6-1972

Bulletin - Western Michigan University: The Undergraduate Catalog 1972-1973

Western Michigan University

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

DIRECTIONS FOR CORRESPONDENCE

Director of Admissions
Admissions, University Literature, Credit Acceptance

Controller
Business and Financial Arrangements

Dean of the College of Applied Sciences
Matters Relating to Vocational Education

Dean of the College of Arts and Sciences

Dean of the College of Business

Dean of the College of Education

Dean of the College of Fine Arts

Dean of the College of General Studies

Dean of The Graduate College

Director of Housing

Director of Counseling

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

Director of Career Planning and Placement
Teacher Placement, Business and Industrial Placement

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

Director of Registration
Registration, Course Time Schedules, Space Allocation

Director of Honors
Honors Program

Office of Financial Aid
Scholarships, Loans and Part-time Employment
In *all* of its relationships the University prohibits any discrimination on the basis of race, religion, sex or national origin.

The text paper used in this catalog contains 30 percent post consumer use recycled waste.
Copies of the complete Western Michigan University Undergraduate Catalog are available for examination at most high schools, libraries, other State universities, community colleges and State government offices. Each entering student, freshman or transfer, is entitled to one copy without charge. Additional copies are available at Western’s Campus Bookstore at $1 each.
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Western Michigan University

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

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

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

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

Academic Year: 1972-73
- Fall Semester — August 30 - December 16
- Winter Semester — January 4 - April 21
- Spring Session — April 30 - June 20
- Summer Session — June 7 - August 17
  (Two sessions equal to one semester)
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| 1972 |
UNIVERSITY CALENDAR 1972-73

Fall Semester, 1972

August 29, Tuesday ........................................... Orientation and Drop-Add
August 30, Wednesday ........................................... Classes Begin
September 4, Monday ........................................... Labor Day Recess
October 27, Friday ............................................. Classes dismissed (2 p.m. Friday only)
                                      (Laboratories excepted)
October 28, Saturday ........................................... Homecoming
November 22, Wednesday ......................... Thanksgiving Recess (12 noon)
November 27, Monday ........................................... Classes Resume
December 16, Saturday ......................................... Semester Ends
December 16, Saturday ......................................... Commencement (2 p.m.)

Winter Semester, 1973

January 3, Wednesday ........................................... Final Registration
January 4, Thursday ........................................... Classes Begin
March 1, Thursday ............................................. Semester Recess (8 a.m.)
March 5, Monday ................................................ Classes Resume
April 20, Friday ................................................ Good Friday Recess (p.m. only)
April 21, Saturday ............................................. Semester Ends
April 21, Saturday ............................................. Commencement (2 p.m.)

Spring Session, 1973

April 28, Saturday ............................................. Final Registration
April 30, Monday ................................................ Classes Begin
May 28, Monday ................................................ Memorial Day
June 20, Wednesday ............................................. Session Ends

Summer Session, 1973

June 25, Monday ................................................ Registration, Graduates
June 26, Tuesday ................................................ Registration, Undergraduates
June 27, Wednesday .......................................... Classes Begin
July 4, Wednesday ............................................. Independence Day
August 17, Friday ............................................. Session Ends
August 17, Friday ............................................. Commencement (6:00 p.m.)
BOARD OF TRUSTEES

John R. Dykema, Grosse Pointe Farms
Maury E. Parfet, Hickory Corners
Dr. Julius Franks, Jr., Grand Rapids
Philip N. Watterson, Cascade
Mildred Swanson Johnson, Muskegon
Robert D. Caine, Hickory Corners
Fred W. Adams, Grosse Pointe
Charles H. Ludlow, Kalamazoo
James W. Miller

Term Expires
December 31, 1972
December 31, 1972
December 31, 1974
December 31, 1974
December 31, 1976
December 31, 1976
December 31, 1978
December 31, 1978
Ex Officio

Fred W. Adams, Chairman
Philip N. Watterson, Vice Chairman
Robert W. Hannah, Secretary
Robert B. Wetnight, Treasurer
Administrative Officers

President ................ James W. Miller, Ph.D., LL.D., D.Hum.
Vice President for Academic Affairs .......... Russel H. Seibert, Ph.D.
Assoc. Vice Pres. for Academic Affairs ...... Philip Denenfeld, Ph.D.
Vice President for Finance ........ Robert B. Wetnight, M.B.A., C.P.A.
Vice President for Institutional Services ..... Myron L. Coulter, Ed.D.
Vice President for Student Services .......... Thomas E. Coyne, M.A.
Dean, College of Applied Sciences .......... George E. Kohrman, Ed.D.
Dean, College of Arts and Sciences .......... Cornelius Loew, Ph.D.
Dean, College of Business ................... Arnold E. Schneider, Ph.D.
Dean, Continuing Education .................. Leo C. Stine, Ph.D.
Dean, College of Education ................... John E. Sandberg, Ed.D.
Dean, College of Fine Arts ................... Robert Holmes, Ph.D.
Dean, College of General Studies .......... Robert M. Limpus, Ph.D.
Dean, The Graduate College ................... George G. Mallinon, Ph.D.
Dean, Admissions and Records ............... Clayton J. Maus, M.S.
Controller ..................................... Robert Beecher, J.D.
Administrative Groups

THE FACULTY SENATE

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

Officers for 1971-72

Samuel I. Clark
Laurel A. Grotzinger
Ada E. Berkey
John Cooley
Frank R. Jamison

President
Vice President
Treasurer
Recording Secretary
Corresponding Secretary

UNIVERSITY COUNCILS

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

EDUCATIONAL POLICIES COUNCIL

Ex Officio
Russell H. Seibert, Chairman
George E. Kohrman, Dean
Robert M. Limpus, Dean
Cornelius Loew, Dean
George G. Mallinson, Dean
John E. Sandberg, Dean
Arnold E. Schneider, Dean
Carl H. Sachtleben, Director of Libraries

Elected
Dorothy McCuskey 1972
Edward L. Galligan 1972
Frank S. Scott 1972
Ollin J. Drennan 1973
Donald Bullock 1973
Robert L. Stallman 1973
James A. Jaksa 1974
Gale E. Newell 1974
Larry Oppliger 1974

Students
Robert W. Lundy
William J. Adamo
Joanne M. Ernst
GRADUATE STUDIES COUNCIL
Ex Officio
George C. Mallinson, Dean Chairman
George E. Kohrman, Dean
Cornelius Loew, Dean
John E. Sandberg, Dean
Arnold E. Schneider, Dean
Russell H. Seibert, Vice President

Elected
Eugene Bernstein 1972
James J. Bosco 1972
William Ritchie 1972
Frederick Gault 1973
Peter Schmitt 1973
Betty Taylor 1973
John T. Burke 1974
Stanley S. Robin 1974
John H. Stroupe 1974

Students
Faye L. Koestner
Leo A. Zabinski
Carol Ann O'Connor

RESEARCH POLICIES COUNCIL
Ex Officio
George G. Mallinson, Dean
Russell H. Seibert, Vice President

