr>
<tr>
<td>312 Recent Developments in Physics</td>
<td>3</td>
</tr>
<tr>
<td>342 Electronics</td>
<td>5</td>
</tr>
<tr>
<td>308 Teaching of Physical Science (3)</td>
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</tbody>
</table>

The remaining credit hours necessary to complete the major must be elected from the following list for each program.

**ASC Physics Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>198 Instrumentation in Physics</td>
<td>3</td>
</tr>
<tr>
<td>312 Recent Developments in Physics</td>
<td>3</td>
</tr>
<tr>
<td>330 Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>352 Optics</td>
<td>4</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>2-4</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>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 Astronomy</td>
<td>4</td>
</tr>
</tbody>
</table>

(3 hours credit toward major or minor)

Any physics course numbered above 300 except 308.

Suggested courses of study for a student majoring in physics under either program are:

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 122</td>
<td>4</td>
</tr>
<tr>
<td>Physics 105 or 198</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 102</td>
<td>4</td>
</tr>
</tbody>
</table>

5-17

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 123</td>
<td>4</td>
</tr>
<tr>
<td>Physics 210</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Education</td>
<td>3-4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 120</td>
<td>4</td>
</tr>
</tbody>
</table>

16-17

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 272</td>
<td>4</td>
</tr>
<tr>
<td>Physics 211</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

16

**Arts & Sciences Curriculum Physics Major**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth Semester</td>
<td>Math 274</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 342</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Physics 330</td>
<td>3</td>
</tr>
</tbody>
</table>

15

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fifth Semester</td>
<td>Math 574</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Physics 520</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3-4</td>
</tr>
</tbody>
</table>

17-18

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth Semester</td>
<td>Math 575</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 540</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics Elective</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>6</td>
</tr>
</tbody>
</table>

16

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh Semester</td>
<td>Comp. Sci. 306 or 506</td>
<td>2-3</td>
</tr>
<tr>
<td></td>
<td>Physics 560</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 352</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

16-17

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eighth Semester</td>
<td>Physics 561 or 563</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

15

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth Semester</td>
<td>Math 274</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 342</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Edu. 250</td>
<td>4</td>
</tr>
</tbody>
</table>

16

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fifth Semester</td>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Comp. Sci. 306</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>7</td>
</tr>
</tbody>
</table>

17

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth Semester</td>
<td>Education 301</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 312</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physics 308</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Gen. Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

16

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh Semester</td>
<td>Education 410</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Education 450 Directed Teaching</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education 470</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eighth Semester</td>
<td>Gen. Education</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

16
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 contact the Undergraduate Adviser in the department regarding courses, employment opportunities, and graduate study in physics.

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/her physics courses, and an accumulated honor point ratio of 3.0 or more in his/her other courses.

**Geophysics Major**

The Physics and Geology Departments offer a program of study leading to a major in Geophysics. Students choosing this program of study are also required to take mathematics courses which correspond to a minor in mathematics. Students contemplating a Geophysics major should contact the Geology Department as early as possible for advising.

The required courses for a Geophysics major are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 210</td>
<td>4</td>
</tr>
<tr>
<td>Physics 211</td>
<td>4</td>
</tr>
<tr>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td>Physics 198 or 342</td>
<td>3-5</td>
</tr>
<tr>
<td>One of the following 4:</td>
<td></td>
</tr>
<tr>
<td>Physics 330</td>
<td>3</td>
</tr>
<tr>
<td>Physics 352</td>
<td>4</td>
</tr>
<tr>
<td>Physics 540</td>
<td>3</td>
</tr>
<tr>
<td>Physics 552</td>
<td>3</td>
</tr>
<tr>
<td>Geology 130</td>
<td>4</td>
</tr>
<tr>
<td>Geology 131</td>
<td>4</td>
</tr>
<tr>
<td>Geology 301</td>
<td>3</td>
</tr>
<tr>
<td>Geology 430</td>
<td>3</td>
</tr>
<tr>
<td>Geology 560</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 122</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 123</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 272</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 374</td>
<td>4</td>
</tr>
<tr>
<td>Computer Science 306</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics/Computer Science 506</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, a student is required to take three electives from upper-level geology, physics, and engineering courses to be chosen with the consent of the advisor. A field course in geology (6-8 hrs.) is strongly recommended.

**Physics Minor**

A Physics Minor consists of 20 credit hours including courses 210, 211, 212 (or 120). With 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 either 342 or 352. The remaining hours for minors in physics may be selected from any of the courses listed above under ASC Physics Major. A Physics Minor cannot receive credit for both 342 and 198.

Only 12 hours of credit will be allowed towards a major or minor for Physics 210, 211, 212 or their equivalent.

The Physics Department offers public lectures and colloquia for undergraduate and graduate students. The Physics Lecture is a series of talks, usually by visitors from other institutions, on topics of general interest. Attendance is expected of all physics majors. The colloquia are primarily for graduate students and physics staff members, but are attended 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 curricula require Physics 110, 111, 210 or 211. 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.

**Science and Mathematics Teaching Minor**

The Department of Physics participates in the Science and Mathematics Teaching Minor for students in the Elementary Curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

**Course Descriptions**

(Courses described in italics are approved for General Education.)

**100 Acoustics**

2 hrs.

The main emphasis of this course is high-fidelity sound reproduction. Approximately two-thirds of the time is devoted to topics such as records, tape decks, tuners, pre-amplifiers, amplifiers, and speakers. Evaluation of high-fidelity components is discussed. The first third of the course covers traditional topics in acoustics such as the human ear, hearing defects, sound imaging, noise safety standards, and building acoustics. The course is designed for students with little background in science and no math is required. This course may not be applied toward either a major or minor in physics.

**101 Principles of Photography**

2 hrs.

This course is designed for students who want a basic course that explains the principles of photography, demonstrates amateur techniques, and familiarizes the student with available cameras and camera equipment. Topics covered include the nature of light, optics, color, cameras, film and paper, exposure, the latent image, development, lighting, and composition. Demonstrations in class include developing film, black and white enlarging, toning, printing color negatives and slides, and basic portraiture. No darkroom facilities are available for students registering for the course. This course may not be applied toward 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 radioactive decay. The course consists of three lectures per week. No previous training in physics is required. This course may not be applied toward either a major or minor in physics.

**104 Introductory Astronomy**

3 hrs. Fall, Winter

The aim of the course is to present the development of knowledge about the solar system, the stars, the galaxies, and the origin and 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. The course consists of three lectures per week. Some evening observation sessions will be offered during the semester. Students majoring in the physical sciences or mathematics are advised to take Physics 105.
105 General Astronomy
4 hrs. Fall
The aim of the course is to present the development of knowledge about the solar system, the stars, the galaxies and the origin and 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. Algebra and trigonometry are required to do the laboratory experiments. Three lecture-recitations and two hours of evening observation and laboratory per week are required. While Physics 105 and Physics 104 have common lecture sections, the students in Physics 105 may expect additional assignments. Recommended for majors and minors in mathematics and/or a physical science. Provides 3 hours credit toward a Secondary Education major or minor. A student may not receive credit for both 104 and 105.

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 I
4 hrs. Fall, Winter, and Spring
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 II
4 hrs. Fall, Winter, and 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 and nucleus, radioactivity, relativity, and quantum phenomena. This course may not be applied toward a major in physics. Prerequisite: Physics 106 or a general course in physics or consent of instructor.

130 Social Issues and Physical Science (see General Studies)

198 Instrumentation in Physics
3 hrs. Fall
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. One lecture and four hours of laboratory weekly.

210 Mechanics and Heat
4 hrs. Fall, Winter and Spring
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, engineering students, and future physics teachers, and strongly recommended for majors in other sciences. The course consists of four lectures and a two-hour laboratory per week. Prerequisite: Math 123 concurrently or consent of instructor. Open to qualified first year students. A student may not receive credit for both 110 and 210.

211 Electricity and Light
4 hrs. Fall, Winter and Summer
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 Introductory Modern Physics
4 hrs. Fall, Winter
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 and a three-hour laboratory period per week. Prerequisite: Physics 211 or consent of instructor. Students may not receive credit for both 120 and 212.

214 Mechanics and Heat Problems
1 hr. Fall
This course is intended for those who have had 111 General Physics I, or its equivalent at another school, and who need to show credit in 210 Mechanics and Heat. The emphasis is on problem solving using calculus with the mathematical rigor required in Physics 210. This course plus Physics 110 is equivalent to Physics 210. Prerequisites: 110 General Physics I or equivalent, Math 123 concurrently, or consent of instructor.

215 Electricity and Light Problems
1 hr. Fall
This course is intended for those who have had 111 General Physics II, or its equivalent at another school, and who need to show credit in 211 Electricity and Light. The emphasis is on problem solving using calculus with the mathematical rigor required in Physics 211. This course plus Physics 111 is equivalent to Physics 211. Prerequisites: 111 General Physics II or equivalent, Math 123 concurrently, or consent of instructor.

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. Does not carry credit towards Physics major or minor but is a required course for those in Secondary Education.

312 Recent Developments in Physics
3 hrs. Winter
This course is designed to acquaint the student with the new and exciting developments in selected areas of Physics and Astrophysics. The course content will change from year to year to include the latest advances in High Energy Physics, Nuclear Physics, Astrophysics, Solid State Physics and Optics. The treatment is largely descriptive with

PHYSICS 195
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 consequences are developed and applied to systems of interest in physics and chemistry. Introductory kinetic theory with selected topics is also included. Prerequisite: Physics 211.

Biomedical Instrumentation
3 hrs.
This course is an applied physics course designed for students majoring in biomedical sciences, especially medical technology. The major emphasis is placed on electronics and its applications in the biomedical sciences. Two lectures and a two-hour lab per week. Prerequisite: Physics 106 or equivalent.

Electronics
5 hrs. Winter
This course deals with analysis of the more important transistor and integrated circuits and includes practical experience in the laboratory. There are three lectures and two 2-hour laboratories per week. Prerequisite: Physics 211.

Optics
4 hrs. Fall
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, photography. Three lectures and one 3-hour laboratory per week. Prerequisite: Physics 211.

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.

Studies in Space Science (see Group Science major under Inter-Disciplinary Programs in this college)

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. Prerequisites: Physics 211, Math 274. (The latter may be taken concurrently.)

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.

Electricity and Magnetism II
3 hrs. This 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.

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.

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.

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 is offered in alternate years.

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 is offered in alternate years.

Advanced Laboratory
2-3 hrs. Winter
The objectives of this course are to provide the student with experience in the use of modern laboratory equipment and with a better understanding of several important physical phenomena. The student will perform 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 Physics 560 (560 may be elected concurrently with 566).

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

Jack C. Piano, Chair
Ralph C. Chandler
Samuel I. Clark
Kenneth A. Dahlberg
David G. Houghton
Alan C. Isaak
Robert W. Kaufman
C. I. Eugene Kim
George Klein
Peter Kobrak
Helenan S. Lewis
Richard L. McNanaw
James E. Nadonly
Roy Olton
Claude S. Phillips, Jr.
Peter G. Renstrom
William A. Ritchie
Chester B. Rogers
Ernest E. Rossi
William N. Thompson
Lawrence Ziring

Courses in the Department are designed to prepare a student to: (1) become a functioning citizen; (2) become a teacher of government or civics; (3) become a governmental employee or officer; (4) understand the part government plays in everyday business or other activities; (5) develop sound methods of investigation and reflection as well as the ability to evaluate political information critically; (6) understand the role which individuals and organized groups can play in the political process; and (7) appreciate the relationship of the study of government and public affairs to other social sciences. 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. It is expected that transfer students will take at least half of the minimum required 30 hours in the Department. The following are required courses for majors:

- 200 National Government
- 250 International Relations
- 340, 341, 342, 343, 344, 345, or 346 (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 standard 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. It is expected that transfer students will take at least half of the minimum required 20 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 Chairperson of the Department.

Students planning to use this major to meet teacher certification requirements are required to take SSIC 300-Teaching of Social Studies in the Secondary Schools (For questions see Prof. Wm. Fox, 1402 Sangren Hall or 2005 Friedmann Hall).

A Criminal Justice Concentration is available within the standard political science major for students with particular career and/or advanced degree interests in this field. The concentration allows students completing the program to receive designation of this specialization on their Permanent Record Card. To complete the concentration, a student must:

A. Complete the four required courses of the standard major (see above)

B. Complete the following THREE courses—

- PSCI 320 American Judicial Process
- PSCI 525 The Politics of Criminal Justice
- SOC 362 Criminology

C. Complete TWO of the following Political Science courses—

- PSCI 204 Politics of Race
- PSCI 300 Urban Politics
- PSCI 313 Youth and Politics
- PSCI 330 Introduction to Public Administration
- PSCI 520 Constitutional Law
- PSCI 522 Civil Liberties and Civil Rights
- PSCI 534 Administrative Theory

D. Complete TWO of the following non-Departmental courses—

- PHIL 313 Philosophy of Law
- BUS 340 Legal Environment
- SOC 462 Criminal Justice Process
- SOC 464 Sociology of Law Enforcement
- SOC 564 Juvenile Delinquency
- SOC 566 Advanced Criminology
- SWRK 565 Correctional Process

Students interested in the concentration should see the Criminal Justice Advisor of the Political Science Department, Dr. Peter Renstrom.

A special program is available through the Division of Continuing Education for students with an Associate Degree in Criminal Justice or Law Enforcement from a community college who wish to complete the Bachelor's Degree in this field. See Dr. Renstrom.

The Political Science Major and Minor programs in Public Administration are designed to prepare students for entry-level positions in public and public related agencies by equiping them with a knowledge and understanding of the political, social, economic and legal environment of public agencies, by introducing them to operational and concentral problems of public agencies, and by providing them with an understanding of selected administrative tools.

All students who elect the Public Administration programs are to complete a major card in consultation with the Public Administration Coordinator in the Department of Political Science. The student must consult with the coordinator upon entering the programs.

The Political Science major program in Public Administration (Curriculum PAP) requires 40 semester credit hours divided among:

- (1) a 22 semester hour core of Political Science courses,
- (2) nine credits in one of three competency areas, and
- (3) an additional nine credits in one of several concentration areas or recommended electives.

The Public Administration Core:

- PSCI 200 National Government
- PSCI 202 State and Local Government
- PSCI 330 Introduction to Public Administration
- PSCI 504 Making of Public Policy
- PSCI 526 Administrative Law and Regulation
- PSCI 534 Administrative Theory
- Plus one of the following: PSCI 531, 533, 535, or 591

Competency Areas:

Budget and Finance Statistics, Computer Operations, Data Processing Personnel Administration and Labor Relations

Concentration Areas or Electives: With the approval of the Public Administration Coordinator, 9 credits are taken from an appropriate concentration area depending upon the student’s particular needs and goals.

The Public Administration Coordinator also suggests appropriate
new approaches to problems facing our communities. While special attention is given to local environmental and planning concerns in southwestern Michigan, the focus is also on the evolving and changing context of politics at all levels of government: local, state, national and international. The Institute has also established the Community Documents Resource Center (CDRC), a specialized information repository containing over 1,300 plans, documents, maps and other publications relating to the environment of southwestern Michigan.

For further information, see Dr. Robert W. Kaufman, Director, Institute of Public Affairs, 117 Moore Hall (383-3983).

Course Descriptions
Courses described in italics are approved for General Education.

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.

270 Political Topics
1 hr.
A specifically focused course dealing with a political topic of general student interest. The course will be primarily substantive rather than theoretical to accommodate students with no previous training in political science. The topic will be announced in advance, and the course may be repeated for credit with a different topic. Not approved for major or minor credit.

American Political System
200 National Government
3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions.

202 State and Local Government
4 hrs.
A study of the institutions, the problems and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

204 Politics of Race
3 hrs.
Examines the sources of racial conflict and the dominant and alternative models of American social organization. Special emphasis is placed on the psychology of racial conflict in the American political system.

300 Urban Politics in the United States
3 hrs.
A study of those factors having an impact on the governing of American cities, including social and economic conditions in the cities, the organization of local political systems, and the actions of the state and federal governments. The city will be viewed as a center of economic and social problems that necessitate political activity and as a laboratory for the advancement of general knowledge of politics.

304 Political Perspectives of Black America
3 hrs.
Analyzes the development of black political perspectives and activities in the United States, with particular reference to the contemporary period. Prerequisite: 204.

306 Environmental Politics
3 hrs.
An examination of the major legal, political, and bureaucratic forces influencing the development and implementation of environmental policy. Interactions between levels and units of government are analyzed. Effective modes of citizen participation and action, especially at the local level, are discussed throughout.

310 Political Parties and Interest Groups
4 hrs.
An introduction to the theories and practices of political parties and interest groups in the American political system. The course considers the nature of politics, organization and function of political parties, and the role of interest groups in policy development.

311 Congress and the Presidency
4 hrs.
A study of the duties, functions and processes of the Congress and the presidency. The political roles and interrelationships of these branches of government will be emphasized.

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
313 Youth and Politics
3 hrs.
A concern with the processes through which children and young people 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.

504 Making of Public Policy in the U.S.
3 hrs.
A study of the formation of public policy at the local, state, and national levels with emphasis on the impact of decision processes upon policy outcomes.

506 Problems of American Government
3 or 4 hrs.
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. Topics will vary from semester to semester and students may repeat the course.

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.

525 The Politics of Criminal Justice
3 hrs.
An examination of the processes of criminal justice with particular emphasis on the relationship between the political system and the administration of justice as it relates to those accused of crimes.

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 regulations and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: 200 or a course in Economics.

Public Administration

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.

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.

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.

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 regulations and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: 200 or a course in Economics.

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bureaucracy in the political system and the nature of, and obstacles to, administrative modernization.

Foreign and Comparative Political Systems

340 West European Political Systems 4 hrs.
Consider 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 The People and Politics of Asia 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 India and the Islamic World 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.
Examines 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 or 4 hrs.
Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. Course may be repeated.

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 or 4 hrs.
The course treats American foreign policy as a process and emphasizes both policy formation and policy execution through the vehicle of specific case problems, such as: the nature and role of foreign policy, Congress and foreign policy, the role of the military, the United Nations and American foreign policy, and changing American attitudes on the objectives of foreign policy. Topics will vary and will be announced each semester. Course may be repeated.

Political Theory and Methodology

360 Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes 3 hrs.
A survey of political philosophy as it developed in Classical Greece, Rome, Medieval Europe, the Reformation and the Renaissance. Emphasis placed on comparative analysis of political philosophies as they reflect the richly diverse sociocultural conditions of these periods. No prerequisites.

361 Introduction to the History of Political Theory II: Political Theory from Thomas Hobbes to Karl Marx 3 hrs.
A survey of political philosophy from the seventeenth century to the middle of the nineteenth. Emphasis upon the great individual philosophers of this period and the early development of the major ideological systems of the modern period: conservatism, liberalism and socialism. No prerequisites.

362 Theoretical and Ideological Bases of Contemporary Politics 3 hrs.
A survey of the more significant developments beginning with the confrontation between socialism and liberalism and concluding with an analysis of those theories and ideologies which have emerged in our own times. No prerequisites.

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 explanation; 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 mathemathic 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.

390 Field Work in Political Science 1-12 hrs.
An opportunity for students of Political Science or Public Administration to test theoretical and practical knowledge in an internship situation under the supervision of a faculty sponsor and a public or public-related official. Students wishing to apply must have a minimum of fifteen hours in Political Science and department approval before registering. Approved application required.

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 and approved application required.

572 Computer Utilization 1 hr.
A non-technical introduction to the computer. Emphasis is placed on the actual use of the computer by the student. The use of readily available data banks and library programs will allow the student to focus on the processing and manipulation of data. Computer programming and statistics are not taught, and are not prerequisites.

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. Approved application required.
Psychology

David O. Lyon, Chair
Galen J. Alessi
Eston J. Asher
Dale M. Brethower
Howard E. Farris
Neil D. Kent
Chris Koronakos
Joetla J. Long
R. Wayne Fuqua
Jack L. Michael
Malcolm H. Robertson
Arthur G. Snapper
Roger E. Ulrich

The Psychology Department offers a variety of courses and programs in both experimental and applied analysis of behavior. The programs are designed both for the student who plans to pursue graduate study and for the student who plans to terminate with the baccalaureate degree.

The sequencing of courses within the various programs is extremely important. Consequently, students should consult with Psychology Department advisors as early as possible in their course work.

Psychology credit transferred from community colleges and other accredited institutions will count toward the partial fulfillment of the requirements for a major or minor in Psychology. Transfer students must consult with a Department advisor before enrolling in Psychology courses, so that they might begin their studies at a point within the course sequence which is most appropriate to their previous training.

Psychology students unable to sequence properly the required courses in their schedule option, should obtain permission from a Departmental advisor to enroll concurrently in some of the courses.

Office 274 Wood Hall
Phone: 383-1848 or 383-1830

Psychology Major Options

A student majoring in Psychology has three options: (a) The Experimental Analysis of Behavior Option, (b) The Human Services Option, and (c) The Secondary School Teaching Option. The requirements for each of these options are summarized below.

A note on the numbering system: Courses ending in 0 (e.g. PSY 150) are in the general option, courses ending in 1 (e.g. PSY 151) are in the human services option, courses ending in 2 (e.g. PSY 152) are in the experimental option, courses ending in 3 (e.g. PSY 453) are required in more than one option, courses ending in 4 (e.g. PSY 474) are approved electives, courses ending in 5 or 6 (e.g. PSY 355 or PSY 356) are teaching assistant courses (5 for applied courses, and 6 for experimental courses), and courses ending in 7 (e.g. PSY 157) are advanced teaching apprentice courses. Courses ending 8 (e.g. 158) are laboratories.

The Experimental Analysis of Behavior Option

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<td>PSY 152</td>
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<td>PSY 158</td>
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<td>PSY 252</td>
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<td>PSY 258</td>
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<td>PSY 362</td>
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<td>PSY 453</td>
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<td>PSY 462</td>
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<td>PSY 472</td>
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*Approved Electives: 32

*Approved Electives: PSY 351, PSY 361, PSY 461, and PSY 464.

Acceptable Minors: Biology, Chemistry, Mathematics, Philosophy, or Physics.

Other Requirements: The following courses or proficiencies are required:
(a) BIOL 101, (b) MATH 100, and (c) two of EET 210, MGMT 102, or PHIL 320.

The Human Services Option

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<td>PSY 151</td>
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<td>PSY 161</td>
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<td>PSY 251</td>
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<td>PSY 351</td>
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<td>PSY 453</td>
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<td>PSY 461</td>
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*Approved Electives: 5


PSY 150 is recommended for those majors wishing to get an introduction to both the experimental analysis (science) and human services option, but other approved electives can be taken in its place.

Because of the differences in the emphasis of the human services and the experimental analysis options, students might consider a major in human services with a minor in experimental analysis, or a major in experimental analysis with a minor in human services. The combination of basic science with applied human service skills provides additional options in the selection of a career in psychology.

The Secondary School Teaching Option: Students who plan to obtain a secondary school teaching certificate may elect to complete the required courses in either the Experimental Analysis of Behavior Option or the Human Services Option. They must also complete PSY 505 or PSY 517. These students are urged to complete teachable minors in one of the sciences or mathematics although other teachable minors may be approved by Departmental advisors.

Psychology Minor Options

A student who elects to minor in Psychology has five options: (a) The Experimental Analysis of Behavior Option, (b) The Human Services Option, (c) The General Psychology Option, (d) The Business Option, (e) The Secondary School Teaching Option. The requirements for each of these options are summarized in the tables below.

The Experimental Analysis of Behavior Option

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<th>Course</th>
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<td>PSY 152</td>
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<td>PSY 158</td>
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<td>PSY 462</td>
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<td>PSY 472</td>
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</table>

*Approved Electives: 32

*Approved Electives: PSY 351, PSY 361, PSY 461, and PSY 464.

Acceptable Minors: Biology, Chemistry, Mathematics, Philosophy, or Physics.

Other Requirements: The following courses or proficiencies are required:
(a) BIOL 101, (b) MATH 100, and (c) two of EET 210, MGMT 102, or PHIL 320.

The General Psychology Option

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<tr>
<th>Course</th>
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<td>PSY 150</td>
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<td>PSY 160</td>
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<td>PSY 250</td>
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<td>Approved Electives</td>
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18-19

The Human Services Option

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<th>Course</th>
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<td>PSY 161</td>
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<td>PSY 251</td>
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<td>PSY 351</td>
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<td>PSY 361</td>
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21

The Business Option

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<th>Course</th>
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<td>PSY 150</td>
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<td>PSY 160</td>
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<td>PSY 250</td>
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<td>PSY 344</td>
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<tr>
<td>PSY 540</td>
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15
The Secondary School Teaching Option: Students who plan to obtain a secondary school teaching certificate with Psychology as a teachable minor may elect to complete either the Experimental Analysis of Behavior Minor Option or the Human Services Minor Option. They must also complete either PSY 505 or PSY 517.

Honors Program in Psychology

The Honors Program is designed to promote an academic community of undergraduate students, graduate students and faculty in Psychology. The requirements for the departmental honors program includes:
1. The completion of a major in Psychology.
2. A University grade point average of 3.5, and a department grade point average of 3.8.
3. Completion of PSY 499, Honors Project in Psychology (6 credit hours) and the preparation of an Honors Thesis.
4. The successful defense of the Honors Thesis before a departmental committee.
5. Participation in a professional apprenticeship program (2 credit hours).

Course Descriptions

(Courses described in italics are approved for General Education.)

150 Introduction to Human Behavior
3 hrs. Fall, Winter
An introduction to general psychology from the point of view of humanistic behaviorism: the use of the science of behavior to help people achieve their full potential as human beings. Emphasizes 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 first year students.

151 Introduction to Applied Behavior Analysis
3 hrs. Fall, Winter
An introduction to procedures for solving human problems and improving the human condition. Applications are made to such areas as education, business, marriage, child rearing, and mental health. Enrollment limited to psychology majors and minors.

152 Introduction to the Experimental Analysis of Behavior
3 hrs.
An introduction to the science of behavior and the procedures and research methodology of the experimental analysis of behavior. The basic concepts of operant and classical conditioning procedures are stressed. Lecture only.

155 Teaching Apprenticeship in Introductory Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching introductory psychology. Prerequisite: consent of instructor. May be repeated for credit.

157 Advanced Teaching Apprenticeship in Introductory Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching introductory psychology.

158 Laboratory in Experimental Analysis I
2 hrs.
A companion laboratory to PSY 152, emphasizing the acquisition of basic laboratory skills in the experimental analysis of behavior. Concurrent enrollment in PSY 152 is encouraged.

160 Child Psychology
3 hrs. Fall, Winter
The application of behavior principles in teaching the child at home and at school. Prerequisite: PSY 150 or consent of instructor.

161 The Analysis of Children's Behavior
4 hrs. Fall, Winter
An in-depth analysis of techniques in child rearing and early education. An examination of complex human learning. Lecture and laboratory. Prerequisite: PSY 151 or consent of instructor.

165 Teaching Apprenticeship in Child Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching child psychology. May be repeated for credit.

167 Advanced Teaching Apprenticeship in Child Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching Child Psychology.

194 General Psychology
3 hrs. Fall, Winter
An eclectic approach to a social and behavioral survey of major topics in psychology including learning, motivation, emotions, intelligence, personality, mental illness and social relations. Does not count for a major or minor in psychology. Approved for General Education.

250 Abnormal Psychology
3 hrs.
A study of the manner in which behaviors labeled by society as "abnormal" are acquired and why they persist. Prerequisite: PSY 160 or consent of the instructor.

251 The Analysis of Abnormal Behavior
4 hrs. Fall, Winter
An introduction to behavior modification in institutions and clinics. Particular attention is paid to variables related to the development, maintenance, and modification of abnormal behavior. Lecture and laboratory. Prerequisite: PSY 161, or consent of instructor.

252 Experimental Analysis of Behavior II
3 hrs.
An intermediate level coverage of the basic areas of respondent and operant behavior. Emphasis is placed on experimental methodology and stimulus control of behavior. Lecture only. Prerequisite: PSY 152 or consent of instructor. Concurrent enrollment in ENG 105 or ENG 305 is required.

255 Teaching Apprenticeship in Abnormal Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching abnormal psychology. May be repeated for credit.

258 Laboratory in Experimental Analysis II
2 hrs.
An intermediate laboratory and companion to PSY 252, emphasizing the application of laboratory techniques of operant and classical conditioning to the problems of discrimination and the stimulus control of behavior. Research methodology and writing laboratory reports are stressed. Concurrent enrollment in PSY 252 is encouraged. Prerequisite: PSY 152 and 158 or permission of instructor, and concurrent enrollment in ENG 105 or ENG 305.

344 Psychology in Business and Industry
3 hrs. Fall, Winter
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 and training, social context of human work, and psychological aspects of consumer behavior.

351 Applied Behavior Analysis Laboratory I
5 hrs. Fall, Winter
Experience in the application of behavior analysis procedures in such areas as education, mental retardation, and handicapped persons. An emphasis is placed on the development of professional
372 Physiological Psychology
3 hrs.
An introduction to physiology and its relationship to behavior, including brain behavior interactions, changes in behaviorally induced chemical changes, and behavioral changes induced by chemical alterations. Lecture only.

374 Toward Experimental Living
3 hrs.
A comparison of the research methodologies in complex social structures with an emphasis upon the design of communities.

375 Teaching Apprenticeship in Physiological Psychology
2-4 hrs. Fall
A laboratory course in the instructional methods of teaching physiological psychology. May be repeated for credit.

378 Laboratory in Physiological Psychology
2 hrs.
An intermediate laboratory and companion to PSY 372 emphasizing the acquisition of laboratory techniques, surgical skills and research methodology in physiological psychology and brain behavior interactions. Laboratory procedures, research methodology, data analysis and professional writing are stressed. Concurrent enrollment in PSY 372 is encouraged. Prerequisite: PSY 258, BIOL 101 or consent of instructor.

384 Educational Psychology
5 hrs. Fall, Winter
A lecture and laboratory course in behavioral assessment, classroom contingency management, behavioral objectives, and other topics in educational psychology.

385 Teaching Apprenticeship in Educational Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching educational psychology. May be repeated for credit.

453 Statistical Analysis
3 hrs. Fall, Winter
Interpretation and application of descriptive and inferential statistical techniques necessary in the understanding of data presentations in behavioral research. Major topics include: measures of central tendency and variability, frequency distributions and graphic presentations, the normal curve, probability theory and the binomial, hypothesis testing, the t-test, chi square, and correlation.

455 Teaching Apprenticeship in Statistics
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching elementary statistics. May be repeated for credit.

461 The Methodology of Applied Behavior Analysis
3 hrs. Fall, Winter
An examination of the problems approached and of the methodologies utilized in applications of behavior analysis. Extensive readings in the recent literature of applied behavior analysis to introduce the student to current issues in the field. Prerequisite: PSY 453 or consent of instructor.

462 Theoretical Basis of Behavior Analysis
3 hrs.
An examination of the problems approached and of the methodologies utilized in experimental analysis. Extensive readings of the recent literature of experimental analysis to introduce the student to current issues in the field.

464 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.

465 Teaching Apprenticeship in Applied Behavior Analysis Methodology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching the methodology of applied behavior analysis. May be repeated for credit.

466 Teaching Apprenticeship in Experimental Analysis Methodology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching the methodology of the experimental analysis of behavior. May be repeated for credit.

472 The Analysis of Verbal Behavior
3 hrs.
An analysis of complex human behavior with an emphasis on language and verbal behavior. Prerequisite: PSY 462 or consent of instructor.

475 Teaching Apprenticeship in Verbal Behavior
2-4 hrs.
A laboratory course in the instructional methods of teaching verbal behavior. May be repeated for credit.
Seminars and Independent Study

397 Seminar and Practicum in Psychology
1-5 hrs. Fall, Winter
Survey and discussion of selected topics in contemporary psychology. Associated practicum activities may include teaching and/or research apprenticeships as announced in the schedule of classes. Permission of instructor. May be repeated for credit up to 12 hours. Courses may include:
- Behavior Contracting Seminar
- Seminar in Self Control
- Seminar in Behavior Modification
- Teaching Apprentice in SPADA
- Advanced Teaching Apprentice in SOEP
Prerequisite: Permission of Instructor

398 Independent Study
1-5 hrs. Fall, Winter
This course provides the undergraduate student with the opportunity for independent reading and/or research under the direction of a Department staff member. Written permission must be obtained on forms available in the department office. May be repeated for credit, although the total number of hours in a degree program is restricted to 12 hours.

499 Honors Projects in Psychology
1-5 hrs.
Independent study and research projects completed under the supervision of a faculty member and coordinated with the Department Honors Program. Prerequisite: Permission of Instructor.

Open to Advanced Undergraduates and Graduate Students

505 Teaching Psychology in the Secondary School
3 hrs.
Class discussions, laboratory experiences and field work concerned with the teaching of Psychology in high school. This is a required methods course for students who plan to teach Psychology in the secondary school. Prerequisite: PSY 361.

510 Advanced General Psychology
3 hrs. Fall, Winter
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.

512 Behavioral Pharmacology and Toxicology
3 hrs. Winter
Topics range from the use of drugs to clarify behavioral principles to the use of behavioral preparations to discern pharmacological effects. Readings include summaries of pharmacological evidences and selected experimental reports concerning both the behavioral techniques and pharmacological problems in basic research. Prerequisite: 9 hours of Psychology, permission of Instructor or enrollment in SPADA program.

513 Research in Animal Behavior I
3 hrs.
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.

516 Conditioning and Learning
3 hrs.
A study of the various approaches to response measurement, experimental methodology and theoretical interpretations of data in the area of conditioning and learning. Lecture and laboratory.

517 Psychology of Learning for Teachers
3 hrs. Fall, Winter
Designed to teach the principles of behavior and the application of these principles to teaching. Topic areas covered include the use of behavior principles in the development of objectives, selection and preparation of instructional material, classroom management and incentive motivation, behavior change, performance contracting and program evaluation. Practical application is stressed.

518 Research in Stimulus Control
3 hrs.
An examination of the literature surveying sensory and perceptual processes with an emphasis upon the research methodology in and theoretical interpretation of data from studies of stimulus control and discrimination in infra-human organisms. Prerequisite: 9 hours of Psychology or permission of instructor.

519 Corrective and Remedial Teaching
3 hrs.
An introduction to and survey of various content skills, curriculum approaches and special teaching techniques used in elementary school reading and mathematics instruction. Designed primarily for prospective school psychologists, focus is on academic skill content, sequencing of skill hierarchies, devising short term educational plans to teach specific skills, and evaluating effectiveness of such plans. Graduate standing in psychology, education, or permission of instructor. Prerequisite: PSY 517 previous or concurrent with this course.

520 Advanced Child Psychology
3 hrs.
An intensive examination of the research literature in developmental psychology with concentration upon various theoretical interpretations of child behavior.

521 Advanced Child Psychology II
3 hrs.
A continuation of PSY 520—the study of children's behavior at an advanced level.

524 Human Sexuality
3 hrs. Fall
Discussion of those human behaviors concerned with sex, sexuality and reproduction. Consideration is given to the anatomical and psychological properties of sexual functioning in male and female. Emphasis is placed upon the sexual response cycle as described by Masters and Johnson. The course is not intended to provide therapy training.

530 Statistics for Education
3 hrs. Fall, Winter
An introduction to basic statistical procedures and concepts. Primarily for students in education. Topics include: measures of central tendency and variability, frequency distributions and graphic presentations, the normal curve, probability theory and the binomial, hypothesis testing, the t-test, chi square, and correlation.

535 Instrumentation in Psychology
3 hrs. Fall
A survey of problems of response measurement in experimentation. Lecture and laboratory.

540 Industrial Psychology
3 hrs. Winter
Application of psychological principles to industry and other organizations. An examination of employee selection, job satisfaction, training, evaluation of performance, supervision, and working conditions.

542 Human Factors Engineering
3 hrs.
A survey of research on the adaptation of equipment, products, and environment to human capacities. Prerequisite: Permission of instructor. Cross Listed with IEN 542.

570 A Behavior Analysis Approach to the Area of Retardation
3 hrs. Fall
Topics will include: historical background, assessment, training, and legal implications of treatment.
Religion

E. Thomas Lawson, Chair
Guntram Bischoff
H. Byron Earhart
David Ede
Nancy Falk
Otto Grundler
Maynard Kaufman
Cornelius Loew
Rudolf Sieber

Religion courses are designed to give students (1) an understanding of the nature and role of religion in human societies, both past and present, both non-Western and Western, (2) a grasp of the various methods used by scholars to describe and explain religion, to assess achievements of these methods, and to develop new methods for increasing their knowledge of religious thought and practice, (3) an opportunity for raising questions about the present and future significance of religious thought and practice.

Many courses in the department are approved for General Education and students can extend their general education to include knowledge of religious thought and practice and to relate their knowledge of religion to their knowledge derived from other disciplines in the university.

The departmental major and minors are a good preparation for graduate study in the field of Historical Studies, and for a vocation associated with 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 15 hours and includes Rel. 200 (Introduction to Religion). One course is recommended 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, totaling 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 Methodological Studies;
5. One course in any religion other than those specified above under (2) and (3), within the category of Historical Studies, or one course in 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

(Courses described in italics are approved for General Education.)

100 Religions of the World

An approach to the religions of the world which surveys themes in various religious traditions (such as Judaism, Christianity, Islam, Hinduism, Buddhism and primitive religions). The course studies how these religious traditions conceive of gods and world order, founders and saviors, religious experience and practice, and religious communities. The course will pay attention to the contemporary status and significance of these themes. Does not apply toward major or minor in Religion.

200 Introduction to Religion

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 acknowledgement 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 humanity discovered about it and the 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.

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 herders. Finally an attempt is made to see what changes Westernization has made in the African 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 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.

400 Religious Texts
2-4 hrs.
An introduction to the canonical and other religious texts of major Western and Eastern religions, such as the Qur'an, the Hebrew Bible, the New Testament, and selected religious texts of India, China and Japan. The specific subject matter of the course will vary from semester to semester and will be announced in the schedule of classes. Students may repeat the course for credit provided the subject matter is different. The major purpose of the course will be to elucidate the religious nature and functions of these texts, and to introduce students to some of the methods of interpretation and exegesis.

500 Historical 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 will be studied: Zen Buddhism; Buddhism; Taoism; Shinto; New Religions of Japan; Religion in Japanese Literature; Islam in the Modern World; Christian Theology to 1500; Renaissance and Reformation Theology; Mystical Dimensions of Islam.
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 Androgynne, 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.

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 will be studied: Millennium, Utopia, and Revolution; Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition.

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, Middle 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 areligious 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 24 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 will be studied: Scientific Issues in the Study of Religion; the Critical Theory; Myth and Symbol in Religion and Literature.

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 a Secondary Education Curriculum which includes the Academic Study of Religions as a minor. (This course is not applicable to the regular religion major/minor program.)
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. Radicals 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 different religious options or "quests" and variations of the Church's religious tradition. The specific context of religion to be studied in this course is that of industrial society. For religion to be understood in more than historical terms it is important that attention be paid to this kind of context. As a consequence of such a focus, questions are also raised about the methods developed to specify and delineate such contexts and the role that religion plays in them. This provides an occasion for raising questions about the assumptions underlying such methods and about their relationship to the systematic study of religion.

530 Constructive 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 may include: Religious Images of Man; Humanism; the Structure of Religion; The Future of Religion; Religion, Language and Structuralism.

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 Chairperson 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 Chairperson of the Department must be secured in advance of registration.

Sociology
David Chaplin, Chair
Donald H. Bourney
Lloyd Braithwaite
Milton J. Brawer
Tilman Cothran
Edsel L. Erickson
Paul C. Friday
Chester L. Hunt
Ronald C. Kramer
David M. Lewis
Richard R. MacDonald
Gerald Markle
James C. Petersen
Ellen P. Robin
Stanley S. Robin
Martin H. Ross
Herbert L. Smith
Subhash R. Sonnad
Thomas L. Van Valey
Morton O. Wagenfeld
Robert Watt
Lewis Walker
Paul Wienir

Courses are designed to give students a better understanding of the significant factors and processes of modern life; to provide study useful for particular applied fields, such as social work, criminal justice, city, state, and federal governmental service, and social research; to meet the needs of students preparing to teach in the social science field; and to prepare students for graduate work in sociology or criminal justice.

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 research course instruction. Research conducted through the Center has dealt with subjects such as: criminal justice, marital roles, race relations, voting behavior, alcoholism, mental health, demography, and education.

Honors Program
Students in sociology and criminal justice may participate in the Department Honors Program in three ways:
1. Qualifying for a bachelor's degree with Honors in Sociology or Criminal Justice. The purpose of this program is to stimulate and reward outstanding student work in sociology or criminal justice. Requirements include: sociology or criminal justice major, overall average of 3.0 or better with an average of at least 3.25 in sociology, satisfactory completion of Soc. 490 (Honors Seminar), and satisfactory completion of an Honors Paper (including an oral exam on the paper). University recognition of graduation with
honors appears on the diploma and transcript.

2. Membership in Alpha Kappa Delta, the national sociology honorary society. AKD is open to all students who have completed at least ten hours in sociology with a grade-point average of 3.0 or better, and whose overall average is at least 3.0.

3. Leonard C. Kercher Fund awards are made each year for outstanding student achievement. Dr. Kercher was head of the department from 1940 to 1972. Further information and application forms may be obtained at the Sociology Undergraduate Office, 2420 Sangren Hall.

Sociology Major
A major in sociology consists of a minimum of 30 hours in sociology courses. Soc. 200, 300, and 382 are required. No more than one course at the 100 level may be applied to a major. Students may choose the concentration described below, or they may make their own selections of courses to complete the 30-hour requirement.

Transfer students should see the department advisor, since any transfer credit in sociology without a stated equivalent must be evaluated by the 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 or minor.

Sociology majors may spend one or two semesters at the Merrill-Palmer Institute in Detroit with credit toward graduation. Students must make individual application to Merrill-Palmer, but if sociology credit is desired, the department advisor must be consulted in advance.

Urban Studies
Concentration: provides valuable training for students desiring research or staff positions in municipal government or various urban programs. This concentration is most valuable, however, as pre-professional training for those interested in such fields as planning, community development, architecture, or law.

Required courses: Soc. 200, 300, 382 Urban Core; Soc. 353, 354, or GEOG 361, Soc. 555.

To complete this 39-hour major, additional sociology courses and cognate courses must be selected in consultation with the department advisor. A major slip is required for this major.

Sociology/Anthropology Major: A combined major in sociology and anthropology consists of a minimum of 30 hours, with at least 12 hours in each department. Soc. 200, 300, 382, and Anth. 210, 240, and 250 are required. Additional courses in either department may be selected by the student.

Sociology Minor
A minor in sociology consists of 15 hours for students in curricula other than education. Students qualifying for teacher certification are required to complete a minimum of 20 hours. Soc. 200 and 210 are required in either case. The balance of the hours required may be selected by the student. No more than one 100-level course may be included in the minor.

Criminal Justice Curriculum
Criminal Justice Major
This program is designed to provide perspective on the entire criminal justice system: crime as a social problem and society's reactions to it, the organization and operation of the criminal justice system, the correctional process, as well as causes of crime and delinquency and other current issues. While the goal of the program is to provide knowledge and skills necessary for students interested in careers in criminal justice, it will support a number of related areas. In addition, students will be well prepared to pursue professional or graduate work in law, criminology, or other areas.

Major (CRJ) Curriculum: 36 hours. Requirements include: (1) Curriculum prerequisites, 9-10 hours; (2) Criminal Justice Core, 18 hours; (3) Special area courses (law enforcement, courts, corrections), 6-8 hours; (4) Related and elective courses, 10-12 hours.

Major slips are required for this major; students should see the advisor at the beginning of the program in order to be sure the necessary prerequisites are included. Transfer students interested in this major are also urged to see the advisor as soon as possible after admission.

A special program is available through the Division of Continuing Education for students with an associate's degree in criminal justice or law enforcement from a community college who wish to complete the bachelor's degree in this field. For further information, see the department advisor.

Criminal justice majors may not minor in sociology.

Criminal Justice Minor
A 24-hour criminal justice minor is available, patterned after the major. Information on courses required may be secured from the department advisor. Minor slips are required. This minor may not be combined with a sociology major.

Undergraduate Assistantships
Students interested in becoming more involved in the department's activities and projects may wish to apply for undergraduate assistantships which are available fall and winter semesters. Department assistants receive a moderate stipend, and are assigned to work for a faculty member or department project. For further information and application forms, see the department advisor.

Advising
Department Advisor: Helen Nelson, 2407 Sangren Hall, 383-1733
Students are encouraged to consult the department advisor for evaluation of transfer credit in sociology or criminal justice, major slips for the concentration in the sociology major, major/minor slips for the criminal justice programs, or any other questions involving majors or minors.

Information on undergraduate programs at Western as well as other schools is also available in the advisor's office.

Course Descriptions
(Courses described in italics are approved for General Education.)

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.

122 Death: Dying and Bereavement
3 hrs.
Social structures, attitudes, beliefs and values about death, dying, and bereavement in contemporary American society as well as in other societies and other time periods will be considered. Medical, legal, religious, and psychological issues in relation to death, dying, and
bereavement will be discussed. (Not recommended for persons recently bereaved.)

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.

501 Social Systems Theory and Analysis
3 hrs.
An investigation and critique of social systems theory, general systems analysis, and specific systems analysis techniques which have been used in social organizations. Each student will be required to conduct a systems analysis during the course. Prerequisite: Soc. 200 or 600* or consent of instructor.

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: intergroup 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.

314 Ethnic Relations
3 hrs.
A study of race and ethnic relations, stressing a global perspective of social relations among varied peoples at different levels of development, and in different parts of the world.

510 Studies in Social Problems: Variable Topics
3 hrs.
An examination of a selected area of concern in social problems not intensively covered in other courses. The focus of the course will be substantive, as well as theoretical and methodological. Topics may include such areas as poverty, mental illness, narcotic addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: Soc. 200 or 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: Soc. 200 or 600, or consent of instructor.

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.

520 Studies in Social Psychology: Variable Topics
3 hrs.
Further analysis of selected topics in social psychology not intensively covered in other courses. Specific topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: Soc. 320.

521 Childhood Socialization
3 hrs.
An investigation of the development of individual knowledge and abilities during childhood as acquired through social interaction and biological maturation. Social theories of learning and child development will be covered, with emphasis on such topics as biological maturation and social learning, language acquisition, the development of self, and the acquisition and systematic organization of beliefs, attitudes, norms and values. Prerequisite: Soc. 320 or consent of instructor.

522 Adult Socialization
3 hrs.
An examination of the processes of social learning and personality development from adolescence through middle age. The course will focus on the selection and performance of adult roles, continuities and discontinuities in role learning across the life span and adaptation to social events as these affect the development and change of adult personalities. Prerequisite: Soc. 320 or 521, or consent of instructor.

523 Contemporary Social Movements
3 hrs.
A study of the origins, growth, and effects in contemporary society of social movements. Selected social movements including communism, fascism, the radical left, the radical right, women’s liberation, etc., will be analyzed. Prerequisite: Soc. 200 or 600, or equivalent.

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.

Comparative Sociology

335 Modern Latin American Societies
3 hrs.
An introduction to contemporary Latin American societies focusing on their developmental problems and processes. Topics may include rural-urban migration, land reform, and governmental development policies in the urban industrial sector.

336 Modern Japanese Society
3 hrs.
An introduction to Japanese society, focusing upon current developments in the process of industrialization and urbanization. Examines the impact of these processes in Japanese population, family life, village organization, urban community, class structure, and personality.

337 Modern Arab Societies
3 hrs.
An introduction to the Arab societies of the Middle East and North Africa, focusing on current tribalism and
ethnic group tensions. The course examines the influences of the three major western religions and the religious, social, political, and economic tensions that have ensued in intergroup relations.

430 Sociology of Development 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. Prerequisite: Soc. 200 or consent of instructor.

531 Studies in Social Change: Designated Areas 3 hrs.
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. 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: Consent of instructor.

533 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, or equivalent.

534 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 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 equivalent, or consent of instructor.

Community and Class

250 Rural Communities 3 hrs.
Rural American society is a complex social situation involving the classic social institutions and problems, including social class, religion, poverty, and diverse racial and ethnic groups. This course attempts to examine these institutions and problems through current literature and by means of a series of field trips to visit examples of these social structures in southwestern Michigan. Contrasting rural communities in other countries may also be considered.

351 Sociology of Childhood 3 hrs.
An examination of the social nature of childhood, from birth to adolescence, and the role of childhood in the social and cultural life of various societies. Analysis will be made of the culture of childhood, both as organized for children by adults and as generated and maintained by children.

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.

353 The City and Society 3 hrs.
An examination of the city and the process of urbanization from earliest times to the present. Focusing upon the United States, emphasis will be placed on the characteristics, problems, and consequences of urban growth and development.

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.

356 Social Inequality 3 hrs.
This course covers the several forms of social inequality that exist in American society today: racial, sexual, age, and religious. The major theoretical contributions to the study of social inequality will be placed in historical perspective. Also of interest are recent educational, occupational, and income differences, treatment by some of the major institutions of society, such as the criminal justice system or the medical and health-care systems.

451 Sociology of Sports 3 hrs.
An analysis of the place of sports in the 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.

454 Community Studies 3 hrs.
An examination of the American community, including the small town as well as the urban or suburban neighborhood. Topics include: decline of the traditional American community, urban and ethnic neighborhoods, and differing sociological approaches used in the analysis of community structure. All students are required to participate in field work aimed at the analysis of a community in the Kalamazoo area.

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, or consent of instructor.

553 Urban Sociology 3 hrs.
An introduction to sociological theory and research on the city including ecological theory, social psychology, institutional analysis, structure and processes like metropolitanization, suburbanization, and planning. Cities in developed and developing societies will be compared and contrasted and specific attention will be given the industrial biases of current urban theories.
554 Demographic Methods
3 hrs.
This course will investigate the sources and validity of census, vital statistics, and other population data. Students will evaluate measures of population composition relating to racial, marital, educational, and economic characteristics; assess various techniques for the analysis of mortality (life tables), reproduction and natality, migration and mobility, with different sources of data; learn techniques of estimating and projecting future population trends.

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
264 Introduction to Criminal Justice
3 hrs.
An overview of the criminal justice system as it currently operates in its three major components: police, courts, corrections. A broad-based interdisciplinary perspective is employed to introduce the beginning student to the process of criminal justice in modern America. Particular attention is placed on the discretionary authority of officials who are engaged in the decision-making roles required to process suspects from arrest to release.

362 Criminology
3 hrs.
A study of the phenomenon of crime as a social problem. Particularly stressed is an analysis of the relationship between law and society and social structure and crime. Discussion centers around conventional white collar and political crimes. The offender populations are identified and analyzed. Prerequisite: Soc. 200 or 210.

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 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 scheduled as SWRK 565)
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: Consent of instructor.

566 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 functions of voluntary associations will be examined. Additional topics may include: America as a nation of "joiners," participant culture and personality, and the contribution of voluntary associations to social movements and social change. Prerequisite: Soc. 200.

570 Studies in Social Institutions: Variable Topics 1-4 hrs.
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 600, or consent of instructor.

572 Power and Society 3 hrs.
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, or equivalent.

573 Sociology of Political Behavior 3 hrs.
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: Soc. 200 or 600, or equivalent.

574 Sociology of Religious Institutions 3 hrs.
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, or equivalent.

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, or equivalent.

576 Sociology of School Organization 3 hrs.
Advanced studies of education as an institution, emphasizing interaction with other social institutions and analysis of internal organization. Attention is focused on the school and social change, schooling and the control of society, and schooling and stratification, as well as impediments to change, power and authority structures and the schools, the teaching profession, and student social structures. Prerequisite: 6 hours of sociology or consent of instructor.

577 Sociology of Learning 3 hrs.
Advanced studies of education focusing on the impact of culture and school organization on learning in the educational setting. Topics include cultural forces such as ethnicity, religion, socio-economic status and bureaucratic structure, classroom organization, team teaching, and the open classroom, segregation, and school type. Prerequisite: 6 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, or equivalent.

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 Social Statistics 3 hrs.
An introduction to statistical reasoning and application with particular reference to social science. The course will view statistics as an aspect of scientific inquiry and consider problems of analysis and interpretation of typical social science data. Not for sociology majors.