Elected
William Houser 1972
Kenneth Dahlberg 1972
Eugene Bernstein 1972
Charles Risher 1973
Uldis Smidchens 1973
John R. Rizzo 1973
Howard E. Farris 1974
Cora E. Marrett 1974
Werner Sichel 1974

Students
Thomas J. Umlau
Robert W. Carlson
Janice C. Johnson

STUDENT SERVICES COUNCIL
Staff
Charles Stroup
Robert Ethridge

Faculty
Fred Decker
Geraldine Richardson
Donald Nantz
Carol Smith

Students
John J. Cairo
Jean R. Farrington
Ann W. Harvey
Cynthia A. Hodge
Mickey D. Mason
Beth E. Merrill
Frederick E. Shell
Jeffery L. Ashby
Administrative Groups

CAMPUS PLANNING COUNCIL

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

Elected
Yousef Alavi 1972
Charles Meyer 1972
Glade Wilcox 1972
Henry J. Beukema 1973
Kenneth E. Dickie 1973
Beth Schultz 1973
Harold Boles 1974
H. Nicholas Hamner 1974
Robert F. Maher 1974

Presidential Appointees
Harold O. Bahlke, College of General Studies
Cornelius Loew, Dean, College of Arts and Sciences
Maurice Seay, Professor of Educational Leadership

Students
Richard R. Wade
Dennis L. Curran

CONTINUING EDUCATION COUNCIL

Ex Officio
Leo C. Stine, Dean, Chairman
Russell Gabier, Director of Admissions
Robert W. Hannah, Administrative Assistant to the V.P. for Academic Affairs
John Nangle, Assistant Director, Institutional Research

Elected
Sterling Breed 1972
William Morrison 1972
G. Stewart Johnson 1973
Darrell G. Jones 1973
Lewis H. Carlson 1974
Herbert H. Hannon 1974
THE ATHLETIC BOARD

Leo C. Vanderbeek, Chairman
and Faculty Representative,
Mid-American Conference
Dale Machacek
Charles Washington
Van Alan Weimer
Clayton J. Maus
James W. McIntyre
Chauncey J. Brinn

Lloyd J. Schmaltz
Joseph McCully
Robert B. Wetnight

Ex Officio
Joseph T. Hoy
John S. Lore

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

Directors of Athletics
Director, Alumni Relations

ACCREDITATION

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

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

ADMISSION

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

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

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

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

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

METHODS OF ADMISSION

Students may be admitted in the following ways:

1. Admission by secondary school diploma: A graduate of an accredited high school, academy or the equivalent may be admitted upon presentation of an acceptable written record.

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

3. Admission by advanced standing: A student wishing to transfer from another accredited college, university, community or junior college, may be admitted upon presentation of an acceptable written transcript of credit showing honorable dismissal. This transcript must be official, and mailed directly from the institution previously attended to the Director of Admission of this University. Transferred credits, except those from Michigan county normals, will be acceptable only when they have been earned at a college which at the time the student was enrolled, was accredited by the North Central Association of Colleges and Secondary Schools, an equivalent organization or by the Michigan Commission on College Accreditation. Each transfer case is handled individually, with separate evaluation of credit.
4. Admission as an unclassified student: (a) A person who does not plan to work toward a degree or certificate may be admitted as an unclassified student if he presents evidence that he can profit by the instruction; (b) A person who holds a Bachelor's degree or a higher degree for which it is prerequisite, may be admitted to the University as an unclassified student upon presentation of credentials showing that holds such degree or degrees. A person eighteen years of age or older who wishes to study at this University may be admitted by the Director of Admissions, provided he is unable to furnish other credentials upon which his admission might be based. Before any unclassified student can receive a degree or certificate from this University, he must have met the requirements for admission prescribed under the other admission procedures numbered 1-3 above.

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

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

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

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

APPLICATION FOR ADMISSION

Freshman — A Student Entering College for the First Time

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

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

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

3. The completed application will be forwarded to the University by the high school. It is not acceptable if sent directly by the student.
4. Applications for admission may be sent to the University at any time during or after the seventh semester in high school.

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

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

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

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

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

10. Applications which may require special consideration should be brought to the attention of the Admissions Staff by the principal or high school counselor with a complete description of the problems or unusual circumstances involved.

Transfer — A Student Who Has Attended Another College

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

1. Complete an application for degree admission.

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

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

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

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

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

7. An official transcript for students with tentative admission must be received in the Admissions Office within ten days following the first day of the semester. Failure to provide such a record may result in the student being withdrawn from school.

8. Grades and honor or quality points are not transferable to or recorded on the WMU permanent record. Courses completed at another college which are
Advanced Placement Program

A number of high schools and preparatory schools offer selected students the opportunity to accelerate and to take in the senior year one or more subjects which are taught at the college level and cover the materials of a college course. Each year in May the College Entrance Examination Board administers a series of Advanced Placement examinations covering this advanced work.
Western Michigan University cooperates with the Advanced Placement Program, granting college credit for Advanced Placement courses passed with a score of 3 or better. Individual departments of the University have formulated policies concerning these college courses which are bypassed through such advanced placing. Entering freshmen with acceptable Advanced Placement scores will be given Advanced Placement credit.

**COLLEGE LEVEL EXAMINATION PROGRAM**

The General Examinations of the College Level Examination Program (CLEP) are used at Western Michigan University to meet the needs of two groups primarily:

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

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

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

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

ENTERING FRESHMEN may be granted college credit at Western Michigan University through testing by the College Level General Examinations only under specific conditions. The application to take a General Examination must be approved by the Admissions Office at Western Michigan University. Approval is contingent on a valid reason for the testing request such as: The secondary school's inability to offer an advanced placement program; a special educational experience such as travel abroad wherein the applicant engaged in a formal study program or seminar; a special summer study program; enrollment in Honors courses equivalent to formal Advanced Placement courses without the Advanced Placement opportunity; and/or other evidence of college level proficiency in areas of the General Examination.

A Bulletin of Information for candidates is available on request from: College Entrance Examination Board, Publications Order Office, Box 992, Princeton, New Jersey, 08540.
The Board of Trustees on recommendation of the President and faculty of Western Michigan University, confers degrees as follows:

**BACHELOR OF ARTS**

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

**BACHELOR OF BUSINESS ADMINISTRATION**

**BACHELOR OF FINE ARTS**

**BACHELOR OF MUSIC**

**BACHELOR OF SCIENCE**

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

**BACHELOR OF SCIENCE IN ENGINEERING (INDUSTRIAL)**

**SECOND BACHELOR'S DEGREE**

A student who earns a bachelor's degree at Western Michigan University and who subsequently becomes a candidate for a second bachelor's degree may, by earning 30 semester hours of residence credit beyond those required for the first degree, be awarded the second degree. The additional hours need not be taken subsequent to completion of requirements for the first degree.
MASTER OF ARTS
MASTER OF BUSINESS ADMINISTRATION
MASTER OF FINE ARTS
MASTER OF MUSIC
MASTER OF OCCUPATIONAL THERAPY
MASTER OF SCIENCE
MASTER OF SCIENCE IN ACCOUNTANCY
MASTER OF SCIENCE IN LIBRARIA NSHIP
MASTER OF SCIENCE IN STATISTICS
MASTER OF SOCIAL WORK

SPECIALIST IN ARTS

Sixth-year programs are offered primarily for the preparation of Community College teachers in Business, English, History, Mathematics and Librarianship by the departments indicated and The Graduate College.