581 Logic and Analysis of Social Research 5 hrs.
This course is designed to integrate the philosophy and logic of science with that of research analysis and statistics necessary for graduate study. The course will include an introduction to the philosophy of science; techniques of theory construction; logic of measurement; descriptive, inferential, and multivariate statistics; and the logic of analysis. Prerequisite: Soc. 382 or equivalent.

583 Research Design and Data Collection 4 hrs.
This course is designed to familiarize students with the development of data-gathering techniques and research proposals. The course will include problem specification, research designs, measurement and scaling, and proposal development. Prerequisite: Soc. 581.

Family

390 Marriage and Family Relations 3 hrs.
A sociological analysis of the structural and interactional aspects of marriage and family groups in contemporary society, with 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.

490 Social Context of Sexual Behavior 3 hrs.
This course focuses on a systematic analysis of contemporary sexual codes and behavior in American society. Present-day beliefs and practices are viewed in historical context (especially from 1900 to the present) to gain insight into what is today, with the purpose of projecting what may be in the future. This
sociological, historical, social-psychological analysis examines current patterns of beliefs and behavior in terms of their immediate and potential effects and consequences both for individuals and couples, and also for society. Prerequisite: Soc. 200.

590 The Family as a Social Institution
3 hrs.
The family viewed in historical and cross-cultural perspectives. A structural-functional analysis of the family institution and the relationship between the social structure of society and the family system. Emphasis is placed on change and comparative analysis. Prerequisite: Soc. 200 or 600, or equivalent.

592 Family Life Education and Counseling
2 hrs.
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.

593 Marriage and Family in Middle and Later Years
3 hrs.
A systematic analysis of the marital and family system and interpersonal relationships of husbands and wives, and parents and children during middle age and the later years of married life. Prerequisite: Soc 390 or equivalent, or consent of instructor.

Independent and Special Studies

195 Contemporary Social Issues: Variable Topics
1-3 hrs.
This course is designed to explore topics of current sociological and general student interest in a substantive fashion at an introductory level. May be repeated for credit with a different topic.

495 Special Topics in Sociology: Variable Topics
1-3 hrs.
A specialized course dealing, each time it is scheduled, with some particular aspect of sociology or criminal justice not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: Soc. 200.

498 Field Experience
2-8 hrs.
Structured as part of a specific departmental program and identified as such in the printed schedule when offered. Opportunity is provided for supervised experiences in local organizations or activities in such areas as criminal justice, gerontology, and urban studies. Prerequisite: Written permission of instructor/supervisor.

499 Honors Seminar
2-6 hrs.
Investigation of selected topics in seminar sessions by advanced undergraduates. May be repeated for credit with a different topic.

595 The Sociological Enterprise: Variable Topics
2-6 hrs.
A survey of various topics or a concentration on one special topic of interest to advanced majors and graduate students dealing with the discipline of sociology and career opportunities in the field. Examples of such topics are: Women in Sociology, Ethics of Social Research, Development of Sociology in Third World Countries, etc. The course is not repeatable. Prerequisite: Soc 200 or 600 and permission of instructor.

598 Directed Individual Study
2-6 hrs.
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 chairperson.
The function of the professional 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 solid understanding of his/her 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 professionals from various disciplines. In addition, business firm visitations, as well as business internships, give ample opportunity for the student to relate to his/her 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 Science in Business 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 Research and Service Institute

The Business Research and Service Institute (BRSI) provides a communicative link between the College of Business and a "community" comprised of business, government and non-profit agencies. Utilizing the expertise of highly-qualified faculty in six major disciplines (Accounting, Administrative Services, Finance, Law, Management and Marketing), the Institute designs and conducts management development programs, workshops, and specialized seminars. In addition, BRSI assists the "community" in improving administrative competency through research and diagnostic activities.

Business Administration Curriculum (BBA Degree)

I. Pre-Business Curriculum

Any entering or transfer student planning to pursue Business Administration as a curriculum will be admitted to a pre-business curriculum and will work with a business advisor in the development of a planned program.

The pre-business curriculum requirements are:

A. Completion of a minimum of 60 semester hours.
B. An acceptable overall grade point average.
C. Minimum grade of "C" in the following pre-business courses or approved alternatives:
I. Upper Class Requirements:
1. Management 300 3 hours
2. Finance 320 3 hours
3. Law 340 3 hours
4. Marketing 370 3 hours
5. Management 499 3 hours
7. Major 21 hours
8. Non-Western World 300+ 3 hours
9. Electives 18 hours

B. Average grade of “C” in all College of Business courses is required.

C. Transfer work towards upper-division courses must meet the following criteria:
1. Approval by the Office of Academic Advising and the department.
2. Minimum grade of “C”
3. Work completed at WMU with less than a “C” may not be completed by transfer work from another institution.

II. Professional BBA Curriculum
In order to graduate from the professional BBA curriculum, a student must have a minimum of 122 semester hours. In addition to the University requirements of general education, physical education and the first two years of study as outlined in the pre-business curriculum, students must complete the following:

A. Upper Class Requirements:
1. Management 300 3 hours
2. Finance 320 3 hours
3. Law 340 3 hours
4. Marketing 370 3 hours
5. Management 499 3 hours
7. Major 21 hours
8. Non-Western World 300+ 3 hours
9. Electives 18 hours

B. Average grade of “C” in all College of Business courses is required.

C. Transfer work towards upper-division courses must meet the following criteria:
1. Approval by the Office of Academic Advising and the department.
2. Minimum grade of “C”
3. Work completed at WMU with less than a “C” may not be completed by transfer work from another institution.

Advising
For questions regarding BBA curriculum requirements and transfer credit equivalencies, contact Dr. John McBeth or Mrs. Michele Moe in the College of Business Advising Office, North Hall.

Special Notes
1. A further requirement is that a minimum of 40% of the coursework must be taken from areas other than business and upper division economics.
2. 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. CLEP examinations may not be used to fulfill the final 30-hour requirement.

3. Students at two-year community colleges who plan to continue at WMU are urged to take courses equivalent to the ones listed in the pre-business curriculum, as this will facilitate entry into the upper level program of the college. Community college students should also be aware of course work acceptable by transfer on the basis of the university’s MACRAO agreement and acceptable validation procedures.

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.

Areas of Concentration
In Business Administration
To graduate with any major from the College of Business, it is necessary to be enrolled in the Bachelor of Business Administration curriculum.

Accountancy
Major Requirements:
Principles of Accounting 210, 211 6
Financial Accounting 310, 311, 411 9
Managerial Accounting—Concepts and Practice 322 3
Income Tax Accounting 324 3
Auditing 516 3
Electives in Accountancy 6
Contract Applications in Commercial Transactions 342 3

For students planning to take the examination for Certified Public Accountant, it is suggested that an additional law course also be selected.

Minor Requirements: Students wishing to minor in Accountancy are required to take a minimum of 21 hours. Fifteen of these hours must be in accountancy: Acty 210, 211, and 310 are required plus six additional hours selected with the students' professional objectives in mind. The remaining six hours must be selected from the following courses: General Business 320, General Business 340, Management 102, Management 300, and Marketing 370.
Accountancy Electives Available for Majors and Minors
Topics in Accounting 420 3
Accounting Information Systems 513 3
Institutional Accounting 514 3
Theory and Problems 518 3
Studies in International Accounting 521 3
Cost Accounting—Theory and Practice 522 3
Studies in Tax Accounting 524 3

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 administrative services area including business communication, office systems, data processing, and consumer relations; (2) the preparation of business teachers; and (3) the secretarial administration area including a co-op program.

To assure appropriate program planning and sequencing, students should consult with Department advisers as early as possible.

1. **Administrative Services**
   Advisor: Contact Departmental Office
   Four options are available in the Administrative Services area of concentration.

   **Business Communication**
   Business Communication 242 3
   Organizational Communication 342 3
   Advanced Business Writing 442 3
   Report Writing 542 3
   Topics in Business Communication 554 3
   Communication Systems in Business 3
   Electives:
   - (Office Organization 386, Internship in Business Communication 410)
   - Topics in Business Communication 554 3
   - Business Publicity and Public Relations, Persuasive Writing for Business 9

   **Electronic Data Processing**
   Business Applications of Computer Concepts & Languages 160 3
   Business Program Flowcharting 162 3
   Business EDP Systems and Procedures I 281 3
   Business EDP Systems and Procedures II 360 3
   COBOL Programming 261 3
   Advanced COBOL Programming 561 3
   Electives:
   - (FORTRAN Programming 262, Computer Languages 263, Internship in EDP 410, Topics in EDP 555, Independent Study in EDP 596) 6

   **Office Systems**
   COBOL Programming 261 3
   Business EDP Systems and Procedures I 260 3
   Records Management 288 3
   Office Organization 386 3
   Office Systems and Procedures 560 3
   Electives:
   - (Organizational Communication 342, Internship in Office Systems 410, Office Management 556, Business EDP Systems and Procedures II 360, Topics in Office Systems 557, Independent Study in Office Systems 596) 9

   **Consumer Relations**
   Consumer Principles and Practices 292 3
   Consumer Behavior, MKTG 477 3
   Marketing Research, MKTG 573 3
   Topics in Consumer Relations 557 3
   Independent Study in Consumer Relations 596 3
   Internship in Consumer Relations 410 3
   Electives:
   - (Law of Sales and Personal Property 541, Advertising 374, Real Estate Fundamentals 330, Damage and Tort Liability 442, Risk and Insurance 321) 9

   **Administrative Services Minor**
   An Administrative Services minor, consisting of 21 hours, may be chosen from any of the areas listed above.

2. **Business Education**
   Advisor: Contact Department Office
   Students who complete a prescribed BBA/business education major earn both a teaching major (30 hours), and a teaching minor (20 hours) in business and receive a Michigan Secondary Provisional Certificate for teaching business subjects in grades K through 12.

   In addition to satisfying University and College of Business requirements, students complete 21 semester hours of professional education courses. The majors and minors must include BEAS 346 and 347 for 4 to 6 hours, plus the required courses and business electives to total the 30 hours for the major and the 21 hours for the minor.

   **Accounting & Related Business Subjects**
   Intermediate Typewriting 183 3
   Integrated Office Skills 281 3
   Records Management 288 3
   Financial Accounting I, ACTY 310 3
   Income Tax Accounting, ACTY 324 3

   **Clerical & Related Business Subjects**
   Production Typewriting 185 3
   Integrated Office Skills 281 3
   Records Management 288 3
   Office Organization 386 3

   **Data Processing & Related Business Subjects**
   Intermediate Typewriting 183 3
   Business EDP Systems & Procedures I 260 3
   COBOL Programming 261 3
   Office Organization 386 3
   Advanced COBOL Programming 561 3

   **General Business & Related Business Subjects**
   Organizational Communication 342 3
   Office Organization 386 3
   Office Systems and Procedures 560 3

   **Secretarial & Related Business Subjects**
   Transcription 184 4
   Production Typewriting 185 3
   Integrated Office Skills 281 3
   Secretarial Administration 287 4
   Records Management 288 3
   Office Organization 386 3

3. **Secretarial Administration**
   Advisor: Contact Department Office
   The Secretarial Administration major 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**
   (first and second years)
   This program concentrates on the
development of skills through cooperative work experience combined with classroom experience.

Industrial and Business World 140 . 3
Transcription 184 . 4
Production Typewriting 185 . 3
Integrated Office Skills 281 . 3
Coordinated Business Experience 282-283 . 3-6
Secretarial Administration 287 . 3
Records Management 288 . 3

B. Administrative Supervision Phase (third and fourth years)

Electives: (Organizational Communication 342, Office Organization 386, Internship 410, Report Writing 542, Office Management 556, Office Systems and Procedures 560). 6-9

This phase of the major requires the completion of the Business Administration Curriculum requirements.

General Business


1. General Business Majors

Advisors: Morrison, Batch, Bliss, Gossman, McCarty and Stevenson

Option 1: General Business Major

In addition to the upper class requirements of Management 300, Finance 320, Law 340, Marketing 370, and Management 499 a student may elect a logical sequence of seven advanced business courses at or above the 300* level. At least three of the seven courses must be from the General Business Department and no more than three may be from any one area of study. A student majoring in General Business may not minor in General Business Option 1.

Option 2: Finance Major

Advisors: Albert, Burdick, Edwards, Howard, Hudson, Jones, Issa, and Weber

In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business Degree, for which Business Finance 320 is required, all Finance majors must complete twenty-one hours of Finance course study. Six of the twenty-one hours shall consist of Introduction to Financial Markets 325 and Investment Analysis 326. The remaining fifteen hours shall be selected in consultation with an advisor from the Finance faculty.

Proper sequencing of advanced courses allows a student in Finance to study Corporate Financial Management, Securities and Investment Management, Financial Markets and Institutions, Insurance and Real Estate.

Option 3: Real Estate Major

Advisor: Selles

In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business Degree, all Real Estate majors must complete twenty-four hours of study consisting of the following:

Course

330 Real Estate Fundamentals . 3
331 Real Estate Finance . 3
332 Real Estate Investment . 3
333 Real Estate Appraisal . 3
429 Mortgage Banking . 3
434 Real Estate Land Development . 3
522 Real Estate Management . 3
542 Real Estate Law . 3

Upon written consent of the advisor, up to 6 hours of approved alternative courses may be substituted for 5 hours of the required courses.

2. General Business Minors

Advisors: General Business Faculty

Option 1: General Business Minor

With the exception of General Business majors, any student who has completed the BBA curriculum requirements will automatically receive a General Business minor. Students pursuing a degree other than a BBA degree may minor in General Business by completing the following twenty-one hours:

Principles of Accounting 210 & 211.6
Business Communications 242 . 3
Business Finance 320 . 3
Legal Environment 340 . 3
Fundamentals of Management 300 . 3
Principles of Marketing 370 . 3

Option 2: Finance Minor

Advisors: Finance Area Faculty

Students wishing to minor in Finance are required to take twenty-one hours. Fifteen of these hours are in Finance and six are in other departments of the College. The Finance minor shall consist of:

Business Finance 320 . 3
Introduction to Financial Systems 325 . 3
Investment Analysis 326 . 3
Principles of Accounting 210 . 3
Decision Making with Statistics 200 . 3
Six (6) additional hours from . 3
available Finance courses (other than Personal Finance 305) selected with the student’s professional objectives in mind.

Option 3: Law Minor

Advisors: Law Area Faculty

Students wishing to minor in Law are required to take a minimum of twenty-one hours. Fifteen of these hours must be in Law, Legal Environment 340 and Business Law 341 or Contract Applications in Commercial Transactions 342 are required; nine additional semester hours of Law shall be selected with the student’s professional objectives in mind. The remaining six hours must be selected from the following courses:

Principles of Accounting 210 . 3
(non-BBA students must take this course)
Fundamentals of Management 300 . 3
Administrative Behavior 451 . 3
Principles of Marketing 370 . 3

Option 4: Real Estate Minor

Advisors: General Business Faculty

Students wishing to minor in Real Estate are required to take twenty-one hours. Fifteen of these hours are in General Business courses and six are chosen from several disciplines from within the College of Business. The fifteen hours of General Business courses shall be selected from the following courses:

Real Estate Fundamentals 330 . 3
Real Estate Finance 331 . 3
Real Estate Investment 332 . 3
Real Estate Appraisal 333 . 3
Real Estate Land Development 434 . 3
Real Estate Management 522 . 3
Real Estate Law 542 . 3

Six (6) hours selected from the following College of Business courses:

Principles of Marketing 370 . 3
Advertising 374 . 3
Sales Administration 376 . 3
Consumer Behavior 477 . 3
Legal Environment 340 . 3
Financial Markets 325 . 3
Business Finance 320 . 3
Computer Usage 102 . 3

Option 5: Insurance Minor

Advisor: Dr. Burdick

Students wishing to minor in Insurance are required to take twenty-one hours. Fifteen of these are in Insurance courses and six are from other disciplines within the College of Business. The Insurance minor consists of the following courses:

Financial Markets 325 . 3
Risk and Insurance 321 . 3
Life and Health Insurance 322 . 3
Property and Liability Insurance 323 . 3

One (1) of the following courses:

Group Insurance and Pensions 526 . 3
Risk Management and Insurance 527 . 3
Insurance Company Mgt 528 . 3
Business Finance 320 . 3

Two (2) of the following courses:

Principles of Marketing 370 . 3
Management

Major in Management (24 hrs.) A major in Management consists of the five courses listed below plus an additional nine hours of advanced work. Such 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.

Fundamentals of Management 300 3
Management Analysis and Behavior (I) 301 3
Management Analysis and Behavior (II) 302 3
Management Analysis and Organizations Design (I) 303 3
Management Analysis and Organizations Design (II) 304 3
(Management 301-302 and 303-304 are taken concurrently)

Nine additional hours of Management courses at the 300 level or above (excluding 499).

Minor in Management (21 hrs.) A minor in Management consists of 300, 301, 302, 303 and 304 plus two courses from any of the following:
Accountancy 210 3
( req. for Non-BBA minors)
General Business 310 3
General Business 340 3
Marketing 370 3

Advisors: Report to the Department of Management, 175 East Hall for assignment to an advisor.

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
   Marketing 370 3
   Advertising 374 3
   Retail Promotion 377 3
   Retail Merchandising 476 3
   Advertising Copy and Layout 474 3
   Consumer Behavior 477 3
   Advertising Media and Campaigns 572 3
   Marketing Research 573 3
   Advertising Theory and Ethics 577 3

   Related Majors
   Students who complete the B.B.A. curriculum requirements may major in any of the following six areas and receive the B.B.A. Degree.
   1. Economics
      Advisor: Caruso
      Elect an additional 21 semester hours of advanced courses (300-500 level) from the Department of Economics.
   2. Public Administration
      Advisors: Morrison, McCarty
      The Public Administration major requires the completion of the

   following major and minor requirements.

   Major Requirements: In addition to Management 300, Finance 320, Law 340, Marketing 370, and Management 499, elect at least 15 semester hours from the following:
   GBUS 311 Ecology and the Law 3
   GBUS 322 Real Estate Finance 3
   ACTY 324 Income Tax Accounting 3
   ACTY 352 Personnel Management 3
   MKTG 372 Purchasing Management 3
   ACTY 514 Institutional Accounting 3
   GBUS 428 Management of Financial Institutions 3
   MGMT 451 Administrative Behavior 3
   GBUS 452 Law of Real Property 3
   GBUS 454 Law of Business Organizations 3
   BEAS 556 Office Management 3

   Minor Requirements: Twenty-two hours as follows:
   GBUS 200 National Government 3
   GBUS 202 State and Local Governments 3
   PSCI 330 Introduction to Public Administration 3
   PSCI 504 Making of Public Policy in U.S. 3
   PSCI 526 Administrative Law and Public Relations 3
   PSCI 534 Administrative Theory 3
   Plus one of the following: 3
   PSCI 531 Administration in Local and National Governments 3
   PSCI 533 Public Personnel Administration 3
   PSCI 535 The Politics of Governmental Budget and Finance 3
   PSCI 591 Statistics for Political Science 3

   3. Statistics
   Advisor: Sievers
   The following courses from the Department of Mathematics plus one business elective comprise the major in Statistics. All students electing the Statistics option must make sure they meet the minimum requirement of 48 hours in business and upper division economics courses.
   306 CS Introductory Programming, or
   MGMT 102, Computer Usage 2-3
   122 Calculus I 4
   123 Calculus II 4
   230 Elementary Linear Algebra 4
   272 Vector & Multivariate Calculus 4
   364 Statistical Methods 4
   362 Probability 3
   460 Intro. to Mathematical Statistics 3
   506 Scientific Programming 3
   567 Applied Statistics 4
   568 Studies in Applied Statistics 3
   Elective (one upper-level Business course emphasizing statistical applications) 3

   41-42
4. Agri-Business
Advisor: Baker
The Agri-Business major requires the completion of B.B.A. curriculum requirements and a major in the Agriculture Department consisting of the following courses:

AGR 110 Animal Industry . . . . 3
AGR 111 Animal Industry . . 3
AGR 220 Agronomy . . . . 4
AGR 320 Intro to Soils Agriculture. 4
AGR 322 Agriculture, Marketing
Finance . . . . 4
AGR 330 Farm Organization and Management . . 4
Agricultural Electives . . . . 8

5. International Business
Advisors: McCarty, Powell
Major:
a. MKTG 353—Introduction to International Business . . 3 hrs.
b. Four of the following courses: . . . . 12 hrs.
ECON 480 International Economic Systems
GBUS 521 International Finance
GBUS 543 Legal Problems of International Business
MKTG 575 International Marketing
ACTY 521 Studies in International Accounting
MGMT 542 Multinational Management

c. Two courses in a specialization to be chosen in consultation with major advisor: . . . . 6 hrs.
   1. Skill specialization
   2. Language proficiency
   3. Regional specialization

Minor:
a. MKTG 353—Introduction to International Business . . 3 hrs.
ECON 480—International Economic Systems . . . . 3 hrs.
b. Three of the following courses: . . . . 9 hrs.
ACTY 521 Studies in International Accounting
GBUS 521 International Finance
GBUS 543 Legal Problems of International Business
MGMT 542 Multinational Management
MKTG 575 International Marketing

6. Health Care Administration
Advisors: Persons interested in the Health Care Administration major should contact the College of Business Advising Office, 250 North Hall (383-3982) or the College of Health and Human Services, B-113 Henry Hall (383-8116).

To receive a BBA degree in Health Care Administration, students will complete a 24-hour major in the College of Health and Human Services and the "BBA Curriculum" requirements as specified earlier in this section.

Major Requirements:
Core Courses (all students must complete):
HHS 511 The Health System and Its Environment . . . . 3
HHS 512 Health Resources and Administration . . . . 3
HHS 514 Basic Principles and Organization of Health Planning . . . . 3
HHS 515 Administration Functions in the Health Care Setting . . . . 3
Total Core Hours . . . . 12

Elective Core (the student must take at least 12 hours from the following):
Development of a group minor (such as, Mental Health or Gerontology) in lieu of core is permissible; however, all electives must be approved by major advisor.

MKTG 194 General Psychology . . . . 3
Health Educ. 211 Community Health—Public Health I . . . . 3
HIST 302 History of Medicine and Medical Care . . . . 3
IEGM 305 Work Analysis . . . . 3
ECON 318 The Economics of Medical Care . . . . 3
SOC 373 Sociology of Health and Illness . . . . 3
GS 411 Women Past, Present and Future . . . . 4
Health Education 411, Public Health II . . . . 3
MGMT 430 Systems Analysis . . . . 3
GS 434 Biomedical Ethics and Society . . . . 4
Biol 512 Environment and Health Problems . . . . 2
ANTH 431 Medical Anthropology . . . . 3
IEGM 545 Health Care Systems Improvements . . . . 3
SWRK 563 Social Work Concepts in Rehabilitation . . . . 3
PSY 572 Applied Behavior Analysis . . . . 3
SWRK 572 Community Agency Resources . . . . 2
Health and Human Services Variable Topic Course . . . var.

Course Descriptions
(Courses described in italics are approved for General Education.)

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.

504 International Business Seminar 1-6 hrs.
A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organizations, supplemented by coordinated faculty lectures and assigned reading. Students completing such a seminar may receive credit in the Departments of Accountancy, Business Education and Administrative Services, General Business, Management or Marketing, if approved by the Head of the Department prior to registration for the seminar.

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.
Accountancy

Gale E. Newell, Chair
David J. Boyd
John T. Burke
James E. Daniels
Frederick Everett
Charles E. Hines, Jr.
Max A. Laudeman
William C. Morris
Robert D. Neubig
David Rozelle
F.W. Schaeberle
John D. Sheppard
William R. Welke
Robert B. Wetnight

The Department of Accountancy prepares its majors for positions as accountants in industrial, governmental and public accounting enterprises. Accountancy majors must complete the Business Administration curriculum.

201 Accounting Concepts and Applications
3 hrs.
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 managerial/cost accounting concepts. Prerequisite: 210.

310 Financial Accounting I
3 hrs. Fall, Winter
This course reviews the accounting cycle, related accounting records and theory. Accounting principles and reporting requirements for current assets, plant and equipment, intangibles, and other assets are also studied. Prerequisite: 211.

311 Financial Accounting II
3 hrs. Fall, Winter
This course is a continuation of Accounting 310. Accounting principles and reporting requirements for liabilities, long-term investments, and stockholder's equity are studied. Other topics generally included are the study of the Statement of Changes in Financial Position, the recording and reporting of accounting changes, the analysis of financial statements, and the study of statements adjusted for inflation. Prerequisite: 310.

322 Managerial Accounting—Concepts and Practices
3 hrs.
A study of the accounting methodology and concepts that have been developed to serve managers in decision-making for planning and control. Includes budgeting, standard costing, variance analysis, incremental analysis, cost and profit analysis, relevant costing, and product costing concepts and practices. Prerequisite: 211.

324 Income Tax Accounting
3 hrs.
A study of the federal tax laws as they apply to individuals, partnerships, and corporations. While the course is primarily organized around the individual taxpayer, particular emphasis is given to the concepts that apply to all reporting entities. Prerequisite: 211.

410 Internship in Accounting
1-4 hrs.
Under the direction of a faculty coordinator, students obtain full-time accounting related employment experience. Participation is limited to available internships and competitive selection by the faculty coordinator and potential employers. Students are required to write a final report. Each employer will provide an evaluation of the student. This course must be taken on a credit/no credit basis and does not count toward the accounting major. Prerequisite: Written consent of the faculty coordinator.

411 Financial Accounting III
3 hrs.
The study of entities and special transactions not covered in Financial Accounting I and II. Particular emphasis is given to partnership equity accounting, fund accounting, accounting by agencies and branches, business combinations, reporting by parent-subsidiary consolidated entities (including foreign subsidiaries). Prerequisite: 311 and senior standing.

420 Topics in Accounting
3 hrs.
An examination of advanced topics in Accounting. Course may be repeated under different topics. Prerequisite: Consent of instructor.

Open to Upperclassmen and Graduate Students

513 Accounting Information Systems
3 hrs.
A study of concepts, organization, technology, and controls of an accounting information system. Includes a study of specific applications (payroll, accounts receivable, etc.), with particular emphasis on data input, processing, and output utilizing the computer. Prerequisite: Management 102, Accounting 310, and Accounting 322, or their equivalent.

514 Institutional Accounting
3 hrs.
A comprehensive study of the recording of transactions by government units and the preparation of financial statements by fund entities. City government is the basic unit of study; however, school districts, universities, and hospitals are given brief coverage to illustrate the similarity in accounting for all not-for-profit entities. Prerequisite: 211 or written consent of instructor.

516 Auditing
3 hrs.
The theory and practice of auditing business enterprises and government agencies. Topics include a review of professional pronouncements, internal control concepts, ethics, and a discussion of audit objectives. Prerequisite: ACTV 311 or equivalent.

518 Accounting Theory and Problems
3 hrs.
A study of financial accounting theory and practice. The course is organized around pronouncements of the Financial Accounting Standards Board and other authoritative bodies. Case studies are used to illustrate application of the concepts of such pronouncements. Prerequisite: Senior standing and accounting major.

521 Studies in International Accounting
3 hrs.
A comparative study of the accounting principles, reporting standards, and procedures in selected countries of the world. Emphasis is placed on those countries which are important in world commerce. Prerequisite: Consent of instructor.

522 Cost Accounting—Theory and Practice
3 hrs.
A study of the accounting methodology and concepts that have been developed to account for both product and period costs of a business enterprise. Includes product
costing for job order and continuous process situations with related systems concepts, cost allocations among departments of an enterprise, joint and by-product costing, and standard costing as it relates to inventory pricing. Prerequisite: 322.

524 Studies in Tax Accounting
3 hrs.
Special studies related to tax problems of individuals, partnerships, and corporations. Emphasis is on federal taxation of corporations, trusts and estates. Prerequisite: ACTY 324 or equivalent.

598 Readings in Accounting
3 hrs.
Directed individual study of topics not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.

Business Education and Administrative Services

Leo Niemi, Chair
Kimon Bournazos
Joel Bowman
Bernadine Branchaw
Ronald DeYoung
Nancy Engemann
Caryl Freeman
Michael Glenn
Cheryl Halper
Earl Halvas
Darrell G. Jones
Mildred Lambe
Marcia Mascolini
John H. McBeth
Max O. McKitrick
Carol Morris
Carl Rauch
Michael Rossi
Margaret Sanders
Charles Shull
Jean O. Smith
Steve Wright

The Department of Business Education and Administrative Services offers three undergraduate programs of study: (1) the administrative services area including business communication, office systems, data processing, and consumer relations; (2) the preparation of business teachers; and (3) the secretarial administration area including a co-op program.

100 Introduction of Business Writing
3 hrs.
A course dealing with those areas of written communication necessary for the development of basic business writing skills. Designed as a foundation for subsequent business writing/communication courses.

140 Industrial and Business World
3 hrs.
An introductory course which acquaints students with the organization of American business and reviews 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.
Development of the basic composition skills required of the competent writer in business and the professions. Through continuing directed practice in writing, students develop competence in the organization and presentation of facts and information in writing.

160 Business Applications of Computer Concepts & Languages
3 hrs.
A study of fundamental computer concepts and languages with consideration of their applications and impact of business and society.

162 Business Program Flowcharting
3 hrs.
Systems and Program Flowcharts and other tools and techniques are used in business problem definition and analysis for computer application. Prerequisite: BEAS 160 or MGMT 102.

180 Beginning Shorthand
3 hrs.
Students learn to read, and transcribe 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 are required each week.

181 Intermediate Shorthand
3 hrs.
A continuation of 180. Emphasis on developing speed in taking dictation in shorthand and transcription procedures. Prerequisites: BEAS 180 and 182, or equivalent. 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 are required each week.

182 Beginning Typewriting
3 hrs.
Emphasis is placed on keyboard mastery and the use of the typewriter as a personal writing tool; students complete projects related to their majors in which the typewriter may be used as a communication tool. Credit given to students with not more than one semester of high school typewriting.

183 Intermediate Typewriting
3 hrs.
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: BEAS 182 or equivalent. Credit given to students with not more than one year of high school typewriting.

184 Transcription
3 hrs.
Emphasizes superior skill in the typewritten transcription of office communications. Prerequisites: BEAS
181, or 3 semesters of high school shorthand, or equivalent; BEAS 183, or equivalent. In addition to classwork, at least two hours of laboratory work are required each week.

185 Production Typewriting 3 hrs.
The development of skill in the production of typewritten materials for office use. Prerequisite: BEAS 183 or equivalent.

242 Business Communication 3 hrs.
Business communication is a general introduction to the uses of communication in modern organizations. Organization theory, behavior, and communication channels form the basis for special emphasis on using written communication to solve typical business problems. Prerequisite: BEAS 142 or its equivalent.

An in-depth analysis of communication problems and practices as they occur in modern business. Special emphasis is given to development of business writing skills as they apply to decision making, report writing, and business communication systems. Prerequisite: BEAS 242 or equivalent.

260 Business EDP Systems and Procedures I 3 hrs.
Introduction to business EDP systems analysis and procedures. Students complete an elementary business data flow systems design from preliminary investigation to implementation. Prerequisite: BEAS 162.

261 COBOL 3 hrs.
Computer programming in the most widely used language for business type application. Programming will be done in timesharing and/or batch sequential mode. Current computer developments are discussed. Prerequisite: BEAS 162.

262 FORTRAN 3 hrs.
Computer programming in FORTRAN; appropriate business application are flowcharted, programmed and run on the PDP-10 timesharing computer. Prerequisite: BEAS 162.

263 Computer Languages 3 hrs.
Examination of some computer languages not covered in 261 or 262. Survey of the application of computers in the areas of business, science, education and technology. Emphasis on RPG programming. Prerequisite: BEAS 162.

281 Integrated Office Skills 3 hrs.
This course develops knowledge of calculating, office duplicating, and machine transcription equipment. Students apply skills and knowledge by utilizing office equipment in a simulated office environment. Students will deal with computers and use computer print outs. Prerequisite: BEAS 182 or equiv.

282 Coordinated Business Experience 3 hrs.
A work-experience course for students in the secretarial and Business Teacher Curriculum. Prerequisite: Departmental permission.

283 Coordinated Business Experience 3 hrs.
A continuation of Business Education 282. Prerequisite: Departmental permission.

287 Secretarial Administration 3 hrs.
An integrated learning program emphasizing the activities performed by the administrative assistant. Students complete class projects and simulations which emphasize problem solving and decision making.

288 Records Management 3 hrs.
The study of efficient methods, procedures, and systems for processing, controlling, and disposing of organizational records. Includes records inventory and classification, information retention and retrieval, and the administration of office information systems.

This course examines the sociological, psychological, and economic aspects of the American consumer movement. Students review the function of the marketplace and examine its contributions and failings. Analysis is made of the changes and problems facing the consumer and the role of private and governmental protection agencies. Legal rights and responsibilities are reviewed, especially those involving warranties, guaranties, and landlord and tenant relationships.

342 Organizational Communication 3 hrs.
A study of communication in structured organizations and the application of communication theory to the solution of communication problems in organizations. Special emphasis on small groups decision making. Prerequisite: BEAS 242.

346 Teaching of Business Subjects 2-4 hrs.
A course in the methods of teaching the business subjects including shorthand, typewriting, accounting, 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>Units</th>
<th>Wks.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Basic Business Subjects</td>
<td>1-4</td>
<td>1</td>
</tr>
<tr>
<td>II Accounting</td>
<td>5-8</td>
<td>1</td>
</tr>
<tr>
<td>III Typewriting</td>
<td>9-12</td>
<td>1</td>
</tr>
<tr>
<td>IV Shorthand, Secretarial Subjects</td>
<td>13-15</td>
<td>1</td>
</tr>
</tbody>
</table>

All students will enroll for two, three, or all four of the above segments.
Prerequisites: Open only to Business Education majors or minors; TEED 301, 347 to be taken concurrently.

347 Practicum in Teaching of Business Subjects 2 hrs.
Provides prospective teachers with an introduction to business education and practice in writing of performance goals and applying concepts and techniques developed in BEAS 346; special emphasis on videotaped microteaching experiences. Course also includes vocational certification, block programs, added cost funding, and other items related to the preparation of vocational office teachers.

360 Business EDP Systems and Procedures II 3 hrs.
A continuation of BED 260 with emphasis on project management, scheduling and control, and evaluation of business data systems and procedures. Prerequisite: BEAS 260.

386 Office Organization 3 hrs.
Designed for students preparing for professional office administration and/or business teaching. Includes office functions and environment, office technology and systems, and the principles of office organization.

410 Internship 1-4 hrs.
Under the direction of a faculty advisor, qualified students may engage in a variety of professional experiences. Scheduled meetings with advisor and written experience reports required. Prerequisite: Filing of a departmental permission-to-elect form. May be repeated for a maximum of 4 hours credit.
442 Advanced Business Writing
3 hrs.
Emphasis on the written communication problems of business, including message design, style, and editing. Students apply skills through work with forms, brochures or handbooks, and articles. There will be some field work outside of class.

542 Report Writing
3 hrs.
Intensive discussion and practice of the commonly used report-writing techniques. The study includes various formats and graphics of reports. In addition to writing several brief reports, students prepare a complete research report, give oral reports.

554 Topics in Business Communication
3 hrs.
An intensive study of a topic in business communication such as a communication systems, business media, business publicity and others. The topic will be announced in advance. May be repeated for credit.

555 Topics in Data Processing
3 hrs.
Special topics appropriate to business applications such as programming documentation and efficiency, planning, organizing and directing management information systems. May be repeated for credit.

556 Office Management
3 hrs.
Procedures of office administration with attention to supervisory patterns in development, appraisal, and management of human resources.

557 Topics in Administrative Services
3 hrs.
Includes an intensive study of a selected topic in Administrative Services such as communication audits, office systems, work measurement and simplification, forms control and design, and others. The topic will be announced in advance. May be repeated for credit.

560 Office Systems and Procedures
3 hrs.
A study of paperwork systems and procedures. Emphasis is placed on office systems and the techniques of systems development including fact gathering and recording, work analysis, and office work simplification and measurement.

561 Advanced COBOL
3 hrs.
Continuation of BED 261, including advanced treatment of sequential access, plus index sequential and random access, report writer, COBOL report generator, documentation, efficiency, and data-base management systems. Prerequisite: BEAS 261.

583 Coordination Techniques in Office Education
3 hrs.
A study of the role and responsibilities of the office education coordinator 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. Prerequisite: DE 573.

584 Improvement of Instruction in Secretarial Subjects
3 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in secretarial subjects.

585 Principles of Skill Instruction
3 hrs.
After studying the principles of skill learning, each student will have an opportunity to develop a complete teaching-learning system for a typewriting or a shorthand program.

586 Improvements of Instruction in Typewriting
3 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in typewriting.

588 Improvement of Instruction in Accounting/Computing Programs
3 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in the accounting/computing programs.

589 Organization and Teaching of Office Practice
3 hrs.
A consideration of aims and content of the 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; considers instructional development, classroom management, and program evaluation. Required for vocational office endorsement. 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 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 an 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. Majors may be obtained in General Business, Finance and Real Estate. Minors are available in General Business, Finance, Law, Insurance and Real Estate. The General Business major and minor requires students to select a logical sequence of courses from the several departments within the College of Business. All majors and minors (except the General Business minor) in this department must be approved by the assigned advisor. (Courses described in italics are approved for General Education. Students must refer to General Education Program Guides for course grouping restrictions and other enrollment information.)

Finance Area—
Finance, Insurance and Real Estate Courses

Emil Albert
William Burdick
Adrian Edwards
Jane Mary Howard
Sam Hudson
A. D. Issa
Robert Jones
Terry Selles
Paul Weber

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 in 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. (Can not be used for any major or minor.)

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: Management 200 and Accounting 210.

321 Risk and Insurance
3 hrs.
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.
This course combines a discussion of the economic aspects of life and health insurance with basic analysis of life 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.
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.

325 Introduction to Financial Markets
3 hrs.
A survey of financial markets and intermediaries with emphasis on the structure, social justification, and current controversies. This course provides additional background for advanced study in finance and a practical foundation for those students interested in an exposure to the financial system. Prerequisite: Accounting 210.

326 Investment Analysis
3 hrs.
A survey of the securities markets from the viewpoint of the novice investor. The course includes a study of market operations, trading techniques, special investment vehicles such as options and warrants, and a consideration of the investment objectives and practices of institutional investors. Prerequisite: 320 Business Finance or consent of instructor.

328 Internship in Finance
1-5 hrs.
Under the direction of a faculty advisor, students obtain employment experience with industrial, commercial, and financial enterprises (commercial banks, insurance companies, etc.) and students are required to file periodic reports to the advisor. In addition, they are evaluated by the firm's executives. Available only to students majoring in finance.

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.
332 Real Estate Investments
3 hrs.
Types, direct vs indirect, the effect of various forms of taxation, market conditions and governmental policies as they affect the investor's spendable income are reviewed. Prerequisite: 330 or consent of instructor.

333 Real Estate Appraisal
3 hrs.
A study of the sources of Real Estate Value, the techniques for estimating property value, and the effective use of appraisal information. Prerequisite: 330 or consent of instructor.

425 Financial Management
1—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 functions; the use of rating agencies in aiding credit acceptance; and the many considerations which become a part of the short-term financing function of the corporate enterprise. Prerequisite: Business Finance 320.

426 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 Advanced Financial Markets
3 hrs.
Further studies of financial markets stressing theories, supporting evidence, and policy implications of selected topics. Research and analytical methods are included in the course content. Prerequisite: 325 Introduction to Financial Markets.

428 Management of Financial Institutions
3 hrs.
This course is devoted to in-depth analysis of the operations of selected financial institutions with emphasis on management decision-making processes. Case analysis and analytical problems are included in the course content. Prerequisite: 325 Introduction to Financial Markets.

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: 325 Introduction to Financial Markets.

434 Real Estate Land Development
3 hrs.
Neighborhood and city growth, municipal planning and zoning, development of residential, commercial, industrial and special purpose properties are analyzed. Prerequisite: 330 or consent of instructor.

499 Senior Topics in Finance
3 hrs.
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.

519 Security Analysis
3 hrs.
An analysis of stocks and bonds as investment vehicles. The course is designed as a sophisticated analysis of valuation techniques with a view towards aiding the student to bridge the gaps between techniques as used by the academicians and the practitioner. Prerequisite: 326 Investment Analysis.

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.
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.

522 Real Estate Management
3 hrs.
Management of income producing properties as an agent of the owner. Consideration of professional standards, business promotion, leasing, insurance and maintenance. Prerequisite: 330 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.

527 Risk Management and Insurance
3 hrs.
This course covers the function of risk management and the responsibilities of risk managers. The sources of risk information are examined, the business risks analyzed and the alternative methods of handling risks evaluated. Criteria for selection of proper insurance coverages and selection of carriers and intermediaries are reviewed. Prerequisite: 321 Risk and Insurance or consent of Instructor.

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.
Law Area
William F. Morrison, Chair
Nicholas C. Batch
James R. Bliss
Thomas Gossman
William McCarty
Leo Stevenson
311 Ecology and the Law
3 hrs.
The study of law as it relates to people's efforts to protect the 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
3 hrs.
An introduction to the legal environment in society. An examination of the role of law in society, the structure of the American legal system and the basic legal principles governing individual conduct.

341 Business Law
3 hrs.
The study of law as it impacts on the business firm. Examines business contract formation and performance, commercial transaction obligations and tort and contract liability of employers and employees. Prerequisite: 340 Legal Environment. Students cannot receive credit for both 341 and 342 Contract Applications in Commercial Transactions.

342 Contract Applications in Commercial Transactions
3 hrs.
The study of the law of contracts as it applies to the business firm. Topics reviewed include agency contracts, sales agreements, negotiable instrument law, security agreements and partnership or corporate formations. Prerequisite: 340 Legal Environment. Students cannot receive credit for both 341 and 342 Contract Applications in Commercial Transactions.

442 Damage and Tort Liability
3 hrs.
The study of individual and business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: 340 Legal Environment.

450 Legal Aspects of Employment
3 hrs.
A survey of the rights, duties and general relationship between employer and employee, including hiring, firing, agency, employee benefit programs, workmen's compensation and an introduction to current labor legislation. Prerequisite: 340 Legal Environment.

541 Law of Sales and Personal Property
3 hrs.
The study of law as it applies to the sale of goods. An examination of the legal obligation of the seller regarding warranties, risk of loss and injuries caused by goods sold in the marketplace. Prerequisite: 340 Legal Environment.

542 Law of Real Estate
3 hrs.
The study of land ownership, sales agreements including the legal duties of the real estate broker, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: 340 Legal Environment.

543 Legal Problems of International Business
3 hrs.
A study of national, regional and international laws which affect the conduct of international business. An examination of the legal regulations which promote or restraints trade or investment by international business firms. Prerequisite: 340 Legal Environment.

544 Law of Business Organization
3 hrs.
Study of business organizations including partnerships and corporations. Prerequisite: 340 Legal Environment.

547 Governmental Regulation of Business
3 hrs.
Examines the laws, rules and regulations at the federal, state and local level which affect most business enterprises. Substantive laws affecting the firm's obligation to employees, stockholders and the general public are examined as are procedural laws affecting the regulation of the firm by public institutions. Prerequisite: 340 Legal Environment.

598 Readings in General Business (Law)
1-4 hrs.
Directed individual study of legal problems which are not treated in departmental course offerings. Prerequisite: Written consent of the instructor.

Management
Fred V. Hartenstein, Chair
Henry H. Beam
Gene S. Booker
Thomas A. Carey
L. Delf Dodge
James W. Hill
John S. Homer
J. Michael Keenan
A. Thomas Mason
Robert J. Planisek
V. Jean Ramsey
John R. Rizzo
Merlene M. Rizzo
Donald D. Tong
William J. Upjohn
Roger L. Wallace
Robert H. Woodhouse
Stephen H. Zelinger

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. Prerequisite: MATH 115.

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 students 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. Prerequisites: 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. Prerequisites: 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. (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.


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 Evaluation
3 hrs.
A survey of systems analysis techniques, including benefit/cost procedures.

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.

453 Organizational Behavior
3 hrs.
A study of current theory, research, and practice regarding variables that influence human behavior in complex organizations. Emphasis is placed on models relevant to human productivity, satisfaction, retention, and learning in organizational settings.

458 Independent Study
3 hrs.
Independent research on specialized management topics. Prerequisite: consent of instructor. (Repeatable)

490 Honors Seminar
1-3 hrs.
A discussion of selected topics in contemporary management. Prerequisites: 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. Prerequisites: 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.
A study in specialized areas of the management literature. The students will prepare an original paper on an assigned topic. Prerequisite: Permission of the instructor.

520 Planning for the Future
3 hrs.
An exploration of alternative ways of predicting future events, selecting long-range goals, systems-planning for achievement. A variety of forecasting and planning methodologies will be examined. Skill will be gained in the more common and well-developed methods through class exercises. Graduate students will be expected to develop an independent application in an area of interest.

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.

542 Multinational Management
3 hrs.
An examination of management strategy, controls, environmental influences of the multinational corporation with consideration of geographic factors. The management function abroad will be examined in light of the cultural assumptions underlying U.S. management and will deal with the necessary modification for effective operations in a cross cultural environment.

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.
Marketing

Robert B. Trader, Chair
Joseph J. Belonax
Zane Cannon
Lowell Crow
Linda M. Delene
Richard E. Embertson
Jay Lindquist
Brian G. Long
Mushtaq Luqmani
Leonard D. Orr
Conner P. Otteson
Andrew F. Powell
Zahir A. Ouraeshi
Dale L. Varble

270 Salesmanship
3 hrs. Fall, Winter
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.

353 Introduction to International Business
3 hrs. Fall
Presents an overview of the framework of international business and consideration of the various dimensions of international activities. Not available for General Marketing major or minor credit.

370 Marketing
3 hrs. Fall, Winter, Spring, Summer
Functions, institutions, and problems of marketing examined from the viewpoint of their effect on distribution of goods. Prerequisite: ECON 201.

372 Purchasing Management
3 hrs. Fall, Winter, Spring
The organization and operation of the purchasing function, responsibilities and policies: problems confronting the purchasing department; relationships with other departments and suppliers. Prerequisite: MKTG 370.

374 Advertising
3 hrs. Fall, Winter, Spring, Summer
A comprehensive survey of basic principles and practices of advertising in their relationship to the economy, society, and the system of mass communication. Prerequisite: MKTG 370.

375 Principles of Retailing
3 hrs. Fall, Winter
Considers the activities necessary in performing the management of a retail establishment. Changes in consumer demographics, life-style and the decision making process. Sources and uses of funds, inventory planning and control, merchandise resources, promotion, customer services, building layout, and expense analysis are special areas of study. Prerequisite: MKTG 370.

376 Sales Administration
3 hrs. Fall, Winter, Spring
Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting; training; sales communication; territories and quotas; motivation, measuring selling effectiveness. Prerequisite: MKTG 370.

377 Retail Promotion
3 hrs. Winter
Study of techniques used in identifying and appealing to retail consumer needs through the use of various store and departmental promotions, newspapers, radio, T.V., direct mail, and point-of-purchase advertising. Ethical considerations of all retail promotion explored. 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.

473 Direct Marketing
3 hrs.
Covers principles, concepts, methods, techniques, and applications of direct marketing; includes use of direct marketing under various conditions and media with special emphasis on mail, electronic media, telephone, and catalog advertising; student projects required. Prerequisite: MKTG 370; Permission of instructor.

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: MKTG 370, Advertising 374; Permission of instructor.

476 Retail Merchandising
3 hrs. Fall, Winter
The planning, "buying", and controlling of merchandise for resale through retail outlets: fashion, mass merchandise, specialty, boutique,
department, and food stores. Students will develop buying plans for various products, such as fashion merchandise, sporting goods, wearing apparel, household goods, and others. Prerequisite: MKTG 370, MKTG 375.

477 Consumer Behavior
3 hrs. Fall, Winter
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. Winter
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 Fall, Winter, Spring, Summer
Cooperative internship training for the BBA degree marketing majors having completed sophomore year. Variable credit at the rate of approximately one credit per 100 hours of internship training acceptable to advisor. May be repeated for a maximum of 6 hours. Term reports required; evaluations completed by executives of firms in which training takes place. Prerequisites: Marketing major; permission of the instructor.

570 Problems in Retailing
3 hrs. Fall
Designed to analyze current retailing problems; market segmentation, inventory planning and control, vendor evaluation, store services, traffic patterns, and warehousing. Report required. Prerequisite: Permission of the instructor and senior level.

571 Services and Non-Profit Marketing
3 hrs.
An analysis of problems and issues relating to the marketing of services and the use of marketing in non-profit organizations. Emphasis in these two divergent areas will be given application of marketing concepts, methods, policies, and strategies; special emphasis on environmental interactions. Prerequisites: MKTG 370 or Permission of Instructor.

572 Advertising Media and Campaigns
3 hrs. Fall, Winter
Examines theory and practice of media research, use of Audit Bureau of Circulation data, broadcasting ratings, copy testing, development of media plans and scheduling as required for advertising campaigns. Prerequisites: MKTG 374 and MKTG 474; Advertising Majors only.

573 Marketing Research
3 hrs. Fall, Winter, Spring, Summer
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. Prerequisites: MKTG 370, MGMT 200.

574 Marketing Logistics
3 hrs. Fall, Winter, Spring
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, Spring
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 Strategy
3 hrs. Fall, Winter, Spring, Summer
Identification of marketing problem situations and cause diagnosis with development of appropriate marketing strategies. Stress placed on application of marketing fundamentals to factual case situations and on decisions in a simulated dynamic environment. Communications of findings and strategies emphasized. Cases and computer games used. Senior level, MKTG 573, plus 6 additional MKTG hrs.

577 Advertising Theory and Ethics
3 hrs. Fall
Critical examination of social, cultural, and ethical implications of "public and business" responsibilities involved in the advertising function. Special student interests developed through research and term projects. Prerequisite: MKTG 370, 374, Permission of Instructor.

578 Marketing Decisions in Publicity and Public Relations
3 hrs.
Analysis of principles and practices of publicity and public relations as these areas relate to the firm's overall promotional strategies; stress on application through case studies and term project. Prerequisite: MKTG 370.

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.
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.

The Orientation and Advisement Office as soon as possible to arrange an orientation appointment. Transfer students, after receiving a completed Credit Evaluation Slip from the Admissions Office, should arrange an appointment to assimilate transfer credit into their curriculum at Western. Students already enrolled at Western who wish to change from or to an Elementary Education or Secondary Education curriculum should contact the Orientation and Advisement Office.

The Office of Orientation and Advisement has information concerning programs, majors and minors, and curricula within the College of Education and will make referrals, when appropriate, to other advising facilities. The services of the office are available to anyone interested in investigating undergraduate and graduate professional education available at Western Michigan University.

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 eight, 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.
Office of Professional Field Experiences
Carl Lindstrom
2504 Sangren Hall
383-1840

The Department’s Office of Professional Field Experience serves the entire University by providing placements for students who need a field experience. These placements are for students needing to participate while taking methods courses, for students wishing to volunteer their tutoring services and for those students who are ready to student teach. All student teachers work under the supervision of the professional staff of the unit. Students who are anticipating student teaching need to contact the Professional Field Experiences Office for an appointment at least one semester before they student teach.

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 (nonprofessional courses only) and/or the College of General Studies, are required for Michigan certification.

2. Elementary Education
   Minor ................... 24 hrs.
   Requirements and approval for this required minor are available in the Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have a minor slip signed by an approved Elementary Education adviser.

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

4. Physical Education .................. 2 hrs. (PEPR 340—Physical Education for the Elementary Teacher, will satisfy one hour of this requirement.)

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 Ed. Ed. minor. (Check catalog descriptions for major and minor requirements.)

Approved majors and minors for the Elementary Education Curriculum (Only programs listed below are acceptable for Elementary Education)

Students are urged to see an Elementary Education adviser, Orientation and Advisement Office, 2305 Sangren, so that approved majors, minors and the Elementary Education Minor may be appropriately planned and coordinated.

Majors
American Studies (AMS)
Anthropology (ANT)
Biology (BIO)
Chemistry (CHM)
Communication Arts & Sciences (CAS)
Dance Education (DAN)
Earth Science (EAR)
Economics (ECO)
English (ENG)
Geography (GEG)
Health Education (HED)
History (HIS)

Language Department Majors:
French (FRE)
German (GER)
Russian (RUS)
Spanish (SPA)

Mathematics (MAT)
Music (MUS)

Physical Education-Elementary (PEE)
Physical Education (PEP)
Physics (PHY)
Political Science (POL)
Rural Life (RUL)
Science (SCI)
Social Science (SOS)
Sociology (SOC)

Speech Pathology and Audiology (SPC)

See College of Health and Human Services’ section of this catalog for description of degree and certificate requirements.

Special Education Majors:
Emotionally Disturbed (SDC)
Mentally Handicapped (SMH)
Orthopedically Handicapped (OHI)
Visually Handicapped (BHE)

(Special Education majors require admission to Special Education curriculum)

Theatre Education (THN)

Minors
Anthropology (ANT)
Art (ARE)
Biology (BIO)
Black American Studies (BAS)
Chemistry (CHM)
Communication Arts & Sciences (CAS)
Dance Education (DAN)
Earth Science (EAR)
Economics (ECO)
English (ENG)
Environmental Studies (EVS)
Family Life Education (FLE)
Geography (GEG)
Health Education (HED)
History (HIS)

Integrated Creative Arts (CRA)
Integrated Language Arts
International and Area Studies Minors:
(Only one minor from department may be used):
   African Studies (AFS)
   Asian Studies (AIS)
   Cross Cultural Studies (CCS)
   Latin American Studies (LAS)
   Slavic Studies (SVS)

Language Arts (LAS): Language Department Minors:
(Only one minor from each department may be used):
   French (FRE)
   German (GER)
   Russian (RUS)
   Spanish (SPA)

Library Science (LIB)
Linguistics (LIN)
Mathematics (MAT)
Music (MUS)

Physical Education Minors:
(Only one minor from each department may be used):
   Physical Ed. (PEP)
   Physical Education—Elementary (PEE)
   Swimming (SWM)
   Phys Ed for Exceptional Child (PEC)
   Recreation (REC)

Physics (PHY)
Political Science (POL)
Science (SCE)
Science and Mathematics Teaching
Social Science (SOS)
Sociology (SOC)

D. The candidate must satisfy the requirements of the A.B. or B.S. Degree.

Emphasis in Early Childhood Education
Facilitator and Adviser, Mary A. Cain

(Students must see an Early Childhood adviser to enroll in the program.)

The Early Childhood Emphasis offers a special professional sequence for K through 8 certification with an endorsement signifying special preparation in teaching young children. Prerequisite: ED 250, Human Development and Learning.
Students will have a split directed teaching assignment, which will be done in the Kalamazoo or Grand Rapids areas, where early childhood faculty are available. (Rare exceptions to Kalamazoo or Grand Rapids assignments may be made upon approval of an Early Childhood adviser.) Students with an Early Childhood Emphasis should complete the Elementary Education Curriculum requirements satisfactorily, with the following additional courses or substitutions:

ED 350 Young Children, Their Families, and Their Society ........... 3 hrs.
351 Reading and Related Communication Skills for Early Childhood* ........... 4 hrs.
355 Learning Experiences for Young Children ........... 3 hrs.
(Substitutes for ED 300)
455 Historical, Social and Philosophical Perspectives on Education for Young Children ........... 3 hrs.
(Subtitle for ED 450)
410 Seminar in Early Childhood Education ........... 1 hr.
470 Directed Teaching (Early Childhood)** ........... 5 hrs.

*The following companion course should also be taken by students in Early Childhood Emphasis: ED 352 Reading and Related Communication Skills for Middle and Upper Grades. (May substitute for ED 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.

Integrated Creative Arts Minor
Adviser: Alfred Balkin

This 24-hour interdepartmental program is offered to preserve elementary school teachers, special education teachers, and others whose goals would be well served. The program stresses the integration of all the arts as a primary motivating agent in the teaching of all subject areas. It also emphasizes the stimulation and development of creative problem-solving behaviors. Those who select the minor must be admitted through a personal conference with the adviser. The minor consists of 24 semester hours distributed as follows:

ED 230—The Nature of Creativity ........... 4 hrs.
Dance 341—Creative Movement in the Elementary School ........... 4 hrs.
Music 140—Music for the Classroom Teacher ........... 4 hrs.
Art 290—The Creative Process through Art .................. 4 hrs.
Comm. Arts and Sci. 564—Creative Dramatics for Children ........... 4 hrs.
ED 430—Creativity in the Elementary School ........... 4 hrs.

ED 230 is geared to personal creative development and is not restricted to Integrated Creative Arts Minors. Students enrolled in the minor must take ED 430 (Creativity in the Elementary School) after they have taken all other courses in this group.

Integrated Language Arts Minor
Maryellen Hains, Coordinator
924 Spraul Tower
(616) 383-0972

An interdisciplinary program of:
COLLEGE OF EDUCATION
Department of Teacher Education
COLLEGE OF ARTS AND SCIENCES
Communication Arts and Sciences
English Linguistics
COLLEGE OF HEALTH AND HUMAN SERVICES
Speech Pathology and Audiology

This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of learning. This program satisfies the guidelines of the Michigan Department of Education for competency based programs and provides opportunities for a wide variety of interests and alternative learning styles.

The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each course. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each course is taught by a faculty member with interdisciplinary expertise from one of the departments participating in the minor. Each course focuses on a particular aspect of language development which will be presented through a balance of lectures, discussions and workshops together with opportunities for student initiated learning.

Students can enter the program in their sophomore year. In general, Human Development and Learning, ED 250 (or its equivalent), is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Offices of the College of Arts and Sciences or the Teacher Education Department and from the Integrated Language Arts (ILAM) Coordinator, Maryellen Hains, 924 Spraul Tower, 383-0972.

Minor slip required. Students must see an advisor before they have completed eight hours in the minor.

Program
This 24-hour interdepartmental minor for elementary education students consists of the following:

Entry Courses—must be taken concurrently:
ILAM/ED 260 Cognitive Development of the Child ........... 2 hrs.
ILAM/SPPA 260 Linguistic Development of the Child ........... 2 hrs.

Intermediate Courses:
ILAM/CAS 365 Oral Communication and the Early Elementary Child ........... 4 hrs.
ILAM/ENG 375 Acquisition of Literacy and the Early Elementary Child ........... 4 hrs.
ILAM/ENG 376 Acquisition of Literacy and the Later Elementary Child ........... 4 hrs.

Capstone—to be taken after at least 16 hours of the minor are completed:
ILAM/ED 460 Integrated Language Arts Seminar ........... 4 hrs.

For individual course descriptions see catalogue listings under the participating department.

Science and Mathematics Teaching Minor
Adviser—Orientation and Advisement Office

This minor is open only to students enrolled in the Elementary Education Curriculum. Advising is through an Elementary Education Adviser, Orientation and Advisement Office, 2305 Sangren Hall. Transfer students will need to have their previous coursework evaluated in Science and Mathematics by the Orientation and Advisement Office prior to enrolling in this minor.
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 are required for Michigan certification.

2. Professional Education: 21-26 hrs. See elementary, junior high and senior high curricula requirements.

3. Library Science: 20-23 hrs. Librarianship as a Profession: Introduction 100 (Not required but strongly recommended) 2
   Fundamentals of Library Organization 230 3
   Collection Development 510 3
   Reference Services 512 3
   Introduction to Cataloging and Classification 530 3
   School Media Center Experience 407 3
   Reading Interests of Young Adults 542 (Required only for teacher-librarian candidates in the secondary curriculum) 3
   Storytelling 546 (Required only for teacher-librarian candidates in the elementary curriculum) 3
   Instructional Materials, K-12 416 . 3

   Children's Literature 282 4
   English electives (senior high) 8
   Communication Arts and Sciences 3
   Elective 3 (junior and senior high) 3

5. Social Science: 3-9 hrs. Political science (government) elective 3
   History elective 3
   (junior and senior high) 3

6. Science or Psychology: 3-4 hrs.
   Science elective 3
   (elementary and junior high—see curricula requirements) 3
   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 provisional certificates 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 media center.

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

A program of undergraduate studies to prepare students to teach in the 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 supervised experiences specifically designed for teaching in the Middle or Junior High School.

PROGRAM REQUIREMENTS MUST BE PLANNED AND APPROVED BY ADVISER.

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 (nonprofessional courses only) and/or the College of General Studies, are 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 adviser 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 adviser 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.
ED 312 Teaching of Reading Elementary OR
ED 322 Teaching of Reading Secondary 3 hrs.
ED 300 Teaching and Learning in Middle Schools 3 hrs.
ED 398 Special Studies in Education (topical seminars) 4 hrs.
Field Experiences (no credit)

Winter Semester
ED 398 Special Studies in Education (Psychology and Guidance of Young Adolescents) 2 hrs.
ED 352 Reading and Related Communication Skills for Middle and Upper Grades 4 hrs.
ED 450 School and Society 3 hrs.
ED 507 Elementary School Social Studies (elementary option OR methods course in major or minor field—secondary option) 3 hrs.
ED 472 Directed Teaching 4 hrs.

E. Professional Education
ED 250 Human Development and Learning (required before two semester planned sequence) 4 hrs.
ED 471 Directed Teaching 5 hrs.
ED 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.

Bachelor of Science Degree Elementary Music Curriculum

Major: Music, Elementary Minor: Elementary Education
Grants certification to teach in elementary grade room and elementary music.

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements

1. General Education Requirements 35 hrs.
See University requirements for General Education

Music convocation 101 (4 semesters) 0 hrs.
Basic Music 160-161 6 hrs.
Aural Comprehension 162-163 2 hrs.
Basic Music 260 3 hrs.
Twentieth Century Techniques 261 2 hrs.
Music History and Literature 270-271 8 hrs.
Conducting 215 1 hr.
Keyboard Musicianship 220, 221, 320, 322 4 hrs.

Note: Students who do not qualify for entry to 220 Music complete keyboard Fundamentals 120 and/or 121 as a deficiency. Students who "comp out" of Advanced Keyboard Musicianship 321 are urged to consider 518 improvisation, 350 American Music, 352 Non-Western Music as courses to take as music electives toward the 40-hour requirement.

Voice Class 122-123 2 hrs.
Choral Ensemble 107, 108, or 112 2 hrs.
Elementary Music Practicum 244 3 hrs.
Creativity in the Classroom 373 4 hrs.
General Music Methods 240 2 hrs.
Guitar Class 126 1 hr.
Instruments of the Band and Orchestra 279 2 hrs.

3. Elementary Education 24 hrs.
An adviser sets up an "individualized" program for each student. Report to the College of Education Orientation and Advisement Office, 2305 Sangren Hall.

4. Professional Education 21 hrs.
Human Development and Learning 250 4 hrs.
Teaching and Learning 300 3 hrs.
Directed Teaching, Seminar in Education, and school and Society 470, 410, 450 14 hrs.

5. Physical Education 2 hrs.
(PEPR 340 Physical Education for the Elementary Teacher will satisfy one hour of this requirement.)

Rural Elementary Curriculum

Bachelor of Arts or Bachelor of Science Degree
State Elementary Provisional Certificate

Major attention is given to preparation for teaching in schools located in rural or small community areas—population 2,500 or less. Students desiring to teach in schools serving these areas must qualify for 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 rural 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 (nonprofessional courses only) and/or the College of General Studies are required for Michigan certification.

2. Elementary Education Minor 24 hrs. Requirements and approval for this required minor are available in the College of Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have a minor slip signed by an approved Elementary Education adviser.

3. Professional Education Sequence 16-21 hrs.
Human Development and Learning 250 4 hrs.
Teaching and Learning 300 3 hrs.
Directed Teaching 470 9 hrs.
Seminar in Education 410 2 hrs.
School and Society 450 3 hrs.

Rural Sociology 220 3 hrs.
Rural Economics 230 3 hrs.
Rural Life (Seminar) 525 2 hrs.
Curr. Organization in Small Schools 201 3 hrs.
Problems of Comm. Schools in Rural Areas 411 1-2 hrs.
Supervision in Rural Area School (Sem.) 408 1-2 hrs.

5. Physical Education 2 hrs.
(PEPR 340 will satisfy one hour of this requirement.)

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
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 (nonprofessional courses only) and/or the College of General Studies are required for Michigan certification.

   2. Professional Education: 21 hrs.
      Human Development and Learning 250: 4 hrs.
      Teaching and Learning in Jr. or Sr. H.S. 301: 3 hrs.
      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: 28 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 a 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).

Approved majors and minors for the Secondary Education Curriculum. (Only programs listed below are acceptable for Secondary Education).

**Majors** (Each major marked with an asterisk gives K-12 certification in that subject.)
- Agriculture (AGR)
- American Studies (AMS)
- Anthropology (ANT)
- Art Education (includes Drawing and Design minor) (ARE)
- Biology (BIO)
- Business Education (BED)
- Chemistry (CHM)
- Communication Arts & Sciences (CAS)
- Dance Education (DAN)
- Distributive Education (DED)
- Earth Science (EAR)
- Economics (ECO)
- English (ENG)
- Geography (GEG)
- History (HIS)
- Home Economics (HEE)
- Industrial Arts Majors:
  - General Industrial Arts (GIA)
  - Drafting (DRA)
  - Electricity-Electronics (ELT)
  - Graphic Arts (GRA)
  - Metal Working (MWK)
  - Power-Automotives (POW)
  - Woodworking (WDK)
- Language Department Majors:
  - French (FRE)
  - German (GER)
  - Latin (LAT)
  - Russian (RUS)
  - Spanish (SPA)
- Linguistics (used only as 2nd major) (LIN)
- Mathematics (MAT)
- Music Education (includes vocal or instrumental minor) (MUS)
- Physical Education Majors
  - Physical Education-Elementary (PEE)
  - Physical Education-Secondary (PES)
  - Health Education (HED)
  - Aquatics Education (AQE)
  - Recreation (REC)
  - Coaching (PEA) (Not K-12)
- Physics (PHY)
- Political Science (POL)
- Psychology (PSY)
- Science (need departmental approval) (SCI)
- Social Science (SOS)
- Sociology (SOC)
- Theatre Education (THN)
- Vocational Technical Education (VIE)

**Minors**
- Agriculture (AGR)
- Anthropology (ANT)
- Art (ARE)
- Biology (BIO)
- Black American Studies (BAS)
- Business Education (BED)
- Chemistry (CHM)
- Communication Arts & Sciences (CAS)
- Dance Education (DAN)
- Distributive Education (DED)
- Earth Science (EAR)
- Economics (ECO)
- English (ENG)
- Environmental Studies (EVs)
- Family Life Education (FLE)
- Food Services (OCS)
- General Business (from Bus. Ed. dept. only) (GBS)
- Geography (GEG)
- History (HIS)
- Industrial Arts (same minor areas as listed under major)

**Minors**
- African Studies (AFS)
- Asian Studies (AIS)
- Cross Cultural Studies (CCS)
- Latin American Studies (LAS)
- Slavic Studies (SVS)
- Language Department Minors (same as listed under major)
- Library Science (LIB)
- Linguistics (LIN)
- Mathematics (MAT)
- Physical Education Minors:
  - Physical Education—Elementary (PEE)
  - Physical Education—Secondary (PES)
  - Coaching (PEA)
  - Swimming (SWM)
  - Phys. Ed. Exceptional Child (PEC)
  - Health Education (HED)
- Recreation (REC)
- Physics (PHY)
- Political Science (POL)
- Psychology (PSY)
- Religious, Academic Study of (ASR)
- Retailing (RET)
- Science (need departmental approval) (SCI)
- Social Science (SOS)
- Sociology (SOC)
- Theatre Education (THN)
- Vocational Technical Education (VIE)

NOTE: Students who choose a Special Education major must be admitted to the Special Education Curriculum.

E. The candidate must satisfy the requirements for the A.B. or B.S. degree.

Special Education Curriculum

Bachelor of Science Degree
State Elementary Provisional Certificate

**Emotionally Disturbed**
(For the preparation of teachers of the emotionally disturbed.)

A. Minimum hours for this curriculum: 130 hrs.
   (If B.A. degree is desired, see Degrees for these requirements)

B. Course Requirements (Listings marked with * indicate that a minimum of "C" must be earned in each course listed in the
2. English 4 hrs.

2. English 4 hrs.

1. General Education
   Requirement 35 hrs.
   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 are required for Michigan
   certification. (See "Degree
   Requirements" under Degree
   and Curricula listed earlier in
   this Bulletin.)

2. English 4 hrs.

2. English 4 hrs.

3. Mathematics and
   Psychology 7 hrs.
   Structure of Arithmetic 150 4
   **General Psychology 194 3

4. Professional Education
   Human Development and
   Learning 250 3
   Teaching of Reading 312 3
   or Reading and Related
   Communication Skills for Early
   Childhood 351 4
   or Reading and Related
   Communication Skills for Middle
   and Upper Grades 352 4

5. Fine Arts (Art and Music) 7 hrs.
   Music for the Classroom
   Teacher 140 or Music in Special
   Education 384 4

6. Practical Arts 3 hrs.
   Childhood/Adulthood Crafts and
   Adapted Techniques 190 3

7. Emotionally
   Disturbed—Major* 39 hrs.
   Education of Exceptional
   Persons 530 3
   Practicum in Special
   Education 531 2
   **Communication Disorders
   200 3
   Programs and Intervention
   Strategies with the Socially
   and Emotionally Maladjusted
   589 4
   Behavior Disorders in School-
   Aged Learners 588 3
   Educational Provisions for
   Handicapped Adolescents and
   Young Adults 560 3
   Diagnostic and Prescriptive
   Techniques in Special
   Education 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 2 hrs.
   Physical Education for the
   Elementary Teacher 340 2

C. One Academic Minor in a subject
   or subject field taught in the
   elementary school 20 hrs.

D. Electives (Approved by
   curriculum advisor)

E. The candidate must satisfy the
   requirements for the B.S. degree
   or the B.A. degree.

Mentally Handicapped

A. Minimum hours for this
   curriculum 130 hrs.
   (If a B.A. degree is desired, see
   "Degrees" for these requirements)

B. Course Requirements (Listings
   marked with • indicate that a
   minimum of "C" must be earned
   in each course listed in the
   major. Those marked with ** are
   approved for General Education.)

1. General Education
   Requirement 35 hrs.
   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 are
   required for Michigan
   certification. (See "Degree
   Requirements" under Degrees
   and Curricula listed earlier in
   this Bulletin.)

2. Communication Arts and
   Sciences and English 7 hrs.
   **Children's Literature 282 4
   Public Speaking I 130 or
   **Interpersonal
   Communication 170 3

3. Mathematics and
   Psychology 7 hrs.
   Structure of
   Arithmetic 150 4
   **General Psychology 194 3

4. Professional Education
   Human Development and
   Learning 250 4
   Teaching of Reading 312 3
   or Reading and Related
   Communication Skills for Early
   Childhood 351 4
   or Reading and Related
   Communication Skills for Middle
   and Upper Grades 352 4
   Directed Teaching 471
   (Regular Class) 4

5. Fine Arts (Art and Music) 7 hrs.
   Music for the Classroom
   Teacher 140 or Music in Special
   Education 384 4
   Art Education Workshop 150 3

6. Practical Arts 3 hrs.
   Childhood/Adulthood Crafts &
   Adapted Techniques 190 3

7. Mentally
   Handicapped—Major* 42 hrs.
   Education of Exceptional
   Persons 530 3
   Practicum in Special Education
   531 2
   **Communication Disorders
   200 3

Orthopedically
Handicapped

A. Minimum hours for this
   curriculum 130 hrs.
   (If a B.A. degree is desired, see
   "Degrees" for these requirements)

B. Course Requirements (Listings
   marked with * indicate that a
   minimum of "C" must be earned
   in each course listed in the
   major. Those marked with ** are
   approved for General Education.)

1. General Education
   Requirement 35 hrs.
   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 are
   required for Michigan
   certification. (See "Degree
   Requirements" under Degrees
   and Curricula listed earlier in
   this Bulletin.)

2. English 4 hrs.

3. Mathematics and
   Psychology 7 hrs.
   Structure of
   Arithmetic 150 4
   **General Psychology 194 3

4. Professional Education
   Human Development and
   Learning 250 4
   Teaching of Reading 312 3
   or Reading and Related
   Communication Skills for Early
   Childhood 351 4
   or Reading and Related
   Communication Skills for Middle
   and Upper Grades 352 4
   Directed Teaching 471
   (Regular Class) 4

5. Fine Arts (Art and Music) 7 hrs.
   Music for the Classroom
   Teacher 140 or Music in Special
   Education 384 4
   Art Education Workshop 150 3

6. Practical Arts 3 hrs.
   Childhood/Adulthood Crafts &
   Adapted Techniques 190 3

7. Mentally
   Handicapped—Major* 42 hrs.
   Education of Exceptional
   Persons 530 3
   Practicum in Special Education
   531 2
   **Communication Disorders
   200 3

8. Physical Education 2 hrs.
   Physical Education for the
   Elementary Teacher 340 2

Nature and Needs of the
Mentally Retarded 532 4
Behavior Disorders in School-
Aged Learners 588 3
Educational Provisions for
Handicapped Adolescents and
Young Adults 560 3
Diagnostic and Prescriptive
Techniques in Special Education
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 2 hrs.
   Physical Education for the
   Elementary Teacher 340 2

CURRICULA 241
Visually Handicapped

A. Minimum hours for this curriculum: 130 Hrs.
(BA degree is desired, see "Degrees" for these requirements.)

B. Course Requirements (Listings marked with * indicate that a minimum of "C" must be earned in each course listed in the major. Those marked with ** are approved for General Education.)

1. General Education
   Requirement: 35 hrs.
   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. (See "Degree Requirements" under Degrees and Curricula listed earlier in this Bulletin.)

2. Communication Arts and Sciences, Language, and English: 7 hrs.
   *Children's Literature 282: 4 hrs.
   **Public Speaking I 130: 4 hrs.
   **Public Speaking II 131: 3 hrs.

   Structure of Arithmetic 150: 4 hrs.
   General Psychology 194: 3 hrs.

4. Professional Education
   11-12 hrs.
   Human Development and Learning 250: 4 hrs.
   Teaching of Reading 312: 3 hrs.
   or Reading and Related Communication Skills for Early Childhood 351: 4 hrs.
   or Reading and Related Communication Skills for Middle and Upper Grades 352: 4 hrs.
   Directed Teaching (Regular Class): 4 hrs.

   Music in Special Education 531: 3 hrs.
   Art Education Workshop 150: 3 hrs.

6. Practical Arts: 3 hrs.
   Childhood/Adulthood Crafts and Adapted Techniques 190: 3 hrs.

   Education of Exceptional Persons 530: 3 hrs.
   Practicum in Special Education 531: 2 hrs.
   Behavior Disorders in School-Aged Learners 588: 3 hrs.
   Educational Provisions for Handicapped Adolescents and Young Adults 560: 3 hrs.
   **Communication Disorders 200: 4 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: 2 hrs.
   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 (Approved by curriculum advisor)

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

Visually Handicapped

A. Minimum hours for this curriculum: 130 Hrs.
(If a B.A. degree is desired, see "Degrees" for these requirements.)

B. Course Requirements (Listings marked with * indicate that a minimum of "C" must be earned in each course listed in the major. Those marked with ** are approved for General Education.)

1. General Education
   Requirement: 35 hrs.
   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 required for Michigan certification. (See "Degree Requirements" under Degrees and Curricula listed earlier in this Bulletin.)

2. Communication Arts and Sciences, Language, and English: 7 hrs.
   *Children's Literature 282: 4 hrs.
   **Public Speaking I 130: 4 hrs.
   **Public Speaking II 131: 3 hrs.

   Structure of Arithmetic 150: 4 hrs.
   General Psychology 194: 3 hrs.

4. Professional Education
   11-12 hrs.
   Human Development and Learning 250: 4 hrs.
   Teaching of Reading 312: 3 hrs.
   or Reading and Related Communication Skills for Early Childhood 351: 4 hrs.
   or Reading and Related Communication Skills for Middle and Upper Grades 352: 4 hrs.
   Directed Teaching (Regular Class): 4 hrs.

   Music in Special Education 531: 3 hrs.
   Art Education Workshop 150: 3 hrs.

6. Practical Arts: 3 hrs.
   Childhood/Adulthood Crafts and Adapted Techniques 190: 3 hrs.

   Education of Exceptional Persons 530: 3 hrs.
   Practicum in Special Education 531: 2 hrs.
   Behavior Disorders in School-Aged Learners 588: 3 hrs.
   Educational Provisions for Handicapped Adolescents and Young Adults 560: 3 hrs.
   **Communication Disorders 200: 4 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: 2 hrs.
   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 (Approved by curriculum advisor)

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.
Counseling and Personnel
Edward L. Trembley, Chair
Robert L. Betz
Kenneth Bullmer
William A. Carlson
John S. Geisler
Paul L. Griffith
Robert F. Hopkins
Neil Lamper
Gilbert E. Mazer
Robert Oswald
Bill K. Richardson
Thelma Urbick

The Department of Counseling and Personnel offers professional education 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.

583 Guidance Workshop
1-4 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)

Educational Leadership
Donald Weaver, Acting Chair
Harold W. Boles
Mary Anne Bunda
James A. Davenport
Richard E. Munsterman
James Sanders
Carol F. Sheffer
Uldis Smidchens
Daniel L. Stufflebeam
Charles C. Warfield

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 243
Professional Health, Physical Education and Recreation
A.L. Sebaly, Acting Chair
Donald Boven
Billye Ann Cheatum
Charles Comer
Harriet Creed
George Dales
Ruth Davis
David Diget
Frances Ebert
Jean Friedel
George Hobbs
Jack Jones
Janet Kanzler
Patricia Lemanski
Ruth Ann Meyer
Margie Jeanne Miner
John Newton
Fred Orlofsky
Richard Raklovits
Harold L. Ray
William Roweckamp
Merle Schlosser
William Schreiber
John Shaw
Norma Stafford
Barbara Stephenson
Fred Stevens
Ronald Winter
Robert Wyman
Roger Zabik

The professional programs 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, and (4) continual review of curricular offerings by students and faculty. Students who desire specialized professional preparation may select from the following:

Majors
1. Aquatics Education
2. Health Education
3. Physical Education Group Major
   A. Coaching Emphasis
   B. Elementary Emphasis
   C. Secondary Emphasis
4. Recreation
Minors
1. Athletic Training
2. Coaching
   A. Phys. Educ. Major
   B. Non-PE Major
3. Elementary Physical Education
4. Health Education
5. P.E. for the Exceptional Child
6. Recreation
7. Secondary Physical Education
8. Swimming

The professional student is expected to work closely with a Departmental advisor during his/her years on campus. A copy of the Departmental Handbook should be secured from the Department Office promptly after choosing a major or minor.

NOTE TO TRANSFER STUDENTS
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 PEPR 344 (3) and PEPR 345 (3) be included in the hours taken at Western Michigan University.

Aquatics Education
(35 Hours)
Bachelor of Science Degree
State Secondary Provisional Certificate

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. The graduate will not be qualified to teach physical education without completing the Secondary Physical Education minor program. 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.

<table>
<thead>
<tr>
<th>Academic Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 125</td>
<td>Introduction to Aquatic Instruction</td>
</tr>
<tr>
<td>PEPR 227</td>
<td>Show Production</td>
</tr>
<tr>
<td>PEPR 295</td>
<td>Biomechanical Analysis of Activity</td>
</tr>
<tr>
<td>PEPR 325</td>
<td>Swimming for the Exceptional Child</td>
</tr>
<tr>
<td>PEPR 337</td>
<td>Coaching &amp; Advanced Technique Series—Speed Swim, &amp; Diving prerequisite PEPR 125</td>
</tr>
<tr>
<td>PEPR 337</td>
<td>Coaching &amp; Advanced Technique Series—Synchronized Swim. prerequisite PEPR 125</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Foundation of Sports Injuries</td>
</tr>
<tr>
<td>PEPR 390</td>
<td>Physiology of Motor Activity</td>
</tr>
<tr>
<td>PEPR 392</td>
<td>Measurement &amp; Evaluation in Physical Education</td>
</tr>
</tbody>
</table>

Activity Courses
9

DAN 123 | Beginning Contemporary Dance | 1 |
PEPR 134 | Small Craft | 2 |
PEPR 102 | Stunts, Tumbling, Trampoline | 1 |

OR
PEPR 103 | Gymnastics (with perm. of instructor) | 1 |
PEGN 251 | Swimming—Skin/Scuba Diving | 2 |
PEGN 253 | Swimming—Speed Swimming | 1 |
PEGN 254 | Swimming—Springboard Diving | 1 |

OR
PEGN 354 | Swimming—Intermediate Springboard Diving | 1 |
PEGN 255 | Swimming—Synchronized | 1 |
PEGN 355 | Swimming—Intermediate Synchronized | 1 |

Electives
6

PEPR 350 | Swimming—Water Safety Instructors | 2 |
PEGN 354 | Swimming—Intermediate Springboard Diving | 1 |
PEGN 355 | Swimming—Intermediate Synchronized | 1 |
PEPR 235 | Theory of Coaching | 1 |
PEPR 236 | Officiating Synchronized Swimming | 1 |
PEPR 236 | Officiating Speed Swimming & Diving | 1 |
PEPR 440 | Nature/Bases of Motor Skills | 2 |

Participation
Aqua Sprites—1 yr., no credit
Speed Swimming Team or Diving Team—1 season, no credit
Teaching Assistant—1 semester, no credit

Health Education Group Major
(36 Hours)
Bachelor of Science Degree
State Elementary and Secondary Provisional Certificate

The health education major is a program to prepare health educators who can influence the psychological, sociological, and biological development of individuals and 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 consult the department advisor promptly after choosing this major, and usually not later than the sophomore year.

Health Education majors are expected to have a valid First Aid Certificate at the time of graduation.

Course Requirements: Hrs.
1. General Education 35 hours required
2. Physical Education . . . . . . . 2
3. Recommended: Students who wish to substitute other courses should consult the advisor in advance
   Required Cognates
   PSY 120 | Introduction to Psychology | 3 |
   OR 190/150
   SOC 200 | Principles of Sociology | 3 |
   BIO 107 | Biological Science | 4 |
   OR 101 | Substitute BioMed 210 Anatomy or 240 Physiology | 4 |

4. Required Courses . . . . . . . . . 28
   PEPR 100 | Health for Modern Man | 4 |
   PEPR 211 | Community Health—Public Health I | 3 |
   PEPR 314 | Elementary School Health and Safety Education | 3 |
   OR
   PEPR 315 | Secondary School Health and Safety Education | 1
   PEPR 411 | Public Health II | 3 |
   PEPR 412 | Administration in Health Education | 3 |
   BIO 205* | The Human Body in Health and Disease | 4 |
   BUS 288/386 | Records Management/Office Management | 2/3 |
   EDUC 399 | Field Experience | 2 |
   PEGR 514 | Methods and Materials in Health Education | 2 |
   PEGR 516 | Issues in Health Education | 2 |

5. Electives . . . . . . . . . . . . . 8
   Courses must be selected with the consent of advisor

*Indicates courses applicable to total General Education requirement.)
Suggested Courses

BMED 230 Microbiology and Man .......................... 3
BUS 292 Consumer Principles and Practices .................. 3
HEC 212 Foods for Man ........................................... 3
HEC 220 Sex Education: Introduction to Human Sexuality ...... 3
PEPR 180/181 380 First Aid/Foundations of Sports Injury ... 1-2

PEGR 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

ED 340 General Safety Education ................................ 2

ED 350 The Young Child, His Family and His Society ............. 3

ED 555 Alcohol Education ........................................... 2

GS 316 Mass Media: Messages and Manipulation ................. 4

Group Major in Physical Education
(45 Hours)
Bachelor of Science Degree
State Elementary and Secondary Provisional Certificate

The Group Major in Physical Education offers the student the opportunity to concentrate on coaching, elementary physical education or secondary physical education. The student completing either the elementary or secondary area will receive certification in K-12; the coaching emphasis student will receive certification in 7-12.

The course of study in the Elementary Emphasis concentrates upon developmental tasks of the elementary school child with unique activities which provide for the child's optimum growth.

The course of study in the Secondary Emphasis offers a wide variety of activities needed to prepare the junior and senior high physical education teacher and an activity area of concentration for specialization in teaching or coaching.

The course of study in the Coaching Emphasis offers the selection of in-depth studies for the coaching of three sports.

Majors are to complete the education sequence as required by the Department of Teacher Education including the directed teaching experience. The student will also act as a Teaching Assistant for one semester in a general physical education course and complete a minimum of 15 clock hours of observation and participation on both the elementary and secondary levels.

These experiences are scheduled for the student to plan on attending a spring session during his/her first year at Western.

Hours Required for This Curriculum ................................ 130

(Indicates courses applicable to General Education requirement.)

1. Required Cognates .............................................. 12
   BMED 112 ................................................... 41
   OR
   Biology 101 .................................................... 4
   BMED 210 .................................................... 41
   BMED 240 .................................................... 41

2. Required Professional Core .................................... 21
   PEPR 101 Intro Games & Spts. ............................ 1
   PEPR 110 Physical Fitness .................................. 1
   PEPR 150 Foundations of HPER ............................ 2
   PEPR 181 First Aid ........................................... 2
   PEPR 295 Biomech. Analysis of Act. ....................... 2
   PEPR 344 Teach. of PE—Elementary ......................... 3
   PEPR 345 Teach. of PE—Secondary .......................... 3
   PEPR 390 Physiology of Mtr. Act. .......................... 2
   PEPR 392 Meas. & Evaluation ............................... 3
   PEPR 440 Nature and Bases of Mtr. Skls. ..................... 2
   Teaching Assistant .............................................. NC

COACHING EMPHASIS .............................................. 24

Required Courses .................................................. 7

1. Coaching Emphasis .......................................... 7
   PEPR 235 Theory of Coaching ................................ 2
   PEPR 236 Officiating (Sport) ............................... 1
   PEPR 380 Found. Sports Injuries (Pre-req. 181) .......... 2
   PEPR 439 Professional Field Experience ....................... 2

2. Coaching Techniques ........................................... 9
   PEPR 100 Sports Activity Series ........................... 3
   PEPR 337 Adv. Techniques and Coaching Series ............. 6
   Baseball Basketball
   Field Hockey
   Football Golf
   Gymnastics Softball
   Speed Swimming
   Diving
   Synchronized Swimming
   Tennis
   Track & Field
   Volleyball Wrestling

3. Required Activity Courses .................................... 5
   Any PEPR or PEGN Activity Courses approved by advisor ....... 4

4. Elective Courses ............................................... 6
   PEPR 236 Officiating (Sport) ............................... 1
   PEPR 250 Cultural Bases HPER ............................... 2
   PEPR 335 Team Manager Participation ......................... 1

PEPR 344 Teaching P.E. Elem. School (required for K-12 P.E. certification) ....... 3

PEPR 368 Admin. Organization Intramural Sports ................ 2

PEGR 530 Practicum in Tchg. & Coaching .................................. 1-2

PEGR 535 Principles & Problems Coaching .......................... 2

PEGR 562 Administration of Athletics ............................ 2

PEGN Activity Courses

ELEMENTARY EMPHASIS .............................................. 24

Required Courses .................................................. 16

PEPR 102 Sts. Tumb. & Tramp. ................................... 1

PEPR 104 Soccer, Spdb. & Fl. Ftbl. .............................. 1

DAN 122 Recreational Dance ..................................... 1

PEPR 132 Tr. & Field ............................................... 1

PEGN 139 Relaxation OR ............................................ 1

DAN 204 Teach, Dan. Elem Sch ................................... 3

PEPR 276 Outdoor Education ....................................... 2

PEPR 320 PE—Exceptional Child .................................. 3

Minimum of 1 additional PEPR Team Sport ....................... 1

Minimum of 1 additional individual sport ....................... 1

PEGN Swimming course at own level ............................. 1

Suggested Elective Courses ....................................... 8

Selection of any PEPR or PEGN activity course as approved by department academic advisor, according to the needs of the individual student.

PEGN 102 Badminton ............................................... 1

PEGN 103 Gymnastics .............................................. 1

PEGN 105 Bowling .................................................. 1

PEGN 106 Basketball ............................................... 1

PEGN 106 Camp Craft ............................................. 1

PEGN 107 Softball ................................................. 1

PEGN 109 Volleyball ............................................... 1

PEGN 131 Tennis ..................................................... 1

PEGN 143 X-Country Skiing ....................................... 1

PEPR 174 Recreational Leadership—Arts & Crafts ................ 2

PEPR 236 Officiating Series ...................................... 1

PEPR 250 Cultural Bases .......................................... 2

PEPR 337 Coach. & Adv. Tech. .................................... 2

PEGN Swimming .....................................................

SECONDARY EMPHASIS .............................................. 24

(Proficiency examination procedure may be obtained from department advisor. See ** below.)

Group I: Swimming—2 courses at own swimming level ........ 2

Group II: Required—DAN 122 Recreational Dance ............... 1

(See also Group IV)

Group III: Team Sports—Course or proficiency ** in all

PEPR 104 Soccer, Spdb., Fl. Ftbl.

OR

PEPR 105 Field Hockey ........................................... 1

PEPR 106 Basketball .............................................. 1

PEPR 107 Softball .................................................. 1

PEPR 109 Volleyball ............................................... 1
**Group IV: Individual Sports—Course or proficiency** in all of A; 1 or B 8

| PEPR 101 Archery | 1 |
| PEPR 102 Badminton | 1 |
| PEPR 102 Tr., Tumb., Tramp. | 1 |
| PEPR 103 Gymnastics (pre-req. PEPR 102 or PEGR 124) | 1 |
| PEGN 122/123 or 322 Golf | 1 |
| PEPR 131 or PEGR 260/360 | 1 |
| PEPR 132 Tr. & Field | 1 |
| PEGR 134 Paddleball | 1 |
| OR |
| PEGR 137 Racketball | 1 |

B. Select 1 course

| DAN 102 Beginning Jazz | 1 |
| DAN 123 Beginning Contemporary | 1 |
| DAN 116 Ballet | 1 |
| PEPR 130 Wrestling | 1 |

**Group V: Lifetime Sports/Activities—Select a minimum of 2 Courses**

| PEPR 102 Bait & Fly Casting | 1 |
| PEPR 105 Bowling | 1 |
| PEGR 106 Camp Craft | 1 |
| PEGR 108 or 208 Back-packing | 1 |
| PEGR 109 Cycling | 1 |
| PEGR 120 Fencing | 1 |
| PEGR 130 Judo | 1 |
| OR |
| PEGR 131 Karate | 1 |
| PEGR 139 Relaxation | 1 |
| OR |
| PEGR 165 Yoga | 1 |
| PEGR 140 Riffey | 1 |
| PEGR 143 X-Country Skiing | 1 |

**Group VI: Concentration Areas—Select A, B or C for 3 credit hours minimum**

A. Sports

First level course or proficiency from Group III or IV

| PEPR 236 Officiating (same activity) | 1 cr. hr. |
| PEGR 337 Coaching/Adv. Techniques (same activity) | 2 cr. hrs. |
| OR |

B. Swimming

Select hours with assistance of advisor (i.e. Speed Swimming, Synchronized Swimming, Springboard Diving, etc.)

| OR |

C. All 3 hours from same dance form

| 1 DAN 202 Jazz Dance II | 1 |
| DAN 302 Intern. Jazz | 2 |
| OR |
| 2 DAN 216 Ballet III | 1 |
| DAN 316 Intern. Ballet | 2 |
| OR |
| 3 DAN 223 Contemp. Dance II | 1 |
| DAN 323 Intern. Contemp. Dance | 2 |

**Group VII: Additional Electives—4 credit hours minimum**

| PEPR 235 Theory of Coaching | 2 |
| PEPR 236 Officiating Series | 1 |
| PEGR 250 Cultural Base | 2 |
| PEGR 300 Seminar | 1-3 |
| PEGR 315 Health—Sec. School | 3 |

**Recreation**

(40 hrs.) Bachelor of Arts Degree Bachelor of Science Degree

The Recreation Major is designed to prepare students to assume leadership and/or administrative roles in public or private recreation agencies and organizations. The hours of electives within this course of study allows the student flexibility in preparing for a specific phase of recreation. Students will also complete a supervised internship at least three months duration consecutively. The option of Teacher Certification (12 credit hours in place of PEPR 479 Recreation Internship and PEGR 478 Seminar in Recreation) provides the student with the opportunity to be licensed to teach Recreation if they so elect.

<table>
<thead>
<tr>
<th>Hours required for this curriculum</th>
<th>122</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Courses</td>
<td>35</td>
</tr>
<tr>
<td>1. Required Professional Courses</td>
<td>29</td>
</tr>
<tr>
<td>(Please note in course descriptions when courses are offered and the suggested sequence of course work.)</td>
<td></td>
</tr>
<tr>
<td>PEPR 170 Introduction to Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 270 Recreation Leadership (Prerequisite or corequisite 170)</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 275 Recreation Programming (Prereq. 270)</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 370 Recreation Practicum (Prereq. 170-270-275)</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 375 Organization and Administration of Recreation (Prereq. 170-270-275-370)</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 470 Recreation Facilities and Areas</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 478 Seminar in Recreation</td>
<td>4</td>
</tr>
<tr>
<td>PEPR 479 Internship in Recreation</td>
<td>8</td>
</tr>
<tr>
<td>2. Elective Courses</td>
<td>11</td>
</tr>
</tbody>
</table>

**GROUP I. Program Skills**

A. **Aquaticus Area** (Not more than 4 courses)

| PEGR 250 Senior Life Saving | 2 |
| PEGR 350 Water Safety Instructors | 2 |
| PEPR 125 Introduction to Aquatic Instruction | 3 |
| PEGR 107 Canoeing | 1 |
| PEGR 141 Sailing | 1 |
| PEGR 251 Skin/Scuba Diving | 2 |
| PEGR 355 Synchronized Swimming | 1 |

| PEGR 253 Speed Swimming | 1 |
| PEGR 254 Springboard Diving | 1 |

B. **Sports Area** (Not more than 8 courses)

PEGR/PEPR Team Sports (Not more than 4—no repeats) | 4 |

| PEGR/PEPR Ind. & Dual Sports (Not more than 4—no repeats) | 4 |
| PEPR 236 Sports Officiating (Not more than 4) | 4 |
| PEPR 337 Adv. Techniques & Coaching (Not more than 2) | 4 |

C. **Arts & Crafts Area** (Not more than 4 courses)

PEPR 174 Rec. Leadership of Arts & Crafts | 2 |

| IED 190 Adult/Child Crafts | 3 |
| OT 110 General Crafts | 3 |
| IED 198 OT Woodworking | 3 |
| ART 239 Metal Smithing | 3 |
| ART 110 (111) Drawing | 3 |
| ART 238 Jewelry | 3 |
| ART 240 Painting | 3 |
| OT 130 Ceramics | 3 |
| IED 170 Ind. Crafts Techniques | 3 |

| D. Music & Drama Area (Not more than 4 courses) | |

| MUS 140 Music for the Classroom | 4 |
| MUS 290 Recreational Music | 2 |
| CAS 564 Creative Drama for Children | 4 |
| THEA 200 Intro. to Theatre | 3 |
| THEA 250 Play Production | 3 |
| LIB 546 Story Telling | 3 |

**E. Outdoor Skills Area** (Not more than 4 courses)

| PEPR 172 Camp Leadership | 3 |
| PEPR 276 Outdoor Education | 2 |
| PEG 106 Campcraft | 1 |
| PEG 133 Orienteering and Backpacking | 1 |
| PEG 143 Cross Country Skiing | 1 |
| BIO 234 Outdoor Science | 4 |
| BIO 105 Environmental Science | 4 |
| BIO 530 Envir. Educ. | 3 |

**GROUP II. Administrative Skills—Not more than four courses**

| PEPR 368 Organization & Administration of Intramurals | 2 |
| CAS 130 Public Speaking | 3 |
| MGT 250 Small Business Management | 2 |
| BEAS 288 Records Management | 2 |
| BEAS 556 Office Management | 3 |
| BEAS 242 Business Communications | 3 |
| MGT 102 Computer Usage | 3 |
| ACCT 201 Accounting | 3 |
| GEO 350 Principles of Conservation & Environment Management | 3 |
| GEO 556 Studies in Land Use Planning | 13 |
| GEO 554 Outdoor Recreation: Resources and Planning | 3 |
| ECON 319 Environmental Economics | 3 |
| AGR 323 Landscape Design | 3 |
GROUP III. Community Organization
Skills—Not more than four courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGR 516</td>
<td>Values Clarification</td>
<td>2</td>
</tr>
<tr>
<td>SW 572</td>
<td>Community Agency Resources</td>
<td>2</td>
</tr>
<tr>
<td>SW 562</td>
<td>Community Organizations in Urban Areas</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Modern Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SW 464</td>
<td>Problem Solving in Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>PEGR 572</td>
<td>Recreation for the Aged</td>
<td>2</td>
</tr>
<tr>
<td>SOC 352</td>
<td>Introduction to Gerontology</td>
<td>3</td>
</tr>
</tbody>
</table>

GROUP IV. General Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGR 180/181 First Aid</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>PEGR 500</td>
<td>Studies in H.P.E.R.</td>
<td>1-3</td>
</tr>
<tr>
<td>PEGR 598</td>
<td>Readings in H.P.E.R.</td>
<td>1-2</td>
</tr>
</tbody>
</table>

Athletic Training Minor (Non-Teaching)
(19-27 hrs.)

Required Cognates:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 112</td>
<td>Biology</td>
<td>3</td>
</tr>
<tr>
<td>BMED 210</td>
<td>Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BMED 240</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
</tbody>
</table>

I. Required Core

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 181</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Foundations Spts. Injuries</td>
<td>2</td>
</tr>
<tr>
<td>HEC 210</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>OT 320</td>
<td>Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>PEGR 489</td>
<td>Field Experience, Atl. Trn.</td>
<td>2</td>
</tr>
<tr>
<td>PEGR 352</td>
<td>Introduction to Atl. Train. Tech.</td>
<td>2</td>
</tr>
</tbody>
</table>

*If not required in major or minor

II. Electives

1. Basic Sciences

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 205</td>
<td>Human Body Hth. &amp; Disease</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101 or 102</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CSSC 133</td>
<td>Issues in Social Biology</td>
<td>4</td>
</tr>
<tr>
<td>PHY 106</td>
<td>Elementary Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

2. Behavioral Sciences

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 170</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105</td>
<td>Behavioral Modification</td>
<td>3</td>
</tr>
<tr>
<td>PSY 190</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 200</td>
<td>Principles Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SWRK 210</td>
<td>Social Work Study Prof. Role</td>
<td>3</td>
</tr>
<tr>
<td>TEED 350</td>
<td>Young Child, Fam. &amp; Society</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Health Educ. Aspects of Man & His Environment

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 512</td>
<td>Health Problems</td>
<td>3</td>
</tr>
<tr>
<td>HEC 220</td>
<td>Intro. Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 235</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
</tbody>
</table>

II. Professional Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 320</td>
<td>P.E. Exceptional Child</td>
<td>2</td>
</tr>
<tr>
<td>PEGR 516</td>
<td>Issues in Health Education</td>
<td>1-3</td>
</tr>
<tr>
<td>TEED 340</td>
<td>Safety Education</td>
<td>3</td>
</tr>
<tr>
<td>TEED 555</td>
<td>Alcohol Education</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional Requirements:
1. Current lifesaving certificate or satisfactory completion of PEPR 250 Lifesaving or PEPR 350 W.S.I. required
2. Six hundred (600) clock hours of clinical experience.

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 235</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 435/535</td>
<td>Principles &amp; Problems of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 439</td>
<td>Field Experience (Pre-req. Coaching &amp; Adv. Techniques Course)</td>
<td>2</td>
</tr>
<tr>
<td>PEGR 400</td>
<td>Varsity Athletic series</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 335</td>
<td>Team Manager Participation</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Foundations of Sports Injuries (Prereq. 181)</td>
<td>2</td>
</tr>
</tbody>
</table>

II. Professional Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 337</td>
<td>Advanced Techniques &amp; 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)</td>
<td>8</td>
</tr>
</tbody>
</table>

III. Team

<table>
<thead>
<tr>
<th>Sport</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>2</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>2</td>
</tr>
<tr>
<td>Baseball or Softball</td>
<td>2</td>
</tr>
<tr>
<td>Volleyball</td>
<td>2</td>
</tr>
<tr>
<td>Soccer</td>
<td>2</td>
</tr>
<tr>
<td>Ice Hockey</td>
<td>2</td>
</tr>
</tbody>
</table>

IV. Individual

<table>
<thead>
<tr>
<th>Sport</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming</td>
<td>2</td>
</tr>
<tr>
<td>Track and Field</td>
<td>2</td>
</tr>
<tr>
<td>Speed Swim/Diving</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Requirements:
- 1 current lifesaving certificate or satisfactory completion of PEPR 250 Lifesaving or PEPR 350 W.S.I. required
- Six hundred (600) clock hours of clinical experience.

Hours Required for this Minor: 23

Requirements for this minor: 24

Additional Electives: 2

Athletic Training Minor—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 Program: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics, and golf.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 235</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 295</td>
<td>Biomech. Analysis of Act.</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 390</td>
<td>Physiology of Motor Act.</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 435/535</td>
<td>Principles, Problems Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Foundations of Sports Injuries (Pre Req.—First Aid 181)</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 439</td>
<td>Field Experience (Pre-req.—Coaching &amp; Adv. Tech. Course)</td>
<td>2</td>
</tr>
<tr>
<td>PEGR 400</td>
<td>Varsity Athletic Series OR</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 335</td>
<td>Team Manager Participation</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 337</td>
<td>Advanced Techniques &amp; Coaching Series—Prerequisites: Must have had first level course(s) or permission of instructors. Elect 6 hours (must be one team sport and one individual sport)</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sport</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>2</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>2</td>
</tr>
<tr>
<td>Baseball or Softball</td>
<td>2</td>
</tr>
<tr>
<td>Volleyball</td>
<td>2</td>
</tr>
<tr>
<td>Football</td>
<td>2</td>
</tr>
<tr>
<td>Soccer</td>
<td>2</td>
</tr>
<tr>
<td>Ice Hockey</td>
<td>2</td>
</tr>
</tbody>
</table>
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

1. General Education Requirement: 38 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

   - BIOL 107
   - BMED 112
   - BMED 210
   - TEED 230

   Required Courses

   - PEPR 100 Health for Better Living
   - PEPR 101 Intro. to Games and Activity
   - PEPR 102 Stunts, Tumbling, Trampoline
   - PEPR 103 Beginning Gymnastics
   - PEPR 104 Soccer, Speedball, Flag Football
   - PEPR 139 Relaxation
   - PEGR Health Education

   Hours Required for this minor... 24

3. Required Courses

   - PEPR 180-81 First Aid
   - PEPR 110 Physical Fitness
   - PEPR 106 Basketball
   - PEPR 107 Softball
   - PEPR 321 Therapeutic Needs & Programs for the Exceptional Child
   - PEPR 420 Testing and Developmental Programs for the Exceptional Child

4. Electives

   - Electives selected by the student subject to approval of advisor.
   - PEPR 325 Swimming for the Exceptional Child
   - SPIED 350 Teaching Physical Education in the Exceptional School
   - PEPR Additional activity courses

Physical Education/Elementary Emphasis

(Must be taken as part of Elementary Group Minor)

1. Cognates

   - Hrs.
   - BIOL 107... 12
   - OR BMED 112... 3
   - BMED 210... 4
   - PEPR 236... 3

2. Required Professional Courses

   - Academic
     - PEPR 276 Outdoor Education
     - PEPR 295 Biomech. Analysis of Activity
     - PEPR 320 Physical Education for the Exceptional Child
     - PEPR 344 Teaching P.E. in the Elementary School
   - OR

3. Hours Required for this minor... 21

   - Elective Courses

   - 12-13
   - 1. Basic Sciences
     - BIOL 205 Human Body in Health & Disease
     - BMED 210 Mammalian Anatomy
     - BMED 240 Human Physiology
   - 2. Behavioral Sciences
     - PSY 150 Behavioral Modification
     - PSY 190 General Psychology
     - SOC 100 /200 Principles of Sociology
     - CAS 170 Interpersonal Communication
     - SW 210 Social Work Services & Prof. Roles
     - TEED 350 The Young Child, His Family & His Society
   - 3. Health Education Aspects of Man and His Environment
     - HEC 212 Foods for Man
     - HEC 220 Sex Education:
       - Introduction to Human Sexuality
     - PEPR 180/181/380 First Aid/Foundations of Sports Injuries
     - PEPR 516 Issues in Health Education
   - 4. Electives

   - 5

   - Electives selected by the student subject to approval of advisor.