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

SPECIALIST IN EDUCATION

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

DOCTOR OF EDUCATION

A degree program offered by the Department of Educational Leadership in the College of Education and The Graduate College designed for educational leaders in schools, business and government.

DOCTOR OF PHILOSOPHY

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

Any curriculum leading to a bachelor's degree consists of at least 122 hours of credit.

The student must meet the following requirements or their equivalent:

**GENERAL REQUIREMENTS**

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

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

c. Each student must complete 40 hours of work in the General Studies Program or in approved alternatives. (See “General Studies Program”).

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

e. Each student must complete two semester hours of general physical education. Freshmen are urged to arrange their schedules so that they complete their two-hour physical education requirement no later than their sophomore year. Persons 30 years of age or older at the time of graduation are not bound by this requirement. Such a waiver applies only to general physical education and not to specific curricular requirements nor to total hours required for graduation. Credit earned in general physical education may apply toward the requirement in general physical education only. It may not be used as academic elective credit. Veterans of Military Service (minimum of one year continuing active duty) shall, upon request, be granted two hours of general physical education credit.

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

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

h. Students transferring from a two-year community or junior college must complete a minimum of one-half of the academic work required in their curriculum
Degree Requirements

at an accredited four-year, degree-granting institution (exclusive of the general physical education requirement).

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

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

Exceptions may be made for:

a. Life certificate holders.

b. Students progressing regularly toward a degree (6 hours or more a year).

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

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

GENERAL STUDIES PROGRAM

I. Freshman-Sophomore Level

Either

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

and

- General Studies Reading 140 ..................................................... 2 hrs.

One course from the following:

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

Two courses from the following:

- Physical Geography 105 or Geological Science 112 .................. 4 hrs.
- Biological Science 107 ......................................................... 4 hrs.
- Physical Science 108 ............................................................. 4 hrs.
- Aims and Achievements of Science 110 ................................. 4 hrs.

Either

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

II. Junior-Senior Level

Introduction to the Non-Western World 304 .......................... 4 hrs.
(or approved alternatives as listed at the College of General Studies Office and in the Schedule of Classes)

Plus one broad, inter-disciplinary course to be selected from following courses:

- Human Communication 400 ..................................................... 4 hrs.
- Science in Intellectual History 401 ........................................ 4 hrs.
- American Culture 402 ......................................................... 4 hrs.
- Criticism of Mass Media 403 ................................................ 4 hrs.
- Business and Society 404 ...................................................... 4 hrs.
- Molders of Thought 405 ....................................................... 4 hrs.
- Social and Cultural Change 408 .......................................... 4 hrs.
- Seminar in Contemporary Issues 497 .................................... 4 hrs.
Degree Requirements

III. Additional work to be selected from the above General Studies courses or from non-professional courses in the College of Arts and Sciences. Technical courses in applied music, art, and speech, and courses in methods of teaching are excluded from this category .......................................................... 10 hrs.

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

1. The Dean of the College of General Studies, in consultation with the committee established to administer the General Studies program, is empowered to make such adjustments and substitutions in the program of individual students and groups of students as seem desirable in order to accomplish the goal of encouraging the student to acquire a broad competence in his study of general education courses. In making such decisions, the Dean will consider:
   a. The high school record of the student
   b. Any college entrance examinations that he has taken or is required to take;
   c. The student's own attitude toward his preparation.

Furthermore, the student is encouraged to study in those areas of General Studies in which he displays the least competence. The Dean may grant credit for the successful completion of examinations designed to determine the competence of the student in an individual area, provided that in doing so the broad objective as stated above will be accomplished.

2. Because of the special purposes of the General Studies program, it is expected that the courses contained in it will normally not be considered part of any academic major or minor sequence. In certain specialized professional curricula, exceptions to this rule may be made in appropriate areas by joint agreements between the Dean of the College of General Studies, those persons responsible for the administration of curricula, and appropriate department heads.

GENERAL STUDIES EQUIVALENCES (FOR TRANSFER STUDENTS)

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

1. General Studies Reading Area
   a. For a full waiver a student must present at least 2 semester credits in a freshman writing or communication course or present proof that he has fulfilled the Freshman English requirement at some other four-year degree granting institution.
   b. If he presents less than 2 semester credits, he will be required to take General Studies Reading.
   c. If the institution from which he transfers has granted a waiver for the Freshman English requirement or any part of it, this waiver will be honored by Western Michigan University.

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

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

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

3. Social Science Area
   a. A student who presents a minimum of 4 semester credits in General Science or in any combination of two or more of the following subjects will be considered to have met his Freshman-Sophomore level general education requirements in social science:
      History of Modern Europe or American History
      Cultural Anthropology
      Economics (Principles)
      Sociology (Principles)
      Political Science (except that American Government may not be used with American History)
   
   b. Regardless of the number of credits he presents in one field, he must present credits in more than one to receive a full waiver. If all his credits are in one field, he must take a course bearing at least 2 hours of credit in another.

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

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

5. Junior-Senior Areas
   All students who transfer to Western Michigan University with fewer than 90 semester credits must complete the 8 hours of Junior-Senior General Studies described on page 25 of the catalog, except that a student who has taken a minimum of 3 hours of work in studies in the Non-Western World may receive an exemption in that area. Students who transfer 90 or more semester credits should consult with the office of the Dean of the College of General Studies about the possibility of waiver.
EXEMPTIONS AND COMPREHENSIVE EXAMINATIONS

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

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

COLLEGES AND CURRICULAR OFFERINGS

COLLEGE OF APPLIED SCIENCES
Agriculture
Distributive Education
Engineering and Technology
  Electrical Engineering Technology
  Industrial Engineering
  Industrial Supervision
  Mechanical Engineering Technology
  Metallurgical Engineering Technology
Home Economics
  Dietetics
  Home Economics in Business
  Home Economics Education
Industrial Education
  Industrial Arts
  Vocational-Technical Education
  Printing Management
Occupational Therapy
Paper Science and Engineering
Transportation Technology
  Automotive Engineering Technology
  Aviation Engineering Technology
Two-year Terminal Curricula
  Food Distribution
  Petroleum Distribution
  Drafting and Design Technology
  Aircraft Technology

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

Music
Philosophy
Physics
Political Science
Psychology
Religion
Sociology
Speech Pathology and
Audiology

General
The same areas of concentration are available in the General curriculum as are
found in the Liberal Arts curriculum.

Medical Technology

Social Work

Speech Pathology and Audiology

COLLEGE OF BUSINESS

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

COLLEGE OF EDUCATION

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

Educational Leadership

Counseling and Personnel

Special Education
Crippled and Homebound
Emotionally Disturbed
Mentally Handicapped
Speech Pathology and Audiology
Blind Rehabilitation

Physical Education for Men (Health, physical education, recreation)

Physical Education for Women (Health and physical education)

COLLEGE OF FINE ARTS

Art
Dance
Music

COLLEGE OF GENERAL STUDIES
Preprofessional Curricula

Every professional school has prescribed the nature and amount of the academic work to be completed as a prerequisite to the professional training for a particular vocation. Four years of higher education are generally required by most professional schools for entrance. Western Michigan University is able to offer its students courses of study that meet the requirements for this preprofessional training. It should be noted, however, that the courses outlined are only suggested plans to illustrate in general the kinds of programs that preprofessional students should follow. IN EVERY CASE THE STUDENT SHOULD PLAN HIS COURSE ACCORDING TO THE REQUIREMENTS OF THE SCHOOL TO WHICH HE PLANS TO TRANSFER FOR HIS PROFESSIONAL TRAINING. It cannot be emphasized too strongly that the student should exercise care to make certain that the specific requirements of a particular school will have been met.

Dentistry

Dr. Leonard Beuving, Adviser

Although the Dental Aptitude Test is required of all applicants to any dental school, the amount and kind of academic work needed for admission varies. Therefore, a student planning to do his predental work at Western Michigan University should refer to the catalogs from the schools of his choice and plan his work at Western to meet the requirements of those particular schools. Many of the current catalogs and the “Admission Requirements of American Dental Schools” are available in Waldo Library. Students should obtain a Dental School Advisory Kit from the preprofessional advisor in the Biology Department.

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<td>General Studies Reading 140</td>
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<td>Biology 100, 101 or 102</td>
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<td>Organic Chem. 360, 361</td>
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<td>Mathematics 100, 120 or 120, 121</td>
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</table>

Recommended Third Year

Major and minor requirements
General Studies
Electives
Engineering

Dr. Don W. Nantz, Adviser

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

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

**MICHIGAN STATE UNIVERSITY**

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<td>Physics 210, 211</td>
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<td>General Chemistry* 103, 109</td>
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<td>General Studies 202, 203</td>
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**MICHIGAN TECHNOLOGICAL UNIVERSITY**

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<td>General Studies Reading 140</td>
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<td>Math 222, 223</td>
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<td>Gen. Chemistry** 103, 109</td>
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<td>Economics 201, 202</td>
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<td>Drafting** 230, 231</td>
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<td>Statics 256</td>
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<tr>
<td>Gen. Studies*** 100 or 101</td>
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<td>Strength of Materials</td>
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<td></td>
<td></td>
<td>Dynamics 355</td>
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**OAKLAND UNIVERSITY**

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<td>English 110</td>
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<td>Physics 210, 211</td>
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<td>Mathematics 106, 306</td>
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<td>Statics 256</td>
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<td>Mathematics 122, 123</td>
<td>8</td>
<td>Dynamics 355</td>
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<td>General Chemistry 103, 109</td>
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<td>General Studies 202, 203</td>
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*Chemical, Metallurgical, and Materials Engineering and Meteorology, Oceanography, and Physics should take Chemistry 102, 120, 362, 363.

**Chemical Engineers should omit Drafting 230, 231 and Chem 103, 109 and take Chem 102, 120, 362, 363.

***Geological Engineers may omit General Studies and take the following Geology courses — 112, 231, 301, 335.
### UNIVERSITY OF MICHIGAN

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### WAYNE STATE UNIVERSITY

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<td>Mathematics 122, 123</td>
<td>8</td>
<td>Physics 211, 212</td>
<td>8</td>
</tr>
<tr>
<td>Gen. Chemistry 101 or 102</td>
<td>4</td>
<td>General Studies 222 or 224</td>
<td>4</td>
</tr>
<tr>
<td>Physics 210</td>
<td>4</td>
<td>Poli. Sci. 200, 302 or 304</td>
<td>3</td>
</tr>
<tr>
<td>General Studies 100 or 101</td>
<td>4</td>
<td>Mathematics 360, 506</td>
<td>7</td>
</tr>
<tr>
<td>Socio-Humanistic Elective</td>
<td>4</td>
<td>Thermodynamics 352</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>29</td>
<td><strong>TOTAL</strong></td>
<td>33</td>
</tr>
</tbody>
</table>

*Also applicable to University of Michigan Dearborn campus.

**Chemical, Metallurgical, and Materials Engineering and Meteorology, Oceanography, and Physics should take Chemistry 102, 120.
Law

Dr. William Morrison, Advisor

No special college program is required or recommended by most law schools. In general, law schools do urge a solid, four-year program leading to the Bachelor of Arts Degree, or its equivalent. Even those few schools which consider applications for admission at the end of the third year of undergraduate study highly recommend that the four-year program be completed. Although it is relatively unimportant what the prospective law student uses for his major, it is most important that a high level of academic achievement be maintained. It is also important that the prospective lawyer's education be as broad as possible.

Although a student might choose to be in any of the University's curricula for his prelegal education, if he specifies prelaw his four-year program will be based upon either the general curriculum or the liberal arts curriculum as offered in the College of Arts and Sciences. If a student interested in law desires another curriculum, he should confer with his regularly assigned curriculum counselor.

Students interested in prelaw education should review the degree requirements as outlined under the general curriculum or liberal arts curriculum which may be found on the first few pages of the section in the University catalog devoted to the College of Arts and Sciences.

Librarianship

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

Medicine

Dr. Leonard Beuving, Advisor

Most medical schools expect students to finish four years of college work before entering. The Medical College Admission Test is required of all applicants to medical schools.

A student planning to do his premedical work at Western Michigan University should refer to the catalogs from the medical schools of his choice and should plan his college work to meet their requirements. Many of the current catalogs and the "Medical School Admission Requirements, U.S.A. and Canada" are available in Waldo Library. Students should obtain a Medical School Advisory Kit from the preprofessional advisor in the Biology Department.

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

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies Reading 140</td>
<td>2</td>
<td>Physics 110, 111</td>
<td>8</td>
</tr>
<tr>
<td>Biology 100, 101 or 102</td>
<td>6</td>
<td>General Studies</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 101 or 102, 120</td>
<td>8</td>
<td>Phys. Ed.</td>
<td>1-2</td>
</tr>
<tr>
<td>General Studies</td>
<td>4</td>
<td>Chemistry 360, 361</td>
<td>8</td>
</tr>
<tr>
<td>Phys. Ed.</td>
<td>1-2</td>
<td>Biology</td>
<td>3-6</td>
</tr>
<tr>
<td>Mathematics 120, 121 or 122, 123</td>
<td>8</td>
<td>TOTAL</td>
<td>28-32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29-30</td>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>
Major and Minor Requirements

Third Year
Major and minor requirements
General Studies
Electives

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

Major and Minor Requirements

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

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

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

3. Departmental requirements for a number of majors and minors are listed elsewhere in this catalog. Where requirements are not specified, students should consult the departmental advisors for approval of a major or minor program as soon as possible but not later than the junior year.