   - 3-6

   - 3

   - 3

   - 2-4

   - 3

   - 2
Recreation Minor

The Recreation Minor is designed to provide students with the opportunity to be licensed to teach Recreation if they so elect. Certification (21 hours additional) allows the student flexibility in preparing for a specific phase of recreation. The option of Teacher Certification (21 hours additional) provides the student with the opportunity to be licensed to teach Recreation if they so elect.

1. Required Professional Courses 14
   (Please note in course descriptions when courses are offered and the suggested sequence of course work.)
   PEPR 170 Introduction to Recreation
   PEPR 270 Recreational Leadership (Prereq. or coreq. 170)
   PEPR 275 Recreational Programming (Prereq. 270)
   PEPR 370 Recreation Practicum (Prereq. 170, 270-275)
   PEPR 375 Organization and Administration of Recreation (Prereq. 170, 270-275-370)

2. Elective Courses (From not more than two groups)

GROUP I. Program Skills
A. Aquatics Area (Not more than 4 courses)
   PEGN 250 Senior Life Saving
   PEGN 350 Water Safety
   PEPR 101 Introduction to Aquatic Instruction
   PEGN 107 Canoeing
   PEGN 141 Sailing
   PEGN 251 Skin/Scuba Diving
   PEGN 355 Synchronized Swimming
   PEGN 253 Speed Swimming
   PEGN 254 Springboard Diving

B. Sports Area (Not more than 8 courses)
   PEGN/PEPR Team Sports (Not more than 4-no repeats)
   PEGN/PEPR Ind. & Dual Sports (Not more than 4-no repeats)
   PEPR 236 Sports Officiating (Not more than 4)
   PEPR 337 Adv. Techniques & Coaching (Not more than 2)

C. Arts & Crafts Area (Not more than 4 courses)
   PEPR 174 Rec. Leadership of Arts & Crafts
   IED 190 Industrial Arts for Elem. Tchr.
   OT 110 General Crafts

D. Music & Drama Area (Not more than 4 courses)
   MUS 140 Music for the Classroom Teacher
   MUS 290 Recreational Music
   CAS 564 Creative Drama for Children
   THEA 200
   THEA 250
   LIB 546 Story Telling

E. Outdoor Skills Area (Not more than 4 courses)
   PEPR 172 Camp Leadership
   PEPR 276 Outdoor Education
   PEGN 106 Campcraft
   PEGN 108/208 Backpacking
   PEGN 133 Orienteering
   PEGN 143 Cross Country Skiing
   BIOL 234 Outdoor Science
   BIOL 105 Envr. Biology
   BIOL 530 Envr. Educ.

GROUP II. Administrative Skills—Not more than four courses
   PEPR 388 Organization & Administration of Intramurals
   CAS 130 Public Speaking
   MGT 250 Small Business Management
   BEAS 288 Records Management
   BEAS 556 Office Management
   BEAS 242 Business Communications
   MGT 102 Computer Usage
   ACCT 201 Accounting
   GEOL 350 Principles of Conservation & Environmental Management
   GEOL 556 Studies in Land Use Planning
   GEOL 554 Outdoor Recreation: Resources and Planning
   ECON 319 Environmental Economics
   AGR 323 Landscape Design

GROUP III. Community Organization Skills—Not more than four courses
   PEGN 516 Values Clarification
   SW 572 Community Agency Resources
   SW 562 Community Organization in Urban Areas
   SOC 210 Modern Social Problems
   SW 464 Problem Solving in Gerontology
   PEGR 572 Recreation for the Aged
   SOC 352 Introduction to Gerontology

GROUP IV. General Electives—Not more than four courses
   PEPR 180 First Aid
   PEGR 598 Readings in H.P.E.R.
   PEGR 500 Studies in H.P.E.R.
   IED 170 Ind. Crafts Techniques

Secondary Physical Education Minor

1. Cognates
   BMED 112
   BMED 210
   BMED 240

2. Required Professional Courses:
   PEPR 150 Foundations of Health, Physical Ed. & Recreation
   PEPR 110 Physical Fitness
   PEPR 295 Biomech. Analysis of Activity
   PEPR 390 Physiol. of Motor Activity
   PEPR 392 Measurement & Evaluation in Physical Education
   PEPR 345 Teaching of Physical Education in Secondary School

Ind. Electives:

Required:
   PEPR 101 Intro. Gms. & Spts.
   PEPR 236 Elect one officiating course
   DAN 122 Recreational Dance

Individual Sports: Elect 4 courses from the following
   PEGN 101 Archery
   PEGN 102 Badminton
   PEGN 122 Golf
   PEGN 131 Tennis
   PEGN 102 St. Tumb Tramp
   PEGN 103 Gymnastics
   PEGN 132 Tr. & Field
   PEGN 134 Paddleball
   PEGN 250 Life Saving
   PEGN 350 WSI

Team Sports: Elect 2 semester hours from the following
   PEPR 104 Soccer, Speedball, Flag Football
   PEPR 105 Field Hockey
   PEPR 109 Volleyball
   PEPR 106 Basketball
   PEPR 107 Softball
Lifetime Sports/Activities: Elect 1 semester hour

PEGN 103 Bait and Fly Casting
PEGN 105 Bowling
PEGN 106 Camp Craft
PEGN 108/208 Backpacking
PEGN 109 Cycling
PEGN 120 Fencing
PEGN 130 Judo
PEGN 131 Karate
PEGN 139 Relaxation
PEGN 143 Cross-Country Skiing

Swimming Minor
Hours Required for this Minor... 21
(*Applicable to total General Education requirement)

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
   BIO 101 .......................... 4
   OR
   BMED 112 .......................... 3
   BMED 210 .......................... 4

3. Academic 13 Hrs.
   PEPR 125 Introduction to Aquatic Instruction ................ 3
   PEPR 337 Coaching—Adv. Techniques Series—
   Speed Swim & Dive Pre-reg. PEPR 125 ... 3
   PEPR 337 Coaching & Adv. Technique Series—
   Synchronized Swim. Pre-reg. PEPR 125 ... 2
   PEPR 295 Biomech. Analysis of Activity ........... 2
   PEPR 325 Swimming for the Exceptional Child .... 3

4. Activity ........................ 4 hrs.
   DAN 123 Beginning Contemporary Dance 1
   PEGN 253 Swimming—Speed
   PEGN 254 Swimming—
   Springboard Diving
   OR
   PEGN 354 Swimming—Int.
   Springboard Diving
   PEGN 255 Swimming—
   Synchronized
   OR
   PEGN 355 Swimming—Int.
   Synchronized

5. Electives ........................ 4 Hrs.
   PEGN 251 Swimming—Skin/Scuba Diving ....... 2
   PEPR 235 Theory of Coaching .......... 2
   PEPR 227 Show Production .......... 2
   PEPR 236 Officiating Speed
   Swim. & Diving .. 1
   PEPR 236 Officiating
   Synchronized Swimming ........... 1
   PEPR 440 Nature/Bases of Motor Skills .......... 2
   PEPR 380 Foundations of Sports Injuries ... 2

Participation is required in Aqua Sprites—one year, speed swimming/diving team—one season, and teaching assistant—one semester.

Swimming Minor

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.

Professional Activity Courses

101 Intro. Games and Sports 1 hr. Fall, Winter, Spring
102 Stunts, Tumbling, Trampoline 1 hr. Fall, Winter
103 Gymnastics 1 hr. Fall, Winter
104 Soccer, Speedball, Flag Football 1 hr. Fall, Spring
105 Field Hockey 1 hr. Fall
106 Basketball 1 hr. Fall, Winter, Spring
107 Softball 1 hr. Fall, Spring
108 Baseball 1 hr. Fall, Spring
109 Volleyball 1 hr. Fall, Winter, Spring
110 Physical Fitness 1 hr. Fall, Winter
130 Wrestling 1 hr. Winter
131 Tennis 1 hr. Fall, Spring
132 Track & Field 1 hr. Fall, Spring
133 Football 1 hr. Fall
134 Small Craft 2 hrs. Spring
135 Ice Hockey 1 hr. Fall, Winter

Health Education Academic Courses

(Courses described in italics are approved for General Education. Course descriptions preceded by a † are open to all students.)

100 Health for Better Living 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 lectures from the community will present some of the topics considered important to the health of modern people. Preference is given to freshmen and sophomores. This is the first course in the Health Education Curriculum.

211 Community Health—Public Health I 3 hrs. Fall
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. Pre-req. 100.

314 Elementary School Health & 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. Pre-req. 100.

315 Secondary School Health & 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. Pre-req. 100.

399 Field Experience in Health 2 hrs. Fall, Winter, Spring
A practical field experience is provided to help students understand the role of the Health Educator. Enrollment by permission of instructor. Pre-req. PEPR 211, 314 or 315.

411 Health Education: Public Health II 3 hrs. Winter (odd)
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. Prerequisite: PEPR 211.

412 Health Education: Administration in Health Education 3 hrs. Fall (even)
The purpose of this course is to introduce the student to leadership roles and administrative skills as they relate to health education.

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 this curriculum. Prerequisite: PEPR 314 or consent of advisor.

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.

125 Introduction to Aquatic Instruction 3 hrs. Winter odd years
An introduction to aquatic instruction including methods, materials, and conduct of aquatic programs. Prerequisite: PEGN 350.

150 Foundations of Health, Physical Education and Recreation 2 hrs. Fall, Winter
An introduction to the University, the profession, and an attempt to assist the student in making a realistic appraisal of his/her own aptitudes and capabilities relevant to the profession via actual testing of personal competencies. Taken in conjunction with PEPR 110.

180 First Aid—Multi Media 1 hr. Fall, Winter, Spring
The course teaches the elements of first aid so that the student can perform the necessary skills required in the event of required emergency care. The multi-media instruction system is used. This course gives the Red Cross multi-media certification. Open to all students.

181 First Aid 2 hrs. Fall, Winter, Spring
The standard course in first aid techniques leading to Red Cross certification. Open to all students.

227 Show Production 1 hr. Winter
Advanced choreography and swim show management. Prerequisite: PEPR 337.

235 Theory of Coaching 2 hrs. Fall, Winter
Introduction to coaching includes basic principles, covers State Athletic Handbook, budgets, scheduling, facilities, liability, public relations, relationships with staff, faculty, students, parents, press, etc.

236 Officiating Series 1 hr. Fall, Winter, Spring
The discussion and application of rules and officiating techniques. The student is required to officiate in out-of-class athletic programs. Prerequisites: Must have had the first level activity or permission of instructor.

Fall Semester
- Basketball, Football, Field Hockey, Softball
Winter Semester
- Basketball, Gymnastics, Volleyball
Odd Years
- Speed, Swimming/Diving, Wrestling
Even years
- Synchronized Swimming
Spring Semester
- Baseball

250 Cultural Bases of Physical Education 2 hrs. Fall, Winter
The application of history, principles, sociology and philosophy of H.P.E.R. to the current movements and trends in the profession. Prerequisite: PEPR 150.

295 (595) Biomechanical Analysis of Activity 2 hrs. Fall, Winter, Spring
The analysis and measurement of human performance. Includes the examination and application of biomechanical principles to physical education and sport activities. Prerequisite: BMED 210.

300 Seminar Series 1-4 hrs.
Designed to provide an opportunity for qualified students to examine and discuss a subject area in field of common interest. Enrollment by written permission of the instructor.

320 Physical Education for the Exceptional Child 3 hrs. Fall, Winter
The activities and games used in corrective, adaptive, and developmental 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. Prerequisite: PEPR 101.

321 Therapeutic Needs & 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. Prerequisites: BMED 210, PEPR 320, SPED 530.

325 Swimming for the Exceptional Child 3 hrs. Fall
The study of physical and learning disabilities, values of swimming, and teaching techniques for these disabilities. Includes experience teaching exceptional children. Prereq. PEGN 350 WSI.

335 Team Manager 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. This requirement is waived for students who have been members of an intercollegiate team and a substitute elective is made for this requirement. Coaching minors or permission of instructor.

337 Coaching & Advanced Technique 2-3 hrs. Fall, Winter, Spring
Coaching and advanced skills, selection of a team, preparation, officiating and conducting competitive events. Prerequisites: Must have had first level course(s) or proficiency.

Fall
- Track/Field, Football, Baseball, Tennis
Even Years
- Softball, Speed, Swimming/Diving (3)
Odd Years
- Field Hockey, Synchronized Swimming, Volleyball
Winter
- Basketball, Gymnastics, Volleyball
Even Years
- Wrestling
Spring
- Tennis, Baseball, Track & Field

340 Physical Education for the Elementary Classroom Teacher 2 hrs. Fall, Winter, Spring
This course is structured for the future elementary classroom teacher and/or special education teacher. It provides experience in the participation and teaching of

PHYSICAL EDUCATION 251
appropriate elementary physical education movement activities in the areas of basic skills, stunts and tumbling, simple games and sports, rhythms, and classroom correlated activities. This course is not for physical education majors or minors.

344 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: PEPR 101, 102 or 103, 132, DAN 122 or 204.

345 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 is on current teaching methods. A minimum of 15 hours of practice with secondary school students is required for which the student should save at least two blocks of time weekly. Prerequisites: PEPR 150, 102 or 103, 1 dance, 2 individual and 2 team sports. Student should enroll in ED 301 same semester.

368 Administration and Organization of Intramural Sports 2 hrs. Fall, Winter
The problems, policies, finances, eligibility, awards, officiating, publicity, and procedures related to the intramural program.

380 Foundations of Sports Injuries 2 hrs. Fall, Winter
Basic first aid and emergency concepts, sports injury prevention, recognition, initial and follow-up care are studied. Principles/techniques are presented in a lecture and laboratory instructional format. Prerequisite: BMED 210; PEPR 181.

390 (590) Physiology of Motor Activity 2 hrs. Fall, Winter
The effects on systems of the body under stress of motor activity—cardiopulmonary function, metabolism, neuromuscular system. Practical application of principles to strenuous physical exercise. Prerequisite: BMED 240.

392 Measurement & Evaluation in Physical Education 2-3 hrs. Fall, Winter
Covers evaluation techniques in terms of understanding, interpretation, and application with emphasis on administration, selection and use of tests; interpretation of results through statistical procedures; analysis of tests available in the field and techniques for developing knowledge and skills tests.

420 Testing & 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. Prerequisites: BMED 210, PEPR 320, SPED 430, 588.

435 (535) Principles and Procedures of Coaching 2 hrs. Fall, Winter and Spring or Summer
Principles of coaching and the relationship of athletics to education. Procedures in team management and organization and administrative aspects of budget, records and equipment. The scientific principles involved in developing, training and conditioning of athletes also included. Prerequisite: PEPR 235.

439 Field Experience in Coaching 2 hrs. Fall, Winter, Spring
The practical field experience laboratory field work is provided to help students understand the role of the coach in the school or recreational setting. Enrollment by permission of the course instructor. Prerequisite: 337 Coaching and Advanced Techniques Series—Approval of Advisor.

440 Nature and Bases of Motor Skills 2 hrs. Fall, Winter
Describe and analyze the characteristic motor development patterns and evaluate the potential of children's motor performance. Emphasis will be placed on the introduction and explanation of the psychomotor domain. Prerequisite: BMED 240 or permission of instructor.

489 Field Experience in Athletic Training 2 hrs. All Semesters
Ten to twenty hours of supervised clinical practice and observation opportunities per week are provided in a training room setting. Experience must be supervised by an NATA Certified Athletic Trainer. Enrollment by permission of the course instructor. Prereq. PEPR 380 and permission of instructor.

Open to Upperclassmen and Graduate Students

500 Studies in Health, Physical Education and Recreation 1-2 hrs.
In depth study of selected topics in HPER. Format can include clinics, workshops, seminars, travel and/or mini-courses; and provide opportunity to acquire skills and teaching techniques. State, national, and international authorities or consultants may be involved. Topics include: Hunter Safety Lifetime Sports Outdoor Education Physical Education Relaxation

520 Physical Activities for Exceptional Children 3 hrs.
Physical and recreational activities and games used in corrective, adaptive and general physical education programs for special education children.

521 Therapeutic Trends for Exceptional Children 3 hrs.
A study of past, present and future trends in habilitation and rehabilitation programs for handicapped people.

530 Practicum in Teaching and Coaching 2 hrs.
Demonstrations, participation and evaluation on teaching and coaching fundamentals in selected sports. A graduate student may apply a maximum of four credits from 530 courses toward the Master's Degree Program. Sports include: Archery Badminton Baseball Basketball Football Golf Field Hockey Gymnastics Ice Hockey Judo Karate Soccer Swimming Track & Field Volleyball Wrestling Yoga

535 Principles and Problems of Coaching 2 hrs.
Various dimensions and forces affecting coaching are identified and explored including educational implications of sport and coaching, characteristics of coaches and athletes, vital relationships, motivation, emotions, behavior, discipline, selecting and evaluation personnel, scientific principles and systems of training, the organization and planning of practices and total programs.

540 Movement Education 2 hrs.
A concept in physical education which deals with the way children learn the basic principles of how their bodies move.
550 The Making of American Sport
2 hrs.
An exploration of the historical-philosophical heritage of sport and physical education in the USA. Major persons, events, ideas, and institutions discussed.

560 Administration of Physical Education
2 hrs.
For administrative officers, as well as for teachers and directors of physical education. Includes a study of representative programs of physical education and a discussion of standards for evaluating such programs.

562 Administration of Athletics
2 hrs.
Discusses administrative procedures and problems connected with athletic programs, including scheduling, facilities, personnel problems, school law and liability, eligibility, finance, safety, and the conduct of athletic events.

580 Studies in Athletic Training
2 hrs.

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 physical exercise are applied to the training and conditioning of competitive athletics. Pre-req. BMED 210, 240.

591 Evaluation in Health, Physical Education, and Recreation
2 hrs.
Acquaints students with the theory, selection, construction, administration, interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation, and construction of tests.

596 Analysis of Movement in Sport
2 hrs.
The study of movement of muscles and the application of kinesiology to physical activity. Prerequisite: BMED 210.

598 Readings in Health, Physical Education, and Recreation
1-2 hrs. All Semesters
Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Pre-req. Approval of the Chairperson of the Department of Physical Education.

Professional Recreation Courses
(Course descriptions preceded by a † are open to all students.)

170 Introduction to Recreation
3 hrs. Fall, Winter
†An introduction to the field of recreation and the role of leisure in modern society including current trends, job opportunities in various settings, programming, and leadership.

172 Camp Leadership
3 hrs. Fall (even) Spring (odd)
†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)
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 programs for children and adults.

270 Recreational Leadership
2 hrs. Fall, 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 leading of activities. Pre-req. PEPR 170 or permission of instructor.

275 Recreational Programming
3 hrs. Fall, Winter
A study of the goals development and evaluation of programs in recreational settings. Practical experience in ascertaining needs and scheduling activities to meet goals will be emphasized.

276 Outdoor Education
2 hrs. Fall (odd)
†A course in the philosophy, methods, and materials of outdoor education emphasizing outdoor education activities for children and youth.

370 Recreation Practicum
The practical field experience. The individual approach to practical field experiences in recreation for the normal and handicapped. Enrollment by permission of instructor and acceptance of practicum proposal. Pre-req. PEPR 275.

375 Organization & Administration of Recreation
3 hrs. Fall
The study of methods of organization in recreation programs and agencies at local, state and federal levels with emphasis on administrative procedures concerning personnel, facilities-areas, legalities, financing, and supervision. Pre-req. PEPR 370.

470 Recreational Facilities and Areas
3 hrs. Winter
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. Pre-req. PEPR 375.

478 Seminar in Recreation
3 hrs. All Semesters
(Taken in conjunction with PEPR 479 Internship in Recreation) Students work individually with the kinds of problems faced in recreation programs in the community. Other problems to be faced later as full time recreation leaders are considered. Suggestions and guidance is afforded by staff members and resource persons. Pre-req. Permission of Instructor.

479 Internship in Recreation
8 hrs. All semesters
Students devote a minimum of three consecutive months duration, at which time they have experience in both the administrative and program areas in which they serve. All students expecting to serve this internship should enroll during the semester it is to be done. Enrollment by permission of instructor. Pre-req. Required Professional Core Courses—17 hrs. Approval of Advisor.

572 Recreation of the Aging
2 hrs. Winter
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 Pre-req. Course in Gerontology.

General Physical Education
All undergraduate students must participate in general activity 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. A student 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. Only a student with a severe physical disability will receive a medical waiver from the requirement. A student with a temporary or permanent physical disability must receive counseling concerning selection of courses suited to his/her limitation. A physical examination by a Health Center physician is the first step in the counseling procedure. The procedure does not have to be followed if the student feels he/she can select two courses without medical advice. The physical examination must be given during the first semester of residence if a student wishes to follow the Medical Recommendation procedure. A copy the procedure may be obtained from the Health Center, Office #1 Oakland Gymnasium or the Main Office, Gary Physical Education Center.
6. A varsity team member may receive up to 2 credits in general physical education by enrolling in the appropriate course in the PEGN 400 series. (List follows 300 level courses.)
7. Only one Dance course may be used to fulfill the general physical education graduation requirement.
8. ROTC Cadets are to enroll in PEGN 175 Military Fitness I and PEGN 175 Military Fitness II to fulfill the general physical education requirement. Permission required from ROTC.

## 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.
3. A course cannot be repeated for credit without written authorization from the Coordinator of the

## Courses in General Physical Education

### Program to the Academic Records Office. PEGN 175 Special Activities may be repeated under different course titles, i.e. 175 Military Fitness, 175 Ice Dance, etc.

### General Physical Education

#### PEGN 200 level courses are open to all students who have completed a 100 level course in the activity or the equivalent. (**Prerequisite 249 or Red Cross Intermediate Card)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PEGN 100 Adapted P.E. Med. Rec</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 101 Archery</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 102 Badminton</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEGN 103 Bait &amp; Fly Casting</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 104 Basketball</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 105 Bowling</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 106 Camp Craft</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 107 Canoeing</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 108 Backpacking</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 109 Cycling</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 120 Fencing</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 121 Field Hockey</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 122 Golf I</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 123 Gymnastics—Apparatus</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 124 Gymnastics—Tumbling</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 128 Horsemanship</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 129 Ice Hockey</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 130 Judo</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 131 Karate</td>
<td>2 hrs.</td>
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<tr>
<td>PEGN 132 LaCrosse</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 133 Orienteering</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 134 Paddleball</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 136 Physical Fitness</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 137 Racketball</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 138 Recreational Games</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 139 Relaxation</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 140 Rifle</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 141 Sailing</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 142 Skiing—Ice</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 143 Skiing—Cross Country</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 144 Skiing—Alpine</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 145 Soccer</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 146 Softball</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 147 Squash</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 149 Swimming—unable to swim in deep water</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 160 Tennis I</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 161 Track &amp; Field</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 162 Trap &amp; Skeet</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 163 Volleyball</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 164 Wrestling</td>
<td>1 hr.</td>
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<tr>
<td>PEGN 165 Yoga</td>
<td>1 hr.</td>
</tr>
<tr>
<td>PEGN 175 Special Activities</td>
<td>1 hr.</td>
</tr>
</tbody>
</table>

PEGN 400 Baseball
PEGN 400 Softball
PEGN 400 Volleyball
PEGN 400 Wrestling

**Note:**
- PEGN 350 W.S.I.—current Life Saving Certificate required. Enrollment by permission of instructor.
- PEGN 355 Swimming—Intermediater, Synchronized 1 hr.
- PEGN 360 Tennis—Intermediater, 1 hr.
- A varsity athlete may receive PEGN credit by enrollment and completion of these courses. (1 credit hour each) Enrollment by permission of instructor.
- One of the following Dance courses may be used:

### DANCE

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DANCE 102 Jazz Dance I</td>
<td>1 hr.</td>
</tr>
<tr>
<td>DANCE 112 Social Dance Forms</td>
<td>1 hr.</td>
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<tr>
<td>DANCE 116 Ballet I</td>
<td>1 hr.</td>
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<tr>
<td>DANCE 117 Ballet II</td>
<td>1 hr.</td>
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<tr>
<td>DANCE 122 Recreational Dance</td>
<td>1 hr.</td>
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<tr>
<td>DANCE 123 Contemporary Dance I</td>
<td>1 hr.</td>
</tr>
<tr>
<td>DANCE 124 Contemporary Dance II</td>
<td>1 hr.</td>
</tr>
<tr>
<td>DANCE 202 Jazz Dance II</td>
<td>1 hr.</td>
</tr>
<tr>
<td>DANCE 228 Improvisation</td>
<td>1 hr.</td>
</tr>
</tbody>
</table>
Education and Professional Development

Thomas Ryan, Chair
David W. Adams
James Armstrong
Fred S. Bailey
Keith Bailey
Alfred Balkin
Dorothy Bladt
James Bosco
Frederick Brail
Robert Brashear
Beatrice Brenton
James Burns
Mary A. Cain
Joe R. Chapel
Arthur Christensen
Mary Cor Corder
David Cowden
Ronald A. Crowell
David H. Curl
Kenneth Dickie
Edsel Erickson
Mary Frances Fenton
Franklin Fisk
June France
James H. Griggs
Richard Harring
Edward Heining
Inja Hong
Michael Howard
Arthur Howard
Robert Hughes
Norma Hungerford
Rachel Inselberg
Helen Jennings
William Kanzler
Ted K. Kilty
Robert Kotecki
Cameron Lambe
Phillip Larsen
D. B. Leonardelli
Carl Lindstrom
Bruce Lloyd
Dorothy McGinnis
Barbara Mehoke
Owen Middleton
George Miller
Daniel Moore
Frank Olenchak
V. Jean Russell
Carol P. Smith
Dorothy E. Smith
Virginia Sorenson
Nancy Thomas
Robert Travers
Jess Walker
Frank Wangberg
Archie Watson

Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to take a minimum of 21 hours of professional education courses, 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.

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 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 Office of Field Experiences, be permitted to take 450 during the other semester of that year. 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 are graded credit/no credit.

Education and Professional Development (ED) 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, audiovisual 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.

101 College Skills 2 hrs.
Designed to help students find and eliminate specific weaknesses in reading skills and habits. Emphasis is placed on gathering and organizing academic information, through which students may build independence.

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.

103 Critical and Creative Reading 2 hrs.
Designed to develop practical application of principles of critical reading through extensive use of content area textbooks. Course will stress author's purpose, summarizing, and outlining for academic efficiency.

104 Effective Reading for College Students 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.

105 Advanced Reading 2 hrs.
Designed to increase reading rates and comprehension skills. Provides the well-adjusted academic student with an opportunity to develop more sophisticated skills.

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 worldwide, including cultural factors; population trends; impact of industrialization; family, village, community; social institutions, agencies and organizations; educational, recreational, religious, health and government facilities. Magazines, pamphlets, and other sources supplement textbooks.

230 The Nature of Creativity 4 hrs.
This course literally explores the nature of creativity—its process, its product, its characteristics, its values, and its relationship to human beings and society. Growth in aesthetic sensitivity, personal interaction, self-confidence, and ability to solve problems creatively are the objectives of this course, which is taught cooperatively by a faculty member from Education and Professional Development and one
from Communication Arts and Sciences. Open to all students.

231 Rural Economics 3 hrs.
Basic economic principles are considered in terms of rural conditions—local, national, international. Economic interpretations are given to topics found in local schools' 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.

This course focuses on the physical, social, emotional and cognitive development of the child, birth through 12 years. Special attention is given to cognitive development viewed in a Piagetian framework. Applications to the teaching of language arts are emphasized. (This course is required for the Integrated Language Arts Minor, and in that program must be taken concurrently with ILAM/SPPA 260.)

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; noninstructional duties of the teacher in the school and community. Requires two half days per week for participation. Offered only during the Fall and Winter Semesters, and Spring Session. Prerequisite: ED 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; noninstructional duties of the teacher in the school and community. Requires two half days per week for participation. Offered only during the Fall and Winter Semesters, and Spring Session. Prerequisite: ED 250.

310 Stories for Childhood 2 hrs.
A study of stories and poems suitable to childhood. Classroom practice in storytelling.

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 with in the classroom. Special consideration will be given to a case study of one severe reading problem.

312 The Teaching of Reading (Elementary) 3 hrs.
A summary of the results of the scientific studies made in the field of reading. Methods of teaching reading are critically analyzed. Stress is placed on appropriate materials at various levels.

313 Problems in Elementary Education 3 hrs.
This course is designed to deal with problems of immediate concern to beginning teachers—discipline, group activity, teacher-pupil planning, and other problems dealing with teaching in the elementary school.

322 The Teaching of Reading (Secondary) 3 hrs.
This course deals with methods and materials for improving reading in the junior and senior high school. Both developmental and remedial procedures are stressed.

350 Young Children, Their Families, and Their 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 subcultural differences on early childhood development, and students will look at the contemporary American scene as it affects young children. Prerequisite: ED 250.

351 Reading and Related Communication Skills for Early Childhood 4 hrs.
A study of the young child's verbal and nonverbal 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, storytelling, writing for and with children, and the production of a wide variety of audovisual 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, storytelling, creative writing, and the production of a wide variety of audovisual 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 concern, 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 as 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.

401 Teaching Elementary School Science
3 hrs.
Designed to introduce students to a sampling of the elementary school science program. Emphasis will be given to the exploration of science programs, techniques, philosophies, and teaching strategies that are currently being used in the elementary school science classroom.

402 Seminar in Science and Mathematics
2 hrs.
This capstone course required of all elementary grades and of the science program. Emphasis will be placed on the integration of creative processes 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.

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 inservice education. Other supervisory problems for all types of rural schools are included.

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 offered by staff members and by resource persons.

411 Problems of Community Schools in Rural Areas
1-2 hrs.
An analysis of the community, 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: ED 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.

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.
This course is concerned with the utilization of change in society as a force in directing American education. The course is directed toward modern problems in education as well as a futuristic look at its possible development. Course content centers around analysis of the influences which such areas as the following have upon American education: political, legal, economic, social, psychological, historical, philosophical. Consideration is given to the individual's role in the change process in education. An interdisciplinary approach is used.

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.

460 Integrated Language Arts Seminar
4 hrs.
This course will focus on synthesizing theories, concepts, and classroom approaches from previous work in the Integrated Language Arts Minor. Students will practice restructuring curriculum objectives, classroom organization, and teaching strategies in order to achieve the maximum integration of the language arts processes in the elementary school. Students will pursue individualized programs culminating in a guided field experience through which students will demonstrate identified program competencies. Student and faculty-led seminars will be scheduled periodically throughout the course. (This course is required in the Integrated Language Arts Minor.)

470 Directed Teaching
9 hrs.
Students devote a minimum of four and one-half days per week for one semester in Directed Teaching. They are expected to have experience in both the curricular and extra-curricular programs of the school in which they teach. All students expecting to do Directed Teaching should enroll well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: Successful completion of ED 250 and 300, 301, or equivalent prior to beginning Directed Teaching; an academic average of 2.0 in all education courses and in overall average, as well as in teaching major or minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.
471 Directed Teaching
1-8 hrs.
Only for seniors who have completed most of their professional course work prior to the senior year. Similar to description for 470. Students should enroll for ED 471, 472, or 474 well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: Successful completion of ED 250 and 300, 301, or equivalent prior to beginning Directed Teaching; an academic average of 2.0 in all education courses and in overall average, as well as in teaching major or minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

472 Directed Teaching
4-9 hrs.
Only for seniors who have previously fulfilled a part of their requirement in Directed Teaching. Similar to description for 471. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

474 Directed Teaching
4-8 hrs.
Only for students specializing in special education. Candidates must be approved by the Head of the Special Education Department. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

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, audiovisual 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.

504 Adult Development and Learning
3 hrs.
This course will provide an in-depth look at each age and stage in the life cycle. It will explore such problems as: the changing role of parents and singles, the changing societal pressures on teachers, new adult life-styles, mid-life career changes, the changing role of males and females and unique health stresses. Emphasis will be placed on the identification of patterns of lifelong learning leading to a more fruitful and fulfilling life.

506 Teaching in Adult Education
3 hrs.
This course is designed to provide teachers with a knowledge of special situations incurred in the teaching of adults. Included also are techniques of interpersonal communications with adults, as well as a practical exercise in the designing of learning experiences for adults. Extensive use will be made of audiovisual media, experts in the field, and field observation in adult learning activities. The course should be helpful to administrators in planning inservice programs for their own staff.

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. (Co-requisite: ED 300 for students required to take ED 300.)

508 Parent Education
2 hrs.
Places major emphasis on home problems which have educational implications for the child. Parent-teacher relationships, counseling programs, and cooperative efforts for improvement of education in home and in school are studied.

509 Parent Education for Teachers of Young Children
3 hrs.
Presents a variety of techniques for teachers to use in working together with parents. Teachers will study child-rearing factors which parents most need to know. The course will help teachers to develop their own record-keeping systems, ways of involving parents in their children’s education, and ways of making meaningful reports to parents. The education of parents as aides is included.

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 procedures will be studied through actual use with pupils. Intended to provide potential teachers with an introduction to basic reading theory as applied to materials, programs, and conditions likely to be encountered in the field. Prerequisite: ED 312 or 322.

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.

516 Professional Symposium in Reading
3 hrs.
This course is designed to be the initial course in the graduate program in Reading. It is designed to present the basic concepts concerning the nature of the reading process and the teaching of reading. Emphasis will be placed on reading as a thinking process and on factors affecting reading performance. Special emphasis will be placed on child development, language development, concept development,
physical, psychological and environmental factors affecting the child's learning to read. In addition, the course will provide a brief overview of the Delivery Systems and procedures used in the U.S. to teach reading. This will involve an historical overview as well as current and potential future practices.

517 Reading in the Content Area: Social Sciences 3 hrs.
518 Reading in the Content Area: Science, Math, and Industrial Arts 3 hrs.

Designed to acquaint junior and senior high school teachers with the reading skills which should be taught and refined in their specific curricular areas. An effort will be made to help teachers, through demonstration and practice, achieve optimal benefit from secondary textbooks and related reading materials.

520 Implications of Piaget's Research for Curriculum Design 3 hrs.
Provides the student with an understanding of the structure of the intellect developed by Piaget, and examines the implications of this structure for the design of the curriculum. Some practical work will be combined with a study of the research on which Piaget has built his theory of intellectual development.

521 Piaget and Young Children 3 hrs.
Examines significant contributions of Piaget to our understanding of young children's learning. Knowledge of how young children think will be applied to early childhood curriculum. Teachers will apply Piagetian tasks, and will be able to improve curriculum for young children with growing understanding of these children's minds.

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: ED 220.

527 Instructional Planning in Accountability Context 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: ED 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: ED 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 20 students.

549 Audiovisual Media II 3 hrs.
A continuation of ED 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: ED 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 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.
This course is intended to provide students with an introduction to the field of comparative/cross-cultural education. The education philosophy and goals, curricula, administrative structure, educational technology, financing and methods of instruction characteristic of selected European countries are examined and compared to parallel features of 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 3-6 hrs.
The initial course required of all students in the M.A. programs for teaching the disadvantaged. 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.

597 Reading and Related Language Experiences 3 hrs.
This course involves a study of the current research and aspects of language which are involved in the process of effective reading. It is intended to provide students with a thorough understanding of the research in language and its application to the reading process. It also is intended to help students understand more fully the place of reading in a total language arts program and to give students an opportunity to make application to practical classroom situations.

598 Selected Reading in Education 1-4 hrs.
Designed for highly qualified students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental adviser and instructor.

Special Education

Joseph J. Eisenbach, Chair
Ahmad Baker
Michael Gallery
Donna Gordon Icabone
Alonzo Hannaford
Barbara L. Loss Harris
Elizabeth Lawrence-Patterson
Abraham W. Nicolaou
Donald F. Sellin
Isadore Turansky
Robert J. Westley
Morvin A. Wirtz

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.

Course Descriptions

474 Directed Teaching in Special Education 4-8 hrs.
See Description under Education and Professional Development, the College of Education.

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: ED 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.

530 Education of Exceptional Persons 3 hrs.
Deals with the problems and methods involved in the adjustment and training of exceptional persons in the schools—the mentally retarded, the gifted, the crippled, the deaf, the blind, the emotionally disturbed, the socially maladjusted, and the mentally handicapped. Prerequisites: Junior standing and consent of Department.

531 Practicum in Special Education 2 hrs.
Students enrolled in this course will be assigned to special classes in public or residential schools serving exceptional children and 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. Graded on a credit-no credit basis. Prerequisites: TEED 250 and consent of Department.

532 Nature and Needs of the Mentally Retarded 4 hrs.
A course especially intended for teachers of mentally retarded individuals. 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. Prerequisites: Spec. Educ. 530 and consent of Department.

533 Diagnostic and Prescriptive Techniques in Special Education 4 hrs.
A thorough study of educational diagnostic instruments and techniques will precede the student’s utilization of these measures in evaluating exceptional persons in his curriculum 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. Prerequisite: Consent of Department.

534 Curricular and Instructional Provisions for Exceptional Children and Youth
4 hrs.
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: Concurrent enrollment in Sp Ed 533 and Consent of Department.

536 Contemporary Issues in Special Education: Honors Seminar
1 hr.
A course especially designed for selected undergraduate majors in Special Education curricula. Emphasis will be placed on theoretical discussions 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.

542 Introduction to the Severely Impaired
3 hrs.
This course is designed to provide basic knowledge about the severely impaired, including mental, physical, emotional, and sensory impairments. The problem of severe impairment will be examined in light of biomedical, legal, sociological, and educational perspectives. Special emphasis within the perspective of education will include information regarding management, assessment, instruction, and organization. Prerequisite: Consent of Department.

543 Nature and Needs of the Crippled and Homebound
4 hrs.
Study of educational, psychological, and therapeutic needs of crippled persons and the role of allied disciplines in meeting these needs. Prerequisites: Spec. Educ. 530 and Consent of Department.

544 Educating the Severely Impaired
3 hrs.
This course develops specific skills in the assessment, prescription, implementation, and evaluation of educational programs for the severely impaired. Course content will focus upon the areas of mobility, communication, sensorimotor development, self-help skills, cognition, and adaptive behavior. A major component of this course is practical experience with severely impaired individuals. Prerequisite: Consent of Department.

560 Educational Provisions for Handicapped Adolescents and Young Adults
3 hrs.
An introductory course to the special education of adolescents and young adults. It will provide the student with knowledge and awareness about the components of secondary and post-school special education programs. Focus will be placed on the physical, intellectual, emotional, and social development of adolescents and young adults. Academic, social, career, and vocational needs and programs of handicapped adolescents and adults will be discussed. Prerequisite: Consent of Department.

588 Behavior Disorders in School-Aged Learners
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 to majors in Special Education curricula, will emphasize techniques and procedures applicable to socially-emotionally maladjusted individuals 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.

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 prostheses. Prerequisite: Consent of Department.

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. Prerequisite: Consent of Department.

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. Prerequisite: Consent of Department.

593 Methods and Techniques of Teaching Braille and Other Areas of Communication
3 hrs.
Explores various methods and techniques of teaching essential communication skills—braille, typing, social communication, handwriting, abacus computation, the use of electronic devices and other media to the visually impaired. Opportunity for supervised practical application of methods will be afforded to the student. Prerequisite: Consent of Department.

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. Prerequisite: Consent of Department.

598 Readings in Special Education
1-4 hrs.
Designed for advanced students interested in independent study. Topics chosen must be approved by the instructor and head of the department. May be repeated for credit. Prerequisite: Consent of department.
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 and/or metalsmithing, 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, three undergraduate degrees are offered: a Bachelor of Science in Education which certifies students to teach dance in the Michigan public schools, K-12; a Bachelor of Arts in applied dance, with a major in either Contemporary Dance or Ballet; and a Bachelor of Fine Arts degree.

In Music, three undergraduate degree programs are available: a Bachelor of Music with majors in applied music (performance), composition, jazz, music education, music history, music theatre, or music therapy; a Bachelor of Science with a major in Music and a minor in elementary education; and a Bachelor of Arts with a major in music and a minor in one of the departments in Arts & Sciences. Teacher certification is earned in the music education and elementary education programs.

In Theatre, programs lead to the Bachelor of Arts and Bachelor of Science degrees, both of which provide the option to earn certification to teach theatre at the secondary school level. The Department also participates with other University departments in offering a music theatre program, a fine arts minor, and a theatre-as-an-elective option.

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, musical ensembles, and theatre productions.
Art

John Link, Chair
T. D. Argyropoulos
John M. Carney
James Chressanthis
Joseph V. DeLuca
Elizabeth H. Dull
Robert H. Engstrom
Joseph A. Frattallone
Reginald Gammon
Gordon J. Grinwis
Robert P. Johnston
Richard J. Keaveny
Donald E. King
Dwayne M. Loder
Walter Mason
Paul S. Mergen
John M. Methaney
Charles E. Meyer
Mary Joanne Mohr
Helmi Moutlon
Bruce Nafe
Mary Eleanor Neu
Barbara Rensenhouse
Curtis A. Rhodes
Louis B. M. Rizzolo
Paul A. Robbert

Introduction

The Department of Art offers many programs with various purposes and objectives. These are described under the heading of each program below.

The Department is affiliated with the National Association of Schools of Art and the College Art Association and subscribes to the recommendations of these organizations.

The various programs are designed to promote the education of good artists and artists-teachers, and to increase artistic awareness among students in other areas. Extracurricular activities include many exhibitions, lectures by visiting artists, a student-operated gallery, and individual studios for advanced BFA candidates. There are approximately 500 undergraduate and 30 graduate art majors active during the academic year. Approximately 100 art degrees are awarded annually.

Programs

The Department of Art offers programs leading to the following three degrees: Bachelor of Fine Arts with a major in one of the areas of the Department, Bachelor of Arts or Bachelor of Science with a major in Art, Bachelor of Science with a major in Art Education. All three programs are within the Art curriculum, which 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.

The Department of Art also offers courses for students in other areas, and two programs satisfying the minor requirements of other curricula.

For specific information see the description of each program below.

Admissions

Admission of art majors is limited by the size and capacity of the Department to 150 new students per year. Admission of freshmen is currently based on the chronological priority of the applications. Admission of transfer students is determined by review of a portfolio of art work.

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. 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 art credit.

Advising

All Art majors and minors are required to see an Advisor as soon as they are on campus and at least once each Fall and Winter semester thereafter. To make an appointment please call (616) 383-6028.

Miscellaneous

Grading. Art majors and minors receiving a grade of D or E in a required course must repeat the course.

Exhibition Requirement. Each Bachelor of Fine Arts major must present a graduating exhibition as stated in Art 413 in the B.F.A. degree requirements. The B.F.A. candidate is to arrange such an exhibition in consultation with his major advisor. The Department of Art may retain one work of art from the collection. B.F.A. candidates must present a graduating exhibition as stated in Art 413 in the B.F.A. degree requirements.

Programs of Study

Bachelor of Fine Arts Degree/Major in a Specific Area

74 credit hours 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 specific application to a Departmental committee for admission to B.F.A. candidacy in a specific major area after completing 30 hours in art and one semester residency in the Department. Applications will be considered each November and March.

Major areas: Ceramics, Graphic Design, Jewelry and/or Metalsmithing, Multi-Media Art, Painting, Photography, Printmaking, Sculpture, Textile Design, Art Teaching. (Art Teaching 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:

15 hours in the basic program (101, 102, 103, 104, 105)
15 hours in Art History including 220, 221
6 hours in Advanced Drawing (210, 310)
2 hours in the Art Seminar (525)
15-24 hours in the major area (example: Painting 240, 340, 440, 540, etc.)
11-19 hours in other elective and required art courses determined in consultation with the major advisor.
2 hours in Graduate Presentation (413). Approval of the presentation by a reviewing committee and submission of slides is necessary for the granting of the B.F.A. degree.

Bachelor of Arts or Bachelor of Science Degree/Art Major

52 credit hours 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:

15 hours in the basic program (101, 102, 103, 104, 105)
9 hours in Art History including 220, 221
6 hours in Advanced Drawing (210, 310)
22 hours in Art electives, including 9 hours in one of the Department's ten areas of concentration.

Bachelor of Science Degree/Art Teaching Major
61 credit hours in Art
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 must be satisfied. Sixty-one credit hours in Art satisfy the major and minor requirements of this curriculum and are distributed as follows:

15 hours in the basic program (101, 102, 103, 104, 105)
3 hours in Advanced Drawing (210)
9 hours in Art History (220, 221, elective)
12 hours in Art Education (252, 352, 452, 552)
12 hours in one area of concentration
10 hours in elective art courses, determined in consultation with the Art Advisor.

Art Teaching majors must enroll in Art 252 in the first semester of the sophomore year and continue taking one art education course in each subsequent semester. This is necessary in order to complete the directed teaching in the senior year and complete the degree in a four-year span.

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 advisor before doing directed teaching.

Art Minor
24 credit hours in Art
This program is designed to expose the student to the field of art and satisfies the minor requirements of the Liberal Arts, Arts and Sciences, or Education curricula. Art minors must register with the art advisor to preplan a complete program before completing any art courses. A minor slip is required.

15 hours in the basic program (101, 102, 103, 104, 105)
9 hours in art electives, including certain art education courses for education majors or minors.

Art History Minor
18 credit hours in Art History
This program is designed for Liberal Arts students interested in art history and satisfies the minor requirements of the Liberal Arts and Arts and Sciences curricula. A minor slip is required. The 18 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 advisor.

Art Courses for Non-Art Majors or Minors
Elementary Education majors are advised to take ART 130, 140 or 150 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. 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.

Basic Program Courses required of all majors and minors in art as prerequisites to other advanced courses.

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<td>3</td>
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<tr>
<td>105 Foundation 3D Studio</td>
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Fine Arts Appreciation Minor
The Department of Art is one of the academic units participating in the Fine Arts Appreciation minor. Students must register with the art advisor to preplan a complete program before completing any art courses. A minor slip is required.

15 hours in the basic program (101, 102, 103, 104, 105)
9 hours in art electives, including certain art education courses for education majors or minors.

Art History Minor
18 credit hours in Art History
This program is designed for Liberal Arts students interested in art history and satisfies the minor requirements of the Liberal Arts and Arts and Sciences curricula. A minor slip is required. The 18 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 advisor.

Art Courses for Non-Art Majors or Minors
Elementary Education majors are advised to take ART 130, 140 or 150 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. 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.

Basic Program Courses required of all majors and minors in art as prerequisites to other advanced courses.

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Fine Arts Appreciation Minor
The Department of Art is one of the academic units participating in the Fine Arts Appreciation minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes. Complete program description is listed at the end of this College's section.

Course Descriptions
(Course descriptions in italics are approved for General Education purposes.)

101 Foundation Drawing
3 hrs.
The visual elements and principles of organization in relationship to perceiving both flat and illusionary space. (Replaces old 110)

102 Foundation 2D Design
3 hrs.
The study of the elements of the visual language and principles of visual organization in black and white and color. (Replaces old 114 and 115)

103 Theory of Art
3 hrs.
A lecture course introducing 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 majors and minors only. (Replaces old 121)

104 Foundation Drawing
3 hrs.
Continuation of ART 101 with emphasis on composition in dark and light. Exploration of the expressive possibilities of the various drawing media oriented towards future needs of art students. Prerequisite: Art 101 (Replaces old 111)

105 Foundation 3D Studio
3 hrs.
The study and exploration of the major manifestations of three dimensional form in space. Exploitation and manipulation of various materials that articulate form by means of line, plane, volume and light. Prerequisite: Art 102.

120 Introduction to Art
3 hrs.
A topical introduction to the visual arts: painting, architecture, sculpture and the crafts. Discussions and slide presentations on such themes as the meaning of modern art, art as cultural and sociological expression, art as symbol, as play and as form. This course will enable the non-art student to develop an art vocabulary and gain insights into man's quest for creative expressions.

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 Experience—(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. Prerequisite: 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.

220 History of Art
3 hrs.
An historical survey of art from prehistoric 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 handbuilding, technical information and a limited experience with the potters 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 media. 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.

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 techniques. Introduction to design concepts relating to jewelry, domestic and sculptural objects. Prerequisite: Basic Program.

240 Painting I
3 hrs.
An introduction to the techniques and expressive possibilities of painting. Prerequisite: Basic Program, ART 210 or 210 concurrently.

241 Intaglio and Relief
3 hrs.
A fundamental exposure to the techniques of Intaglio and Relief painting and an introduction to Print esthetics. Prerequisite: Basic Program.

242 Watercolor Painting
3 hrs.
A survey of the application, techniques, and limitations of the watercolor painting medium. Prerequisite: Basic Program.

243 Lithography
3 hrs.
A basic, confidence-building, introduction to Lithography through Aluminum Plate techniques. Fundamental discussion of Stone lithography and esthetic possibilities of the medium. Prerequisite: Basic Program.

245 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.

246 Screenprint
3 hrs.
Introduction to screenprint fundamentals, techniques and procedures, exploring at length the expressive potentials of the medium—to include basic color printing procedures. Prerequisite: Basic Program.

248 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.

252 Art Education Workshop
(Majors)
3 hrs. Fall, Winter
A studio course involving projects, media and materials, handled on an aesthetic level but appropriate for the creative and maturational ability of the K-12 art student. Prerequisites: Basic Program, Art major status.

305 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.

310 Intermediate Drawing
3 hrs.
Drawing as the study of form and as a conclusive aesthetic statement. Model available during approximately 1/2 of the class meetings. Prerequisite: ART 210.

330 Ceramics
3 hrs.
Continuation of ART 230 with opportunity for concentration in the medium. Some experiment in glazing. Prerequisite: ART 230.

331 Sculpture
3 hrs.
Development of individual sculpture direction. All media. Prerequisite: ART 231, 310 or 310 concurrently.

332 Craft Design
3 hrs.
A continuation of ART 232. Prerequisite: ART 232.

334 Textiles
3 hrs.
Advanced work in textile design allowing for specialization with a material or technique surveyed in ART 234. Prerequisite: ART 234.

335 Multi-Media Art
3 hrs.
Continuation of ART 235. Prerequisite: Permission of instructor.
338 Jewelry and Metalwork
3 hrs.
Advanced work in the jewelry processes. Prerequisite: ART 238.

339 Metalsmithing
3 hrs.
Continuation of ART 239, broadening the design and technical experience. Prerequisite: ART 239.

340 Painting II
3 hrs.
Continuation of ART 240. Prerequisites: ART 240, 310 or 310 concurrently.

341 Intaglio and Relief
3 hrs.
An intermediate course continuing the investigation of basic and advanced Intaglio and Relief techniques with the introduction of color printing. The artist-student should begin to discover and adapt media and or techniques (or synthesis of media and or techniques) appropriate to individual esthetic intentions. Prerequisite: ART 241.

342 Watercolor
3 hrs.
Advanced problems in watercolor techniques to include composition. Prerequisite: ART 242.

343 Lithography
3 hrs.
An intermediate investigation of Lithography based on basic skills with the introduction of color printing and other advanced techniques. The artist-student should begin to discover methods and techniques adaptable and appropriate to his esthetic intent. Prerequisite: ART 243.

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.

346 Screenprint II
3 hrs.
An intermediate course continuing the investigation of basic and advanced screenprint stencil techniques with the introduction of photo-stencil methods. The artist/students should begin to discover and apply method of technique appropriate to their aesthetic intent. Prerequisite: Art 246.

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. Prerequisite: ART 248 and ownership of a 35mm slr or 2 1/4 x 2 1/4 camera.

352 Preparation for Art Teaching (Elementary)
3 hrs. Fall, Winter
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, slides 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 ART 330 with some experience in stacking and firing procedures. Prerequisite: ART 330.

431 Sculpture
3 hrs.
Continuation of ART 331. Emphasis on welding and sheet metal techniques. Prerequisites: ART 331, 310.