4. The candidate for a degree must complete a major and a minor. A candidate for the Elementary Provisional Certificate may elect instead, a major of at least 30 semester hours (group major of 36 semester hours) or two minors of 20 semester hours (group minors, 24 semester hours). In addition to the major or two minors, the Elementary Education minor is required.

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

6. Under certain conditions General Studies courses may be counted toward major and minor requirements. (See Departmental requirements.)

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

8. It is not permissible to use education as a major or minor in any undergraduate curriculum with the exception of the Elementary Education curriculum. In the Elementary Education curriculum it is a required minor in addition to a major or two minors. (See Elementary Education curriculum.)

9. The following courses are not to be counted as satisfying major and minor requirements:
   a. Required course in General Studies Reading
   b. Required professional courses in education
   c. Required courses in general physical education

10. A combination of foreign languages, or of English or American Literature with a foreign language, is not permissible. A major or minor must be in one language only.
11. Mathematics may not be combined with science (physics, geography, chemistry, or biology) for any major or minor sequence, but may be required to satisfy requirements of certain curricula.

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

**PROGRAMS REQUIRING MAJOR AND MINOR SLIPS**

*(In All Cases Check Catalog Requirements)*

<table>
<thead>
<tr>
<th>Program</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountancy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>African Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>American Studies</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>Anthropology</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Art</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Asian Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Automotive Engineering Technology</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Aviation Engineering Technology</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Biology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Black Americana Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Business Education</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Communication Arts and Sciences</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Comparative Cross/Cultural Studies</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Distributive Education</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Earth Science</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Economics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Engineering and Technology</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>(Curricular Offerings Only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity and Electronics</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>Electrical Engineering Technology</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>Drafting and Design</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>Industrial Engineering</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>Industrial Supervision</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>Mechanical Engineering Technology</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>Metallurgical Engineering Technology</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>English*</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Family Life</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>General Business</td>
<td>(None)</td>
<td>No</td>
</tr>
<tr>
<td>Business Law</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Finance</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>General Business</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Insurance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Public Administration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Geography</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Geology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Home Economics</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Dietetics</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Home Economics in Business</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Home Economics in Education</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Industrial Arts</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Major and minor slips are required for all students taking an English major or minor with creative writing emphasis.*

**Check with department head or administrative assistant.**

***Major and minor slips are required for all students who wish to transfer in credit to be counted toward a major or minor.*
<table>
<thead>
<tr>
<th>Language</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>German</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Latin</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Russian</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Spanish</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Latin American Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Librarianship</td>
<td>(None)</td>
<td>No</td>
</tr>
<tr>
<td>Linguistics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Management</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>General Marketing</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industrial Marketing</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Retailing</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Medical Technology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Medieval Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Military Science</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Music</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>Paper Science and Engineering</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Physical Education—Men</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Physical Education—Women</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Physics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Political Science</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Printing Management</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Psychology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Religion</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Science—Group</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Slavic Studies</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>Social Science: Group</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Social Work</td>
<td>(None)</td>
<td>No</td>
</tr>
<tr>
<td>Sociology**</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Special Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blind and Visually Impaired</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>Crippled and Home Bound</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>Emotionally Disturbed</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>Mentally Handicapped</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>Speech Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech Pathology and Audiology</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>Vocational Technical Education</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Certificates

TEACHER CERTIFICATION—PROVISIONAL

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

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

2. State Secondary Provisional
This certificate is valid for teaching all subjects in grades 7 and 8, and in subject matter fields in grades 9 through 12 in which the applicant has completed a major or minor. It is valid for approximately 6 years and may be renewed once for three years provided that the applicant presents 10 semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first certificate.

TEACHER CERTIFICATION—CONTINUING

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

The following procedures must be followed to qualify for the continuing certificate:

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

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

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

4. The candidate must secure the appropriate blanks from the Certification
Certificates

Officer, complete the blanks and return them to the University, accompanied by his provisional certificate and Teacher’s Oath.

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

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

THIRTY-HOUR CONTINUING CERTIFICATE

(available after July 1, 1971)

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

NOTE—ALL PREVIOUSLY ISSUED CERTIFICATES SHALL RETAIN THEIR ORIGINAL DESIGNATION AND VALIDITY. ALL PERMANENT CERTIFICATES SHALL CONTINUE AS PERMANENT CERTIFICATES.
Student Fees

Undergraduate and Graduate Student Fees

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

<table>
<thead>
<tr>
<th>Status</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident undergraduate</td>
<td>$18.00</td>
</tr>
<tr>
<td>Non-resident undergraduate</td>
<td>$38.00</td>
</tr>
<tr>
<td>Resident graduate</td>
<td>$24.00</td>
</tr>
<tr>
<td>Non-resident graduate</td>
<td>$58.00</td>
</tr>
</tbody>
</table>

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

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

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

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

APPLIED MUSIC FEE—A special departmental fee of $75.00 for 60 minutes, or $38.00 for 30 minutes of private instruction per week is charged for applied music each semester. Each credit hour of applied music normally requires 30 minutes of private instruction.

AUDITORS' FEES—Auditors (students who attend classes but do not desire credit) are governed by the same regulations as students desiring credit.

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

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

ROOM AND BOARD—Cost of room and board is $570 a student for each semester. The rate for room only in those residence halls which do not provide board, is $200 a student for each semester. A first payment of $50 to be applied toward room and board payment will be required with the signed contract before a housing assignment is made.

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

Address requests for housing information to the Director of Housing. It is the responsibility of each student to file his application for resident housing. This is not automatic upon acceptance by the University.
RESIDENCY:

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

1. The residence of a student who is a minor follows that of his parents or legal guardians, except that a minor student who comes to the institution from another state or country cannot be registered as a resident of this state on the basis of having a resident of this state as a guardian except on permission of the Board of Trustees.

2. A person who is at least 21 years of age at the time of registration in the institution and who has resided in this state six months next preceding the data of registration without being registered at a college or university during that period is deemed a resident of this state for the purpose of such registration.

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

4. No person is deemed to have gained or lost residence in this state while a student at any institution in this state, public or private, except by changes in status effected under paragraphs 1, 3 or 5.

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

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

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

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

SCHOLARSHIP REGULATIONS

UNIT OF CREDIT

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

GRADING SYSTEM

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

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

"I" INCOMPLETE

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

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

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

COMPREHENSIVE EXAMINATIONS

Each department shall have the authority with the approval of its dean, to establish a "comping out" procedure for credit for any course in that department. 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.

Students may also take the option of arranging for credit on a credit/no credit basis. The usual tuition rates must be paid by any student for any course for which he receives credit by this method.

CREDIT/NO CREDIT SYSTEM

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

1. The name of the program shall be Credit/No Credit.

2. "Credit" will be posted for each student who earns the grade of A, B, or C. "No Credit" will be posted for the grade of D or E. Faculty members will not be notified whether a student is taking a course for a grade or for Credit/No Credit.