434 Textiles
3 hrs.
Continuation of ART 334. Prerequisite: ART 334.

435 Multi-media Art
3 hrs.
Continuation of ART 335. Prerequisite: Permission of instructor.

438 Jewelry
3 hrs.
Advanced work in the jewelry processes. Prerequisite: ART 338.

439 Metalsmithing
3 hrs.
Continuation of ART 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 Workshop-Seminar
3 hrs.
Advanced exploration of any print media singularly or in combination on a semi-independent level into specific areas appropriate to the individual artist/student's needs. Prerequisite: Art 341 or 343 or 346.

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. Fall, Winter
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: BFA Candidacy. Credit/No Credit only.

529 Advanced Ceramics
3 hrs.
Advanced work in ceramics including glaze calculation. Prerequisite: ART 430.

530 Ceramics
1-6 hrs.
Advanced work in ceramics on an independent basis. Prerequisite: ART 529. Repeatable for credit.

531 Sculpture
3 hrs.
Continuation of ART 431. Emphasis on bronze and aluminum casting and related techniques. Prerequisite: ART 431. Repeatable for credit.

534 Textiles
3 hrs.
Continuation of ART 434 with advanced work in textile design. Prerequisite: ART 434. Repeatable for credit.

535 Multi-Media Art
3 hrs.
Continuation of ART 435. Prerequisite: Permission of instructor. Repeatable for credit.

538 Jewelry
3 hrs.
Continuation of ART 438; advanced work in jewelry processes. Prerequisite: ART 438. Repeatable for credit.

539 Metalsmishing
3 hrs.
Continuation of ART 439. Prerequisite: ART 439. Repeatable for credit.

540 Painting IV
3 hrs.
Continuation of ART 440. Prerequisites: ART 410, 440. Repeatable for credit.

541 Printmaking Workshop
1-6 hrs.
An advanced seminar for qualified undergraduates to engage in successful exploration of printmaking media appropriate to each art student's esthetic needs. Prerequisite: ART 441 or 443. Repeatable for credit.

542 Watercolor
3 hrs.
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: ART 442. Repeatable for credit.

545 Graphic Design
3 hrs.
Continuation of ART 445. Prerequisite: ART 445. Repeatable for credit.

548 Photography
3-6 hrs.
Professional development through research in advanced projects. Prerequisite: ART 448. Repeatable for credit.

552 Preparation for Art Teaching
3 hrs. Fall, Winter
A course dealing with: the current problems in 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
1-6 hrs.
An arranged elective course in which the student investigates and researches a problem, a project, or trends in art education. (Not to be taken in place of required art education courses.) Prerequisites: ART 252, 352, 452, 552, and permission of the art education chairman. This course is open to graduate and non-degree level students.

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.

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).

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, Da Vinci, Michelangelo, Titian, Van Eyck, Brueghel and Durer.

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.

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.

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.

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.
Dance
Wendy Cornish, Chair
Helen Brown
Clara Gamble
Luretta McCray
Eugene Mills
Eve Stabolepszy
Janet Stillwell

Programs
Degrees: Bachelor of Arts, Bachelor of Science with major in Dance, and Bachelor of Fine Arts in Dance.

Three majors and five minors are offered in The Department of Dance. They are:
1. Major in Dance (40 credit hours)
   a. Major for students planning to teach Dance
   b. Performance Dance Major: Contemporary Emphasis
   c. Performance Dance Major: Ballet Emphasis
2. Minor in Dance (24 credit hours)
   a. Minor for students planning to teach Dance
   b. Contemporary Dance Minor
   c. Ballet Minor
   d. Jazz Dance Minor
   e. Theatrical Dance Minor

Introductory dance courses are offered for non-majors/minors. Some of these partly fulfill graduation requirements in Physical Education.

Advising
THE DEPARTMENT OF DANCE
WALWOOD UNION: (616) 383-4049

Upon admission to the University, major and minor 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 a major slip with the assigned advisor during the junior year and secure a graduation audit statement before registration for the final semester.

Miscellaneous
Jury Teaching Major in Dance: During the sophomore year the student must pass a performance and oral jury, and, prior to student teaching, must pass an advanced performance, oral and teaching jury. The performance jury must be in the Contemporary Style.

Performance Majors in Dance: During the sophomore year the student must pass an oral and performance jury and, during the junior year, must pass an advanced oral, performance and choreographic jury. The performance jury will be in the style of the major emphasis.

Minors: Teaching minors must pass an oral and teaching jury prior to student teaching. Performance 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.

Majors in Dance
Bachelor of Fine Arts in Dance
60 credit hours

The B.F.A. degree shall consist of a Performance Dance Major and one of the Performance Dance Minors, the total program not to exceed 60 hours. DANC 582 Graduating Presentation, for three hours credit, and DANC 350 Performance, for 4 hours credit must be included in this program.

The student in the Performance Dance Major: Contemporary Emphasis may select one of the following minors in dance for the B.F.A.: Ballet Minor, Jazz Dance Minor or Theatrical Dance Minor.

The student in the Performance Dance Major: Ballet Emphasis may select one of the following minors in dance for the B.F.A.: Contemporary Dance Minor, Jazz Dance Minor or Theatrical Dance Minor.

Enrollment in the BFA program is contingent upon admission to the University and approval of the Department of Dance through audition. Audition information is available from the Department of Dance upon request. Students are urged to complete admission to the University by March 1.

Teaching Major in Dance
40 credit hours

A student must complete all General Education Distribution Program requirements as outlined in this bulletin. Within these requirements, dance majors should select Biomedical Sciences 112 and Biomedical Sciences 210.

Requirements in the Department of Education and Professional Development shall be completed for this degree as described under Secondary Curriculum in the College of Education.

(Refer to certification information as outlined elsewhere in this bulletin.)
Required Courses in Technique Hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 223</td>
<td>Contemporary Dance III</td>
<td>1</td>
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<tr>
<td>Prereq: 124 or consent of advisor</td>
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<tr>
<td>DANC 323</td>
<td>Intermediate Contemporary Dance</td>
<td>2</td>
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<tr>
<td>Prereq: 223</td>
<td></td>
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<tr>
<td>DANC 423</td>
<td>Advanced Contemporary Dance</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: 323</td>
<td></td>
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<tr>
<td>DANC 222</td>
<td>Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC 202</td>
<td>Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228</td>
<td>Improvisation in Dance</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 223 or consent of advisor</td>
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Required Courses in Theory Hrs.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>DANC 100</td>
<td>Foundations of Dance Education</td>
<td>2</td>
</tr>
<tr>
<td>DANC 182</td>
<td>Introduction to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: consent of advisor</td>
<td></td>
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</tr>
<tr>
<td>DANC 282</td>
<td>Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 323</td>
<td></td>
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<tr>
<td>DANC 341</td>
<td>Creative Movement in the Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>DANC 342</td>
<td>Teaching of Dance in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: 122, 202, and 323</td>
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<tr>
<td>DANC 482</td>
<td>Non-literal Approach to Choreography</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 182 or consent of advisor</td>
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<tr>
<td>DANC 500</td>
<td>Dance History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 392</td>
<td>Measurements and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>Either:</td>
<td>PEPR 295 Biomechanical Analysis of Activity</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: BMED 210</td>
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<tr>
<td>DANC 290</td>
<td>Kinesiology for the Dancer</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: BMED 210</td>
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</tbody>
</table>

Electives: (6-7 hours) From courses in The Department of Dance with the dance academic advisor.

Initial Jury: During the sophomore year, the student must pass a Contemporary Dance performance and an oral jury.

Final Jury: The student must pass an advanced Contemporary Dance performance and oral jury, as well as a teaching jury, prior to student teaching.

University Dancers or Dancer’s Workshop: Students must participate in workshop activities each semester on campus after declaration of major, up to six semesters.

Performance Dance Major: Contemporary Emphasis

40 credit hours

A student must complete all General Education Distribution Program requirements as outlined in this bulletin. Within these requirements it is suggested that he/she enroll in the following in Area I: Music 150, Theatre 200, Art 120, and in Area IV, enroll in Music 352.

Required Courses in Technique Hrs.

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<tr>
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<td>Contemporary Dance III</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 124 or consent of advisor</td>
<td></td>
<td></td>
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<tr>
<td>DANC 323</td>
<td>Intermediate Contemporary Dance</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 323</td>
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<td></td>
</tr>
<tr>
<td>DANC 423</td>
<td>Advanced Contemporary Dance</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: 323</td>
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</tr>
<tr>
<td>DANC 216</td>
<td>Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC 116</td>
<td>Ballet I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228</td>
<td>Improvisation in Dance</td>
<td>1</td>
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<tr>
<td>Prereq: 223 or consent of advisor</td>
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<tr>
<td>DANC 320</td>
<td>Performance Dance</td>
<td>1-2</td>
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<tr>
<td>Approval of Chairperson</td>
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<tr>
<td>Three hours of credit from any of the following:</td>
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</tr>
<tr>
<td>DANC 150</td>
<td>Dancer’s Workshop</td>
<td>1-3</td>
</tr>
<tr>
<td>DANC 250</td>
<td>University Dancers</td>
<td>1-3</td>
</tr>
<tr>
<td>Prereq: audition only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANC 550</td>
<td>Western Michigan Repertory Dance Co</td>
<td>2-3</td>
</tr>
<tr>
<td>Prereq: audition or consent of Co. Dir.</td>
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</tr>
<tr>
<td>DANC 580</td>
<td>University Ballet Theatre</td>
<td>2-3</td>
</tr>
<tr>
<td>Prereq: audition or consent of Ballet Company Director</td>
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Required Courses in Theory Hrs.

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<tr>
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<tbody>
<tr>
<td>DANC 182</td>
<td>Introduction to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: consent of advisor</td>
<td></td>
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<tr>
<td>DANC 282</td>
<td>Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 323</td>
<td></td>
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</tr>
<tr>
<td>DANC 482</td>
<td>Non-literal Approach to Choreography</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 182 or consent of advisor</td>
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</tr>
<tr>
<td>DANC 500</td>
<td>Dance History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>DANC 525</td>
<td>Special Studies in Historical Dance Styles</td>
<td>2</td>
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<tr>
<td>DANC 548</td>
<td>Dance and the Related Arts</td>
<td>3</td>
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<td>Prereq: 500, 525 or consent of advisor</td>
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<tr>
<td>DANC 588</td>
<td>Dance Production</td>
<td>3</td>
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</table>

Electives: 8-9 hours from courses in The Department of Dance with the dance academic advisor.

Initial Jury: During the sophomore year, the student must pass an oral and Contemporary Dance Performance jury.

Final Jury: During the junior year, the student must pass an advanced oral and Contemporary Dance Performance jury, as well as a choreographic jury.

Performance Dance Major: Ballet Emphasis

40 credit hours

A student must complete all General Education requirements as outlined in this bulletin. Within these requirements it is suggested that he/she enroll in the following in Area I: Music 150, Theatre 200, Art 120, and in Area IV, enroll in Music 352.

Required Courses in Technique Hrs.

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<tr>
<td>DANC 216</td>
<td>Ballet III</td>
<td>1</td>
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<tr>
<td>Prereq: 117 or consent of advisor</td>
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<tr>
<td>DANC 316</td>
<td>Intermediate Ballet</td>
<td>2</td>
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<tr>
<td>Prereq: 216 or consent of advisor</td>
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<tr>
<td>DANC 416</td>
<td>Advanced Ballet</td>
<td>3</td>
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<tr>
<td>Prereq: 316 or consent of advisor</td>
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<tr>
<td>DANC 218</td>
<td>Jazz Dance I</td>
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<tr>
<td>DANC 123</td>
<td>Contemporary Dance I</td>
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<td>DANC 128</td>
<td>Pantomime</td>
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<tr>
<td>Prereq: 102, 116 or 123</td>
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<tr>
<td>DANC 227</td>
<td>Character Dance</td>
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<tr>
<td>DANC 327</td>
<td>Ballet for the Male Dancer</td>
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<tr>
<td>DANC 425</td>
<td>Special Studies in Ballet</td>
<td>1-3</td>
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<tr>
<td>DANC 427</td>
<td>Pointe Technique</td>
<td>1</td>
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<tr>
<td>DANC 527</td>
<td>Partnering</td>
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<td>Prereq: consent of advisor</td>
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Three hours credit from any of the following:

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<td>University Dancers</td>
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</tr>
<tr>
<td>Prereq: audition only</td>
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<tr>
<td>DANC 550</td>
<td>Western Michigan Repertory Dance Co</td>
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<tr>
<td>Prereq: audition or consent of the Company Director</td>
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<tr>
<td>DANC 580</td>
<td>University Ballet Theatre</td>
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Required Courses in Theory Hrs.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 182</td>
<td>Introduction to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: consent of advisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANC 292</td>
<td>Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 323</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANC 482</td>
<td>Non-literal Approach to Choreography</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 182 or consent of advisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DANC 500</td>
<td>Dance History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>DANC 525</td>
<td>Special Studies in Historical Dance Styles</td>
<td>2</td>
</tr>
<tr>
<td>DANC 548</td>
<td>Dance and the Related Arts</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: 500, 525 or consent of advisor</td>
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</tr>
<tr>
<td>DANC 588</td>
<td>Dance Production</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives: 8-9 hours from courses in The Department of Dance with the dance academic advisor.

Initial Jury: During the sophomore year, the student must pass an oral and Contemporary Dance Performance jury.

Final Jury: During the junior year, the student must pass an advanced oral and Contemporary Dance Performance jury, as well as a choreographic jury.
DANC 482 Non-literal Approach to Choreography...........2
Prereq: 182 or consent of advisor
DANC 582 Graduating Presentation.........................2
Prereq: consent of advisor

Electives: 10 hours from courses in The Department of Dance with consent of the dance academic advisor.

Initial Jury: During the sophomore year, the student must pass an oral and performance jury in the ballet.

Final Jury: During the junior year, the student must pass an advanced oral and performance jury in the ballet.

Minors in Dance
Teaching Minor in Dance
24 credit hours
Students must meet all General Education Distribution Program requirements as outlined in this bulletin. Within these requirements it is suggested that dance minors select BMED 210.
A student within this minor should be an education major within another subject area.

Required Courses in Technique Hrs.
DANC 223 Contemporary Dance III.......................1
Prereq: 124 or consent of advisor
DANC 323 Intermediate Contemporary Dance........2
Prereq: 223
DANC 423 Advanced Contemporary Dance..............3
Prereq: 323
DANC 202 Jazz Dance II................................1
Prereq: 102 or consent of advisor
DANC 122 Recreational Dance.........................1
DANC 228 Improvisation in Dance......................1
Prereq: 223 or consent of advisor

Required Courses in Theory Hrs.
DANC 100 Foundations of Dance Education.............2
DANC 182 Introduction to Choreography................3
Prereq: consent of advisor
DANC 282 Dance Accompaniment.........................2
Prereq: 323
PEPR 392 Measurements and Evaluation................2
Either:
PEPR 295 Biomechanical Analysis of Activity..........2
Prereq: BMED 210
DANC 290 Kinesiology for the Dancer..................3
Prereq: BMED 210
Either:
DANC 341 Creative Movement for the Elementary School 4
DANC 342 Teaching of Dance in the Secondary School 3
Prereq: 122, 202 and 323

Electives: To complete a 24-hour minor, with consent of the dance academic advisor.

Jury: The student must pass an oral and teaching jury prior to student teaching.

University Dancers or Dancer’s Workshop: Student must participate for 2 semesters.

Contemporary Dance Minor
24 credit hours
Each student must meet all the General Education Distribution Program requirements as outlined in this bulletin.

Required Courses in Technique: Hrs.
DANC 223 Contemporary Dance III.......................1
Prereq: 124 or consent of advisor
DANC 323 Intermediate Contemporary Dance........2
Prereq: 223
DANC 423 Advanced Contemporary Dance..............3
Prereq: 323
DANC 102 Jazz Dance I................................1
DANC 228 Improvisation in Dance......................1
Prereq: 223 or consent of advisor

Either:
DANC 122 Recreational Dance.........................1
DANC 116 Ballet I....................................1

Either:
DANC 150 Dancer’s Workshop.........................1
DANC 250 University Dancers.........................1
Prereq: audition only

Required Courses in Theory: Hrs.
DANC 182 Introduction to Choreography................3
Prereq: consent of advisor
DANC 282 Dance Accompaniment.........................2
Prereq: 323
DANC 548 Dance and the Related Arts...................3
Prereq: 500, 525 or consent of advisor

Electives: 5-6 hours from courses in The Department of Dance, with consent of the dance academic advisor.

Jazz Dance Minor
25 credit hours
Each student must meet all General Education Distribution Program requirements as outlined in this bulletin.

Required Courses in Technique Hrs.
DANC 202 Jazz Dance II................................1
Prereq: 102 or consent of advisor
DANC 302 Intermediate Jazz............................2
Prereq: 202
DANC 303 Jazz Workshop................................2
Prereq: 302
DANC 101 Beginning Tap................................1
DANC 123 Contemporary Dance III......................1
DANC 228 Improvisation in Dance......................1
Prereq: 223 or consent of advisor

Either:
DANC 116 Ballet I....................................1
DANC 122 Recreational Dance.........................1
The Department of Dance offers a variety of courses and minors.

### Theatrical Dance Minor

24 credit hours

Each student must meet all General Education Distribution Program requirements as outlined in this bulletin.

#### Required Courses in Technique Hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>DANC 102 Jazz Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 116 Ballet I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 122 Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 123 Contemporary Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228 Improvisation in Dance</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 223 or consent of advisor</td>
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<tr>
<td>Two hours from the following:</td>
<td></td>
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<tr>
<td>DANC 117 Ballet II</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 116 or consent of advisor</td>
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<tr>
<td>DANC 124 Contemporary Dance II</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 123 or consent of advisor</td>
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<tr>
<td>DANC 202 Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 102 or consent of advisor</td>
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</tr>
<tr>
<td>DANC 216 Ballet III</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 117 or consent of advisor</td>
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<tr>
<td>DANC 223 Contemporary Dance III</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 124 or consent of advisor</td>
<td></td>
</tr>
<tr>
<td>DANC 302 Intermediate Jazz</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 202</td>
<td></td>
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<tr>
<td>Either:</td>
<td></td>
</tr>
<tr>
<td>DANC 101 Beginning Tap</td>
<td>1</td>
</tr>
<tr>
<td>DANC 128 Pantomime</td>
<td>1</td>
</tr>
<tr>
<td>Prereq: 102, 116 or 123</td>
<td></td>
</tr>
</tbody>
</table>

#### Required Courses in Theory Hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 182 Introduction to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>Prereq: consent of advisor</td>
<td></td>
</tr>
<tr>
<td>DANC 328 Stage Dance Forms</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 122 or 227 and either 182 or THEA 255</td>
<td></td>
</tr>
<tr>
<td>DANC 525 Special Studies in Historical Dance</td>
<td>2</td>
</tr>
<tr>
<td>DANC 528 Musical Theatre Workshop</td>
<td>2</td>
</tr>
<tr>
<td>Prereq: 328 or consent of advisor</td>
<td></td>
</tr>
<tr>
<td>DANC 588 Dance Production</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Electives: 2 hours from courses in

- The Department of Dance with consent of the dance academic advisor.

### Fine Arts Appreciation Minor

The Department of Dance offers a Minor in Fine Arts Appreciation. The course descriptions and requirements are as follows:

#### Course Descriptions

- **100 Foundations of Dance Education**
  - 2 hrs.
  - Investigation of selected topics relative to the prospective dance educator.

- **101 Beginning Tap**
  - 1 hr.
  - An introduction to tap technique primarily concerned with the development of rhythmic execution.

- **102 Jazz Dance I**
  - 1 hr.
  - An introduction to jazz technique. The emphasis is placed on movement isolation, percussive dynamics, and strong rhythmic awareness.

- **112 Social Dance Forms**
  - 1 hr.
  - 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.

- **116 Ballet I**
  - 1 hr.
  - An introduction to ballet technique for the beginning student.

- **117 Ballet II**
  - 1 hr.
  - A development of ballet technique above the introductory level. Ballet combinations are learned to emphasize sequence of movement and material used. Prerequisite: DANC 116 or consent of advisor.

- **122 Recreational Dance**
  - 1 hr.
  - Investigation of folk, square and social forms of dance with a concentration on overlapping dance skills.

- **123 Contemporary Dance I**
  - 1 hr.
  - An introduction to contemporary dance technique above the introductory level. Prerequisite: DANC 123 or consent of advisor.

- **124 Contemporary Dance II**
  - 1 hr.
  - The development of contemporary dance technique above the introductory level. Prerequisite: DANC 124 or consent of advisor.

- **128 Pantomime**
  - 1 hr.
  - The study of movement in its relationship to the dramatic situation. Prerequisite: DANC 102, 116 or 123.

- **150 Dancer’s Workshop**
  - 1 hr.
  - Practical experience in the development of technique and performance skills for repertory and quick study. Attendance required prior to DANC 250 University Dancers’ auditions. May be repeated for credit.

- **182 Introduction to Choreography**
  - 3 hrs.
  - The study of analysis, compositional principles of dance. Competency in contemporary dance technique and improvisation is a suggested preparation. Prerequisite: Consent of advisor.

- **200 Dance Notation**
  - 3 hrs.
  - A study of Labanotation—a practical system of recording human movement for purposes of analysis and reading. The course includes reading (interpretation), theory and practical. Prerequisite: DANC 216, 282 and 323.

- **202 Jazz Dance II**
  - 1 hr.
  - Further development of the jazz dancer in the first-year level. Aspects of performance techniques are introduced with an increased emphasis in style. Prerequisite: DANC 102 or consent of advisor.

- **204 Teaching of Dance in the Elementary School**
  - 3 hrs.
  - 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.

- **216 Ballet III**
  - 1 hr.
  - Designed for the student seeking increased strength and versatility in classical technique. The course
emphasizes jumps, turns, and beats. Prerequisite: DANC 117 or consent of advisor.

223 Contemporary Dance III
1 hr.
The exploration of contemporary dance technique for the student who has experience in beginning levels of this dance form. Prerequisite: DANC 124 or consent of advisor.

225 Special Studies in Jazz
1-6 hrs.
Practical studies in jazz not offered as separate courses. Examples of possible topics include the following: intermediate tap, Afro-American dance. May be repeated for credit up to 6 hours.

227 Character Dance
1 hr.
A course designed to train the dancer in the theatrical folk dance of European countries. Prerequisite: DANC 216 or consent of advisor.

228 Improvisation in Dance
1 hr.
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 223 or consent of advisor.

250 University Dancers
1 hr.
Open to all University students by application. Audition for this group will include performance in various dance styles. Studio Evenings and Annual Concert of Dance experiences will take place through further choreographic and rehearsal auditions. May be repeated for credit. Prerequisite: By audition only.

282 Dance Accompaniment
2 hrs.
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. Prerequisite: DANC 323.

290 Kinesiology for the Dancer
3 hrs.
This course is designed for the dance student who does not have a major or minor in Physical Education. It is concerned with analysis of movement from an anatomical and mechanical point of view, with special attention given to the problems of dance technique. Prerequisite: BMED 210.

300 Seminar in Dance
1-3 hrs.
The content of the seminar will vary to provide qualified students the opportunity to examine and discuss areas of common interest within the discipline of Dance. Will be attended by students in DANC 582 when applicable.

302 Intermediate Jazz
2 hrs.
Further development of a jazz technique on the intermediate level, emphasizing movement isolations, sequential coordinations, dynamics, aspects of performance and the development of ensemble awareness. Prerequisite: DANC 202.

303 Jazz Workshop
2 hrs.
Provides an opportunity to create and perform jazz compositions on the pre-professional level in different jazz styles. Intensive training in ensemble awareness is emphasized. May be repeated for credit. Prerequisite: DANC 302.

316 Intermediate Ballet
2 hrs.
Ballet technique emphasizing a great variety of steps. Classical technique and its application to movement in combinations is stressed. Prerequisite: DANC 216 or consent of advisor.

323 Intermediate Contemporary Dance
2 hrs.
The study of contemporary dance technique designed for the student seeking greater proficiency and versatility. Prerequisite: DANC 223.

325 Special Studies in Contemporary Dance
1-6 hrs.
A study of contemporary 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. Repeatable for credit up to 6 hours.

327 Ballet for the Male Dancer
1 hr.
The specific training in the tour de force of the male dancer. May be repeated for credit. Prerequisite: DANC 216 or consent of advisor.

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 or 227 and either 182 or THEA 255.

341 Creative Movement in 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. Prerequisite: DANC 122, 202 and 323.

344 Dance for the Exceptional Student
2 hrs.
Study of movement possibilities and their use in dance therapy. Emphasis on methods, techniques, and practical laboratory experience. Prerequisite: Consent of Advisor.

350 Performance variable
An experience in student-choreographed or faculty-choreographed concert material. Registration to occur after performance has been completed. May be repeated for credit. Prerequisite: Approval of Chairperson.

382 Choreography for the Ballet
2 hrs.
The study and practical application of ballet movement into a finished work. Prerequisite: DANC 182 and 316 or consent of advisor.

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. Prerequisite: consent of advisor.

416 Advanced Ballet
3 hrs.
Ballet technique for the experienced student in the classical idiom. Within the technique, style is strongly emphasized. A portion of each class period will be devoted to pointe work. May be repeated for credit. Prerequisite: DANC 316 or consent of advisor.

423 Advanced Contemporary Dance
3 hrs.
The advanced study of contemporary dance technique with emphasis on
274 COLLEGE OF FINE ARTS

ensemble awareness. May be repeated for credit. Prerequisite: DANC 323.

425 Special Studies in Ballet 1-6 hrs.
Studies in ballet not offered as a separate course. Examples of possible topics include the following:
a. Survey and Selection of Music for the Ballet
b. Ballet Repertory
c. Opera Ballet
d. Pre-Classic Dance Forms
Repeatable for credit up to 6 hours. Prerequisite: Consent of advisor.

427 Pointe Technique 1 hr.
The specialized training of the female dancer in pointe work. May be repeated for credit. Prerequisite: DANC 316 or consent of advisor.

450 Repertory 2 hrs.
A study of, and experience in, previously choreographed dances with an intensive analysis of style, structure and form. May be repeated for credit. Prerequisite: DANC 302 and 323.

482 Non-literal Approach to Choreography 2 hrs.
A non-literal approach to design in dance through the study of varied use of time, space and dynamics in solo and group choreography. Prerequisite: DANC 182 or consent of advisor.

500 Dance History and Philosophy 3 hrs.
The history of dance through the philosophies of humanity from primitive cultures to the contemporary concert dancer.

525 Special Studies in Historical Dance Styles 2 hrs.
Studies in dance history not offered as separate courses. Examples of topics for study include the following: Afro-American Dance; Contemporary Dance in the 20th Century; Classic and Romantic Ballet; Vaudeville, Broadway and the Movies; Dance in the East and Far East; Survey of Dance as Social Comment.

527 Partnering 1 hr.
The training of ballet dancers in the art of Pas de Deux. Women in the class must have had background in pointe work. May be repeated for credit. Prerequisite: Consent of advisor.

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 Theatre. Prerequisite: DANC 328 or consent of advisor.

540 Repertory Company Class 1 hr.
Designed for the dance student at the professional level. An advanced technique in ensemble performing is necessary. All members of the Western Michigan Repertory Dance Company shall take this as a required technique class. Repeatable for credit. Prerequisite: Western Michigan Repertory Dance Company members or consent of Company Director.

548 Dance and the Related Arts 3 hrs.
Related study of cross-sections of art disciplines at various points in the historical development of humanity. Assumes prior knowledge of historical and philosophical development of at least one of the disciplines. Prerequisite: DANC 500, 525 or consent of advisor.

550 Western Michigan Repertory Dance Company 2-3 hrs.
The Company is a major performing ensemble which provides master classes, lecture-demonstrations and concerts in various dance styles on and off campus. The nature of these activities requires that members show proficiency in the areas of performance, improvisation, teaching, public speaking and composition. Membership involves a series of auditions and is open only to members of officially recognized Department ensembles. Members shall attend DANC 540. May be repeated for credit. Prerequisite: By audition or consent of company Director.

570 Ballet Company Class 2-4 hrs.
Designed for the ballet student at the professional level. An advanced technique and proficiency in performing is necessary. All ballet dancers who are members of the University Ballet Theatre shall take this as a required technique class. May be repeated for credit. Prerequisite: By audition or consent of Ballet Company Director.

580 University Ballet Theatre 2-3 hrs.
Comprised of members of the performing ballet group of The Department of Dance. Dancers will have experience performing and rehearsing in a professional company environment. Members of the company will be selected by audition or permission of the Ballet Company Director, and shall attend DANC 570. Repeatable for credit. Prerequisite: By audition or consent of Ballet Company Director.

582 Graduating Presentation 1-3 hrs.
Preparation and presentation of an advanced project in dance, to be either a written paper or the performance or choreography of a major dance work. An oral examination is included. To be taken by B.F.A. candidates in their senior year. Prerequisite: Consent of advisor.

588 Dance Production 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 are considered.

598 Readings in Dance 1-4 hrs.
Advanced students with good academic standing may elect to independently pursue a program of readings in areas of special interest. Prerequisite: Approved application required.

599 Non-reading Independent Study in Dance 1-4 hrs.
Advanced students with good academic standing may elect to independently pursue the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Approved application required.
Music

Donald Bullock, Chair
William Aligood
William Appel
Joan Boucher
Russell W. Brown
Herbert Butler
Curtis Vicar-Smith
Robert M. Davidson
Carl Doubleday
Gerald F. Fischbach
Jack J. Frey
Tom R. Fulton
Russell W. Brown, Chair
Stephen Jones
Evelyn Iversen
Robert Humiston
Robert M. Davidson
Herbert Butler
Marshall L. Hutchinson
Kathryn Loew
Leonard V. Meretta
Charles E. Osborne
Donald J. Para
Phyllis Rappeport
Roderick T. Riccio
Neil J. Sanders
David A. Sheldon
Gregory L. Tailford
Michael Varner
Brian Wilson
Joseph T. Work
Joyce Zastrow
Stephen Zegree
Ramon Zupko

Introduction
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 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 NASM and the National Council for Accreditation of Teacher Education. The Department's program in music therapy is certified by the National Association of Music Therapists.

Programs
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, Jazz, Music Education, Music History, Music Theatre, Music Theory, and Music Therapy. The Bachelor of Arts and Bachelor of Science degrees afford the student the opportunity to major in music and minor in some non-music area of study. All requirements for these degrees in music may be completed within the 122 semester-credit-hour minimum which is required for a degree at Western.

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; the Bachelor of Science with a major in Music and a minor in Elementary Education carries certification to teach in the elementary classroom and/or to teach as a music specialist in the classroom or 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 approval is obtained through the Office.

Admissions
Admission to Western Michigan University is granted only by the Admissions Office for undergraduate students. Application forms may be obtained by writing to the Admissions Office.

Enrollment in a music curriculum is contingent upon admission to the University and approval of the Department of Music. Department approval is obtained through the music audition and testing program. The student may proceed by making application to the University at which time notification will be sent about the audition and testing program in the Department of Music, or a request may be made for 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 the senior year, or in the final year at a community college.

Approval to become a music major is based upon the student's background in music, as demonstrated on the major instrument or voice, the student's musical aptitude, as measured by the Gaston Test of Musicality, and upon academic abilities, reflected in grade point average and various scholastic test scores as they are available. Efforts are made to evaluate the student on the basis of musical potential and not upon desire to enter a specific professional area of music. All students commence a major in music with common "core" requirements and are, therefore, considered for entry into the major with this common basis in mind.

Students who are considering becoming a music major should have a good background in applied music (instrumental or vocal study and performance). Preparation in piano, as a secondary instrument, is also helpful to the student, but not a requisite. Priority to entry into Basic Music 160, which is required of all music majors in their first year of study, the student must demonstrate knowledge of fundamentals. A fundamentals examination will be administered at the time the student is initially advised about classes.

The Department of Music has been gratified with its audition and testing program. The program has helped many students make a more intelligent choice regarding their educational career. Many have been helped toward avoiding entering a field in which they do not have the necessary foundation or talent to be successful, while others have been encouraged to pursue an education in music in order to fully develop...
talents which they have discovered through the audition and tests which were administered. Further information regarding admission to a music curriculum may be obtained by writing the Music Student Advisor in the Department of Music. The Department welcomes the opportunity to confer with prospective students, parents, and counselors regarding educational goals and plans.

Transfer Credit
Music credit from another institution is normally acceptable providing 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. In order to earn a Bachelor of Music degree from Western Michigan University, a student may not transfer more than thirty-three (33) semester credit hours in music courses taken at a non-four-year institution toward music curriculum requirements. If the "Performance Electives" requirement has not been completed at the time of the transfer, at least two of the remaining hours must be completed in major ensembles. Advisors will assist transferring students in finding ways of applying credit hours, not applicable to music curriculum requirements, toward General Education electives or free electives.

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, music theory, and piano proficiency for non-pianists—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.

Presumably, the transfer student will have completed many of the Core Requirements (see below) before enrolling at Western. In that case, he/she must elect a major area of concentration within the music curriculum prior to enrollment. Acceptance in the major will be automatic but certain requirements must be met in order to remain in that major. In order to maintain good standing as a major in Applied Music, Composition, Jazz, Music History or Music Theory, the student must earn a minimum grade-point-average of 3.25 in the first two courses that apply to the major area of concentration. The student who elects Music Education or Music Therapy as a major must maintain a grade-point-average of 3.0 in all courses in the major area of concentration in order to be recommended for Directed Teaching (Music Education) or Music Therapy Internship. The transfer student who elects Music History, Composition, Jazz, Theory, Applied Music-Vocal, Music Education-Vocal, or Elementary Education-Music as a major must take a Piano Placement Examination before admission to those majors in order to project the feasibility of completion of keyboard proficiency requirements in these curricula.

For further information regarding the transfer of music credits, contact the Music Student Advisor in the Department of Music.

Advising
Advisors: Robert Humiston and Donald Para
Appointments: 104 Maybee Hall (616-383-0913)
The Department of Music provides counseling for all music students through a full-time student advising service. The Music Student Advising Office provides general advising for all students in a music curriculum. Advice on general education and major/minor requirements can be provided by consulting with a single Music Student Advisor. Only when a student pursues a minor outside of the Department of Music is an appointment required with another advisor.

The office of the Music Student Advisor is primarily maintained for the purpose of providing academic counseling. Personal guidance is often provided by the Advisor, and matters which are beyond his/her qualifications will be referred to persons and offices on- and off-campus which are capable and qualified to assist.

Graduation requirements must be completed as stipulated in the Bulletin, Undergraduate Catalog, which is in effect at the time the student is admitted. Requirements may not be added in the midst of the student's enrollment, but he/she may take advantage of course and curriculum alterations which may occur while the degree is in progress if these changes enhance his/her education. Each student is responsible for knowing the requirements which must be completed for the degree, and for taking the steps necessary for completion of requirements. All music students are urged to take advantage of the advising services in the Department of Music for assistance in making educational choices and for interpretation of requirements as they are stated in the Catalog.

Miscellaneous
Special (non-academic) requirements for graduation fall in the area of recital performance and recital attendance. Since these are non-academic areas, completion of these requirements is not reflected on the student's transcript and, therefore, requires graduation clearance from the Music Student Advisor which is tentative and is conditioned upon the student's enrollment, but he/she must earn a minimum grade-point-average of 3.0 in all courses in the major area of concentration in order to project the feasibility of completion of keyboard proficiency requirements in these curricula.

The requirement for recital attendance: All music majors are required to attend Music Convocations each semester they are in residence. Each student is allowed to be absent from one Convocation per semester. Without exception, only one absence per semester will be excused. Any absences beyond "one" will be recorded in the student's file. Absences must be made up by attending other Department of Music concerts and recitals in which the student is not a participant. Absences in the student's record which have not been made up will prevent graduation.

The requirement(s) for recital performance are as follows:
1. Bachelor of Music candidates with a major in Applied Music must present a Senior Student Recital (scheduled public recitals, convocations, or area recitals) prior to graduation. Individual students may be required to give additional performances on student recitals at the discretion of their private teachers.

Prerequisite to performance on any student recital shall be a recommendation by the student's applied teacher. Prerequisite to the presentation of Junior and/or Senior Recitals is an approved hearing of that recital by the student's area faculty. Recitals should be scheduled in the Office for Concerts and Special events as far in advance as possible.

Competency Examinations are available to students who qualify for advanced placement or a waiver of requirements in music courses, even if no formal education at the college level may have been completed. Common areas of competency are applied music, secondary instruments, and music theory. Regular examinations are scheduled in these areas to allow qualified students to demonstrate competency.

In the event that a student demonstrates competency in an area
of study which is required in the curriculum, he/she may elect two alternatives for fulfilling degree requirements: (1) request a waiver of the requirement and elect an equivalent number of hours in music courses of his/her choice; or (2) receive credit for the course(s) in which competency is demonstrated by paying an examination fee according to the schedule approved by the Board of Trustees.

Scholarships and Grants in Music are awarded by the Department of Music. Awards are made on the basis of musical talent and/or scholastic achievement. New students are eligible for consideration for these stipends at the time of their audition for admission to the music curriculum. Currently enrolled students apply and audition for awards and renewal of awards during the Winter Semester.

For a listing of music grants and scholarships and application forms, contact the Student Advisor in the Department of Music. Early application for awards is advised.

Music majors may also be eligible for any number of general University scholarships as described in the Student Financial Aid section of the Bulletin, Undergraduate Catalog.

Programs of Study
When a student is admitted to the music curriculum a major area of concentration is usually not declared. Before any student may declare a major area of concentration he/she must complete requirements in the music "core," which are courses required commonly of all music majors, regardless of professional or vocational interests in the field. Core requirements will normally be taken in the first two years. For students who are interested in an in-depth introduction to the two professions for which this university offers certification courses, an opportunity will be provided for them to register for FIELD EXPERIENCE courses in Music Education and Music Theory.

Core Requirements—Bachelor of Music Degree

Music Convocation 101

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*Applied Music 200, 300

(see Electives below) 14

Basic Music 160, 161, 260, 261 11

Aural Comprehension 162, 163, 259 3

Theory Elective (see Electives below) 2

*Musick History and Literature 270, 271, and one History/Literature Elective (see Electives below) 10

*Performance Elective (see Electives below) 8

Keyboard Fundamentals 120-121 2

Conducting 215 1

General Education Electives 35

Major Area of Concentration 13-41

Free electives to make a minimum of 122 semester credit hours.

Music Clearance (verification of completion of recital performance and attendance requirements)

Note: *Music Therapy majors are required to complete only 8 hours of Applied Music 200 (including successful completion of a Sophomore Hearing), 8 hours of Music History 270-271, and 4 hours of Performance Electives.

Electives

Performance electives may be selected from the following list of courses.

1. All students are required to elect four semesters of a major ensemble.


2. The remaining four semester hours of performance electives may be selected from the following: MUS 106, 107, 108, 109, 110, 111, 112, 114, 119, 190, 210, 211, 218, 219, 300, 317, 512, 517.

The student is expected to complete one performance elective during each term of enrollment.

Theory electives may be selected from the following:

Music History/Literature electives may be selected from the following list of courses: MUS 350, 352, 375, 550, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581.

Applied Music Option Six hours of Applied Music may be used in the junior and senior years to support the student's professional major, providing he/she has passed his/her "Sophomore Hearing" and has the joint approval of his/her performance area and major area. Students are encouraged to invent independent study projects which may fulfill elective requirements in the above categories. The student must secure approval of a faculty member to supervise the project and of the Music Advisor for application of the project toward curricular requirements.

Electing a Major Area of Study—Bachelor of Music Degree

Music majors will elect a major area of concentration in their fourth semester of study. All areas of concentration are open to the music major and the student may freely elect the area of his/her choice by completing a form provided by the Music Student Advisor. The student will automatically be accepted in the area of his/her choice if he/she qualifies under the following guidelines:

1. Providing the student has a minimum grade point average of 3.25 in "Core" music courses—required in the first two years.

2. Providing the student has a minimum grade point average of 3.25 in "Core" courses which are in the same area as the elected major (i.e., Applied Music Major must have at least a 3.25 average in applied music courses required in the first two years; Music History majors must have at least a 3.25 average in music history and literature courses required in the first two years; Music Theory—3.25 in theory courses; Composition—3.25 in composition courses.)

3. Since no courses in the area of the elected major are required in the first two years in Music Education and Music Therapy, a student may freely elect either of these curricula, but must earn a minimum grade point average of 3.0 in course work, in the area of the major in order to be recommended for an internship (Music Therapy) or for a directed teaching assignment (Music Education).

If the student does not automatically qualify according to the guidelines outlined above, the application will be submitted to the faculty committee in the area of the major for approval. In the event that approval is denied and the student does not qualify for any other major area of concentration, the Student Advisor will outline the course work in music which may be applied toward the Bachelor of Arts or Bachelor of Science degrees with a major in Music.

Music Education:

Instrumental Major

Grants certification to teach music at any grade level (K-12) grant.

Music Methods (elect from: 240, 344, 345, 346) 4

Instrumental Conducting & Literature 331 2

Instrumental Classes (elect from: 128-139, 227-229) 6

Teacher Education 250, 301 7

Directed Teaching Block 410, 450, 470 14

Before the student will be recommended for Directed Teaching he/she must have completed courses in the major with a minimum G.P.A. of 3.0. The application for a directed
teaching assignment must be made in the Directed Teaching Department prior to one full semester before the assignment is to begin.

Wind/Percussion students must complete two semesters of MUS 109 (Marching Band) in fulfilling Physical Education requirements.

Music Education: Vocal Major
Grants certification to teach music at any grade level (K-12)

Music Methods (elect from 240, 340, 347) 4
Choral Conducting and Literature 330 2
*Professional Electives 6
Vocalists elect from 220, 221, 230, 231, 232, 320, 321, 530, 545, 590
Pianists elect from Voice 100, 190, 230, 231, 232, 321, 530, 545, 590
Teacher Education 250, 301 7
Directed Teaching Block 410, 450, 470 14

Before the student will be recommended for Directed Teaching he/she must have completed courses in the major with a minimum G.P.A. of 3.0. The application for a directed teaching assignment must be made in the Directed Teaching Department prior to one full semester before the assignment is to begin.

Note: *All Music Education-Vocal majors must achieve the 321 proficiency level for Keyboard Musicianship. No more than 4 credit hours in class piano may be applied toward the Bachelor of Music degree. If a student enters the program without any keyboard background, two semesters of class piano must be taken as a deficiency. Piano majors must substitute Voice Class 122-123 for Keyboard Fundamentals 120-121 in the Core Requirements.

Music Therapy Major

Courses in Music Therapy 281, 290, 380, 382, 383, 480, 481, 490, 543 17
Keyboard Musicianship 220, 221, 320, 322 4
Fundamentals of Guitar 126 1
Voice Class 122 1
Instruments of the Band and Orchestra 279 (or) Percussion Class 130 plus one additional instrument class 2
*Professional Electives (elect from 123, 128—139, 240, 289, 366, 569)
Applied Music 300, Applied Organ-piano majors only, Performance Electives—selected from Electives under Core Requirements 5
Psychology 150, 160, 250, and an elective in Psych or Spec. Ed. 12

The student must achieve a 3.0 G.P.A. in the Therapy Major in order to be recommended for MUS 481. In completing the Gen. Ed. requirements the Therapy Major must complete at least two courses from the following: SOC 100, 190, 200, ANTH 100, 220, 250; GSSC 121, 123. In completing Phys. Ed. requirements the Therapy Major must complete at least one course in dance which qualifies as a P.E. "activity" course.

Applied Music: Instrumental Major
In order to be permitted to major in applied music the student must achieve a minimum G.P.A. of 3.25 in MUS 200 or be admitted by audition.

Applied Music (in addition to Core Requirements) 300 10
Performance Electives (in addition to Core Requirements; see Electives above) 3
Chamber Music 218 2
Composition 262 2
Senior Recital (required for Music Clearance) 0

Applied Music: Vocal Major
In order to be permitted to major in applied music the student must achieve a minimum G.P.A. of 3.25 in Applied MUS 200 or be admitted by audition.

Applied Music (in addition to Core Requirements) 300 10
Performance Electives (in addition to Core Requirements; see Electives above) 3
Opus Workshop 2
Advanced Piano Class 220, 221, 320, 321 4
Foreign languages 8
Senior Recital (required for Music Clearance) 0

In addition to the 8 hrs. of Foreign languages above, the Applied Music-Vocal major must include two semesters of one foreign language in completing General Education requirements. The language must be selected from the list of approved General Education Distribution courses.

Music Theatre Major

Keyboard Musicianship 220-221 2
Music Theatre Production 545 2
Music Theatre Practicum 516 2
Dance Classes (elect from 102, 116, 123, 128, 182, 225, 228, 328) 5
Theatre Minor 24
To complete a minor in Theatre the student must complete 24 semester hours of work in Theatre courses.

Courses may be selected by the student in consultation with a Theatre Staff Advisor. Declaration of the Theatre minor must be made to the Theatre Department.

Professional Electives (choose from: 279, 317, 320, 321, 330, 331) 5

Teacher Certification

Students wishing to receive certification to teach music in the public schools (K-12) must complete the following courses:

Note: *If these courses are elected under "Professional electives" in the Music Theatre major, they will apply toward the teacher certification requirements.

Music Theory

Composition 262 2
Introduction to Musicology 570-571 6
Music Theory Electives (see Electives above) 5
Seminar in Music Theory 446 (2 semesters) 4
Music History/Literature Elective (see Electives above) 4
Counterpoint 560-561 4
Orchestration 567-568 4
All Bachelor of Music: Music Theory candidates must pass a piano proficiency examination as outlined below.

Composition

Composition 262-263 4
Acoustics 566 3
Seminar in Composition 362 6
Seminar in Electronic Composition 364 8
Professional Electives (choose from 100, 130, 567, 568, Music History/Literature electives, Art History courses, 20th Century Literature courses) 6

The Composition student must have previous compositional experience before being admitted to a Composition Major. This experience may be acquired by transferring approved credit in Composition from another institution or by successful completion of Composition 262-263. All Bachelor of Music: Composition candidates are required to present a Senior Recital consisting of thirty minutes of original compositions which are an outgrowth of the candidate’s course work and which have been approved by the Composition faculty.

All Bachelor of Music: Composition candidates must pass a piano proficiency examination as outlined below.
In completing General Education requirements the Composition major must include ART 589 and ENG 239. It is recommended that the student also consider ART 120, ENG 150, and THEA 200.

Music History

Hrs.
German 200-201 .................. 8
Introduction to Musicology 570-571 . 6
Musicology and Research 575-576 . 4
Music Theory Elective
(see Electives above) .............. 2
Music History/Literature Electives
(see Electives above) .............. 11
All Bachelor of Music: Music History candidates must pass a keyboard proficiency examination as outlined below.

Jazz

Hrs.
Applied Music (in addition to Core Requirements) 300. ............ 8
Jazz Ensembles 210/218. .......... 4
Jazz Composition 264 ............... 2
Jazz Arranging 555, 556 .......... 4
Jazz Improvisation 558, 559 ....... 4
Electronic Media 594 ............... 2
Jazz History & Literature 582 ....... 3
Keyboard Musicianship 220, 221, 320, 321 ... 321 ............. 4

Keyboard Requirements for Composition, Theory and Musicology Majors

All Composition, Theory, and Musicology majors must demonstrate keyboard competency as a graduation requirement, or for admission to candidacy for a graduate degree. Competency examinations will be administered by a jury of faculty members from the Keyboard Area and from the Area of the student's major.

The student should be prepared to present "readings" of a wide range of literature with reasonable accuracy and musical integrity rather than attempt to achieve a performance level with a few compositions. Sight-reading ability is also expected.

Functional skills related to the student's major shall be examined as follows:

Theory/Composition

1. Ability to harmonize at sight.
   Level: Oxford Folk Song Sight-singing Series—Book III.
2. Play harmonized ascending and descending major and minor scales—all keys.
3. Ability to demonstrate in context the following:
   a. All diatonic triads and seventh chords, including all inversions.
   b. Chromatic chords including the following: secondary dominants, borrowed chords, augmented sixth chords, augmented dominants and augmented dominant seventh chords, the Neapolitan sixth chord, diminished seventh chords, and half-diminished seventh chords.

Music History

1. Two compositions of contrasting style at the level of Bach Two-Part Inventions or Bartok Mikrokosmos, Vol. III or IV. One composition must be selected from the Baroque or Classical repertoire; the other from the Romantic or Contemporary period.
2. Score-reading. Emphasis shall be placed on reading from string quartet scores.
3. Sight-reading of piano music which is easier than the level of literature which the student is performing.

Bachelor of Science Degree or Bachelor of Arts Degree Music Curriculum

Hrs.
1. General Education Electives .... 35
2. Physical Education (Marching Band 109 substitutes) ........ 2
3. A major in music:
   Music Convocation 101 ........ 0
   Applied Music 200 ............. 8
   Basic Music 160-161, 260-261 .... 11
   Aural Comprehension 162-3, 259 .... 3
   Keyboard Fundamentals 120-121 ... 2
   Music History/Literature 270-271 .... 8
   Performance Electives (major ensemble) ........ 4
   Music Electives ................ 14
4. A minor in another department in University (minimum) 15
   (Note: In the event that the credit hours for the minor requirements established by the Department which offers that minor are greater than 15, the students may make an appropriate adjustment in the hours allowed for free electives.)
5. Free Electives ................ 22
124 Total

The award of the Bachelor of Arts or the Bachelor of Science degree is dependent upon course work taken in foreign language and extra credits earned in General Education, Language and Literature, Science and Social Science. See advisor for specific details.

Music-Theatre Program

The Music Department and Theatre offer a reciprocal program which provides students with the opportunity to combine these two areas of study. In addition to the above requirements for:
1. General Education.
2. Physical Education, and
3. Music major, the student would complete the following:

4. Minor in Theatre ............ 24
   Electives to be selected in consultation with a Theatre Department Advisor. Declaration of a Theatre Minor must be made to the Theatre Dept.
5. Dance Courses ............ 6
   (Select from 102, 116, 123, 128, 182, 225, 228, 328)
6. University electives to make a total of 122 hours ............ 11
7. For the student who is enrolled in the General Curriculum of the College of Arts and Sciences there will be an option to complete requirements for a Bachelor of Arts degree or a Bachelor of Science degree. To be awarded a Bachelor of Arts degree, the student, in completing requirements as outlined above, must have completed at least 70 hours of General Education, Language and Literature, Science, and Social Science, including at least eight hours in one foreign language. 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.
   The student completing requirements as outlined above, including a minimum of 40 hours in General Education, Language and Literature, Science, and Social Science, is eligible for the Bachelor of Science degree.

Bachelor of Science Degree

Elementary Education—Music As described under the College of Education section of this catalog.

Music Minor

Requirements for the Elementary Education Student:

Hrs.
Basic Music 160 .................. 3
Aural Comprehension 162 ........ 1
*Keyboard Musicianship 120-121 . 2
*Keyboard Musicianship 220-221 . 2
Voice Class 122 .................. 1
General Music Methods 240 ....... 2
Elementary Music Practicum 244 .... 3
Instruments of Band & Orchestra 279 ....... 2
American Music 350 ............ 4
Creating Music in the Classroom 373 ....... 4

24
Requirements for students who will not receive a teaching certificate:

Fundamentals of Music 159  2
Basic Music 160              3
Aural Comprehension 162    1
Music Literature Electives 4
**Music Electives**          8

Notes: *The student may demonstrate competency in piano classes by registering for a piano proficiency examination through the Music Student Advisor. A waiver of the piano requirements means that the student will fulfill his 24-hour minor program by taking two additional hours of music electives. MUS 126, 161, 215, 271 are recommended.

**A maximum of 2 semester hours in music ensembles may be applied toward a music minor.**

THE DEPARTMENT OF MUSIC DOES NOT OFFER A MINOR FOR STUDENTS WHO WILL RECEIVE SECONDARY TEACHING CERTIFICATION.

Course Descriptions
(Courses described in italics are approved for General Education.

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
1 hr.
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 Treble Choir
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: W. Appel)
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: G. Talford)
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
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.

114 Wind Ensemble
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.

119 Gold Company
(Director: S. Zegree)
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.

120 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. Membership by audition.