3. A student may elect for Credit/No Credit any course from General Studies or General Physical Education as well as other courses not counting toward his major or specified in his curriculum as defined in the University Undergraduate Catalog.*

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

4. A student may change only during the drop/add period from Credit/No Credit to grade or from grade to Credit/No Credit.

5. All undergraduate students, regardless of classification or probationary status, will be allowed to enroll Credit/No Credit.

6. Credit/No Credit courses, while counting toward a degree, will not be used to determine the overall grade point average (GPA) of the individual student.

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

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

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.

*Directed Teaching, a required course, is taken on a credit/no credit basis.
HONOR POINTS

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

GRADE-POINT AVERAGE

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

DEAN’S LIST

To gain a place on the Dean’s List for a semester, a student must:
1. Have taken at least fourteen semester hours of work during the semester for letter grade.
2. Have a grade-point average of at least 3.50 for the semester.

SCHOLARSHIP STANDARDS

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

1. Good Standing
   A student is in good standing whenever his over-all grade point average is at least 2.0.

2. Warning
   Whenever the grade point average for any enrollment period is less than 2.0, but the over-all grade point average is 2.0 or above, the student will be warned.

3. Probation
   The student will be placed on probation whenever his over-all grade point average falls below 2.0.

4. Probation Removed
   Whenever the conditions of Good Standing are restored, Probation will be removed.

5. Continued Probation
   If the over-all grade point average increases, although still below 2.0, the student may be continued on Probation for one additional enrollment period.

6. Dismissal
   The student who fails to increase his over-all grade point average at the end of an enrollment period of Probation, or whose over-all grade point average fails to reach 2.0 at the end of one enrollment period of Continued Probation, will be asked to withdraw from the University. Exceptions may be granted, at the discretion of the Registrar, where the increase has been substantial but still falls fractionally short of the minimum 2.0 requirement.
Class Load

CLASS ATTENDANCE

Students are responsible directly to their instructors for class and laboratory attendance as well as for petitions for excuses for absences.

CLASS LOAD

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

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

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

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

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

CHANGING COURSES (DROP-ADD)

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

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

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

WITHDRAWAL FROM THE UNIVERSITY

Any student who wishes to withdraw completely from the University must initiate this action through the Office of Records.

CLASSIFICATION

Students at Western Michigan University are classified officially as follows:

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

**COURSE NUMBERING SYSTEM**

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

**Course Numbers**

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

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

**GRADUATION**

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

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

A student must have an overall grade point average of 2.00 or higher to be graduated in any curriculum. If a student goes on academic probation or is dismissed as a result of the work taken in his final semester, he will be required to remove the low scholarship status before being granted a degree or certificate.

FINAL DATE FOR COMPLETION OF WORK

All work taken either on or off the campus must be completed by graduation day. Transcripts of completed work earned off the campus will be received after the end of the semester only in cases where there are extenuating circumstances. Courses taken or completed after the summer session will not count toward bachelor's degrees or teaching certificates granted at the close of the summer session. Students who take or complete such courses will receive their degrees and certificates at the close of the fall semester.

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

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

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

HONORS

Honors are conferred upon graduating students who have displayed a high level of performance during their university career. Such honors are announced at a special convocation.

Recipients of honors receive their degrees:

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

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

1. Credits and honor points earned during a student's second to seventh semester, inclusive, only will be counted toward honors.
2. Credits and honor points earned in correspondence and extension classes will be considered toward honors.
3. No student will be eligible for honors who has not earned at least 160 honor points in this University during the interval mentioned in Rule 1.
TRANSCRIPTS

A student desiring a transcript of his record in this University should write to the Office of Academic Records giving dates of attendance and, if a graduate, the date of graduation. He should give all names under which he may have been enrolled. Each student is entitled to one transcript of his record without charge. Additional copies are one dollar each. No transcript will be released except upon written authorization of the student.

FOREIGN STUDENTS

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

IDENTIFICATION

Each student on campus is required to have an identification card which includes photo, name, social security number and validating label.

STUDENT ACADEMIC RIGHTS: POLICIES AND PROCEDURES

I. Introduction

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

In the Classroom

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

Protection Against Improper Academic Evaluation

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

Protection of Freedom of Expression

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

II. Policies and Procedures

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

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

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

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

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

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

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

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

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

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

C. Policies and Procedures Regarding Requirements

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

(2) The student shall not be held responsible for meeting curricular requirements that are not listed or not applicable under the catalog governing the work he is taking.

(3) Every department (shall) provide systematic procedures for students to express their views on matters of program and curriculum.
(4) University policy and implementation of such policy should not be determined and enforced according to the needs of computer programming or records. Special care should be taken to insure that no individual is treated unfairly because of computer problems.

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

CAREER PLANNING AND PLACEMENT

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

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

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

CONDUCT AND DISCIPLINE

Rules and regulations covering student conduct are developed by the Student Services Council composed of faculty and students. The policies, when approved, are published in The Code of Student Life. Rules and regulations appearing in this Code are developed under the philosophy reflected in this statement:

"The individual student of Western Michigan University, as a part of the University society, should be encouraged to help develop a responsible, intelligent community. He should be encouraged to maintain his own integrity through sound self-discipline. The University should adopt only such reasonable rules and regulations as are necessary for the orderly and harmonious, functioning of the whole community."

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

COUNSELING CENTER

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

**Individual counseling appointments**, providing students with an opportunity to discuss various concerns including vocational planning, academic counseling, educational goals and personal or emotional difficulties;

**Groups sessions and workshops**, designed to increase self-understanding, improve relationships with others, increase leadership skills and eliminate behaviors that are self-defeating.

**Occupational-Vocational Library**, which provides a wide variety of information concerning careers as well as a substantial number of catalogs and bulletins from other American colleges and universities;

**Training and Internship programs**.

Students using the counseling service are assured of complete confidentiality.

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

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**HEALTH SERVICE**

**POLICIES AND PROCEDURES:**

Western Michigan University Health Center provides facilities for Western Michigan University students needing medical, surgical or physical care. All undergraduate students are required to have on file with the Health Center a record of a physical examination performed by a physician of the student's choice. Registration is not considered complete until the health examination has been received. In order to assure uniformity of records, the University Health Center blank is sent to each student by the Admission's Office along with the individual's notification of acceptance as a student.

**WHO IS ELIGIBLE FOR CARE:**

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

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

**LOCATION:**

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

**HOURS:**

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

**EMERGENCY SERVICE:**

When the University is in session there is 24 hour emergency service with nurses on duty. This service is available at all times at the emergency entrance.
Housing Policies

TO SEE A PHYSICIAN—OUTPATIENT CLINIC:
Students are seen by appointment except for emergencies. Appointments can be made by calling 383-6005. If you cannot keep an appointment, call to cancel it. Your failure to cancel an appointment will compromise another student’s opportunity to see a physician.

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

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

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

GENERAL INFORMATION:
In cases of acute illness or serious accidents a student patient may be taken to the Health Center or the emergency room of a local hospital. If an emergency case is taken to the Health Center during non clinic hours, the nurse on duty may confer with the physician on call, refer the patient to an emergency room at a hospital or arrange for temporary care pending the physician’s examination later.