211 Studio Accompanying
(Chair: P. Rappeport)
1 hr.
A laboratory experience in accompanying solo music. Students will be assigned three to four hours of varied studio accompanying per week. This course may be repeated for credit not to exceed a total of two semester hours.

218 Instrumental Chamber Music
1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e. string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

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.

512 New Music Ensemble
(Director: R. Zupko)
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.

514 Instrumental Chamber Music
1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e. string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only
MUSIC 281

if a sufficient rehearsal/performance schedule warrants.

516 Music Theatre Practicum
1 hr.
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
1 hr.
Performance of early Western music. Open to all students of the University. 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.

519 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 instructor.

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. Only students enrolled in other classes at Western are eligible to receive applied music instruction. Generally, an audition or interview is necessary in order to be approved for study.

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.

Except for MUS 099, 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.

Students who register for one hour of credit per semester receive one 25-minute lesson per week; two credit hours, one 40-minute lesson; four credit hours, one 60-minute lesson. The more credit a student receives in applied music, the more is expected in practice time and materials.

A $6 fee is required for those enrolled in applied music at the 200, 300, 500 and 600 level in order to bring guest artists/performers to campus for additional musical instruction and enrichment.

999 Applied Music
0 credit ($60 fee)
Private lessons for any student who wishes to register. No tuition is paid, but a special fee is charged. No audition or final examination is required. Beginning students will be accepted. Instructors will be Department of Music professors or qualified students.

100 Applied Music
1-2 hrs.
This level of applied music indicates private music study at a fundamental level. Credit earned may be applied to a Bachelor of Music degree only by special arrangement through the Department of Music.

200 Applied Music
1-4 hrs. ($6)
This level of applied music indicates "lower division" standing for music students who have been approved for this level through auditions or jury examinations.

201 Sophomore Hearing
1 hr.
An examination in applied music. Must be passed to qualify for upper-level applied study.

300 Applied Music
1-4 hrs. ($6)
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 four credits per semester may be earned at this level.

301 Senior Hearing
1 hr.
An examination in upper-level applied music. All Wind-Percussion majors must pass this examination to be cleared for graduation.

501 Master Class
2 hrs.
The study of literature, performance practices, and techniques for a specific 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 purpose of dealing with materials and techniques common to all performers. The class may be repeated for credit. Music majors only.

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.

102 Piano Class I
2 hrs.
This is a beginning course for the development of piano playing skills for non-music majors/minors. The course will cover fundamentals of music reading, keyboard techniques, sightreading, and harmonization.

103 Piano Class II
2 hrs.
A continuation of MUS 102 Piano Class I. Because course goals do not align with other keyboard classes in the Department of Music, the student will not be prepared to progress into other piano courses offered for music majors/minors. Prerequisite: MUS 102 or instructor consent.

120 Keyboard Fundamentals
1 hr.
The course covers basic fundamentals of piano technique, sightreading, transposition and simple harmonization of melodies using primary harmonies. The course must be taken concurrent with or following MUS 160. Prerequisite: MUS 159 or music reading ability.

121 Keyboard Fundamentals
1 hr.
A continuation of 120. The course of study includes major scales and arpeggios using standard fingering, sightreading of easy pieces with two independent parts or melody with block chord accompaniment, transposition of a single melody line, and harmonization of melodies using secondary and secondary dominant harmonies. Prerequisite: MUS 120, or instructor consent.

122 Voice Class
1 hr.
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
1 hr.
A continuation of MUS 122. Repertoire will include early English songs and 17th and 18th century Italian songs as well as other
standard literature, with a minimum of five songs to be memorized during the semester. Prerequisite: 122.

124 Guitar Class I
2 hrs.
This class will enable the student with no previous experience to use the guitar as an accompanying instrument. The course will provide basic instruction in the fundamentals of music reading as well as the fundamentals of guitar. The student will be required to own or have access to a Folk or Classical type guitar.

125 Guitar Class II
2 hrs.
This class is intended for the student who has completed Guitar Class I or the student with some guitar ability who wishes to further develop his/her skills. The course will enable the student to use the guitar as a solo or melody-playing instrument. Instructions will be provided on tablature and transposition as it applies to the guitar and on various techniques as used in both the Classical and Folk idioms for melody or single-note playing. The student will be required to own or have access to a Folk or Classical type guitar. Completion of MUS 124 or instructor consent.

126 Fundamentals of Guitar
1 hr.
This class is for the music major or minor who has an ability to read music and a basic knowledge of harmony but who cannot already play the guitar. The class will focus on the use of guitar in the music education and music therapy professions and will cover the different styles of beginning guitar playing, including an overview of basic chords, barre chords and the various strumming and picking patterns. The student must own or have access to a Folk or Classical type guitar. Prerequisite: MUS 160.

128 Violin Class
1 hr.
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 performance of operettas, cantatas, or solo accompaniments.

129 String Class
2 hrs.
A thorough examination of all string instrument performance, pedagogy, materials, methods and maintenance. For wind and percussion majors in Public School Music.

130 Percussion Class
1 hr.
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
1 hr.
Fundamentals of flute pedagogy and performance. For music majors only.

132 Oboe Class
1 hr.
Fundamentals of oboe pedagogy, performance and reed-making. For music majors only.

133 Clarinet Class
1 hr.
Fundamentals of clarinet pedagogy and performance. For music majors only.

134 Bassoon Class
1 hr.
Fundamentals of bassoon pedagogy, performance, reed-making, and instrument maintenance. For music majors only.

135 Saxophone Class
1 hr.
Fundamentals of saxophone pedagogy and performance. For music majors only.

136 Trumpet Class
1 hr.
Fundamentals of trumpet pedagogy and performance. For music majors only.

137 French Horn Class
1 hr.
Fundamentals of French horn pedagogy and performance. For music majors only.

138 Trombone Class
1 hr.
Fundamentals of trombone pedagogy and performance. For music majors only.

139 Tuba Class
1 hr.
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.

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 perception and enjoyment of music on a visual as well as an 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.

151 Music Appreciation: Jazz/Pop
4 hrs.
A study of the development of jazz and its importance as an American art form. The course includes a survey of the beginnings of jazz as a blending of the musical cultures of Africa and Europe. The development of jazz from the late 19th century to the present will be traced. Current trends in jazz and rock, as well as electronic influences in contemporary pop music will be emphasized. Studies will include sociological and cultural trends and their influence on the evolution of the various styles and forms of jazz and pop. Implications for the future will be considered.

159 Fundamentals of Music
2 hrs.
A study of fundamentals, including notation, scales, intervals, basic chord construction, and the rhythmic/metric aspect of music. This course is open to all students as an introductory study in music theory.

160 Basic Music
3 hrs.
A study of traditional harmony through partwriting and analysis including the inversion of diatonic triads and dominant seventh chords. Prerequisite: Acceptance as a music major or minor and the passing of a qualification examination in music fundamentals.

161 Basic Music
3 hrs.
A continuation of MUS 160. Includes the study of secondary dominants, augmented sixth chords, borrowed chords, and modulation to foreign keys. Prerequisite: MUS 160 with the grade of C or better.
162 Aural Comprehension
1 hr.
Training in the basic skills of music reading and ear training. Prerequisite: Acceptance into MUS 160.

163 Aural Comprehension
1 hr.
A continuation of MUS 162. Prerequisite: MUS 162 with a grade of C or better.

190 Accompanying
1 hr.
Supervised experience in accompanying vocal and instrumental music, both solo and ensemble.

191 Accompanying
1 hr.
A continuation of MUS 190. Prerequisite: MUS 190.

215 Conducting
1 hr.
A course in the fundamentals of conducting, including beat patterns, various gestures for attack, release, phrasing, etc., use of the left hand, and score-reading. The student will be afforded a variety of experiences, i.e., conducting exercises for videotaping, conducting practice laboratories, etc. Prerequisite: One year of music theory and ear-training, (MUS 161, 163).

220 Keyboard Musicianship
1 hr.
A course primarily designed for those who need to develop more advanced practical skills at the piano. Emphasis is on further development of piano technique, sightreading and harmonization skills. Prerequisite: MUS 121 with a grade of C or better, or instructor consent.

221 Keyboard Musicianship
1 hr.
A continuation of MUS 220. Prerequisite: MUS 220, or instructor consent.

227 Violin Class
1 hr.
A specialized course for the string major presenting the techniques and materials of violin. Students also attend the pedagogy lectures given in MUS 129. Prerequisite: String major.

228 Cello Class
1 hr.
A specialized course for the string major presenting the techniques and materials of cello. Students also attend the pedagogy lectures given in MUS 129. Prerequisite: String major.

229 String Bass Class
1 hr.
A specialized course for the string major presenting the techniques and materials of string bass. Students also attend the pedagogy lectures given in MUS 129. Prerequisite: String major.

230 English, Italian and Latin Diction
1 hr.
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
1 hr.
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
1 hr.
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
2 hrs.
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: Instructor consent.

244 Elementary Music Practicum
3 hrs.
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: Instructor consent.

259 Aural Comprehension
1 hr.
Continuation of MUS 163. Prerequisite: MUS 163 with a grade of C or better.

260 Basic Music
3 hrs.
A continuation of MUS 161 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of the composition and performance of several original works in specific forms, employing a variety of vocal and instrumental combinations. Prerequisite: MUS 161 with a grade of C or better.

261 Basic Music: 20th Century Techniques
2 hrs.
Basic compositional techniques such as ostinato, bi-tonality, metric modulation, klangfarbenmelodie, twelve-tone serialization and special techniques of instrumental sound production. Prerequisite: MUS 161 with a grade of C or better.

262 Composition
2 hrs.
Beginning work in composition, with emphasis on the development of short works utilizing small instrumental combinations. Attention is given to melodic, rhythmic and harmonic devices. Prerequisite: MUS 161, or permission of instructor.

263 Composition
2 hrs.
A continuation of MUS 262. Prerequisite: 262.

264 Jazz Composition
2 hrs.
The fundamental aspects of composition in the jazz idiom, including harmonic progression, melodic design and rhythmic formulation. Intensive study will be made of well-known standard tunes as well as classic jazz compositions. All periods will be studied so that the student will have a well-grounded familiarity with basic compositional idioms, including the blues, standard AABA song forms, modal forms and more complicated sectional forms. All compositions created in class will be performed by class members or by the appropriate ensemble outside of class. Prerequisite: 161 C or better.

270 Music History and Literature
4 hrs.
A brief study of non-Western music cultures, and a survey of Western music from earliest times to the 18th Century.

271 Music History and Literature
4 hrs.
A survey of Western Art music from the 18th Century 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 will be given the opportunity to explore one or more of the brasses and woodwinds. Prerequisite: Instructor consent.

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. This course should be taken following or concurrent with PSY 150.

289 Music Activities for Children in Therapy
2 hrs.
This class will examine labels and categorizations involved in children populations, offer instruction in social-recreational instruments, allow for a more in-depth study of appropriate music materials and activities, and allow for experience in designing and implementing music therapy treatment procedures for individuals and groups. Class time will be primarily used for instruction with some selected help times to allow for more individualized instruction. Exams will be of a written, playing and/or presentational format. Prerequisite: Instructor consent.

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 Keyboard Musicianship
1 hr.
Course emphasis is on the development of accompanying and harmonization skills and an introduction to four-part, open-score reading. Prerequisite: MUS 221 with a grade of C or better, or instructor consent.

321 Advanced Keyboard Musicianship
1 hr.
A course designed to concentrate on piano skills necessary for vocal majors. The course will include accompanying techniques, sightreading, transposition and open score reading, as well as general piano techniques and some functional piano skills. Prerequisite: C or better in 320 or instructor consent.

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 the part of the course in order to work with younger students. Prerequisite: MUS 215.

344 Band Methods
2 hrs.
Extensive involvement with actual teaching of band music in public schools is the central part of this course.

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: MUS 240 for music majors; otherwise, no prerequisite.
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, fundraising, 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 String Methods 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, fundraising, 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.

352 Non-Western Music 4 hrs.
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 2 hrs.
An analytic study of the larger forms from the instrumental and vocal repertoire. Prerequisite: MUS 260 with a grade of C or better.

361 Style Analysis 2 hrs.
A continuation of MUS 360. Prerequisite: MUS 360 with a grade of C or better.

362 Seminar in Music Composition 2 hrs.
Original work in composition accompanied by study and analysis of advanced 20th century compositions and creative concepts. May be repeated for credit. Prerequisite: MUS 263.

364 Seminar in Electronic Music Composition 2 hrs.
Original electronic music composition including a study of techniques since 1950, application of studio technique to sound production, and the operation of the synthesizer as a performance instrument. Advanced students will develop and submit an outline of a compositional project. The student will be assigned a number of hours weekly for independent work in the studio for realization of the project, which will receive periodic guidance and criticism from the instructor. May be repeated for credit. Prerequisite: MUS 263.

366 Instrumental Arranging 2 hrs.
A course designed to give the student experience in arranging music for instrumental groups with emphasis placed on making effective use of the resources available in the average junior high and high school music situation. Prerequisite: MUS 161.

368 Survey-Review of Basic Music 2 hrs.
The course consists of a review of chromatic harmony through writing and analysis with emphasis on correlation and reconciliation of the various terminologies used in music theory. This course may not be applied as credit toward degree requirements in music. Credit/No Credit only.

373 Creating Music in the Classroom 4 hrs.
Using the elements of music as a focus, students devise musical activities of a creative nature for use in the elementary classroom and/or for general music classes at the Jr. High and Secondary level. These experiences explore techniques which can help students realize their creative potential. The course includes classroom experience in area schools.

375 Twentieth Century Music Literature 2 hrs.
A chronological survey of 20th Century music literature through listening and analysis.

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: PSY 150.

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: MUS 281 and 290.

383 Observation and Measurement in Music Therapy 1 hr.
Overview of techniques of behavior measurement and accountability paired with actual clinical observations. This course should be taken following or concurrent with MUS 281.

384 Music in Special Education 4 hrs.
Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmical, 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.
466 Seminar in Music Theory
2 hrs.
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. Prerequisite: MUS 261.

467 Seminar in Music Theory
2 hrs.
A continuation of MUS 466. Prerequisite: MUS 466.

470 Classroom Procedures in Theory
2 hrs.
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
2 hrs.
A continuation of MUS 470. Prerequisite: MUS 470.

480 Music Therapy Methods and Materials
3 hrs.
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: MUS 382.

481 Music Therapy Internship
2 hrs.
A six-month internship at an approved state mental hospital.

490 Undergraduate Workshop in Special Problems
1-3 hrs.
Designed for students interested in some special field or music not formally listed for instruction. All special problems must be approved by the Chairperson 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.

Open to Upperclassmen and Graduate Students
518 Improvisation
2 hrs.
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: MUS 161.

530 Advanced Choral Conducting
2 hrs.
Supervised experience in conducting vocal ensembles. The student may be called upon to prepare an ensemble for public performance. Prerequisite: MUS 330.

531 Advanced Instrumental Conducting
2 hrs.
Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: MUS 331.

540 Elementary School Music
2 hrs.
Emphasizes the place of music in the curriculum and the use of music in the day-to-day activities in the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

541 Music Supervision and Consultation
2 hrs.
A study of the structuring and implementation of a music education program in the schools, in terms of three organizational relationships: the music administrator or supervisor, the scheduled music teacher, and the unscheduled music consultant. Relation of music specialist to classroom teacher.

542 Studies in Music Education: (topic)
2 hrs.
Topic to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Education Materials, and Curriculum Planning for Innovation in Music Education. This course may be repeated for a maximum of 4 credits.

543 Research in the Psychology of Music
2 hrs.
Development and employment of research methods and techniques applied to the psychology of music. Experimental projects will be required in areas dealing with music and/or musical behavior. Prerequisite: MUS 380.

544 Music Education Materials: (topic)
2 hrs.
A study of the theoretical basis for and practice in analyzing and evaluating music for use in music education programs. This course may be repeated for a maximum of 4 credits.

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 scenes or acts 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.

550 Music Appreciation: The Symphony
3 hrs.
The course in THE SYMPHONY is a general music course which presents music for symphony orchestra from the listener's point of view. It deals with the materials, structure, texture, sonority, and style of orchestral music since the mid 18th century as well as the cultural milieu which gave rise to and brought about changes in musical style. Music reading ability not required. Not open to graduate music majors.

555 Jazz Arranging
2 hrs.
Jazz Arranging is a study of the art of arranging for the jazz ensemble—both traditional and contemporary. The course will undertake a detailed study of instrument ranges, transpositions and sound potential, and will cover voicings, scoring practices, calligraphy and contemporary trends within the medium. Prerequisite: MUS 264.

556 Advanced Jazz Arranging
2 hrs.
A study and application of the art of arranging for the jazz ensemble, studio orchestra and show orchestra. The course will undertake a detailed study of scoring for winds, brass, strings, voices and percussion in relation to traditional and contemporary trends within the medium. Prerequisite: MUS 555.

558 Jazz Improvisation I
2 hrs.
A study and directed application of the fundamentals of jazz improvisation including basic chord and scale construction and recognition, harmonic function, chord-scale relationships and basic blues and popular song forms. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisite: 161, C or better.
559 Jazz Improvisation II
2 hrs.
A study and directed application of advanced techniques of jazz improvisation including chord extension, voicing, inversions and substitutions, chord function and progressions and complex scales and their applications. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisite: 558, C or better.

560 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: MUS 261 with grade of C or better.

561 Counterpoint
2 hrs.
A continuation of MUS 560. Prerequisite: MUS 560.

562 Advanced Composition
2 hrs.
A study of twentieth century techniques in composition with original work in vocal and instrumental forms. Prerequisite: MUS 362.

563 Advanced Composition
2 hrs.
A continuation of MUS 562. Prerequisite: MUS 562.

566 Musical Acoustics
3 hrs.
A course designed for the music student. Discussion as well as laboratory demonstrations of such principles as: simple vibrating systems; waves and wave propagation; complex vibrations; resonance, intensity and loudness levels; tone quality; frequency and pitch; intervals and scales; tuning and temperament; auditorium and room acoustics; and psychoacoustics. Prerequisite: MUS 161.

567 Orchestration
2 hrs.
A study of the characteristics of instruments, and of arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: MUS 261.

568 Orchestration
2 hrs.
A continuation of MUS 567. Prerequisite: MUS 567.

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 MUS 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: MUS 270 and 271.

573 Classical Music (1750-1800)
2 hrs.
Examination of the chief works of Mozart and Haydn, with intensive study of symphonic form and the development of the classic opera. Prerequisites: MUS 270 and 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. Prerequisites: MUS 270 and 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 MUS 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 Solo Literature: (topics)
2 hrs.
Solo literature for a specific medium (voice, piano, violin, etc.) will be studied from a theoretical, historical, and performance point of view. Topics to be announced. May be repeated for credit. Prerequisite: MUS 270 and 271.

581 Choral Music Literature
3 hrs.
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

582 Western Music Before 1600
4 hrs.
A survey of music to 1600. Major developments in style, notation and performance practices will be stressed using works of theorists and primary manuscript sources.

583 Jazz History and Literature
3 hrs.
A survey of the history of jazz including aspects of sociology and history as they relate to the art form of jazz. All periods in jazz history, from its earliest roots in Africa and the slave culture in the United States, up through the blues, dixieland, swing, bop, mainstream and the more eclectic period of jazz rock and free-form jazz will be explored. Important works will be examined from each period in order to grasp the essentials of a particular style.

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. 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 vertical pianos. The course is designed to give the student valuable insights into the field of piano technology in order that he/she might intelligently purchase and care for this instrument. Not intended to train tuners.

594 Electronic Media
2 hrs.
The purpose of this course is to expose the student to the equipment used in various recording situations and its operation, as well as discussing the artistic use of this equipment. Although predominately a techniques course, areas which affect the creative aspects of the final recording will be discussed (such as microphone placement, tasteful vs. inappropriate editing, etc.). In addition to the recording aspects, other electronic instruments used in performances will be surveyed, including synthesizers of various types (both keyboard and non-keyboard) and traditional electronic instruments (guitars, electronic organs, electronic pianos, and various sound modification devices).
Theatre

Robert H. Luscombe, Chair
Daniel Fleischhacker
Russell J. Grandstaff
David Karsten
Dan J. Martin
Greg D. Roehrick
Lyda Stillwell
Vern Stillwell

Introduction

The Department of Theatre offers programs leading to Bachelor of Arts and Bachelor of Science degrees. Students should refer to degree and General Education requirements within this catalog for specifics. The Department of Theatre concentrates on undergraduate programs which stress the interdependency of academic and production experiences, the importance of theatre fundamentals, and the significance of a broad theatre background.

Opportunities for participation in the production program begin with the freshman year. The Department presents eight to ten faculty-directed major productions each year, including music theatre. Additional plays are presented in the directing classes and the laboratory theatre program. All regularly enrolled University students in good academic standing are eligible to participate in these productions.

Students may gain additional experiences working with the Student Advisory Troupe, an elected group of student representatives that meets regularly with the theatre faculty, and with the local chapter of Theta Alpha Phi, a national theatre honorary fraternity.

Admissions

Enrollment in the theatre curriculum is contingent upon admission to the University and the approval of the Department of Theatre. Information regarding admission and transfer of credit to a theatre curriculum may be obtained by contacting the theatre student advisor in the Department of Theatre, Shaw Theatre.

Advising

Student Advisor: Dr. David Karsten
Shaw Theatre: (616) 383-1762

The Department student advisor will assist any student enrolled in the University with course selections in theatre. Theatre majors and minors must confer with the theatre student advisor, who will help them plan their program and complete the required major or minor slip. It is Departmental policy to accept no more than 18 hours of transferred credit toward a non-teaching major, 12 hours of transferred credit for a teaching major, and 9 hours of transferred credit toward a minor.

Programs of Study

Theatre Majors

The Department of Theatre offers curricula including two majors, a minor, and participates with other University departments in offering a music theatre program, a Fine Arts minor and theatre as an elective option.

The majors are:
1. A major for students not planning to teach.
50 credit hours in theatre
This program is designed for students who want to prepare for graduate study in theatre or advanced, specialized professional training. It offers a program combining a broad background in theatre with the possibility of concentration in acting, directing, or technical production.

Required Courses

<table>
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<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Script Analysis (THEA 175)</td>
<td>3</td>
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<tr>
<td>Makeup (THEA 230)</td>
<td>3</td>
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<tr>
<td>Acting I (THEA 240)</td>
<td>3</td>
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<tr>
<td>Play Production (THEA 250)</td>
<td>3</td>
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<tr>
<td>Directing I (THEA 255)</td>
<td>3</td>
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<tr>
<td>Stagecraft I (THEA 325)</td>
<td>3</td>
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<tr>
<td>Costume I (THEA 335)</td>
<td>3</td>
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<tr>
<td>Theatre History I (THEA 370)</td>
<td>3</td>
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<tr>
<td>Theatre History II (THEA 371)</td>
<td>3</td>
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<tr>
<td>Stage Lighting and Sound (THEA 422)</td>
<td>3</td>
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<tr>
<td>Stage Design (THEA 426)</td>
<td>3</td>
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<tr>
<td>Development of Theatre Art (THEA 570)</td>
<td>3</td>
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<tr>
<td>Electives arranged with Departmental advisor</td>
<td>14</td>
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</tbody>
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2. A major for students planning to teach and direct theatre programs in secondary or elementary schools.
30 credit hours in theatre

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<td>Theatre History I or II (THEA 370 or 371)</td>
<td>3</td>
</tr>
<tr>
<td>Stage Lighting and Sound (THEA 422)</td>
<td>3</td>
</tr>
<tr>
<td>Stage Design (THEA 426)</td>
<td>3</td>
</tr>
<tr>
<td>A methods course must be arranged with Department advisor</td>
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</tbody>
</table>

Students electing this major are strongly urged to minor either in English or Communication Arts and Science in order to increase the breadth of their general Speech background and enhance their
Prospects for employment in the teaching profession.

Note: 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 Theatre and Communication Arts and Sciences are counted as courses in Speech. All teachers to be certified must meet requirements of the University, the College of Education, and the State Board of Education.

Theatre Minor
24 Credit Hours

In this program the student is exposed to several theatre areas. Courses required include:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Script Analysis (THEA 175)</td>
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<tr>
<td>Makeup (THEA 230)</td>
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<tr>
<td>Acting I (THEA 240)</td>
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<tr>
<td>Play Production (THEA 250)</td>
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<tr>
<td>Directing I (THEA 255)</td>
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<tr>
<td>Stagecraft I (THEA 325)</td>
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<tr>
<td>Costume I (THEA 335)</td>
<td></td>
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<tr>
<td>Stage Lighting and Sound (THEA 422)</td>
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</tbody>
</table>

Students pursuing the Bachelor of Music degree wishing to elect the theatre minor will arrange course selection with the theatre student advisor.

Music-Theatre Program

The Department of Theatre and the Department of Music offer a reciprocal program which provides students with the opportunity to combine a music major with a theatre minor or a theatre major with a music minor. Students interested in knowing more about the options available in this program should contact the theatre student advisor, Dr. David Karsten in Shaw Theatre, or Dr. Robert Humiston, Room 104, Maybee Hall.

Fine Arts Appreciation Minor

The Department of Theatre is one of the academic units participating in the Fine Arts Appreciation minor, a program available for students who wish to increase their appreciation of the arts and develop some understanding of aesthetics, and artistic processes.

Theatre as an Elective

The Department offers courses for students who want to explore specific areas of theatre, broaden their background and appreciation of theatre and/or acquire skills in a particular area.

Recommended Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>Explorations in Performance (THEA 110)</td>
<td>3</td>
</tr>
<tr>
<td>Script Analysis (THEA 175)</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Theatre (THEA 200)</td>
<td>3</td>
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<tr>
<td>Play Production (THEA 250)</td>
<td>3</td>
</tr>
<tr>
<td>Stage Makeup (THEA 230)</td>
<td>3</td>
</tr>
<tr>
<td>Improvisational Theatre (THEA 310), Theatre History I or II</td>
<td>3</td>
</tr>
<tr>
<td>Theatre History I or II (THEA 370 or 371)</td>
<td>3</td>
</tr>
<tr>
<td>Script Writing (THEA 376)</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Theatre (THEA 200)</td>
<td>3</td>
</tr>
</tbody>
</table>

May be used to satisfy a General Education requirement.

Course Descriptions

(Courses described in italics are approved for General Education.)

110 Explorations in Performance
3 hrs.
Instruction and practice in the various forms of performance for the beginning student.

146 Voice for the Stage
3 hrs.
Techniques for the training and use of the actor’s voice on stage.

175 Script Analysis
3 hrs.
The study of selected plays from the standpoint of the theatre artist. Emphasis on thorough examination of the play script preparatory to production.

200 Introduction to Theatre
3 hrs.
Considers theatre as a part of the individual’s cultural heritage and liberal arts background. Students attend theatre performances and have opportunities to participate in University Theatre. (Lab fee required for play attendance.)

230 Stage Makeup
3 hrs.
Study and practice of the basic principles and techniques of stage makeup.

240 Acting I
3 hrs.
Study and practice of the basic principles of acting. Prerequisite: THEA 175.

250 Play Production
3 hrs.
An introductory course in the principles and practices of play production. Recommended for Secondary Education majors and minors in CAS, English, and Theatre.

255 Directing I
3 hrs.
Functions of the play director as teacher, interpreter, coordinator, and collaborator. Focus is upon principles and problems of directing. Students prepare and direct scenes from realistic plays. Prerequisite: THEA 240, 250, sophomore standing or above.

300 Special Topics in Theatre: Variable Topics
3 hrs.
An investigation of topics of special interest related to theatre. Repeatable for credit under a different title. Examples of topics for study include: Black Theatre, Contemporary Drama and Theatre, Dance Drama, Dialects, Informal Drama for Jr. High and/or Sr. High, Mime, Movement, Oriental Theatre, Puppetry, Styles in Acting, Youth Theatre.

310 Improvisational Theatre
3 hrs.
Study and practice of the concerns and techniques of improvisational theatre. Emphasis on the development of the spontaneous and creative abilities of individual students and on the development of extemporaneous group theatre.

325 Stagecraft I
3 hrs.
A beginning course in technical production including familiarity with theatrical equipment and materials, planning and construction of basic stage scenery, and laboratory work in University Theatre productions. Prerequisites: THEA 250 or consent of instructor.

330 Stagecraft II
3 hrs.
An advanced course in technical production including the planning, construction, and painting of complex stage scenery, and laboratory work in University Theatre productions. Prerequisites: THEA 325 or consent of instructor.

335 Costume I
3 hrs.
Study of costume history from Egyptian through 17th Century. Includes study of design and construction techniques. Prerequisite: THEA 250 or consent of instructor.

336 Costume II
3 hrs.
Study of costume history from the 18th through 20th Centuries, including costumes from opera and ballet. Continued development of design and rendering skills. Prerequisite: THEA 335 or consent of instructor.

290 Theatre Practicum
1-3 hrs.
Supervised experience in one or more areas of theatre through direct contact with the University Theatre program. Nature of involvement determined by student-teacher contract. May be repeated for credit up to a maximum of six semester hours. Prerequisite: consent of instructor.
340 Acting II
3 hrs.
An intermediate course in techniques for the actor with emphasis on characterization. Prerequisites: THEA 146, 240, 310 or consent of instructor: sophomore standing or above.

355 Directing II
3 hrs.
A continuation of THEA 255. Students prepare and direct one short realistic play and one short nonrealistic play. Prerequisites: THEA 255, or consent of instructor.

370 Theatre History I
3 hrs.
Survey of theatre history from the beginnings to 1642. Playwrights, acting styles, theatre production, theatre architecture, and audience taste are studied.

371 Theatre History II
3 hrs.
Survey of theatre history from 1642 to the 20th century. Playwrights, acting styles, theatre production, theatre architecture, and audience taste are studied. Theatre 371 may be taken without first having taken Theatre 370.

376 Script Writing
3 hrs.
A course in the fundamentals of writing comedy and drama for theatre and television.

395 Summer Theatre
2, 4, 6 hrs.
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. Students may enroll for one or more workshops depending on individual needs, interests and schedules. Number of credits and length of workshop determined by focus of topics studied. See summer schedule of classes for specific offerings, prerequisites and lab fees. Topics may include: Acting, Costuming, Design, Directing, Improvisation, Lighting and Sound, Makeup, Management, Technical Theatre.

422 Stage Lighting and Sound
3 hrs.
A course in the design of theatre lighting and sound and in the practical application of those designs to the stage. Includes laboratory practice in staging University Theatre productions. Prerequisites: THEA 325 or consent of instructor.

426 Stage Design
3 hrs.
A course in scenography covering the design of stage settings, lighting, and properties. Includes development of skills in rendering, the scenic model, and theatre drafting techniques. Prerequisite: THEA 422 or consent of instructor.

490 Individualized Study in Theatre
Variable
Designed to enable advanced students to initiate, plan and execute projects in particular aspects of theatre. Must be planned in collaboration with a member of the theatre faculty who will act as supervising teacher. Not designed to replace other theatre courses. Up to six hours may be accumulated. Projects may involve study and research in an area of special interest, special performances or other creative activities, or assisting theatre instructor in the classroom. Prerequisite: consent of department head, chairperson and supervising instructor.

The Department of Theatre does not offer a graduate degree in theatre. The graduate courses listed below, however, are open to undergraduate and graduate students. They may be taken as cognate or elective courses in graduate degree programs of the University where permitted.

500 Studies in Theatre: Variable Topics
Variable Credit
Selected topics within the broad range of theatre. Emphasis upon concepts, theory and advanced skills. Repeatable for credit under a different title. Examples of topics for study include: Advanced Directing, Advanced Makeup, Advanced Technical Theatre, Design for the Theatre, Developmental Theatre, Service, Informal Drama for Jr./Sr. High, Story Theatre, Theatre Administration, Theatre Production, Touring Theatre.

535 Costume Studio
3 hrs.
Study of the design and creation of costume accessories such as hats, jewelry and masks. Prerequisite: THEA 336 or consent of instructor.

536 Costume Creation
3 hrs.
Study and practice of costume style and design through construction, fabric painting, and decorative surfaces. Prerequisites: THEA 335, 336 or consent of instructor. Students are required to supply their own materials.

540 Acting Studio
3 hrs.
An advanced course in the art of acting with emphasis on the individual needs of the student actor. May be repeated for maximum of 6 hours credit. Prerequisite: Consent of instructor.

550 Musical Theatre Production
3 hrs.
Focuses on concepts, methods, organization, and communication principles useful to directors, musical directors, choreographers in creating effective musical theatre productions, particularly in the school and community situation. Team-taught by instructors from music, dance, and theatre. Prerequisite: THEA 255 or consent of instructor.

562 Teaching of Theatre
3 hrs.
Designed to familiarize middle and high school teachers with philosophies, methods and creative procedures for teaching theatre. Emphasis placed upon qualitative theatre programming. Prerequisite: Student must have completed at least 15 hours in the Theatre Department and take course prior to student teaching and TEED 301.

570 Development of Theatre Art
3 hrs.
A survey of the development of theatre art and its relationship to the concurrent development in other arts. Recommended for students considering graduate work in the fine arts. Prerequisite: THEA 370 or 371 or consent of instructor.

620 Seminar in Theatre: Variable Topics
2, 4, 6 hrs.
Study of interrelated aspects of historical and contemporary theatre. Various topics. See schedule of classes. Prerequisite: Variable.

628 Summer Theatre
2, 4, 6 hrs.
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. Students may enroll for one or more workshops depending on individual needs, interest, and schedules. Number of credits and length of workshop determined by focus of topic studied. See Summer Schedule of Classes for specific offerings. Prerequisite: Variable (see schedule of classes). Topics may include: Acting, Costuming, Design, Directing, Improvisation, Lighting and Sound, Makeup, Management, Technical Theatre.
The Fine Arts Appreciation 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 advisors, 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 Appreciation minor: Art, Dance, English, Humanities, Music, and Theatre.

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 advisors.
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.

Students interested in this minor are urged to contact one of the six advisors as early as possible. A minor slip is required.

Recommended Courses:

Art: 120, 130, 140, 220, 221, 235, 305
Dance: 102, 116, 123, 228, 300, 500, 548
English: 110, 150, 210, 266, 340, 344
Humanities (General Studies): 102, 200, 201, 202, 203, 204, 207, 208, 209, 300, 301
Theatre: 200, 240, 250, 290, 300, 395, 500
Philosophy: 312

Certain other courses from these departments may be included in the minor with the approval of one of the advisors.
Goals of the College

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 aims to 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 acknowledges positively more than one mode of inquiry and encourages exploration of cross- and or trans-disciplinary interests and programs of study.

5. The College of General Studies maintains 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 perspectives which in the course of study would provide the student with broad and recognizable frames of reference for the integration of knowledge. It is hoped that the students would therefore perceive ways which will assist each of them in integrating and applying the information each gains in more specific disciplines.

Additional information concerning any 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 College of General Studies is composed of a group of scholars who were gathered together to deal specifically with rapidly expanding knowledge, and the increasing numbers of ways such new knowledge impinges on other knowledge, both new and old. The essential purpose of the Integrated Programs is to acquaint the student with results of interdisciplinary work of a very broad nature and to thus avoid what is commonly called "tunnel-vision" or an inability to see anything outside a very narrow perspective. The developers of the Integrated Programs come from just about every type of academic discipline. The College of General Studies has mathematicians, sociologists, historians, physicists, artists, biologists, et al., who work together to produce courses that include not only the latest knowledge, but also include the broad perspective that can be acquired through such an interdisciplinary effort.

Each Integrated Program consists of broad interdisciplinary courses and each is designed to help the student make more sense out of an increasingly complex world. The programs are designed to cover the entire undergraduate experience; since, as students grow their perceptions grow concurrently.

Particular attention is paid to the beginner in the program. Individualized attention and advising is provided at all levels, but especially at the earlier levels, in
order to assist the student to make the best possible choices from the diversity that is general education at Western. The faculty of the Integrated Programs take a special responsibility for each of their students and are willing and able to help each student plan a series of general education courses that make particular sense and have particular cogency for that particular individual. Both the faculty and the students in the Integrated Programs have the unusual opportunity to participate in the joint activities of a unique group from many interests; over an extended period of time. It is this close, and long-range, contact that is one of the major strengths of the Integrated Programs.

What does an Integrated Program do for students and how does it work? There are two Integrated Programs:

PROGRAM A—The Integrating Perspective
PROGRAM B—Student Planned Inquiry

Integrated Program A: The Integrating Perspective

This Integrated Program consists of four parts:

PART I: An entry course
PART II: Three interdisciplinary courses
PART III: A Non-Western world course
PART IV: Optional sequences of courses

PART I: A four-hour course—GINT 155, In Pursuit of Awareness

This course is designed to accomplish four ends:
1. The course provides for the student an awareness of self—what the extensions of human capability can be, the limitation of being human, and a general exploration of the inner, subjective self.
2. The course provides insight to that world or system that is beyond the confines of the individual self and explores the systemic qualities of the world and the people in it.
3. The course ties together the self and system and shows the interaction of self with system. The interface or plane or intersection between the individual and the system is examined. Alternatives for altering this interface are explored.
4. The course serves as a general introduction for entry into the rest of the Integrated Program.

PART II: The Integrating Matrix—Three courses (12 semester hours)

The matrix is composed of nine courses. The courses take the three perspectives of self, world and their combination (the reciprocal) and examine these in the context of one of the three broad areas of knowledge (the sciences, social sciences and humanities). The student must take three courses from the matrix. In order to represent each of the perspectives, there must be one course from each column and one course from each row.

PART III: One four-hour course—GENL 304, Introduction to the Non-Western World.

A course in the Non-Western World is required of all students at Western. GENL 304 is taught in the College of General Studies and is an interdisciplinary course with an integrated faculty.

PART IV: 15 Semester hours—Student Selected.

With the assistance of a College of General Studies adviser, the student may select:
1. Additional courses from Part II and/or
2. Sequences of courses from the Distribution Program.

Special sequences of courses have been developed within the College of General Studies. For instance, a sequence of courses in Women's Studies. The student may also take GINT 195 and/or GINT 196 from Integrated Program B.

Integrated Program B: Student-Planned Inquiry

One of the ways you can meet Western’s General Education requirement is to plan your own program of courses and projects, based on a topic of your own choosing. The Student-Planned Inquiry Program provides an opportunity for you to do just that.

The Methods of Inquiry course introduces you to the methods of designing your own education by asking effective questions and locating the best available information. The projects and courses selected constitute the general education program for that student. These are programs specifically tailored to your own needs and are built around your interests. GINT 195—Methods of Inquiry, helps develop the skills you will need to make the most of the University and your education. You start by learning about the resources of the University and the community and how these can be used to your own best advantage.

In Part II the student is helped to begin implementing the course of study and projects decided upon in Part I. Notice that alternatives are already mentioned since not all student-planned inquiry can be satisfied in the same manner.

Unless you learn to investigate things on your own, your education will stop when you leave college. If that happens, where will you be ten years from now? The data indicate that you will change occupations approximately five times during your lifetime. Learning how to take best advantage of your opportunities will certainly make these changes easier for you.

Part III assures that you have a balanced program. It also includes the University-wide Non-Western World requirement.

Part IV provides an opportunity for any student to take advantage of the Student-Planned Curriculum. The advisers in Integrated Program B are available to help individuals plan their entire university experience without the formalities of the usual major or minor.

Part IV: Student-Planned Curriculum (optional)

See description of this program in the University Catalogue. Students may extend their topic of Inquiry into a four-year Bachelor’s degree program without the usual requirements of a Major or Minor.

In summary, the Integrated Programs provide a variety of advantages that cannot be had elsewhere:
1. There is a planned sequence of events that helps make sense and
meaning out of general education for each student.

2. There is individual attention paid to each student by a faculty who get to know the individual students.

3. Classes in Integrated Programs usually have a group of students who are known to each other.

4. First preference for enrollment is given to students who are members of Integrated Programs.

5. Professional and faculty counseling is available at all times to all Integrated Program members. You just need to ask for it.

6. Integrated Program courses are unrelated events in General Education. There is planned continuity and sequence in both Integrated Programs.

NOTE: For additional information regarding these programs call 383-0941, Office of the Dean, College of General Studies, 2090 Friedmann Hall.

Course Descriptions
(Courses described in italics are approved for General Education.)

For Integrated Programs

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. (Also approved for the distribution 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 investigation 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.

For General Purposes

141 Workshop: Language Skills
2 hrs.
Designed primarily for those whose skills are academically inadequate; the workshop is planned to aid students in developing their facility with language. It focuses on the structure and diction of academic discourse, with special emphasis on writing. Favorable habits of proofreading, editing, and usage are encouraged. Students may use the workshop to facilitate writing assignments from other courses, whenever practicable. No letter grades will be given; credit is earned whenever acceptable facility in the language skills is demonstrated; a grade of "Credit" is awarded at the end of the semester during which credit is earned. Enrollment is by permission. Does not count for General Education.

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.

241 Library Resources
3 hrs.
Students will be introduced, through lectures, projects and exercises, to materials, methods and people that can help them find what they want in the library. They will become acquainted with (1) library organization, including the card catalog (2) forms of publication—books, documents, periodicals, microforms, etc. (3) indexes, bibliographies, on-line computer retrieval systems, and other reference tools which aid in the pursuit of information (4) strategies for using the library effectively. All of this is intended to help students with their course work and to pursue their personal and career interests in the future. Does not count for General Education.

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.

305 Non-Western Societies in the Modern World
4 hrs.
An analysis of the distinctive cultural configuration of one of the following regions: East Asia, Southeast Asia, South Asia, the Middle East and North Africa, Sub-Saharan Africa. The types of transition being made in the particular region from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure and ideology.

306 Non-Western World Through Literature
4 hrs.
This course introduces the student to the literature of Asia and Africa. Literature is used as a means to studying Non-Western societies. The purpose is to enable students to explore the distinctive lifestyles of Non-Western cultures, become acquainted with some unique worldviews, and to learn to compare and contrast cultural behavior. This course also provides an opportunity to test the hypotheses of social scientists regarding these cultures.

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 Chairperson and the office of the Dean of the College. May be repeated for credit. This course will not be accepted for General Education credit without the approval of the Coordinator of General Education Advising.
The major concern in all courses offered by the Humanities Area is the fundamental question: what does it mean to be a human being? We examine, especially through historical perspectives, a spectrum of other persons' intellectual, emotional, spiritual, and imaginative responses to this basic question. We explore a whole range of values associated with those responses for the purpose of providing a comparative basis for one's own discrimination and choice.

All courses offered by the Humanities Area are interdisciplinary, and each deals with humanity's imaginative and aesthetic responses, our cultural symbols. Our emphasis is frequently on the arts, but our approach is not so much a comparative or interrelated study of the arts (where the main concerns would ultimately lead to questions about the arts and their form and style) as it is a matter of employing the arts to gain particular insights into the nature of human beings as they respond to their cultural environments. Our approach necessarily involves more than a concern for the arts. Since our primary concern involves the question of what it means to be a human being, and since answering such a question also involves an examination of cultural contexts, all of the traditional humanistic disciplines may be involved in our courses. Moreover, in many of our courses, we find it necessary to extend into the Sciences and Social Sciences in order to delineate and/or corroborate a given cultural idea.

Humanities Area courses may be used to satisfy requirements in the Fine Arts Minor.

Course Descriptions
(Courses described in italics are approved for General Education.)

102 Direct Encounter with the Arts
4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of arts: cinema, photography, theater, sculpture, music, poetry, dance, and architecture. Classroom discussions are held following the students' participation in the various art events scheduled each semester, with students expected to write journals or response papers about the major events of the course. There will be a course charge in lieu of textbooks.

200 Arts and Ideas of the Twentieth Century
4 hrs.
This course is a comprehensive examination of selected arts of modern Western culture (four from among the following: architecture, dance, film, literary arts, music, painting, and sculpture) demonstrating their relationship to the major intellectual and social currents of the twentieth century. The emphasis in the course is on helping the students develop their own powers of observation and critical response through the materials and activities of the course.

201 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 on the merits of the popular arts as aesthetic and as social products.

202 Great Themes in Art
4 hrs.
A comparison of selected themes (e.g., love, death, heroism) 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.

203 Arts and Cultures of Black Africa
4 hrs.
An introduction to black 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.

204 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.

205 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.

200 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 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 concepts 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 Traditions
4 hrs.
An interdisciplinary introduction to the origins, nature and development of traditional African art, cultures and philosophies, and their impact on other cultures.

304 Asian Traditions
4 hrs.
A study of the most significant arts and ideas in the many cultural traditions of Asia. Select examples will be compared with each other and with the student's own cultural heritage.
315 Human Communication
4 hrs.
An investigation of the processes by which people use 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 students' consciousness of their own communication behavior and through exposing them to the ideas of various communication specialists.

316 Mass Media: Messages and Manipulation
4 hrs.
An examination of mass communication in general and of particular mass media. Students will consider the processes, effects, and functions of mass media, and their personal responses to these, through considering relevant scholarship from such diverse fields as sociology, history, psychology, anthropology, art, and literature.

400 The Twenties
4 hrs.
A study of one of the 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—this and more serve as a basis for comparison with our own times.

401 Depression and War: The Thirties
4 hrs.
This course will be an interdisciplinary examination of the 1930's, focusing on America during the Great Depression and the Second World War.

402 America Since World War II
4 hrs.
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.

403 Towards 2000: Utopian Visions and Futurism
4 hrs.
A discussion course which introduces the student to the classic literature 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 the 21st century.

404 Creative Process
4 hrs.
This course will analyze the process through which symphonies, poems, photographs and other works of art are created. The analysis will then be extended to a range of phenomena beyond the arts, including subjects of student concern.

405 Myths and Myth-Making
4 hrs.
The purpose of this course is to study humans as myth-makers. The course will analyze several basic mythic structures that humans use to create a universe in which there is meaning and purpose. These myths will be studied in art, literature, music, film and/or related materials.

406 Historical Fact and Fiction
4 hrs.
This course examines the problem of representing the truth about historical events through the eyes of historians, novelists, painters, filmmakers and other artists. It emphasizes criteria for judgment rather than "right" answers.

407 Architecture and People
4 hrs.
An examination of architecture, particularly modern architecture, in its relation to people and the environment from a humanistic perspective—the possible contribution of architecture to the good life.

408 Art and Technology
4 hrs.
An inquiry into the contemporary visual and musical arts as they relate to technology.

409 Women: 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.

410 Artists of Black Africa
4 hrs.
An examination of selected black African artists and cultural and philosophical developments and interactions in contemporary Africa in the context of world cultural processes.

501 Humanities Workshop: Variable Topics
1-3 hrs.
This course is designed to permit the granting of appropriate credit for participation in workshops and institutes sponsored by the Humanities Area of the College of General Studies. Humanities Workshop may be repeated for credit, upon a change in topic, for a maximum of 6 hours credit. This course may not be used to satisfy the University's General Education requirements.
Science Area

Ronald Flaspohler, Chair
Shirley Bach
Roger Bennett
Carl J. Engels
Franklin G. Fisk
David Hargreave
Robert H. Poel
Michael D. Swords
Joanne Ursprung

An important part of the general education of a person is an understanding of the science and technology which have had such a tremendous impact on our daily lives and on the shaping of our culture. The main emphasis of some Science Area courses is comprehension of the development of scientific thought and the relationship of science to other aspects of our cultural development.

Other courses consider recent discoveries and technological advances. Also considered are the possible environmental or ethical consequences of applying these advances. The scientific knowledge necessary to understand the new technology is presented. This is followed by exploration of different points of view and the evolution of alternate solutions in terms of practical considerations and moral and ethical values.

Other courses are directed toward students in elementary education. Science concepts and processes are considered in the context of new elementary science programs which see science as a vital part of the general education of children.

Course Descriptions

(Courses described in italics are approved for General Education.)

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 prerequisite) Not recommended for science majors.

130 Social Issues in Physical Science
4 hrs.
A course designed to look at current science related problems of society having their factual core of knowledge in the physical sciences. Sufficient understanding of this knowledge is acquired to give non-scientists an understanding of the trade-offs resulting from alternative attempts to solve a problem. Emphasis will be placed on understanding the scientific enterprise, how it relates to modern technology, and how both relate to people and to societal issues.

131 Physical Science in Elementary Education
4 hrs.
This course is designed to introduce students to some of the broad concepts 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. Because of its broad based nature, this course is especially valuable for elementary education minors and at the same time appropriate for majors and minors in all fields of endeavor.

132 Aims and Achievements of Science
4 hrs.
This course is designed as a broad philosophical and historical view about science as a human endeavor. It examines the aims or goals of science and compares these to the achievements of the scientific enterprise, as well as demonstrating the methods of science and other methods of obtaining reliable information. The course for the non-scientist is a non-mathematical examination of science and the way it affects and is affected by culture. The interrelationships between science and other disciplines and some of the important issues of our day are discussed.

133 Issues in Social Biology
4 hrs.
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, controlling population size, genetic engineering, controlling environmental factors affecting health and disease, and the ethical and moral concerns implicit in these.

134 Problem-Solving and Decision-making
4 hrs.
This course helps students become more proficient in the essential skills of solving problems and making decisions, at a professional level, as well as personal and social levels. It accomplishes this through the study of many approaches and techniques, including those used with great success in science and technology. It also provides an understanding of simple number tools and relationships, necessary for interpreting information, as aids to problem-solving and decision-making.

231 Physical Science in Elementary Education
4 hrs.
This course is a continuation of GSCI 131, Physical Science in Elementary Education for those students who desire or need further study in the concepts and methods of the physical sciences. Instruction will be in laboratory sections no larger than 30 and an inquiry learning-by-doing approach will be utilized. This course will further elaborate on some concepts introduced in GSCI 131 and will also introduce additional important concepts in the physical sciences. (Prerequisite GSCI 131 or consent of instructor)

430 Citizen Planning for Tomorrow
4 hrs.
This course introduces students to some of the implications of our technologically sophisticated society. Students assume the roles of members of a regional planning council charged with the responsibility of developing a long-range, comprehensive plan for the future of Southwest Michigan. In these roles they analyze the status quo, the dangers and the future needs of the region; they research potential ways to deal with the problems identified; and, working together, synthesize a master plan for the next several decades.

431 The Darwinian Revolution
4 hrs.
A lecture-discussion course designed to explore the interplay between the growth of scientific ideas and the cultural milieu from which they came. Pre-Darwinian views of humanity's "place in nature" 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 Science and Parascience
4 hrs.
The goal of this course is to examine open-mindedly several "alternate visions" of the nature and origin of human life in the light of science's attitudes and objectives. Topics examined: astrology, futuro-prediction, "harmonies" between entities, ESP, telepathy, the aura, PK, UFOs, extraterrestrial life, ancient astronauts, and others.

433 Science, Technology, and Society
4 hrs.
This course consists 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.

434 Biomedical Ethics and Society
4 hrs.
This course concentrates on contemporary scientific and ethical issues in biomedicine. Some issues involved are: new reproductive technologies and their appropriate use; experimentation on human subjects (the meaning of informed consent, risks and benefits); new technologies to extend life and the quality of the life extended; biological engineering; death, transplantation, and resource allocation; ethical aspects of biomedical innovation.

435 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.

436 The Search for an Ecological Conscience
4 hrs.
This is a lecture/discussion course designed to explore the means whereby humans can develop a more responsible and compassionate relationship with their non-human fellow passengers on spaceship earth. The essential elements of an ecological awareness are developed, the relationship between awareness and conscience delineated, and the fusion of all into an ecologically sane lifestyle explored.

534 Moral and Philosophical Foundations of Health Care*
4 hrs.
In this course philosophical reflection and biological science are combined in a critical examination of the nature and purpose of health sciences. Topics to be considered include: The aims of the health sciences; the interplay of fact and value in health care; competing images of humankind embedded in health science; patient autonomy, dignity, and medical paternalism.

*This is a cross-college interdisciplinary course which is team taught with faculty from the Philosophy Department.