Students who require medical care and laboratory examinations, which cannot be performed at the Health Center, will be referred to a local hospital. When a student is transferred to a local hospital, the nearest relative or friend will be notified as early as possible.

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

STUDENT HEALTH INSURANCE:
To cover some of the medical expenses which may be incurred, it is strongly recommended a student carry a health and accident insurance policy. Most parents have such coverage; however, it is advisable to review the provisions of the policy regarding dependent’s age and college attendance. A group health and accident policy is offered to students through the University at a modest premium and may be applied for when a student is admitted to the University.

HOUSING POLICIES

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

Any student who is married or who will reach the age of 21 by the last day of winter semester (for the fall and winter semesters) or by the first day of fall semester (for spring and summer sessions) may live in housing of his own choosing.
Any student carrying eight (8) hours or less during the fall and winter semester or four (4) hours or less during the spring and summer sessions may live in housing of his own choosing.

FRESHMEN AND SOPHOMORES must live in a residence hall unless living at home with their parents except as indicated above.
The student may choose from many varieties of housing, depending upon personal preferences and University Housing Regulations.

RESIDENCE HALLS—Western Michigan University has 21 residence halls of various styles serving approximately 7,300 students. The University requires most freshmen and sophomores to reside in residence halls because of the unique educational benefits of this experience.

MARRIED HOUSING—The University maintains and operates 590 married student apartments on campus consisting of 341 one-bedroom and 249 two-bedroom units.

OFF-CAMPUS HOUSING—The Off-Campus Housing Office is located in Room 3510 of the Student Services Building. A professional staff provides a housing locator service to assist the approximately 15,000 students living off-campus.

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

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

All students must file their actual local address while attending the University (not preferred mailing address) at the time of identification card validation. All changes of address or corrections must be filed within three days at the Off-Campus Housing Office.

Violations of University regulations regarding housing policies will be referred to the Office of University Judiciaries. For further information regarding these regulations, please consult the Code of Student Life.

OMBUDESMAN

The primary contribution the University Ombudsman can make to Western Michigan University is the confirmation that the University seeks to resolve grievances and provide justice for all members of the University community. To achieve this goal at Western Michigan University, a University Ombudsman is to be appointed with the following prerogatives and responsibilities.

The Ombudsman is a presidential appointee chosen with the active participation of students, faculty and staff and confirmed by the Board of Trustees. Regardless of the present position of the proposed Ombudsman, it is imperative he be a competent, well-known and respected person on the campus and his role as Ombudsman be recognized by faculty, staff and students as one of importance. The appointment is for a two year term with the option of reappointment.

The Ombudsman's ability to function effectively comes primarily from his skill in working with others to resolve difficulties and from the fact he acts under the authority of the President of the University, to whom he reports. His role is to investigate and mediate grievances. He must be dedicated primarily to concerns of the individual as opposed to the power of the institution to impose its will. However, his position must be impartial rather than partisan. To be effective in dealing with students, faculty and staff, the integrity of the Ombudsman must be unquestionable.

The Ombudsman will establish simple and rapid procedures for hearing requests, complaints and grievances. He shall investigate such matters, and where he discovers there is a malfunction in the administrative process or an abuse of power, he shall assist the individual in accomplishing a quick and fair resolution of his
problem. Some problems he may be able to remedy himself, but when appropriate, he will refer the person to other University members and/or offices. His office will be easily accessible and adequately furnished and staffed. He is authorized to make thorough investigations and shall have direct and prompt access to all University offices and relevant records. He will be alert especially to the chief causes for student concerns, and make recommendations for the elimination of these causes consistent with the fundamental purpose of the University. He shall keep written confidential records consistent with University policy regarding records and make periodic reports on the work of his office.

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. It welcomes and facilitates the presence of many religious groups.

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 are available to interested students.

The Coordinator of Religious Activities and the campus ministry staff are 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 assures direction and equality in the University's relationships with more than 14 student religious organizations and the campus ministers of 12 different denominations presently represented on campus. The Office of Religious Activities is part of the University Student Services, responsible to the Dean of Students. The office is located in Kanley Memorial Chapel, an interfaith chapel, maintained by the University as a center for religious activities. In addition to Kanley Memorial Chapel, there are five student centers operated by specific denominations on or near campus.

STUDENT ACTIVITIES AND ORGANIZATIONS

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

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

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

Information concerning University policies relating to the activities of student groups may be obtained from the office of Student Activities.
The 200 separate organizations on Western's campus include such areas as:

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

TESTING SERVICES

The facilities of Testing Services are open to all students, faculty, alumni and their families. Testing Services can provide many guides for the student in his quest for self understanding. Virtually all services are free.

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

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

Testing Services is located in West Hillside Apartments.

SCHOLARSHIPS AND STUDENT FINANCIAL ASSISTANCE

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

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

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

Scholarship applications must be completed by March 1. For further information please contact the Director of Scholarships.

In determining financial assistance, Western utilizes the recommendations of the College Scholarship Service. An entering student who plans to apply for a scholarship, a National Defense Student loan, the College Work-Study Program, or the Educational Opportunity Grant program must submit a copy of the Parents Confidential Statement to the College Scholarship Service, designating Western Michigan University as one of the recipients. For further information on Student Financial Assistance and Scholarships, see page 56.

Information concerning fellowships may be obtained from the Graduate College.
SCHOLARSHIPS

STUDENT FINANCIAL ASSISTANCE

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

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

Employment opportunities, both on-campus and off-campus, are available to students at Western. The on-campus opportunities include regular University employment and Work-Study job opportunities. The Work-Study program and off-campus job placement are administered by the Office of Financial Aid. For regular on-campus University employment see page 73 under “Student Employment.”

FINANCIAL AID PROCEDURES

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

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

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

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

SCHOLARSHIPS

Distinguished University Scholarships

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

Available to undergraduate students, sophomore, junior or senior level. The scholarship stipend is up to $1,000 per academic year.

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

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

HONORS COLLEGE SCHOLARSHIPS—A limited scholarship fund to support special needs, projects or programs. Apply directly to the Honors College.

General University Scholarships

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

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

FRESHMAN RECOGNITION SCHOLARSHIP—A freshman scholarship designed to award high school seniors for excellent academic achievement during their four years of high school, demonstration of leadership ability, testing results, character and citizenship. A student may receive up to $100 regardless of financial need. A recognition in honor of these recipients will be a part of the scholarship award program. The number of scholars and the amount of the stipend will be determined by the Scholarship Committee.

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

Distinguished Sponsored Scholarships

ALPHA BETA EPSILON SCHOLARSHIPS—Each of the 18 chapters of the sorority gives one or more scholarships each year. A student who receives a scholarship must fill the requirements set by the chapter. Apply to the chairman of the sorority chapter in your community.