Social Science Area

Nita Hardie, Chair
Syed Abedin
Ted Bank
Do Young Chang
Sushi Datta-Sandhu
Dave DeShon
Gilda Greenberg
Norman Greenberg
Francis Gross
Bruce Haight
Arthur Helweg
Barbara Havira
Charles Houston
Lawrence Israel
Pat Klein
Hung Peng Lee
George LeBonte
Lynne Lemrow
Minoru Mochizuki
Nizaralli A. Motani
Evan Richards
Visho Sharma
Larry Tyler

The primary focus of social science is the realm of human experience. Within this field of study, of special concern is the analysis of the social processes which link all human beings. The empirical, data-based approach which characterizes social scientific inquiry seeks to foster a better understanding of the emergence and nature of the regularities of human life.

The main objective in the teaching-learning process is to facilitate the development of social self-consciousness, an awareness that individuals experience life, define and express their humanity within a human group which is part of a larger social network. To achieve this, social science courses are designed to provide the student an opportunity to examine: the cultural relativity of behavior, ideas and values as well as the dynamic and continuing processes by means of which these are diffused across cultures; the idea that humanness has a socially determined and historical, as well as individual basis; the view that there are reciprocal influences of environmental settings, cultural processes, social forces and individual expression; the view that the social processes of any group tend to define the limits of individual activity; the importance of an empirical analysis of private and social perspectives as well as the predictions which these perspectives which go beyond the specificities of the regular social science disciplines and, experience-based views of social reality which are placed into juxtaposition with one or more theoretical formulations of social processes, the views of
student peers, and those of the instructor.

Course Descriptions
(Csourses described in italics are approved for General Education.)

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 those social processes which impose restraints upon human 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 Human 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, and environmental quality.

126 History of the Chicano
4 hrs.
A study of the cultural, social, political, and economic roots of Mexicans and Mexican-Americans which led to the evolution of the Chicano in the United States. This course examines the conditions which led to the Chicano movement and its reasons for promoting ethnic and cultural awareness as well as social and political consciousness.

224 Americans Called Indians
4 hrs.
An investigation of contemporary American Indian problems through the integration of current events, films, field research, and literature—with some of the traditionally accepted information compiled by anthropologists, historians, and journalists who have lived and worked with American Indians.

226 The Chicano in Contemporary Society
4 hrs.
This course examines the Chicano in contemporary society from a cultural, educational, social, political, and economic perspective. Of particular interest are education, the farm worker struggle, land-grant litigation, and urban strife.

256 Beyond Survival
4 hrs.
As Rene Dubos has suggested, the real issue is not "Will humanity 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.

260 World Exploration
4 hrs.
Ours has been called the New Golden Age of Exploration—an exciting period of history when explorers have penetrated the last remote regions of our planet, have begun to probe the ocean depths and far reaches of space. This course focuses upon these quests and human drama in exploration, and particularly upon the most recent findings at the frontier of knowledge. Multi-media lectures, demonstrations, and opportunities for independent study.

320 World in Ferment: The 'Crisis of Modernity'
4 hrs.
The 20th century has reached its three-quarter mark. Scarred by warfare, by revolution, and by ethnic strife, it has seen the passing of empires and of ideological certainty. This course views, from a social science perspective, the key transformations of our epoch—presented as interrelated aspects of a single, world-wide crisis: the 'Crisis of Modernity.'

325 Self-Images and Images of Social Reality
4 hrs.
An inter-disciplinary inquiry into the self-images of persons, their social origin and change, and ways the perception of other persons, groups, and social events and issues are relative to perceptions of one’s self. The aim is an understanding of factors that influence our own and other persons’ perceptions and the form and quality of the self-images and images of the social world.

355 Contemporary Theory and Personal Growth
4 hrs.
A course designed to help the student gain an awareness of the human person as continually capable of growth. Selected developmental thinkers, each of whom is concerned with stages of human growth, are studied in conjunction with novels, poetry, and films in order to shed light on the individual’s continuing search for meaning and productivity in contemporary society.

360 Urban Environments and Ecological Studies
4 hrs.
Cultural and human ecologies of urban environments; a study of humans in their 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.

361 Orientation to Field Exploration
4 hrs.
Focuses upon the motivations and experiences of modern explorers in many disciplines, especially those which impact upon social science. Emphasis is upon involving the students actively in exploring the world around them. They are shown how they can participate in worldwide scientific expeditions, and how to use creative and research techniques in a variety of field situations. Content partly determined by students’ interests and backgrounds; multi-media lectures, seminars; student-planned expeditions, including one weekend camping trip.

363 Cross Cultural Exploration of Human Consciousness
4 hrs.
The differing ways that humans define and experience reality; world views and self-concepts in various cultures. The principles and practices of Eastern disciplines, and those of other exotic cultures, are examined in the light of Western science. Students are introduced to recent findings at the frontiers of cross-cultural research in transpersonal psychology, psychiatry, parapsychology, and biofeedback technology. Lectures and discussions with occasional guest speakers.

421 Social Movements and Social Conflict
4 hrs.
A study of contemporary sociocultural conflict and change. The emphasis will be placed on understanding the theoretical basis for the development of social movements and the study of selected protest movements.

423 Role Portrayal in the Mass Media
4 hrs.
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 each of the media listed.

424 Science, Mysticism and Changing Views of Life
4 hrs.
A comparative study of Oriental and Occidental views on cosmic and universal phenomena. Investigations center on changing scientific views of life, the relevance of archetypal processes to cultural forms, parapsychology, "altered states of consciousness", mysticism and its relationships to cosmology and psychological functions, and an introduction to general systems theory and environmental design.

425 Theories of Human Behavior
4 hrs.
A critical inquiry into the development of social science method and theory with a focus on key individuals who have influenced the directions of present day inquiry.

444 Psychology and Women
4 hrs.
This course will examine traditional and contemporary psychological theories and related research on women. The course will investigate age-old assumptions about sex roles and sex identity through an analysis of the psychological literature of the 20th century.
The College
Faculty
Richard Williams
Adjunct Faculty
C. Dennis Barr
Donald DeWitt, M.D.
Robert Nicholson, M.D.
Martin A. Verzi
Gerald Cecere
Russell Davis

The College of Health and Human Services provides programs in Alcohol and Drug Abuse (at the graduate level), Blind Rehabilitation and Mobility, Gerontology, Medical Technology, Occupational Therapy, Physicians’ Assistants, Social Work, and Speech Pathology and Audiology. Through these professional programs, education, research, and community assistance in health and human services is provided. The programs cover direct service roles in the health and human service professions, as well as functions of policy development, planning, and administration. Students may earn the degrees of Bachelor of Arts and Science, Master of Arts in Blind Rehabilitation, Occupational Therapy, and Speech Pathology and Audiology; and Master of Social Work through their studies. A Health Care Administration concentration is also available through the College of Business within the Bachelor of Business Administration program.

Mission of the College
The mission of the College of Health and Human Services at Western Michigan University is to contribute to improvement of the quality of health and human services in the Western Michigan area, the State of Michigan and the nation as a whole through degree and non-degree instructional programs, research and community service activities. The mission includes a commitment to foster development of a comprehensive health and human service care system responsive to the citizens of the state and the nation and which contributes to enhancement of overall quality of life in general.

Through the qualitative and innovative educational and professional service programs of the College a commitment is being made to the integration of education—within the College, between the College and other colleges of the University, and between the College and our communities, both professional and geographic. The College is further committed to ensuring that its teaching, learning, and discovery processes will focus on preparing people who understand their professional tasks in the context of a concept of quality that embraces the wholeness, challenge, and beauty of life and who will be prepared for leadership in a moral and professional sense as well as in an organizational sense.

Advising
Students admitted to Western Michigan University must also be admitted formally to the College’s programs through the individual departments or units. Interested candidates should contact the departments or program directors for further information.

Financial Aid
Scholarships and other forms of financial assistance are available for most programs in the College. Please refer to the section on Scholarships and Financial Aid.

Health Care Administration Major Program
Dr. Barbara D. Marks, Advisor

Students wishing to major in Health Care Administration must be admitted to the Bachelor of Business Administration degree program through the College of Business and should consult that college’s section of the bulletin for specific details. Requirements for the major include:
**Integrated Language Arts Minor**

Maryellen Hains, Coordinator  
924 Sprau Tower  
(616) 383-0972

An interdisciplinary program of:  
COLLEGE OF HEALTH AND HUMAN SERVICES  
Speech Pathology and Audiology  
COLLEGE OF EDUCATION  
Department of Education and Professional Development  
COLLEGE OF ARTS AND SCIENCES  
Communication Arts and Sciences  
English  
Linguistics

This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of language learning. This program satisfies the guidelines of the Michigan Department of Education for competency based programs and provides opportunities for a wide variety of individual interests and alternative learning styles. The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each course. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each course is taught by a faculty member with interdisciplinary expertise from one of the departments participating in the minor. Each course focuses on a particular aspect of language development which will be presented through a balance of lectures, discussions and workshops together with opportunities for student initiated learning.

Students can enter the program in their sophomore year. In general, Human Development and Learning, ED 250 (or its equivalent), is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Offices of the College of Arts and Sciences or the Educational and Professional Development Department and from the Integrated Language Arts (ILAM) Coordinator, Maryellen Hains, 924 Sprau Tower, 383-0972.

Minor slip required. Students must see an advisor before they have completed eight hours in the minor.

**Program**

This 24-hour interdepartmental minor for elementary education students consists of the following:

**Entry Courses—must be taken concurrently:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ILAM/ED 260</td>
<td>Cognitive Development of the Child</td>
</tr>
<tr>
<td>ILAM/SPPA 260</td>
<td>Linguistic Development of the Child</td>
</tr>
</tbody>
</table>

**Intermediate Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ILAM/CAS 365</td>
<td>Oral Communication and the Early Elementary Child</td>
</tr>
<tr>
<td>ILAM/ENG 375</td>
<td>Acquisition of Literacy and the Early Elementary Child</td>
</tr>
<tr>
<td>ILAM/ENG 376</td>
<td>Acquisition of Literacy and the Later Elementary Child</td>
</tr>
</tbody>
</table>

**Capstone—to be taken after at least 16 hours of the minor are completed:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILAM/ED 460</td>
<td>Integrated Language Arts Seminar</td>
</tr>
</tbody>
</table>

For individual course descriptions see catalogue listings under the participating department.

**College Course Descriptions**

511 The Health System and Its Environment  
3 hrs.  
This course provides a descriptive analysis of the organization of the health system. The student who participates can expect to gain an understanding of the structure of health services as well as the processes of operation of the service system and the ways in which consumers make use of the system. The analysis focuses on the interplay of forces within the system as well as behind the system and its environment.

512 Health Resources Administration  
3 hrs.  
This course is an introduction to principles and problems of health resources administration. The course focuses on two major areas. First, in a general introduction concerning the structures of the financing of health services, the course explores public and private mechanisms, insurance, and other financing plans. Second, the course examines the principles of financial administration for health services in the institutional and private practice setting. In this context major current issues and problems such as cost containment in health financing are analyzed.

513 Special Studies in Health Care Organization and Delivery Variable  
This course deals with intensive analysis of the organization, design, and delivery of health care services in specialized areas. The specialized areas cover long-term, mental health, and mental retardation services, and group medical practice.

514 Basic Principles and Organization of Health Planning  
3 hrs.  
This course is an introduction to the principles and methods of planning in the health system. It includes a descriptive analysis of the significance of planning effective health care services, alternative planning frameworks, and technical approaches to the planning process. In addition the course surveys the history of planning in the health systems as well as the current structure arrangements for carrying
out planning in the health arena both at the macro and micro levels.

515 Administrative Functions in the Health Care Setting
3 hrs.
This course focuses on the knowledge and skills necessary for the major administrative functions in health organizations. These include goal setting, decision making, personnel management, data processing, service design, and general principles of financial management.

530 Clinical Theory for Health and Human Services
1-4 hrs.
This course covers selected theories which form the foundation for health and human service practice in specialized areas. Students are expected to master the content as a basis for building foundation knowledge for clinical practice. Theory of environmental health, systems theory for the health setting, theories of substance abuse for nursing and medical practice, and community health theory are among the possible areas of study. The specific topics are announced with each semester offering.

560 Clinical Practice in Selected Health and Human Service Areas
1-4 hrs.
This course covers variable topics in clinical health and human service practice. It is a skills development course which helps students to become proficient in specific techniques and procedures related to patient care or client service. Clinical applications of biofeedback, clinical practice in genetic counseling, the role of the health team in clinical practice, the patient and clinical laboratory services, basic clinical skills for the substance abuse setting, and community health education practice are among the possible areas of studies. The specific areas are announced with each semester.

561 Problem Solving in Health and Human Service Organizations
1-4 hrs.
This seminar covers variable topics relating to problem solving in health and human services. It is a skill development course which helps students to become proficient with theoretical constructs and specific procedures for application in the health and human services system. Technology for health planning, the health system and its environment, organization of health practice teams, and financial problem solving in the health agency are among the topics covered. The specific topics to be discussed are announced with each semester offering.

570 Field Education in Health and Human Services
1-6 hrs.
This registration is designed to give the student a total learning experience during which the student can apply some of the knowledge and information obtained in the health and human services academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in the health and human service area. By permission of instructor.

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 prostheses.

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.
Explores various methods and techniques of teaching essential communication skills—braille, typing, social communication, handwriting, abacus computation, the use of electronic devices and other media to the visually impaired. 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.

597 Introduction to Cecutieny
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.

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.

Gerontology Minor
Advisers:
Billye Cheatum  
Physical Education  
Geraldine Richardson  
Occupational Therapy  
Elen Page Robin, Director  
Gerontology  
Robert Barstow  
Social Work

Gerontology, the study of the aging process and of old age, is offered as a multidisciplinary minor at Western Michigan University. Gerontology includes the study of aging through a disciplinary perspective, as well as that medical specialty known as geriatrics.

Interest in gerontology has burgeoned in the United States with the recognition that currently our population includes more than 23,000,000 persons beyond age 65—and that population segment is growing. Universities have responded through research and teaching to increase the understanding of the older portion of our population and to provide trained personnel to work with older persons.

The minor in gerontology is well designed to supplement formal training in other fields such as Sociology, Social Work, Occupational Therapy, Physical Education and Recreation, Blind Rehabilitation, Speech Pathology, and others. It cannot, however, be used for teacher certification. Knowledge and understanding gained from formal courses in the gerontology minor are supplemented by direct work with older persons through field experience. Study of gerontology not only can lead to vocational interests in services to older persons but can prepare one for graduate and professional work, can enrich awareness of the society in which one lives, and can allow the thoughtful and intelligent personal planning of one’s own middle and later years.

The minor consists of twenty or more hours from the courses listed, of which four are required courses. Courses must be selected in consultation with one of the advisers. Exceptions to the program specified, such as the inclusion of independent studies through departmental readings courses, may be made with the approval of the adviser.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Sociology 352: Introduction to Social Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>Sociology Work 464: Social Work</td>
<td>3</td>
</tr>
<tr>
<td>Practice in Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>Occupational Therapy 470: Functioning of the Older Adult</td>
<td>3</td>
</tr>
<tr>
<td>Field Education: Either HHS 570</td>
<td>4</td>
</tr>
<tr>
<td>or a practicum in a participating department</td>
<td>3 or 4</td>
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</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Biomedical Sciences 531: Biology of Aging</td>
<td>3</td>
</tr>
<tr>
<td>Business Education 292: Consumer Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>Business, General 326: Investment Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Economics 313: Poverty and Economic Security</td>
<td>3</td>
</tr>
<tr>
<td>Economics 318: Economics of Medical Care</td>
<td>3</td>
</tr>
<tr>
<td>General Studies, Science 434: Biomedical Ethics</td>
<td>4</td>
</tr>
<tr>
<td>Home Economics 210: Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>or Home Economics 212: Food for Man</td>
<td>3</td>
</tr>
<tr>
<td>Home Economics 480: Marriage and Family in Maturity</td>
<td>3</td>
</tr>
<tr>
<td>HPER 572: Recreation for the Aging</td>
<td>2</td>
</tr>
<tr>
<td>Social Work 563: Concepts in Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>Social Work 572: Community Agency Resources</td>
<td>2</td>
</tr>
<tr>
<td>Sociology 122: Death: Dying and Bereavement</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 373: Sociology of Health and Illness</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 552: Sociology of Aging</td>
<td>3</td>
</tr>
<tr>
<td>Speech Path. and Aud. 552: Communication Problems of the Aged</td>
<td>3</td>
</tr>
<tr>
<td>Education and Professional Development 504: Adult Development and Learning</td>
<td>3</td>
</tr>
</tbody>
</table>
Medical Technology

David A. Duprey, Director and Adviser

Adjunct Faculty
Judy L. Daskiewicz
Geraldine Doezema
Betty Floyd
Harriet Hillebrand
Carole Sue Hutchinson
Lenore L. Johnson
Anne Kornafel
Laura J. Stanley
Sandra Sue Stump
Merrie Ver Merris
Mary C. Woitanski
Iris M. Young

The medical technologist is an important member of the health care team. He/she is the one who performs specialized laboratory tests which assist the physician in the diagnosis and treatment of various diseases. The medical technologist must, therefore, be precise and accurate in the performance of these tests and possess a keen awareness for the importance of quality control within the laboratory.

Preparation for a career in Medical Technology requires an extensive background in the sciences (Biomedical Science, Chemistry, Math, and Physics), as well as adequate clinical laboratory training. The Medical Technology student takes courses on the Western campus for three years (Option A) or four years (Option B) and then spends one year in an approved hospital School of Medical Technology (preferably one affiliated with Western).

Students planning to major in Medical Technology will be admitted into a Pre-Medical Technology Curriculum at the time of admission to the University. Following completion of the sophomore year, students must submit their applications to the Medical Technology Office for processing. The deadline for submitting applications is April 15 of each year. Students are admitted to the program once a year and are notified of admission by May 15.

Once a student is admitted to the Medical Technology curriculum, he/she may elect one of two options for completing the requirements for the B.S. degree. Both curricula require 125 semester hours for graduation. For Option A (3 + 1), the student spends three years on the Western campus followed by a one-year internship at an approved, accredited hospital School of Medical Technology. Following completion of the internship the student is awarded a B.S. degree in Medical Technology. For Option B (4 + 1), the student earns the Bachelor's degree after four years on the University campus. A twelve-month hospital internship is then taken independently of the University in fulfillment of the requirements of the American Society of Clinical Pathologists (ASCP). Western Michigan University has affiliation agreements with the following Michigan hospitals: Blodgett Memorial Medical Center, Grand Rapids; Borgess Hospital, Kalamazoo; Bronson Methodist Hospital, Kalamazoo; Northern Michigan Hospitals, Inc., Petoskey; Butterworth Hospital, Grand Rapids; Hackley Hospital, Muskegon; McLaren General Hospital, Flint; Munson Medical Center, Traverse City; Pontiac General Hospital, Pontiac; St. Mary's Hospital, Grand Rapids; Saginaw Medical Center, Saginaw; Wayne County General Hospital, Eloise; Flint Osteopathic Hospital, Flint; and William Beaumont Hospital, Royal Oak.

Western is also affiliated with the following out-of-state hospitals: The Lutheran Hospital, Ft. Wayne, Indiana; St. Joseph's Hospital, Ft. Wayne, Indiana, St. Vincent Hospital, Indianapolis, Indiana; St. Mary's Hospital, Quincy, Illinois; and The Elyria Memorial Hospital, Elyria, Ohio.

Pre-Medical Technology Program (Pre-Professional Phase)

I) Admission Requirements: those of the University

II) Pre-Medical Technology (pre-Professional) courses:

A. Biomedical Science courses
1. Biomedical Science 112 - Introduction to Biomedical Sciences
2. Biomedical Science 113 - Cell Biology
3. Biomedical Science 200 - Biomedical Sciences Laboratory
4. Biomedical Science 250 - General Genetics

B. Chemistry courses
1. Chemistry 101 or 102 - General Chemistry
2. Chemistry 120 - Qualitative Analysis
3. Chemistry 365 - Organic Chemistry OR
4. Chemistry 360 and 361 - Organic Chemistry

C. Mathematics courses
1. Mathematics 120 - Mathematics IA OR
2. Mathematics 122 - Calculus I OR
3. Mathematics 200 - Analysis and Application

D. Physics courses
1. Physics 106 - Elementary Physics OR
2. Physics 110 and 111 - General Physics

E. Medical Technology courses
1. MDTC 100 - Orientation to Medical Technology

F. General Education courses
1. Minimum of 20 semester hours should be completed by end of sophomore year.

G. Physical Education Requirements
1. Minimum of 2 semester hours of activity-related courses should be completed by end of freshman or sophomore year.

Professional Program—Medical Technology

I) Admission Requirements:

A. Completion of all pre-medical Technology (pre-Professional) courses listed above or equivalent substitutes

B. Minimum grade point average of 3.0 in all previous coursework

C. Satisfactory laboratory evaluations in designated Biomedical Science and Chemistry courses.

D. A score of 56% or better on the English Skills test or completion of English 305 with a grade of C or better

E. Approval of the Program Director

II) Two options available (one option must be declared upon acceptance to Professional Phase):

A. Option A (3 + 1)
For Option A, a minimum of 95 semester hours is completed at Western and 30 hours in the clinical internship. The 30 semester hours earned during the internship constitute the student's major; while minors in Biomedical Science and Chemistry are earned. The total minimum hours required for the curriculum are 125 semester hours.

1. Required courses for Medical Technology Curriculum (Professional Phase) under Option A:
   a. Biomedical Science courses
      1. BMed Sci 312 - Microbiology
      2. BMed Sci 330 - Clinical and Pathogenic Microbiology
      3. BMed Sci 350 - Human Physiology for Majors
      4. BMed Sci 430 - Hematology-Serology

   b. Chemistry courses
      1. Chemistry 103 - General Chemistry
      2. Chemistry 104 - Organic Chemistry
      3. Chemistry 260 - Physical Chemistry

   c. Physics courses
      1. Physics 106 - Elementary Physics
      2. Physics 110 and 111 - General Physics

   d. Mathematics courses
      1. Mathematics 120 - Mathematics IA OR
      2. Mathematics 122 - Calculus I OR
      3. Mathematics 200 - Analysis and Application

   e. General Education courses
      1. Minimum of 20 semester hours should be completed by end of sophomore year.

   f. Physical Education Requirements
      1. Minimum of 2 semester hours of activity-related courses should be completed by end of freshman or sophomore year.

   g. Required courses for Professional Program
      1. MDTC 100 - Orientation to Medical Technology
      2. MDTC 101 - Clinical Science
      3. MDTC 102 - Clinical Technology
      4. MDTC 103 - Clinical Practice
      5. MDTC 104 - Clinical Administration

   h. Elective courses for Professional Program
      1. Elective courses (14 or more semester hours)

   i. Total minimum hours required for the curriculum are 125 semester hours.
b. Chemistry courses
1. Chem 222 - Quantitative Analysis
2. Chem 450 - Introductory Biochemistry
3. Chem 456 - Introductory Biochemistry Lab
c. Physics courses
1. Phys 340 - Biomedical Instrumentation
d. Medical Technology courses (Fourth Year - Hospital Practicum)
1. MDTC 435 - Clinical Chemistry
2. MDTC 436 - Clinical Chemistry Lab
3. MDTC 437 - Clinical Hematology
4. MDTC 438 - Clinical Hematology Lab
5. MDTC 439 - Clinical Microbiology
6. MDTC 440 - Clinical Microbiology Lab
7. MDTC 441 - Clinical Immunohematology
8. MDTC 442 - Clinical Immunohematology Lab
9. MDTC 443 - Advanced Clinical Laboratory Techniques I
10. MDTC 444 - Advanced Clinical Laboratory Techniques II
2. Medical Technology Internship (Fourth Year) - see courses listed above
   This clinical practicum is served in an approved, accredited hospital School of Medical Technology. It is taken for twelve months and registration is required with the University during the Fall and Winter semesters. Selection of students is competitive; no student is guaranteed an internship. Each hospital selects its own interns from the group of students who have applied for its available internships.
   B. Option B (4 + 1)
   For Option B, the entire 125 semester hours are completed at Western. Specific curriculum requirements are listed and must be completed for the degree. In addition, a major in Biomedical Science and a minor in Chemistry can be earned under this option.
   1. Required Courses for Medical Technology Curriculum (Professional Phase) under Option B:
      a. Biomedical Science courses/Biology courses
         1. BMed Sci 312 - Microbiology
         2. BMed Sci 330 - Clinical and Pathogenic Microbiology
         3. BMed Sci 350 - Human Physiology for Majors
         4. BMed Sci 430 - Hematology/Serology
         5. BMed Sci 534 - Virology
         6. BMed Sci 536 - Immunology
         7. Biol 559 - Radiation Biology
      b. Chemistry courses
         1. Chem 222 - Quantitative Analysis
         2. Chem 450 - Introductory Biochemistry
         3. Chem 456 - Introductory Biochemistry Lab
      c. Physics courses
         1. Phys 340 - Biomedical Instrumentation
d. Cognate requirements
   2. Medical Technology Internship (5th year)
   The clinical practicum is served in an approved, accredited hospital School of Medical Technology. It is taken for twelve months independent of the University. Registration with Western during this period is not required under this option.

Course Descriptions
100 Orientation to Medical Technology
2 hrs. Fall
An introduction to the field of Medical Technology and all aspects relating to it. The course will include lecture and discussion, tours of various hospitals and research firms, as well as guest lectures presented by individuals working in the field of Medical Technology. Prerequisite: Admission to Pre-Medical Technology Curriculum.

435 Clinical Chemistry
3 hrs.
Basic theories and principles of clinical chemistry are presented through lecture and demonstration. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

436 Clinical Chemistry Laboratory
5 hrs.
Laboratory techniques in clinical chemistry are presented. Familiarity with these techniques is acquired through demonstration and active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

437 Clinical Hematology
2 hrs.
Basic theories and principles of clinical hematology and coagulation are presented through lecture and demonstration. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

438 Clinical Hematology Laboratory
4 hrs.
Laboratory techniques in clinical hematology and coagulation are presented. Familiarity with these techniques is acquired through demonstration and active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

439 Clinical Immunohematology
2 hrs.
Basic theories and principles of blood banking and serology are presented through lecture and demonstration. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

440 Clinical Immunohematology Laboratory
4 hrs.
Laboratory techniques in blood banking and serology are presented. Familiarity with these techniques is acquired through demonstration and active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

441 Clinical Microbiology
3 hrs.
Basic theories and principles of clinical microbiology including bacteriology, mycology, and parasitology, are presented through lecture and demonstration. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

442 Clinical Microbiology Laboratory
4 hrs.
Laboratory techniques in clinical microbiology are presented. Familiarity with these techniques is acquired through demonstration and active participation at the respective benches. This course is taken in an
Curriculum (3
Acceptance in Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

443 Clinical Laboratory
Techniques I
1 hr.
Basic theories and principles of microscopy, urinalysis, radioisotopes, and miscellaneous disciplines are presented through lecture and demonstration. Education and management are also covered under this heading. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

444 Clinical Laboratory
Techniques II
2 hrs.
Laboratory techniques in microscopy (phase and fluorescent), urinalysis, radioisotopes and miscellaneous disciplines are presented. Familiarity with these techniques is acquired through active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

Occupational Therapy

Barbara Rider, Chair
Mary Ann Bush
Claire Callan
Richard Cooper
Sandra Edwards
Lois Hamlin
Terry Korhorn
Alice Lewis
Shirley Lukens
Geraldine Richardson
Harriet Schmid
Doris Smith
Dean Tyndall

The curriculum is designed to prepare students to treat clients in various disability areas and to complete requirements of accreditation established by the American Medical Association in cooperation with the American Occupational Therapy Association. It includes a minimum of six months of supervised field work experience in selected agencies providing experience with clients with a wide range of physical and psychosocial dysfunction.

Admission Procedure

The Occupational Therapy Department has established a maximum enrollment number for each academic level. Consequently, this department in conjunction with the Admissions Office has established a selections procedure. Criteria for selection are essentially based on: 1) academic standing, 2) knowledge and interest in occupational therapy, and 3) participation in human service experiences. The application process includes the completion of the appropriate University application form plus the completion of an Admissions Questionnaire forwarded to all applicants requesting admission to the Occupational Therapy Curriculum. The "equal consideration date" (deadline) for receipt of application forms and Admission Questionnaires for the Fall Semester is February 14 for all new first-year and transfer applications and intra-University changes of curriculum applicants.

The primary enrollment period is the Fall Semester with the number of new admissions split about evenly between first-year and junior-level transfer students who have completed a minimum of 55 semester hours or its equivalent. Intra-University change of curriculum applicants will also be processed each Winter Semester. Students should contact the Occupational Therapy Department for information regarding intra-University change of curriculum procedures.

The student will apply for admission to the field work experience early in the semester in which he/she will have earned credits equal to 55 semester hours. Applications are made in the departmental office. To enroll for field work 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 and academic and general competency. Transfer students with 55 or more credit hours or students holding Baccalaureate degrees will apply for their field work assignment before the end of the first month in the curriculum.

Any student who fails to meet the following criteria will be notified by letter that he/she will be in jeopardy of being dropped from the Occupational Therapy Curriculum and the student must request a hearing before a departmental committee to decide about continuance in the program. If a hearing is not requested within two weeks after receipt of the letter, the student will be dropped from the curriculum.

1. A student will complete all required departmental courses and required prerequisites with a grade of C or better.
2. A student can repeat only one required departmental course, and that course only once, to attain a grade of C or better.

The department may refuse to permit a student to continue in the curriculum if at any time it is deemed that the student will not be able to perform at a professional level.

The following courses are offered on a credit/no credit basis only: OT 236, 440, 441, 450.

The Program

Bachelor of Science Degree

A. Minimum Hours required for this curriculum

B. Course Requirements:

1. General Education Requirements

2. Behavioral Science

   PSY. 150 Introduction to Human Behavior

   PSY. 160 Child Psychology

   O.T. 225 Growth, Development and Aging

   3


OCCUPATIONAL THERAPY 309
### Course Descriptions

Indicates hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 112</td>
<td>Introduction to Biomedical Sciences</td>
<td>3</td>
<td>This may be used in this curriculum to satisfy 3 hours of Area III Science required</td>
</tr>
<tr>
<td>O.T. 221</td>
<td>Gross Human Anatomy</td>
<td>4</td>
<td>Presents an introduction to occupational therapy and allows students to develop some basic skills that facilitate occupational therapy.</td>
</tr>
<tr>
<td>O.T. 235</td>
<td>Developmental Assessment</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>O.T. 241</td>
<td>Application in Physical Dysfunction-Treatment</td>
<td>4</td>
<td>A study of the structure and function of the various systems of the body.</td>
</tr>
<tr>
<td>O.T. 242</td>
<td>Application in Physical Dysfunction-Treatment</td>
<td>4</td>
<td>A study of physical, mental, emotional, and social patterns of growth, development, and aging..</td>
</tr>
<tr>
<td>O.T. 243</td>
<td>Clinical Instruction in Physical Disabilities</td>
<td>2</td>
<td>Provides a theoretical basis for the application of occupational therapy principles.</td>
</tr>
<tr>
<td>O.T. 250</td>
<td>Senior Seminar</td>
<td>2</td>
<td>Provides experience in health service or agency to provide experience with hospital procedure and an orientation to patient groups.</td>
</tr>
<tr>
<td>O.T. 251</td>
<td>Field Work Experience</td>
<td>3</td>
<td>Provides experience in health service or agency to provide experience with hospital procedure and an orientation to patient groups.</td>
</tr>
<tr>
<td>O.T. 252</td>
<td>Field Work Experience</td>
<td>3</td>
<td>Provides experience in health service or agency to provide experience with hospital procedure and an orientation to patient groups.</td>
</tr>
<tr>
<td>O.T. 253</td>
<td>Application in Physical Dysfunction-Treatment</td>
<td>4</td>
<td>A study of physical, mental, emotional, and social patterns of growth, development, and aging..</td>
</tr>
<tr>
<td>O.T. 254</td>
<td>Clinical Instruction in Physical Disabilities</td>
<td>2</td>
<td>Provides experience in health service or agency to provide experience with hospital procedure and an orientation to patient groups.</td>
</tr>
<tr>
<td>O.T. 255</td>
<td>Senior Seminar</td>
<td>2</td>
<td>Provides experience in health service or agency to provide experience with hospital procedure and an orientation to patient groups.</td>
</tr>
</tbody>
</table>

**310 COLLEGE OF HEALTH AND HUMAN SERVICES**


**BMED 240**

- Human Physiology....... 4
- O.T. 221 Gross Human Anatomy........ 4
- O.T. 320 Kinesiology....... 3
- O.T. 103 Ceramics......... 3
- O.T. 110 General Crafts..... 3
- I.ED 324 OT Woodworking.... 3

5. General Pathology........ 7

- O.T. 322 Psychiatric Conditions........ 3
- O.T. 324 Medical and Orthopedic Conditions........ 4

6. Occupational Therapy...... 39

- 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 Field Work Experience........ 3
- O.T. 441 Field Work Experience........ 3
- O.T. 442 Application in Physical Dysfunction-Treatment........ 4
- O.T. 443 Clinical Instruction in Physical Disabilities........ 2

7. Physical Education........ 2

8. Electives to make 128 hours

**201 Therapeutic Media II (2-2)**

- 3 hrs. Fall, Winter

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.**211 Therapeutic Media I (1-2)**

- 2 hrs. Fall, Winter

This course presents an introduction to occupational therapy and it allows the student to develop some basic skills that facilitate the occupational therapy process both for subsequent classes and in practice. It also investigates the evaluative procedures involved in the occupational placement of a worker with a disability.**210 Therapeutic Media II (2-2)**

- 3 hrs. Fall, Winter

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 Gross Human Anatomy (4-4)**

- 6 hrs. Fall, Winter, Spring

A study of the structure and function of the various systems of the body. Lecture and laboratory. Prerequisite: BMED 112 or equivalent, Occupational Therapy major.**225 Growth, Development, and Aging (3-0)**

- 3 hrs. Fall, Winter

A study of physical, mental, emotional, and social patterns of growth, development, and aging. Aspects to be given special emphasis for the occupational therapy student will be motor development, physiology of aging, growth patterns, and functional development in any of the above aspects. Prerequisites: Psychology 150, 160.**235 Developmental Assessment (2-2)**

- 3 hrs. Fall, Winter, Summer

A course in theory and methodology of developmental assessment through children's activities, developmental schedules, and test batteries for evaluating perceptual and motor development. Experience in assessment of young children will be a part of the laboratory experience. Prerequisite: O.T. 255, Occupational Therapy major.**236 Independent Practicum**

- 2 hrs. Fall, Winter, Spring, Summer

Participation in a health service or agency to provide experience with hospital procedure and an orientation to patient groups. Daily log is required. Student must submit a proposal for the course for departmental approval prior to registration. Prerequisite: Occupational Therapy major.**320 Kinesiology (3-0)**

- 3 hrs. Fall, Winter

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: BMED 240, OT 221.**322 Psychiatric Conditions (3-0)**

- 3 hrs. Fall

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 identify concepts of the law as applied to the psychiatric patient. Prerequisites: PSY 150, 160; O.T. 225 or concurrently; Occupational Therapy major.**323 Clinical Neurology (3-0)**

- 3 hrs. Fall, Winter

Regional neuroanatomy and functional neurophysiology are presented. Emphasis is upon clinic signs that indicate neuropathology. Students will participate in a group paper presentation of a neurological disorder and will take part in a neurological exam. BMED 240, OT 221.**324 Medical and Orthopedic Conditions (4-0)**

- 4 hrs. Fall, Winter

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: BMED 240.**330 Psychosocial Dysfunction-Theory (3-0)**

- 3 hrs. Fall, Winter

A course in theory and methodology of developmental assessment through children's activities, developmental schedules, and test batteries for evaluating perceptual and motor development. Experience in assessment of young children will be a part of the laboratory experience. Prerequisite: O.T. 255, Occupational Therapy major.**
and techniques as a means of enhancing psychosocial functioning. Lecture, discussion, demonstration, student projects, resource people, movies, video tape and participatory experiences will be used in instruction. Prerequisite: OT 322 or concurrent.

331 Psychosocial Dysfunction-Techniques (1-3)
2 hrs. Fall, Winter
A laboratory class designed to develop skill in the use of techniques and media used 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: OT 330.

333 Field Work Level I-A (0-4)
2 hrs. Fall, Winter, Spring, Summer
Clinical experiences designed to develop skill in application and community agencies. Prerequisite: OT 331 or concurrent.

410 Application in Physical Dysfunction-Techniques (2-4)
4 hrs. Fall, Winter
The objectives of occupational therapy in general medicine and rehabilitation serve as a basis for studying treatment techniques. Prerequisites: OT 235. May be taken concurrently with OT 320, 323, 324, and 442.

430 Organization for Patient Services (3-0)
3 hrs. Fall, Winter, Spring, Summer
An analysis of occupational therapy services and programming to meet client needs. Includes enabling activities at national and state levels, as well as within the individual delivery system. Prerequisites: Senior level, OT major.

436 Independent Study in Occupational Therapy
2-4 hrs. Fall, Winter, Spring, Summer
Designed to allow outstanding students to work independently under faculty supervision. Consent of Department Chairperson.

440 Field Work Level II
3 hrs. Fall, Winter, Spring, Summer
A three-month affiliation in hospitals or agencies providing the student experience in designated areas of occupational therapy. Departmental consent only. Prerequisite: OT 331, 333, or 442, 443.

441 Field Work Level II
3 hrs. Fall, Winter, Spring, Summer
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 (4-0)
4 hrs. Fall, Winter
Emphasis is placed on the process of evaluation, interpretation, planning and implementation as applied to occupational therapy. Prerequisites: OT 235, 320, 323, 324. May be taken concurrently with OT 410.

443 Field Work Level I-B (0-4)
2 hrs. Fall, Winter, Spring
Clinical experiences designed to develop skill in evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Prerequisite: OT 410. May be taken concurrently with OT 442.

450 Senior Seminar (2-0)
2 hrs. Fall, Winter
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 (3-0)
3 hrs. Fall, Winter
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 (1-3)
2 hrs. Winter, Summer
Includes methods and techniques of teaching needwork, ceramics, and leatherwork to visually handicapped adults. Prerequisite: Occupational Therapy majors must have consent of Department Chairperson.
The Selection Process
A selection committee establishes policies that relate to the selection process. The three-step process consists of:

1. Review of application data: each application is reviewed by at least three members of the selection committee and the candidates are identified for interviews.

2. Interviews: candidates are scheduled for separate required interviews with individuals representing medicine, counseling and academics.

3. Final selections: the selection committee reviews all the data including the results of the interviews and recommends candidates for admission. Students are admitted to the program at the beginning of the academic year each fall semester. Because of the keen competition for the limited number of positions, priority is given to those candidates who present the best overall profile. Selection is based on all aspects of the academic record, assessment of previous health-related achievements, evidence of good character and the possession of those attitudes and aptitudes required for the effective health care professional.

The Curriculum
Essentially, this upper-division curriculum is divided into two parts, each consisting of four consecutive terms of course work. The first part is devoted to the basic medical sciences upon which the theoretical concepts of disease can be built. Subjects covered in this portion include anatomy, biochemistry, pharmacology, microbiology and pathophysiology. During this time, the students begin instruction in the clinical areas such as interviewing, history taking and physical diagnosis.

During the senior or clinical year, after a clerkship in psychiatry, each senior PA student enrolls in four required clinical clerkships to include: internal medicine, surgery, obstetrics & gynecology and pediatrics. In addition, each senior student is permitted one elective clerkship in any of the medical specialties that relate to primary care. Practicing physicians primarily in the southwestern Michigan area serve as preceptors in this phase of the program. The Physicians' Assistants program at Western has affiliations with the following hospitals:

- Allegan General Hospital, Allegan, MI
- Berrien General Hospital, Berrien Center, MI
- Community Health Center of Branch County, MI
- Community Hospital Association, Battle Creek, MI
- Hillsdale Community Health Center, Hillsdale, MI
- Kalamazoo State Hospital, Kalamazoo, MI
- Lakeview General Hospital, Battle Creek, MI
- Leila Y. Post Montgomery Hospital, Battle Creek, MI
- Memorial Hospital, St. Joseph, MI
- Pipp Community Hospital, Plainwell, MI
- Sturgis Hospital, Sturgis, MI
- United Memorial Hospital, Greenville, MI
- Veterans Administration Hospital, Battle Creek, MI

The last 8 weeks of the senior year, the students are enrolled in the final Family Medicine Preceptorship which is arranged as a potential employment situation.

For current information on the curriculum, the admission requirements and procedures, write to: Office of Undergraduate Admissions Western Michigan University Kalamazoo, Michigan 49008

A. Minimum hours required for this curriculum: 161 hrs.

B. Students are required to obtain at least a grade of "C" in each course or they must appear before an Academic Review Board to determine their continuance in the program.

C. Students are required to successfully pass a comprehensive examination in medical terminology at the start of the fall semester in their junior year.

D. Course Requirements
1. General Education Requirements
2. Program Courses

Pre-Clinical Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 203 Cellular Biology for PAs</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 206 Integrated Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>MDSC 301 Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>MDSC 304 Patient Evaluation I</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 307 Techniques of Pt. Counseling</td>
<td>1</td>
</tr>
<tr>
<td>MDSC 311 Gross Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>MDSC 317 Clinical Medicine I</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Winter Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 319 Clinical Physiology for PAs</td>
<td>4</td>
</tr>
<tr>
<td>BMED 401 Principles and Techniques of Laboratory Diagnosis</td>
<td>4</td>
</tr>
<tr>
<td>MDSC 302 Medical &amp; Surgical Emergencies II</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 314 Patient Evaluation II</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 327 Clinical Medicine II</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 410 Pharmacology &amp; Therapeutics</td>
<td>4</td>
</tr>
</tbody>
</table>
This course includes the common diseases, how they present and their significance in diagnostic processes. Emphasis is placed upon the understanding of the basic functioning of the organ systems. The clinical and regional anatomy are stressed. The course is designed to help the Physician's Assistant student achieve a sound understanding of the structure of the human body through lectures, discussions and cadaver dissection. Topographical and regional anatomy as applied to clinical medicine are stressed.

MDSC 317 Clinical Medicine I 3 hrs.
MDSC 327 Clinical Medicine II 3 hrs.
MDSC 337 Clinical Medicine III 3 hrs.
MDSC 347 Clinical Medicine IV 3 hrs.

This series of courses is presented sequentially through the four terms that comprise the pre-clinical year. It provides instruction in the systematic evaluation of patient problems through history taking and physical examination. Lectures, demonstrations, student examination of patients, and critique of those examinations are included among the instructional techniques. Emphasis is placed upon techniques of interviewing and physical examination that insure the acquisition of an accurate data base that is essential for diagnosis and the preparation of the treatment plan. The student learns how to record the data and orally present a complete data base efficiently and professionally. Both the traditional and problem oriented medical records are studied.

MDSC 304 Patient Evaluation I 3 hrs.
MDSC 314 Patient Evaluation II 3 hrs.
MDSC 324 Patient Evaluation III 1 hr.
MDSC 334 Patient Evaluation IV 1 hr.

This series of courses is presented sequentially during Spring and Summer Terms. These courses include the common diseases, how they present and some of the commonly accepted treatments. Emphasis is placed upon the significance of laboratory findings in diagnostic processes.

MDSC 311 Gross Human Anatomy 4 hrs.

This course is designed to help the Physician's Assistant student achieve a sound understanding of the structure of the human body through lectures, discussions and cadaver dissection. Topographical and regional anatomy as applied to clinical medicine are stressed.

MDSC 317 Clinical Medicine I 3 hrs.
MDSC 327 Clinical Medicine II 3 hrs.
MDSC 337 Clinical Medicine III 3 hrs.
MDSC 347 Clinical Medicine IV 3 hrs.

This series of courses is presented sequentially through the four terms that comprise the pre-clinical year. It provides instruction in the systematic evaluation of patient problems through history taking and physical examination. Lectures, demonstrations, student examination of patients, and critique of those examinations are included among the instructional techniques. Emphasis is placed upon techniques of interviewing and physical examination that insure the acquisition of an accurate data base that is essential for diagnosis and the preparation of the treatment plan. The student learns how to record the data and orally present a complete data base efficiently and professionally. Both the traditional and problem oriented medical records are studied.

MDSC 307 Techniques of Patient Counseling 1 hr.

This introduction to patient counseling emphasizes the impact of interviewing techniques, current theories of personality and psychopathology and including such specialized techniques as methods of crisis intervention. In addition, psychotherapeutic counseling is discussed.

MDSC 410 Pharmacology & Therapeutics 4 hrs.

This course emphasizes the general principles of pharmacology as a basis for the rational clinical use of drugs. The course is comprehensive but pragmatic. Factors affecting drug action, such as rates of absorption, metabolism and excretion are discussed. Mechanism of action is covered when known. However, the main thrust is to acquaint the student with the drugs commonly used in therapy, their side effects and toxic manifestations.

MDSC 412 Clinical Pharmacology 3 hrs.

This course deals with the practical aspects of pharmacology as they relate to primary-care Physicians' Assistants. This course emphasizes but is not limited to dose-response relationships, differences in pharmaceutical preparations, routes of administration, biological variations,
drug interactions, problems of patient compliance, over-the-counter drugs, respiratory agents, topical agents, and prescribing rules common to all physicians' assistants and especially for the state of Michigan.

Course Descriptions for the Clinical Year

**MDSC 308 Clinical and Diagnostic Skills**
1 hr.
This three-week course offered at the beginning of the clinical clerkship year is designed to give the student firsthand experience in the diagnostic procedures of radiology and laboratory data. The laboratory portion is an intensive study of the common diagnostic laboratory tests including their validity, cost, time, preparation and applicability. Students enter a one-to-one relationship with a radiologist to obtain an appreciation for the many forms of diagnostic radiologic study. This experience is obtained in affiliated hospitals to enhance the students' clinical awareness.

**MDSC 409 Allergy & Dermatology**
1 hr.
This course is comprised of two learning units that are presented concurrently. The allergy unit covers the basic theoretical and proven concepts of allergy and immunology. Emphasis is placed on the clinical recognition of allergic symptoms, the importance of accurate etiologic diagnosis, the relationship between pathophysiologic changes and their corrections by proper therapy. The dermatology unit 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.

**MDSC 422 Pediatrics Clerkship**
6 hrs.
During this six-week clerkship emphasis is placed on normal variations of growth and development and childhood illnesses. Emphasis is placed on well-child care, immunizations, nutrition, and general patient and parent education. The student is exposed to treatment of the acutely ill in the office and hospital and assessment of normal growth and development through physical examination.

**MDSC 423 Obstetrics & Gynecology Clerkship**
6 hrs.
This six-week clerkship is designed to provide an opportunity for the PA student to develop proficiency in the special history taking and examination of the Ob/Gyn patient. While on the obstetric service, the management principles of pregnancy, labor and delivery, including prenatal, natal and postnatal complications are taught. The gynecology emphasis is placed on exposing the students to methods and programs relating to cancer detection, venereal disease and birth control. Emphasis is on those obstetric and gynecologic disorders most commonly encountered by the primary care physician.

**MDSC 424 Internal Medicine Clerkship**
6 hrs.
A six-week clerkship during which the indications, limitations, and methods of performing the necessary diagnostic procedures and therapeutic measures used in the treatment of general medical disorders are reviewed. Patient problems and conditions as experienced in the out-patient clinic, emergency room, and the hospital are covered in this course. The student, through the collection and review of historical, physical and laboratory data, develops an understanding of patient evaluation and treatment.

**MDSC 425 General Surgery Clerkship**
6 hrs.
This six-week surgical clerkship is designed to prepare the student to function as an assistant to the generalist. The student's time is divided between outpatient and in-patient surgical services. Students perform admission histories and physicals and participate in discussions regarding diagnostic tests necessary for proper patient care. The student then follows through pre-operative preparations, assists in surgery and helps in post-operative care. In this way, the student learns to assist not only in the management of routine surgical cases, but also in the treatment of various complications.

**MDSC 426 Psychiatry Clerkship**
6 hrs.
Through this three-week clerkship, the physicians' assistant student will receive special training in the mental status examination and assessment of basic psychiatric problems. He/She will become acquainted first hand with the manifestations of various forms of psycho-pathology. Emphasis is placed on the management of psycho-social problems including counseling and medical treatment.

**MDSC 427 Family Medicine Preceptorship**
8 hrs.
Family Medicine is an eight-week learning experience to familiarize the student with the delivery of primary health care as carried out in the physician's office, rural and inner-city care centers and other facilities at the community level. The student learns to give specific attention to the basic biologic and social unit of the family, preventative medicine, follow-up care and rehabilitation after acute illness, and serve as an educator in teaching patients responsibility for their own health. The student also develops an appreciation for the skills of other allied health professionals and observes the patient utilization of these personnel. This preceptorship is offered as the final rotation and is intended to provide the perspective graduate with an opportunity to make a first hand observation of a rural setting in which he/she may wish to seek employment.

**MDSC 428 Elective Clerkship**
6 hrs.
This six-week clerkship is intended to cover the many sub-specialties of medicine to include dermatology, otorhinolaryngology, ophthalmology, urology, orthopedics, cardiology and oncology. The student may elect to take any combination of these specialties to fill the six-week period. In addition to the specialties, the student may elect to seek further experience in one of the other main clerkships such as surgery, internal medicine, ob/gyn, pediatrics or family practice.
# School of Social Work

John Flynn, Director  
Robert Barstow  
Thomas Blakely  
Lloyd Braithwaite  
William Burian  
Donald Cooney  
G. G. Dadlani  
Betty Desher  
Doris Greene  
Lethonee Jones  
David Joslyn  
Philip Kramer  
Leslie Leighninger  
Raymond Lish  
Gary Mathews  
Nathaniel McCaslin  
Edward Pawlak  
Deloris Phillips  
Kenneth E. Reid  
Bridget Stover  
Kyu-Taik Sung  
Danny H. Thompson  
Tom Vassil  
Marion Wijnberg  
James Woik

The School of Social Work offers both an undergraduate and graduate professional program. Both programs are accredited by the Council on Social Work Education. The undergraduate professional program is designed to offer social welfare content as part of the student's Liberal Arts Education, to prepare students for beginning level social work practice and to provide preparation for graduate training in social work. The graduate-professional program is designed to educate students for direct service and leadership positions in the field of social welfare.

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. In addition, the School of Social Work participates in an University Gerontology minor. Social Work students should consult their curriculum advisor for program planning for the Gerontology minor. Also available to social work majors is a concentration in corrections.

Offerings in the Social Work major proceed in four 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. The fourth component provides an introduction to social research.

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**Undergraduate Social Work Curriculum**

**A. Minimum hours required for graduation**: 122 hrs.

**B. Course Requirements**

1. **General Education**: 35 hrs.
2. **Requirements for the undergraduate Social Work Major**: 32 hrs.
   - 210 Social Work Services & Professional Roles 3 hrs.
   - 300 Social Welfare as a Social Institution 3 hrs.
   - 301 Social Issues and Program Analysis 3 hrs.
   - 350 Individual and Family Behavior 3 hrs.
   - 351 Group, Community and Organizational Behavior 3 hrs.
   - 400 Social Work Practice: Values and Problem Analysis 3 hrs.
   - 401 Social Work Practice: Intervention and Evaluation 3 hrs.
   - 410* Field Experience and Seminar I 4 hrs.
   - 411* Field Experience and Seminar II 4 hrs.
   - 533 Dynamics of Race and Culture for Social Work Practice 3 hrs.

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**Note**: Following completion of SWRK 210 students must be accepted into the Social Work Curriculum to complete the major.

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3. **Required Research Component**
   - SOC 382 Methods of Sociology 5 hrs.

4. **Guided Interdisciplinary Minor**
   - 519-20 hrs.
   - 53 hrs.
   - Includes:
     - CAS 170 Interpersonal Communication 3 hrs.
     - ENGL 305 Practical Writing 4 hrs.

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Any one of the following:

- ECON 100 Contemporary Economic Problems 3 hrs.
- ECON 313 Poverty and Economic Security 3 hrs.

Any one of the following:

- PSI 202 State & Local Government 4 hrs.
- PSI 300 Urban Politics 3 hrs.

Any one of the following:

- PSY 150 Introduction to Human Behavior 3 hrs.
- PSY 160 Child Psychology 3 hrs.
- PSY 250 Abnormal Psychology 3 hrs.

Any one of the following:

- SOC 210 Modern Social Problems 3 hrs.
- SOC 300 Sociological Theory 3 hrs.
- SOC 315 Introduction to Social Gerontology 3 hrs.
- SOC 371 Dynamics of Contemporary Social Change 3 hrs.

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5. **Physical Education**: 2 hrs.
6. **Electives**: 26-29 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 hrs.
- 412 Projects in Social Work 4 hrs.
- 464 Problem Solving in Gerontology 3 hrs.
- 512 Social Policy and Service Delivery in Selected Problem Areas 3 hrs.

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*Completed applications are due at least 15 weeks prior to the semester in which field work is to be taken.*
Course Descriptions

(Courses described in italics are approved for General Education.)

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.
This course introduces students to the social work profession, its value base and code of ethics. The course provides an examination of professional social work roles and the profession's responsibilities in the delivery of social work services to minority and majority groups at various levels of government and within a variety of settings. Required for social work majors and minors. (Prerequisite: Sophomore status or consent of instructor.)

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 (political, social, economic, historical, and philosophical) that have led to the institutionalization of social welfare. (Prerequisites: 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.)

350 Social Work Concepts in Individual and Family Behavior
3 hrs.
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 in 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 Problem Analysis
3 hrs.
Taken concurrently with S.W. 410. Focuses upon problem identification, data collection and analysis and goal formulation. Examination of 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, majors only.)

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 interventional behaviors in simulations, and to evaluate the effectiveness of their own interventional behaviors in simulated and real situations. (Prerequisites: Senior status, completion of S.W. 400 and 410 and concurrent enrollment in S.W. 411, majors only.)
SOCIAL WORK 317

410 Field Experience and Seminar I
4 hrs.
Two hundred and twenty-five (225) clock hours in the field and fifteen (15) hours 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. (Prerequisite: consent of instructor.)

411 Field Experience and Seminar II
4 hrs.
A continuation of S.W. 410. Two hundred and twenty-five (225) clock hours in the field and fifteen (15) hours 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. 411. Term majors only.)

412 Special Projects in Social Work
4 hrs.
An individually designed community or agency level field study focusing on social problems in the community and the various programs, policies and individual problem solving techniques designed to have impact upon those problems. Studies are generally exploratory or survey by design. Content may reflect a particular field of service such as mental health, gerontology, corrections, family service, etc. Term paper or equivalent is required. Students are also required to complete 180 clock hours on project. Precise contract to be worked out with instructor. (Prerequisite: consent of instructor.)

464 Problem Solving in Gerontology
3 hrs.
This course provides the student with information about social welfare programs, both institutional and non-institutional, which are available to our aged population. The student is introduced to different approaches to service delivery and interventive problem solving techniques utilized by professional social workers in working with minority and majority aged population. Open to social work students and students from related professional disciplines with consent of instructor.

512 Social Policy and Service Delivery in Selected Problem Areas
3 hrs.
Intensive study in selected field of service specialization and social problem areas. Attention is focused on learning about the major social policy issues associated with the service or problem area. Specific topics will be announced each semester. (Prerequisite: consent of instructor.)

513 Social Welfare and the Law
3 hrs.
The legal bases of organized social welfare and social work practice are examined through the study of selected examples of social legislation and judicial decisions, the legislative process, development of administrative regulations and court organization. Illustrative case studies are used to demonstrate how social workers can manage within the restrictions and opportunities presented by legal institutions and practices in social and individual case situations. (Prerequisite: consent of instructor.)

533 Dynamics of Race and Culture for Social Work Practice
3 hrs.
Focus is upon ethnic/racial groups who are among social welfare consumer groups and social work clientele. Racial/cultural characteristics, group strengths and weaknesses, group priorities and experiences in the context of social welfare and social work will be examined. Implications of ethnic factors for social work practice, social planning, and social work education will be explored. (Prerequisite: consent of instructor.)

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. (Prerequisite: consent of instructor.)

562 Community Organization in Urban Areas
3 hrs.
Social welfare planning and social action methods are studied as approaches for preventing and resolving aspects of social problems in medium and larger size urban communities. Emphasis is placed on the organizing of neighborhood and consumer groups for social interaction and improvement of community conditions. (Prerequisite: consent of instructor.)

563 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.

564 Special Studies in Social Welfare Practice
1-4 hrs.
Study of selected topics related to the theory and practice of social welfare activities and endeavors. Focus will be on roles of human service workers and methodologies utilized in these roles in a range of social welfare areas. Specific topics will be announced. (Prerequisite: permission 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 phenomenon of crime and delinquency. Selected techniques for correctional behavior modifications are studied in relation to a typology of normative deviancy in terms of both etiology and rehabilitation. (Prerequisite: consent of instructor.)

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

*Completed applications for 410 and 411 and 412 are due at least 15 weeks prior to the semester field work is to be taken.
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 interventional means are explored. (Prerequisite: consent of instructor.)

567 Institutional Treatment of Offenders
3 hrs.
This is a seminar in correctional treatment which focuses on modern means of intervention in closed custody (institutional) settings. Available methods currently utilized to improve the social functioning of the imprisoned lawbreaker will be reviewed. Specific attention is directed at such role functions as correctional diagnostician, correctional counselor, program administrator, institutional parole officer, correctional officer, training school teacher, etc. The impact of custody, classification and prison programming will be examined in detail. Inadvertent products of total institutions on incarcerated inmates will be evaluated in terms of the inmate culture, prisonization and leadership roles. This will be applied to all types of correctional institutions (juvenile and adult, men and women, misdemeanant and felon). Visits to selected institutions will be arranged. (Prerequisite: consent of instructor.)

568 Non-institutional Treatment of Offenders
3 hrs.
This is a seminar in correctional treatment which focuses on modern means of intervention which emerge from local community resources directed at the improved social functioning of the identified lawbreaker. Specific attention is directed at the role functions relative to such correctional processes as probation, parole, half-way houses, community treatment centers and youth service facilities. Methods and techniques of service delivery to men and women, juveniles and adults, misdemeanants and felons will be analyzed. Visits to selected agencies will be arranged. (Prerequisite: consent of instructor.)

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.
Teacher Certification Track

Students who seek careers as clinicians in the public schools in Michigan (or in other states which require teacher certification for such employment) must arrange to complete a minor in Elementary Education which is required for the Elementary Provisional Teaching Certificate. Requirements and approval for this minor are obtained from the Education Orientation and Advisement Office, 2305 Sangren Hall. Students must obtain an approved minor slip signed by an approved Elementary Education adviser. In addition, students who desire Elementary Provisional Certification will be required to complete the following College of Education undergraduate registration: ED 300, “Teaching and Learning” (3 semester hours); ED 410, “Seminar in Education” (2 semester hours); ED 450, “School and Society” (3 semester hours); and ED 470, “Directed Teaching” (9 semester hours). The latter three registrations usually are taken concurrently in one semester during the senior year.

Completion of the foregoing requirements, together with completion of the curricular requirements described below and completion of a master’s degree program in Speech Pathology and Audiology (which must include graduate level directed teaching experience in speech/language/hearing therapy), will result in recommendation of the student for Elementary Provisional Teaching Certification. Simultaneously, the master’s degree recipient in this track is approved for employment in Michigan as a “Teacher of the Speech and Language Impaired” and typically also will have completed the academic and practicum experiences required for employment in other clinical settings as well.

Non-Teacher Certification Track

Students who seek careers in settings other than the schools (for example, in hospitals, community agencies, and rehabilitation centers) or who are preparing for doctoral study are not required to complete the requirements for teaching certification outlined above. Students in this case are required to complete an academic minor in an area such as linguistics, social work, psychology, gerontology or other related discipline. Assistance in selecting an appropriate minor is available through the departmental undergraduate adviser.

Completion of the curricular requirements described below, together with the completion of a master’s degree program in Speech Pathology and Audiology, typically satisfies all academic and practicum requirements of the American Speech-Language-Hearing Association for a Certificate of Clinical Competence in the emphasis area (speech and language pathology or audiology) pursued in graduate school.

Undergraduate Speech Pathology and Audiology Curriculum

A major in speech pathology and audiology consists of a minimum of 34 to 36 hours in Speech Pathology and Audiology plus additional course work specified by the Department. These additional requirements include course work in general education, physical education, supporting courses outside the Department and an academic minor. All the course work can be completed within the minimum 122 credit hours required by the University for a bachelor’s degree. Each student is responsible for obtaining information on degree requirements and for taking the steps necessary to meet those requirements.

Students interested in a major in speech pathology and audiology should contact the Department office in the Speech and Hearing Center on the East Campus for an appointment with an undergraduate advisor. Because the sequencing of courses included in this major is critically important, students should seek academic advising from the Department as soon as possible.

Involvement in Integrated Language Arts Minor

The Department of Speech Pathology and Audiology is one of five participating departments in the Integrated Language Arts Minor—a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the “Interdisciplinary Programs” section of the College of Arts and Sciences or its listing in the College of Education or the College of Health and Human Services.

Course Descriptions

(Courses described in italics are approved for General Education.)

200 Introduction to Communication Disorders

3 hrs.
A survey course about speech, hearing and language disorders.

203 Normal Language Acquisition

3 hrs.
A study of normal language acquisition, as a basis for investigating disordered language. The course involves a survey of the stages of language acquisition and a consideration of mechanisms of language acquisition. Prerequisite: Consent of instructor or LING 100 and PSY 194. Majors must take concurrently with SPPA 204.

204 Phonetics

3 hrs.
A study of human speech sounds as a basis for understanding speech production and speech perception. Means of symbolizing speech sounds are provided to prepare the student for accurate transcription of speech behavior. Prerequisite: Consent of instructor or LING 100 and BIOL 112 or BIOL 101. Majors must take concurrently with SPPA 203.

206 Voice and Respiration

3 hrs.
A study of respiration and phonation, with emphasis on their function in speech production and speech perception. The course includes a detailed study of the structures involved, including neurology. Prerequisite: Consent of instructor or SPPA 203; SPPA 204; PHYS 106; MATH 110 or 116. Majors must take concurrently with SPPA 206.

206 The Auditory System

3 hrs.
A study of the structure and function of the hearing system, as related to communicative processes. The course includes a consideration of theories of speech perception. Prerequisite: SPPA 203; SPPA 204; PHYS 106; MATH 110 or 116; or by consent of instructor. Majors must take concurrently with SPPA 205.
207 Clinical Laboratory
1 hr.
During this registration the student is
required to participate in structured
observations of clinical activities
including out-patient evaluations, on-
going therapy and multidisciplinary
diagnostics. Must be taken
currently with SPPA 203.

260 Linguistic Development of the
Child
2 hrs.
This course focuses on the
communication development of the
child, birth through 12 years. The
acquisition of language and other
communication modes is viewed from
a psycholinguistic orientation.
Application to the teaching of the
language arts is emphasized. Must
be taken concurrently with ILAM/ED
260. Required for the Integrated
Language Arts Minor.

351 Phonemic Disorders
2 hrs.
A detailed study of the nature of
phonemic disorders; orientation to
clinical management. Prerequisite:
204.

353 Fluency Disorders
2 hrs.
A detailed study of the nature of
fluency disorders; orientation to
clinical management. Prerequisite:
204.

354 Language Disorders in
Children
3 hrs.
A detailed study of the nature of
communication problems associated
with congenital or acquired
impairment of language function in
children; orientation to clinical
management. Prerequisite: 203.

358 Disorders of Hearing:
Identification and Measurement
3 hrs.
An introduction to the measurement
of hearing and the field of audiology.
The course will include an
introduction to aural pathologies.
Prerequisite: Consent of instructor or
SPPA 205.

359 Special Studies in
Communication Disorders
2 hrs.
A survey of neuropathologies and
structural deviations which result in
communication disorders, including
infantile cerebral palsy and cleft
 palate. Prerequisite: Consent of
instructor.

400 Practicum in Speech
Pathology and Audiology I
2 hrs.
Clinical experience in the
management of speech, language,
and/or hearing disorders.

401 Practicum in Speech
Pathology and Audiology II
2 hrs.
Clinical experience in the
management of speech, language,
and/or hearing problems. Prerequisite:
400.

403 Vocal Tract Kinetics
3 hrs.
A study of vocal tract kinetics and
the neurological basis of speech. The
course includes a detailed
consideration of speech as the time-
varying shaping of the vocal tract.
Prerequisite: Consent of instructor or
SPPA 205 and SPPA 206.

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.

500 Scientific Methods in Speech,
Language and Hearing
2 hrs.
Research in normal and disordered
communication is studied with
reference to the scientific method,
principles of measurement,
instrumentation, and experimental
techniques. The course requires that
either a laboratory or a clinical
research proposal be formulated by
each student.

551 Neuropathologies of Speech
2 hrs.
This course is concerned primarily
with surveying selected
communication disorders associated
with neuropathologies.

552 Communication Problems of
the Aged
3 hrs.
This course is designed to provide
the student preparing to be a
classroom or special teacher with
information about the nature of oral
language, its development and
conditions associated with
dysfunction. Does not apply toward a
major in Speech Pathology and
Audiology.

554 Speech and Hearing Therapy
in the Schools
2 hrs.
Study of clinical work with speech or
hearing disordered children in the
school setting.
Laurel A. Grotzinger  
Dean

Sid Dykstra  
Associate Dean

The Graduate College offers a wide variety of programs leading to the master's, specialist, and doctoral degrees.

The University has sixty-two master's degree programs. Master of Arts degrees are awarded in twenty-four programs in the following general categories within the College of Education: Audiovisual Media, Counseling and Personnel, Curricula in Teaching, Early Childhood Education, Educational Leadership, Physical Education, Reading, Special Education, Teaching in the Community College, Teaching the Economically and Educationally Disadvantaged, Teaching in the Elementary School, and Teaching in the Middle or Junior High School. Twenty other educational programs at Western also lead to the Master of Arts degree: Anthropology, Art, Biology, Blind Rehabilitation, Chemistry, Communication Arts and Sciences, Dance, Economics, English, Geography, History, Home Economics, Modern and Classical Languages, Mathematics, Medieval Studies, Physics, Political Science, Psychology, School Psychology, Sociology, and Speech Pathology and Audiology. The University also offers the Masters of Science degree in Accountancy, Applied Statistics, Biomedical Sciences, Biostatistics, Business, Computer Science, Earth Science, Geology, Librarianship, Operations Research, Paper Science and Engineering, and Technology, as well as the Master of Business Administration, Master of Fine Arts, Master of Music, Master of Occupational Therapy, Master of Public Administration, and Master of Social Work degrees.

In 1960 programs leading to the Specialist in Education degree were introduced. This degree is offered in Educational Leadership, Counseling and Personnel, Special Education, and School Psychology. In addition, the University offers Specialist in Arts degrees in Business Education, History, Librarianship, Mathematics, and Science Education.

Doctoral programs were initiated in 1966 and were fully accredited by the North Central Association in 1971. Five of these programs, those in Chemistry, Mathematics, Science Education, Sociology, and Psychology, lead to the Doctor of Philosophy degree. The Doctor of Education degree is offered in Counseling and Personnel, Educational Leadership, and Special Education.

Please refer to The Graduate College Bulletin for further information on these programs.
The Division of Continuing Education offers off-campus educational opportunities to qualified persons who wish to pursue their education on a part-time basis. Increasing numbers of men and women are becoming interested and involved in improving their educational backgrounds for a variety of reasons—to improve career opportunities, to supplement past educational experience, to meet certification and licensure requirements, and to satisfy personal learning needs.

In response to the needs of this adult student body, Western's continuing education activities have been expanded to include extension courses for both undergraduate and graduate credit; independent study courses; conferences, institutes, workshops; and other types of short courses for business, community, educational, and industrial leaders, and other interested adults. Course and program offerings in the sixteen southwestern Michigan counties served by Western's Division of Continuing Education are planned in conferences between representatives from academic units and continuing education professionals, who continuously analyze students' needs and interests. Independent study courses may be taken for credit and applied toward an undergraduate degree, subject to limitations defined by the University, college, or department in which the student is studying. In-service educational programs are planned with business, civic, educational, and professional groups. Advisory services are offered as well as actual training programs. Speakers, discussion leaders, and persons qualified to handle leadership-training programs also are available.

Special programs offered by the Division include non-credit enrichment courses administered by the Center for Adult Education for adults from the community; workshops and seminars for lawyers and judges developed and presented by the Center for Continuing Legal Education; and training programs in safety and driving offered by the office of Pupil Transportation Services.

Foreign students and business people are taught how to converse and communicate competently in English by the staff of the Career English Program.

The Division's central office is located in A-Wing of Ellsworth Hall on Western's main campus in Kalamazoo. Four additional regional centers are located as follows:

- Benton Harbor Regional Center
  Lake Michigan College
  1100 Yore Avenue
  Benton Harbor, MI 49022
- University Consortium Center
  105 N. Division Street
  Grand Rapids, MI 49503
- Muskegon Regional Center
  3308 Glade Street
  Muskegon Heights, MI 49444
- Southcentral Regional Center
  Kellogg Community College
  450 North Avenue
  Battle Creek, MI 49017

General University Studies

The Division has developed a baccalaureate program for adult students who are unable to take courses on the Kalamazoo campus. It especially serves those with a community college background or its equivalent. This undergraduate degree program is known as the General University Studies curriculum, and leads to either the Bachelor of Arts or the Bachelor of Science degree depending upon the subject matter content of the program. Specific course requirements vary with the selected Area of Concentration. All programs must be planned with an academic advisor for the Area of Concentration. Arrangements for consultation with an advisor will be provided at the student's convenience. Inquiries about the General University Studies programs should be directed to any of the Division's offices.
General Requirements
The general requirements for a bachelor's degree in the General University Studies curriculum include the following:

1. Complete at least 122 hours of credit, with a minimum of 60 hours of academic work from an accredited four-year, degree-granting institution. At least 30 hours of credit must be taken through Western Michigan University.

2. Completion of a planned Area of Concentration, involving a minimum of 45 semester hours of credit. Some work may include credit completed in the first two years of the student's preparation or credit given from non-accredited training or experience.

3. Completion of the General Education requirement of 35 semester hours of credit. This work does not have to be exclusive of work included in the Area of Concentration.

Areas of Concentration

I. American Studies
This bachelor's degree program was designed for those who wish to broaden their understanding and appreciation of American life and institutions. Students with an interest in the humanities, fine arts, or social sciences will find this program of interest. Although the program is primarily non-vocational, it will provide a useful background for a number of professional degree programs, such as business administration, public administration, social work, and the law.

The requirements for this 45-hour concentration are as follows:

A. A minimum of 25 credit hours, with at least two courses in each of four of the following subject matter fields:
   1. Anthropology, Philosophy, Religious Studies
   2. Art, Music, Theatre
   3. English
   4. History
   5. Economics, Social Work, Sociology
   6. Political Science

B. An additional 9 hours in one of the four fields chosen above, thus bringing the total hours in that field to 15 hours.

C. A 3-hour introduction to interdisciplinary studies: either Arts and Sciences 501, Studies in American Culture: History 308, Mainstreet U.S.A., 1850-1970; History 318, Popular Culture in 20th Century America (also offered as an independent study course); History 598, Independent Reading in History; or a workshop in American Studies.

D. An independent study project (3-8 hrs.) on some aspect of the American experience. Designed to encourage imaginative and innovative application of previous study. This project may draw on local resources, as in the case of regional history and/or community arts, or it may deal with more general aspects of the American experience. Students may arrange for credit in a variety of ways, such as community workshops, independent study involving directed research, travel projects, and community service.

II. Applied Liberal Studies
This program, which leads to the Bachelor of Arts or Bachelor of Science degree, is available to those who have completed vocational training programs at a business school, community college, technical institute or other specialized educational institution. This program will be of particular interest to those adults who, through previous formal study and practical experience, are eligible for promotion to positions of supervisory, managerial, or executive responsibility, but who lack the formal education qualifications necessary for such advancement.

The requirements for this 45-hour concentration are as follows:

A. A minimum of 18 credit hours, with at least 6 hours selected from three of the following topical areas:
   1. Community concerns
   2. Communication skills
   3. Environmental concerns
   4. Human relations
   5. International concerns
   6. Technical skills mastery

B. An additional 12 hours in the three areas chosen above.

C. Up to 15 hours of work taken previously may be applied toward this concentration. Acceptance of this credit does not imply transferability to other degree programs at Western.

III. Criminal Justice
The General University Studies bachelor's degree in Criminal Justice is designed for persons who have completed an associate's degree in law enforcement, corrections, police administration, and wish to complete a bachelor's degree through part-time study. Sixty hours of upper division study beyond the associate's degree is required to complete the bachelor's degree in Criminal Justice.

The degree program is interdisciplinary with core courses in law enforcement, courts and corrections. In addition each student has an opportunity to take advanced courses in one of these areas.

The requirements for this 45-hour concentration are as follows:

1. Prerequisite Courses
   Three (3) social science core courses:
   a. an introductory course in political science
   b. an introductory course in psychology
   c. an introductory course in sociology

   These courses are prerequisites to the criminal justice curriculum and do not count as a part of the 45 hours required in the area of concentration.

2. Area of Concentration (45 hours)
   a. Maximum of 12 hours from a two-year college criminal degree program (Designated as G.U.S. Social Service credit).
   b. Criminal Justice Core Courses (18 hours)
      SOC 362 Criminology
      SOC 462 Criminal Justice Process
      or
      PSCI 525 Politics of Criminal Justice
      SOC 464 Sociology of Law Enforcement
      SOC 564 Juvenile Delinquency and the Community
      SWRK 565 Correctional Process
      SOC 566 Advanced Criminology
   c. Minimum of 15 hours to be selected from:
      1. Special Areas
         Law Enforcement Special Topics:
         Courts
         PSCI 320 American Judicial Process
         PSCI 522 Civil Rights and Civil Liberties
         PHIL 313 Philosophy of Law
         Corrections
         SWRK 567 Institutional Corrections
         SWRK 568 Non-institutional Corrections
      2. Related Areas
         SOC 382 Methods of Sociological Inquiry
         PSCI 590 Research Methods
         SOC 314 Ethnic Relations
         PSCI 204 Politics of Race
         SWRK 533 Dynamics of Race and Culture
IV. Environmental Studies

This program was designed to stimulate a student's interest in the continuing study of life processes and styles, and to provide a basis for understanding the environment. The program will assist the student to define, analyze, and evaluate the nature of environmental problems; to prepare for a leadership role in community environmental education and action; and to make professional contributions in resolving environmental problems. It leads to a Bachelor's degree.

The requirements for this 45-hour concentration are as follows:

A. ENVS 110, Fundamentals of Environmental Studies, and ENVS 400, Senior Seminar in Environmental Studies.

B. At least three of the following core courses: Anthropology 100, Man in Evolutionary Perspective; Biology 105, Environmental Biology; Chemistry 140, Introductory Environmental Chemistry; General Studies 360, Explorations in Urban Environments and Ecological Studies; Geography 350, Principles of Conservation and Environmental Management; Physics 102, Physics and the Environment. Majors in Anthropology, Biology, Chemistry, Geography, or Physics may not use their respective core course as a part of their Environmental Studies program.

C. The remainder of the program is to be planned by the student and an academic advisor. It is recommended that the student elect courses designed to complete the requirements for a major in such related fields as Anthropology, Biology, Economics, Geography, Geology, or Political Science.

V. Health Studies

This program was designed for the health professional, such as the registered nurse, dental hygienist, radiologic technologist, and respiratory therapist, who wishes to develop his or her background of health studies in order to improve professional opportunities in communications, management, social work, or education in the health field. The requirements for this 45-hour concentration are as follows:

A. A maximum of 15 hours of work from previous training.

B. A minimum of 15 hours of work in health-related subjects.

C. At least 15 hours in some related area, such as communications, management, or social work.

Note: Up to 62 hours of credit for work taken in a nursing training program may be included in this degree program. Additional credit may be accepted by the academic advisor if it was taken at a four-year, degree-granting institution and relates to the Health Studies program.

VI. Social Science Studies

This program was designed to provide career-related preparation for students interested or employed in public service occupations, such as community development, social services (not certified), state and local government. The program will appeal to those with an interest in the social sciences and who are considering a related vocational field, as well as to those interested in the study of public issues, politics, and social questions. A bachelor's degree is conferred upon those completing the program requirements.

The requirements for this 45-hour Social Science concentration are as follows:

A. A minimum of 12 semester hours of credit selected from the following: Anthropology 220, Cultural Anthropology; Anthropology 240, Principles of Cultural Anthropology; Economics 201, Principles of Economics; Geography 205, Our Human World; Political Science 100, Introduction to Political Science; Psychology 150, Introduction to Human Behavior; Social Work 210, Social Work Services and Professional Roles; Sociology 200, Principles of Sociology, or Sociology 300, Sociological Theory.

B. At least 33 semester hours of additional social science credit in Anthropology, Economics, Geography, Political Science, Psychology, Social Work, and/or Sociology. These courses must be approved by the program's academic advisor, and may be interdisciplinary—drawn from a number of departments, disciplinary—drawn from a single social science discipline, or applied—identified with the needs of a particular area of study, such as public administration, sociology of education, social science research techniques, or applied social service.

VII. Technical-Scientific Studies

This program was designed for those interested in technical studies, including the study of aviation, automotive technology, electronics, manufacturing, supervision, and industrial vocational education. A student who has completed a two-year vocational-technical study program at a community college, or one who has achieved a comparable level of preparation through a combination of study and work experience will find this program of interest. A career-oriented program, particularly for those in manufacturing and industrial education, it leads to the Bachelor of Science degree.

The requirements for this 45-hour concentration are as follows:

A. A minimum of 45 semester hours of credit from such areas as graphics, materials and processing, technical analysis, electrical engineering, transportation technology, manufacturing management, and mechanical engineering. Students interested in industrial education, such as teachers in skills centers, may substitute such areas as industrial arts, drawing, graphic arts, metal working, woodworking, and auto mechanics.

B. Up to 15 hours taken previously may be applied towards this concentration. Some of these credits may be earned through examination, evaluation of previous experience, and non-accredited training.

C. At least 15 hours must be earned through courses at Western. Students desiring certification as teachers in vocational-technical areas must take additional professional courses in methods course construction and evaluation.
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B.A., M.A., Aligarh Muslim (India); M.A., Ph.D., Pennsylvania

Accardi, Wayne, 1978, Assistant Professor of Industrial Education
B.A., Suny (Buffalo); M.A.E., Ball State

Adams, David W., 1956, Professor of Education and Professional Development
B.A., Ohio Wesleyan; M.A., Ed.D., New York

Adams, Phillip D., 1964, Associate Professor of Humanities F.R.S.A
B.A., Western Michigan; M.A., Ph.D., Ohio; F.R.S.A

Agor, Weston H., 1974, Adjunct Professor of Political Science
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Airala, Marta, 1977, Adjunct Clinical Professor, Physicians’ Assistants Program
M.D., Cordoba Medical School (Argentina)

Akers, James E., 1978, Adjunct Assistant Professor of Geology
B.S., Missouri (School of Mines and Metallurgy); M.P.H., Minnesota

Alag, Gurubux Singh, 1977, Assistant Professor of Electrical Engineering
B.E. (E.E.) Savgor University; M.E. (E.E) Calcutta University; D.E., Rensselaer Polytechnic Institute

Alavi, Yousef, 1958, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Albert, Emil, 1978, Assistant Professor of General Business
B.S.M.E., Purdue; M.B.A., D.B.A., Michigan State

Alessi, Galen J., 1974, Assistant Professor of Psychology
B.S., Maryland; M.A., Western Michigan; Ph.D., Maryland

Allgood, William T., 1969, Associate Professor of Music
B.M., East Carolina; M.M., Illinois; D.M.A., Michigan

Alvarez, Elsa, 1964, Associate Professor of Spanish
B.A., Iowa; Ph.D., Havana; Ph.D., Michigan State

Anderson, Robert H., 1957, Associate Professor of Chemistry
B.A., Baker; M.A., Ph.D., Columbia

Appel, William C., 1965, Professor of Music
B.S., State Teachers of Indiana (Pa.); M.Mus., Indiana

Apple, Loyal E., 1966, Lecturer in Blind Rehabilitation
B.A., William Jewell

Argyropoulos, Triantafilos, 1964, Associate Professor of Art
B.S., M.F.A., Michigan

Armstrong, J. William, 1969, Assistant Professor of Education and Professional Development
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Asher, Eston J., Jr., 1954, Professor of Psychology and Director of Institutional Research
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Aslian, Roy C., 1978, Assistant Professor of Military Science
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Atkins, Michael B., 1971, Associate Professor of Industrial Education
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Bach, Shirley, 1964, Associate Professor of Natural Science
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Bacolor, Rodolfo B., 1977, Adjunct Clinical Professor, Physicians’ Assistants Program
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Baechtold, Marguerite, 1967, Associate Professor of Librarianship
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Bailey, Frederick S., 1958, Assistant Professor of Education and Professional Development
B.S., M.A., Western Michigan; Ph.D., Michigan State

Bailey, Keith D., 1955, Assistant Professor of Education and Professional Development
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Bailey, Thomas C., 1970, Assistant Professor of English
B.A., Oberlin; M.A., Missouri, Ph.D., Washington University

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B.S., M.S., Old Dominion; Ed.D., Virginia
Bournazos, Kimon, 1965, Professor of Business Education and Administrative Services
B.S., M.S., Ph.D., Michigan State

Bowen, Donald E., 1953, Associate Professor of Health, Physical Education and Recreation
B.S., M.A., Western Michigan

Bowers, Robert S., 1937, Professor of Economics
B.A., Kansas Wesleyan; M.A., American; Ph.D., Wisconsin

Bowman, Harold E., 1974, Adjunct Professor of Medical Technology
B.S., M.D., Indiana University

Bowman, Joel, 1975, Assistant Professor of Business Education and Administrative Services
B.A., M.A., Ph.D., University of Illinois

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B.B.A., Notre Dame; M.B.A., Detroit; C.P.A., Michigan

Brady, John G., 1976, Adjunct Clinical Professor, Physicians' Assistants Program
B.A., St Mary's; M.H.A., St. Louis; Ph.D., Iowa

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Brathwaite, Lloyd, 1968, Associate Professor of Sociology and Social Work
B.A., M.Crim, D.Crim., California University (Berkeley)

Branchaw, Bernadine, 1971, Associate Professor of Business Education and Administrative Services
B.A., College of St. Francis; M.S., Ed.D., Northern Illinois

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B.S., Memphis State; M.R.E., Southwestern Seminary; M.Ed., Texas Christian; Ph.D., Texas

Brawer, Milton J., 1960, Professor of Sociology
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Library Matura, Oberschule Fuer Maedchen, Vienna IV; M.L.S., Western Michigan; Ph.D., Vienna

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Brethower, Dale, 1977, Associate Professor of Psychology
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Brewer, Richard, 1959, Professor of Biology
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Brewer, Robert N., 1970, Instructor in Social Science
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Brown, Charles T., 1948, Distinguished University Professor and Professor of Communication Arts and Sciences
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, Robert W., 1976, Adjunct Clinical Professor, Physicians' Assistants Program
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Brown, Russell W., 1951, Associate Professor of Music
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Bullock, Donald P., 1963, Professor and Chairman, Department of Music
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B.A., Milton; M.B.A., Ph.D., Wisconsin

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B.S., John Carroll; M.S.W., Boston College; Ph.D. University of Chicago

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B.S., Carroll; M.A., Ph.D., Michigan State; C.P.A., Wisconsin

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Carlson, William A., 1966, Professor of Counseling and Personnel  

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Carroll, Hardy, 1970, Assistant Professor of Librarianship  
B.A., Guildford;  
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Caruso, Phillip P., 1967, Assistant Professor of Economics  
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Chalifoux, Thomas R., 1977, Instructor of Accountancy  
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B.A., Kentucky;  
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Chandler, Ralph C., 1976, Associate Professor of Political Science  
B.A., Stetson;  
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B.D., Union Theological Seminary;  
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Chang, Do Young, 1971, Associate Professor of Social Science  
B.A., M.A., Ph.D., Michigan

Chao, Lin, 1978, Assistant Professor of Humanities  
LL.B., Comparative Law School of China;  
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Chapel, Joe R., 1965, Associate Professor of Education and Professional Development  
B.A., Western Michigan;  
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Chaplin, David, 1972, Professor and Chairman, Department of Sociology  
B.A., Amherst;  
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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;  
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B.S., Oklahoma College for Women;  
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Chen, Chihsing, 1976, Adjunct Clinical Professor, Physicians' Assistants Program  
M.D., National Taiwan University

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B.S., M.D., M.S. (Pharmacology) Michigan

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Choi, Eung Ryong, 1978, Adjunct Clinical Assistant Professor, Physicians' Assistants Program  
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Chressanthis, James A., 1977, Assistant Professor of Art  
B.F.A., Arizona State;  
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Christensen, Arthur L., 1959, Assistant Professor of Education and Professional Development  
B.A., Michigan;  
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Clark, Michael J., 1971, Associate Professor of Speech Pathology and Audiology  
B.A., Oberlin;  
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Clark, Samuel I., 1948, Professor of Political Science and Director, The Honors College  
B.A., Ph.D., Chicago

Clarke, A. Bruce, 1967, Professor of Mathematics and Dean, College of Arts and Sciences  
B.A., Saskatchewan;  
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Clysdale, J. Patrick, 1958, Associate Professor of Health, Physical Education and Recreation  
B.S., M.A., Western Michigan

Coates, Sue S., 1975, Professor and Chairman, Department of Home Economics  
B.S., Washington;  
M.Ed., Ed.D., Missouri

Cole, Roger L., 1959, Professor and Chairman, Department of Modern and Classical Languages  
B.A., M.A., Ph.D., Michigan

Coleman, Edith Williams, 1971, Assistant Professor, Counseling Center  
B.S., Detroit;  
M.A., Ed.D., Wayne State

Collins, Thomas D., 1977, Adjunct Clinical Professor, Physicians' Assistants Program  
M.D., University of Rochester

Comai, William B., 1976, Adjunct Clinical Professor, Physicians' Assistants Program  
B.A., Albion;  
M.D., Michigan

Corbiss, William W., 1962, Professor of English  
B.A., Mississippi;  
M.A., Ph.D., Harvard

Comer, Charles D., 1968, Assistant Professor of Health, Physical Education and Recreation  
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 R., 1968, Associate Professor of English  
B.A., M.A., Syracuse;  
Ph.D., Massachusetts

Cooney, Donald F., 1977, Assistant Professor of Social Work  
B.A., M.Div., Mary Immaculate;  
M.A., Fordham

Cooney, Seamus, 1971, Associate Professor of English  
B.A., University College (Dublin);  
M.A., Indiana;  
Ph.D., California (Berkeley)
Cooper, Richard, 1977, Assistant Professor of Occupational Therapy B.S., M.O.T., Western Michigan
Corn, John A., 1959, Professor of Economics B.S., M.S., Ph.D., Wisconsin
Cordier, Mary, 1967, Associate Professor of Education and Professional Development B.A., Northern Iowa; M.A. Michigan State; Ed.S., Western Michigan
Cordier, Sherwood S., 1956, Professor of Dance B.S., Juniata; M.A., Yale; Ph.D., Minnesota
Cornsigh, Wendy L., 1967, Associate Professor and Chairman, Department of Dance B.S., Michigan; M.A., Western Michigan

Costello, R. Thomas, 1977, Adjunct Clinical Professor, Physicians' Assistants Program B.A., A.M. & N. College; M.A., Indiana; Ph.D., Chicago
Crow, Lowell E., 1974, Assistant Professor of Education and Professional Development B.S., M.S., Northern State; Ed.D., South Dakota

Crowell, Ronald A., 1966, Assistant Professor of Communication Arts and Sciences B.S., 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

Crowther, Timlan C., 1972, Professor of Sociology B.A., A.M. & N. College; M.A., Indiana; Ph.D., Chicago

Cudney, Milton R., 1964, Professor, Counseling Center B.S., Western Michigan; M.A., Michigan; Ph.D., Ohio State

Cutbirth, Nancy, 1971, Assistant Professor of English B.A., Stanford; M.A., Ph.D., Texas

Cutchin, John W., 1962, Associate Professor of Transportation Technology B.S., Lewis; M.A., Chicago Teachers College

Curtis-Smith, Curtis, 1968, Associate Professor of Music B.M., M.M., Northwestern University

Custen, George F., 1979, Assistant Professor of Sociology B.A., S.U.N.Y., Binghamton; M.A., Pennsylvania State

Cutcher, Nancy, 1971, Assistant Professor of English B.A., Stanford; M.A., Ph.D., Texas

Czuchna, Paul, 1967, Assistant Professor of Speech Pathology and Audiology B.S., Western Michigan; M.A., M.D., Wayne State

Dadlani, Gurdino G., 1969, Associate Professor of Social Work B.A., Baroda College (India); M.S.W., University of Baroda (India); M.Sc., Western Reserve University

Dahlberg, Kenneth A., 1966, Associate Professor of Political Science B.A., Northwestern; M.A., Stanford; Ph.D., Colorado

Daksewicz, Judy L., 1978, Adjunct Clinical Assistant Professor of Medical Technology B.S., M.D., Wayne State

Davis, James E., 1963, Associate Professor of Accountancy B.S.B.A., Kansas State of Pittsburg; M.B.A., Ph.D., Arkansas; C.P.A., Indiana

Dannenberg, Raymond A., 1956, Professor and Chairman, Department of Distributive Education B.S., Western Michigan; M.A., Ph.D., Michigan

Darling, Dennis E., 1967, Assistant Professor of Industrial Education B.S., Stout State; M.A., Ball State; Ph.D., Michigan State

Darling, Marvin, 1978, Adjunct Clinical Assistant Professor in the Health Sciences B.S., M.A., Michigan

Datta-Sandhu, Suhashni, 1971, Instructor of Social Science B.A., M.A., Western Michigan

Day, Robert B., 1965, Professor of Mechanical Engineering B.Sc., M.Sc., (Met.E.) Cincinnati; D.Sc. (Met.E.), Colorado School of Mines; P.E.

Dawson, William, 1974, Adjunct Clinical Assistant Professor of Speech Pathology and Audiology B.A., Bowling Green; M.A., Ph.D., Indiana

Dease, Luther R., 1970, Adjunct Assistant Professor of Education and Professional Development and Director, Upward Bound B.S., Lincoln; M.A., Ed.D., Western Michigan

Deckard, Thomas L., 1977, Assistant Professor of Transportation Technology B.S., M.S., Western Michigan

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Dell, James A., 1957, Associate Professor of Educational Leadership B.A., M.A., Western Michigan; Ed.D., Columbia University

David, Beverly R., 1967, Assistant Professor of Humanities B.A., M.A., Wayne State; Ph.D., Michigan State

Davidson, Audrey, 1966, Assistant Professor of Sociology B.S., M.A., Wayne State; M.A., M.D., Wayne State

Davidson, Clifford O., 1965, Associate Professor of English B.S., St. Cloud State University; M.A., Ph.D., Wayne State

Davidson, Robert, 1966, Instructor of Music B.S., M.A., Western Michigan

Davis, Alvin J., 1973, Adjunct Assistant Professor of Speech Pathology and Audiology B.S., Bloomsburg State College; M.S., Pennsylvania State

Davis, Charles, Jr., 1967, Professor of Electrical Engineering B.S.E.E., M.E.E., Wayne State; M.S.E.E., Michigan; Ph.D., Michigan State; P.E.

Davis, Michael, 1977, Adjunct Clinical Instructor, Physicians' Assistants Program B.S.M., Western Michigan

Davis, Robert S., 1965, Associate Professor of English B.A., Indiana; M.A., Ph.D., Claremont

Davis, Ronald W., 1966, Associate Professor of History B.A., Bowling Green; M.A., Ph.D., Indiana

Davis, Russell J., 1977, Adjunct Professor of Humanities and Health Services B.A., Ohio Wesleyan; M.A., New York; D.P.A., George Washington University

Davis, Ruth M., 1961, Professor of Health, Physical Education and Recreation B.A., Bowling Green; M.A., Ph.D., Indiana

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De Leeuw, Henry, 1974, Adjunct Professor of Medical Technology
B.S., Chicago; M.D., Chicago Medical

Delene, Linda M., 1977, Associate Professor of Marketing
B.A., Michigan; M.A., Hawaii; Ph.D., Toledo

De Luca, Joseph V., 1966, Professor of Art
B.S., M.A., Bowling Green State; M.F.A., Michigan State

Demetrakopoulos, Stephanie, 1971, Associate Professor of English
B.A., Portland State; M.A., Ph.D., Minnesota

Denenfeld, Philip S., 1956, Professor of English and Associate Vice President for Academic Affairs
B.A., Wayne State; M.A., Ph.D., Northwestern University

de Peaux, Richard Joel, 1969, Associate Professor of Humanities
B.S., M.F.A., Wisconsin

Debka, Stanley K., 1955, Professor of Physics
B.S., Chicago; M.S., Ph.D., Michigan

Deshler, Betty Jean, 1974, Assistant Professor of Social Work
B.A., Western Michigan; M.S.W., Michigan

De Shon, David S., 1964, Associate Professor of Social Science
B.A., William Jewell; M.A., Kansas City; Ph.D., University of Missouri (Kansas City)

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B.S., M.A., Western Michigan; Ed.D., Northern Illinois

Dickason, David G., 1966, Associate Professor of Geography
B.A., College of Wooster; M.A., Pittsburgh; Ph.D., Indiana

Dickie, Kenneth E., 1967, Professor of Education and Professional Development
B.S., M.S., Stout State; Ed.D., Indiana

Dieker, Richard J., 1966, Professor and Chairman, Department of Communication Arts and Sciences
B.S., M.S., Emporia State; Ph.D., Michigan State

Diet, David K., 1970, Assistant Professor of Health, Physical Education and Recreation
B.S., Michigan State; M.A., Western Michigan

Dilli, Gordon E., 1976, Instructor of Marketing
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Dilworth, John B., 1968, Associate Professor of Philosophy
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Dimbiloglou, M. Ekrem, 1977, Adjunct Clinical Professor, Physicians’ Assistants Program
M.D., Istanbul University School of Medicine (Turkey)

Dodge, L. Delf, 1978, Assistant Professor of Management
B.A., M.B.A., Ph.D., Michigan State

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B.S., Calvin College

Dooley, Howard J., 1970, Associate Professor of Humanities
B.S., M.A., Ph.D., Notre Dame

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DuBien, Janice, 1976, Assistant Professor of Mathematics
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Dybek, Stuart, 1973, Assistant Professor of English
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Dykstra, Sidney, 1964, Associate Professor of Educational Leadership and Associate Dean, The Graduate College
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Earhart, H. Byron, 1966, Professor of Religion
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Ebling, Benjamin, 1965, Professor of French
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B.A., Berea;  
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Richardson, Geraldine, 1967, Assistant Professor of Occupational Therapy  
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Robbeck, George, 1968, Associate Professor of Communication Arts and Sciences  
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Rodner, William, 1978, Assistant Professor of Humanities  
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B.S., M.S., Ph.D., Wisconsin  
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B.S., M.A., Temple;  
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Rossi, Michael J., 1978, Assistant Professor of Business Education and Administrative Services  
A.B., Merrimack;  
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P.E.  
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B.S., Andrews; M.A., Western Michigan

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B.S., M.A., Ph.D. Missouri
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Walker, Lewis, 1964, Professor of Sociology
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Watson, Archie E., 1970, Assistant Professor of Education and Professional Development
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Weber, Paul, 1975, Instructor of General Business
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Weessies, Marvin J., 1970, Assistant Professor of Blind Rehabilitation
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B.S., Western Michigan; M.Ed., Pennsylvania State

Woodhull, Edward H., 1977, Assistant Professor of Management
B.A., B.S., M.A., Iowa

Woodliff, Charles M., 1967, Professor and Director, Division of Instructional Communications
B.A., Wisconsin State; M.A., Syracuse; Ed.D., Montana

Woods, John W., 1955, Professor of English
B.S., M.A.T., Indiana

Woodward, Joseph F., 1966, Assistant Professor of Industrial Engineering
B.S., Western Michigan; M.S., Illinois Institute of Technology; C.M.E.

Wooldridge, Shirley C., 1965, Assistant Professor of Communication Arts and Sciences
B.A., M.A., Ed.D., Western Michigan

Work, Joseph T., 1950, Associate Professor of Music
B.M., M.M., Eastman School of Music; D.M.A., Michigan

Wright, Alden, 1970, Associate Professor of Mathematics
B.A., Dartmouth; Ph.D., Wisconsin

Wright, Stephen A., 1976, Instructor of Business Education and Administrative Services
B.S., Western Michigan

Wyant, Robert M., 1977, Assistant Professor of Industrial Engineering
B.S., Ohio State; M.B.A., Michigan

Wyman, Robert F., 1964, Associate Professor of Health, Physical Education and Recreation
B.S.M., Ed.D., Wayne State

Yang, Kung-Wei, 1966, Professor of Mathematics
B.S., National Taiwan; Ph.D., Indiana

Yelsma, Paul, 1975, Assistant Professor of Communication Arts and Sciences
M.B.A., University of Denver; Ph.D., Michigan

Youel, David B., 1976, Adjunct Clinical Professor, Physicians' Assistants Program
B.A., M.D., Chonnam National University (Korea)

Young, Iris M., 1974, Adjunct Assistant Professor of Medical Technology
B.S., M.D., Michigan State

Younis, Ahmad, 1978, Adjunct Clinical Assistant Professor, Physicians' Assistants Program
B.A., M.D., American University of Beirut Medical School

Yunghans, Charles E., 1962, Assistant Professor of Electrical Engineering
B.S.E.E., Valparaiso; M.S., Western Michigan

Zelinger, Stephen H., 1975, Assistant Professor of Management
A.B., Pennsylvania State; M.B.A., Temple

Zietlow, James P., 1965, Professor of Physics
B.S., Peoria; M.S., 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.A., Ph.D., Columbia

Zlotkin, Morton R., 1978, Adjunct Assistant Professor of Medical Technology
A.B., Calvin; MT (ASCP) American Society of Clinical Pathologists Certification

Zupko, Ramon, 1971, Associate Professor of Music
B.S., M.S., Juilliard School of Music
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East Campus

East Hall—Classrooms and offices for the departments of accountancy, management, music and art; locker facilities, offices and a gymnasium for the physical education department.

North Hall—Offices and classrooms for general business, law, marketing, business library, and offices of the dean, College of Business.

Oakland Recital Hall—Office, classroom and practice space are provided for the music department and a 300-seat auditorium.

Physical Plant—Trades maintenance shops; grounds crews and University garage; campus planning and extension department; physical plant department.

Printing Services—University print shop and mimeographing service.

Speech and Hearing Center—The department of speech pathology and audiology.

Walwood Union—Snack bar, meeting rooms, department of dance offices, and College of Business.

West Hall—Occupational therapy department, agriculture department, and the College of Business, and business education and administrative services.

West Campus

Arcadia—Department of public safety.

William R. Brown Hall—Classrooms for the departments of history, economics, English, language, and linguistics departments.

Willis F. Dunbar Hall—Classrooms for the departments of history, economics, philosophy, religion, political science, College of General Studies and television studios.

Ellsworth Hall—Offices for Continuing Education, Faculty Senate, Minority Student Services, News Services, Placement Services, Pupil Transportation, Purchasing, Research Services, Sports Information, University Publications and Women's Services.

John Everett Hall—Faculty offices for departments of physics, geology, mathematics and computer sciences.

L. Dale Faunce Student Services Building—Counseling, financial aid, scholarships, housing, student activities, orientation; offices for major student organizations; WIDR, campus radio stations, Western Herald.

Robert Friedmann Hall—Offices for dean of College of Arts and Sciences, dean of College of General Studies, faculty offices for economics, history, philosophy and political science, and WMUK-FM studios.

Hillside East—Alumni center, aural press and public administration program.

Hillside West—Honors College, testing services, Cistercian studies and library and medieval studies.

Industrial Engineering and Technology—Departments of electrical engineering, engineering and technology, home economics, industrial education, industrial engineering, mechanical engineering, transportation technology, and dean, College of Applied Sciences.

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—Art Department studios.

Harper C. Maybee Hall—Music department and music library.

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, and dean, College of Fine Arts.

Paul Rood Hall—Classrooms for the departments of physics, geology and mathematics; computer sciences, and physical sciences library; 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 Educational Resources Center, and the Reading Center and Clinic.

Russell H. Seibert Administration Building—University administration offices.

Laura V. Shaw Theatre—The University Players present productions in this 600-seat theatre.

George Sprau Tower—Offices of the communication arts and sciences, Black Americana studies, English, languages and linguistics departments.

University Health Center—75-bed student health service building opened in 1969.

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

Dwight B. Waldo Library—The library's total collection number over 1.7 million bibliographic items, including books, bound periodicals, music scores, recordings, maps, documents and materials in microform. Also located in the building are the School of Librarianship, the University Archives, and the Audiovisual Film Library.

Leslie H. Wood Hall—Biology, biomedical sciences, psychology and geography departments.

Off-Campus

Aviation Building—Shops, laboratories and classroom for aircraft technology and pilot training.

Kleinstuck Nature Preserve—Given in 1922 by Mrs. Caroline Hubbard Kleinstuck, this 50-acre tract provides instructional space for biology sciences near the campus and inside the city of Kalamazoo.
Athletic Facilities

Gary Physical Education Center
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 Physical Education Department. Read Fieldhouse and the intramural building connect to this building.

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.

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.

University Recreation Building

Harry Lawson Ice Arena Facilities include: a regular hockey rink, 85 feet by 200 feet; seating capacity 4,300; four one-wall handball courts; weight room; dressing rooms for women and men.

Ed Gabel Natatorium Facilities include: swimming pool 120 feet by 50 feet; seating capacity of 400; movable bulkhead; two one-meter and one three-meter diving boards; classrooms; locker facilities; staff offices.

Waldo Stadium An intercollegiate football stadium with artificial turf and 25,000 seats. It is 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 regular 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 physical education department and the department of military science (ROTC).
Above: The West Campus
Right: The East Campus
Western Michigan University

Key to Building Numbers

*An asterisk in front of a building name denotes that the building has been made physically accessible to the handicapped.

East Campus
1 East Hall
15 Hyames Field
5 North Hall
9 Oakland Gymnasium & ROTC
10 Oakland Recital Hall
21 Physical Plant Building
12 Printing Services
3 *Speech and Hearing Center
8 Spindler Hall
15 Waldo Stadium
10 Wallwood Hall, Union & Residence
4 West Hall

West Campus
75 Bigelow Hall
42 Brown Hall
28 Burnham Halls
46 Davis Food Commons
45 Davis Hall
30 Draper-Siedschlag Halls

66 *Dunbar Hall
37 Elmwood Apartments A-Q
56 Ellsworth Hall
57 *Everett Office Tower
77 *Faunce Student Services Building
74 French Hall
67 *Friedmann Hall
49 Gary Physical Education Center
66 Goldsworth Valley Apartments R-Z
73 Goldsworth Valley Residence Unit #1
  a. Hadley Hall
  b. Ackley Hall
  c. Brittson Hall
  d. Shilling Hall
72 Goldsworth Valley Residence Unit #2
  a. Eicher Hall
  b. Harvey Hall
c. Garneau Hall
d. LeFevere Hall
71 Goldsworth Valley Residence Unit #3
  a. Harrison Hall
  b. Eldridge Hall
c. Stinson Hall
d. Fox Hall
55 *Health Center
60 Henry Hall
26 Hillside Offices, A & B
65 Hoekje Hall
51 Home Management House
31 Kanley Chapel
50 Kanley Running Track
69 *Knauss Hall
39 Knollwood Building
53 *Lawson Ice Arena & Gabel Natatorium
29 Maybee Hall
27 *McCacken Hall & Paper Industry Labs
40 *Miller Auditorium
47 Moore Hall
33 Oaklands
80 Parking Ramp #1
25 Public Safety
62 Read Fieldhouse
56 *Rood Hall
38 *Sangren Hall
81 Sara Swickard Pre-School
32 *Seibert Administration Building
41 Shaw Theatre
43 *Sprau Office Tower
52 Stadium Drive Apartments
35 Trimpe Distributive Education Bldg.
59 *University Student Center
61 *Waldo Library
36 *Wood Hall
48 Zimmerman Hall

Information Center
Administration Bldg.
(616) 383-0040