ALVIN M. BENTLY FOUNDATION SCHOLARSHIP AWARD FOR EXCELLENCE—The Alvin M. Bently Foundation grants three $750.00 Awards for Excellence to incoming freshmen who are graduates of Michigan high schools. The scholarships are awarded for one year but may be renewed three times upon recommendation of the University Scholarship Committee. Apply to the Scholarship Office.
THE CLIFFORD AND ELLA CHAPMAN SCHOLARSHIP FOUNDATION AWARD—These scholarships are provided from funds of the foundation established in 1964 by Clifford and Ella Chapman, long time friends of Western Michigan University. The number of scholarships and the amount of each will be determined by the University Scholarship Committee in consultation with the Trustee of the Foundation.

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

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

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

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

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

WOMEN'S ARMY CORPS—Extends the opportunity to all women students who have successfully completed their junior or first term senior year of college to participate in the College Junior and Student Officer Scholarship Programs. The College Junior Program is timed and planned to give an insight into the opportunities offered to college graduates as officers in the Women's Army Corps. For further information, contact Placement Office, Financial Aids Office or nearest Army Recruiting Station.

College of Applied Sciences

ENGINEERING TECHNOLOGY

AMERICAN FOUNDRYMEN'S SOCIETY SCHOLARSHIP—The Central Michigan, and Detroit (William D. Innes Memorial) Chapters of the American Foundrymen's Society offer four $250 scholarships per year to any Engineering or Technology student having a direct interest in the foundry industry. Apply directly to the Engineering and Technology Department.
SOCIETY OF MANUFACTURING ENGINEERS (Phillip J. Beatty Memorial)—The Society of Manufacturing Engineers offers scholarships of $150-250 to Engineering or Technology students, sophomore standing or above. Apply directly to Engineering and Technology Department.

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

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

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

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

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

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

FOOD DISTRIBUTION

NFBA FOUNDATION, INC. SCHOLARSHIP—This scholarship grant is offered to an undergraduate in the Food Distribution curriculum who is interested in making a career in food distribution. The amount of the scholarship is $750; it is offered for one year only. Apply to the Distributive Education Department.

INDUSTRIAL EDUCATION

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

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

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

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

MILITARY SCIENCE

MILITARY SCIENCE R.O.T.C. SCHOLARSHIPS—Four, three, two and one year scholarships are available to qualified students. Each scholarship provides for all tuition, textbooks and laboratory fees in addition to an allowance of $100 per month for the period that the scholarship is in effect. Four year scholarships are open on a competitive basis, to high school graduates who enter Army R.O.T.C. as freshmen. The other scholarships are open only to students enrolled in R.O.T.C. Applications for scholarships, which will begin the academic year following application, must be submitted between September 1 and January 15 of the current academic year. Students desiring application or other information should contact the Head of the Military Science Department.

OCCUPATIONAL THERAPY

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

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

SOCIAL AND REHABILITATION ADMINISTRATION GRANT—Annual traineeships, awarded on the basis of scholarship and financial need, are offered to juniors, seniors and graduate students in occupational therapy. Apply to the Department of Occupational Therapy.

Information concerning scholarships other than those administered by the Department of Occupational Therapy may be obtained from the departmental secretary.
Up to 70 scholarships ranging in size from $150 to $600 per semester are available to students majoring in the Paper Science & Engineering Curriculum. The average grant is about $400 per semester, renewable for eight semesters. The scholarship program is supported through the Paper Technology Foundation, Inc., The Louis Calder Foundation, individuals, and groups, as listed below.

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

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

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

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

Albany Felt Company
Alton Box Board Company
Allied Paper Company
American Can Company
American Cyanamid Company
Appleton Coated Paper Company
Appleton Wire Works Corporation
The Bauer Bros. Company
Beloit Corporation
Bergstrom Foundation
The Black-Clawson Company
Blandin Paper Company
Boise Cascade Scholarship
Brown Company
Buckman Laboratories, Inc.
Burgess Cellulose Company
Louis Calder Foundation
Olin W. Callighan Scholarship
Cameron Machine Company
Central Soya Company
Chemurgy Division
Clark and Vicario Corporation
Consolidated Civic Foundation, Inc.
Container Corporation of America
Bert Cooper
CPC International
Crown Zellerbach Foundation
Domtar Pulp & Paper Inc.
Dow Chemical Company
Draper Brothers Company
Theodore W. Dunn (in memoriam)
Eastman Kodak Company
Engelhard Minerals & Chemicals
Freeport Kaolin Company
French Paper Company
Georgia-Kaolin Company
Georgia-Pacific Corporation
P. H. Glatfelter Company
D.S. & R.H. Gottesman Foundation
Grain Processing Corporation
Hammermill Paper Company
Albert S. Harman Scholarship (in memoriam)
Hercules, Inc.
Hoerner-Waldorf Corporation
Hooker Chemical Corporation
J.M. Huber Corporation
Huyck Corporation
ITT Rayonier, Incorporated
Improved Machinery, Inc.
Industrial Nucleonics Corp.
International Paper Company Foundation
The Johnson Corporation
Kimberly-Clark Foundation, Inc.
The Lindsay Wire Weaving Company
Lockwood Trade Journal Co., Inc.
Chas. T. Main, Inc.
Mae Munter Callighan Named Foundation Scholarship
The Mead Corporation Foundation
Scholarships

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

PETROLEUM DISTRIBUTION

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

DETROIT OILMEN'S CLUB—A grant up to a maximum of $300 per year is available on a one year basis. Open to high school graduates and community college students from Wayne, Oakland, and Macomb counties with preference given to sons of oil families and oil company employees.

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

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

PRINTING MANAGEMENT

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

PRINTING HOUSE CRAFTSMEN—The Kalamazoo Valley Club of Printing House Craftsmen has established a four-year scholarship in Printing Management at Western Michigan University, for residents of the State of Michigan. The scholarship pays $215 for each full semester and is renewable throughout the four years required to complete the curriculum. A new scholarship is offered each year so that up to four such grants may be in effect at any one time. Apply to the Industrial Education Department.

TRANSPORTATION TECHNOLOGY

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

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

LUBRIZOL SCHOLARSHIP—An award of $500 for a student in Automotive Engineering Technology. To be eligible, a student must be a junior or senior in the Production and Testing curriculum option. Transfer students are eligible after one semester of full-time work. Apply directly to the Transportation Department.

College of Arts and Sciences

COMMUNICATION—Communication Scholarships are offered to undergraduates who are majors or minors in the Department of Communication Arts and Sciences. These scholarships are in amounts ranging from $200 to $700 per year depending upon the individual’s qualifications. The recipients of these scholarships must: (a) hold a 3.0 overall average, (b) be willing to assume positions of responsibility in assisting with research, working with co-curricular activities, and working on special projects, (c) be recommended by the Department of Communication Arts and Sciences. The scholarships are renewable by recommendation of this department. Contact the Department of Communication Arts and Sciences, Mr. Thomas Sill.

MEDICAL TECHNOLOGY

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

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

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

MUSIC

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

HARPER MAYBEE SCHOLARSHIPS—Senior awards are made by the Department of Music through the Harper Maybee Scholarship Fund and the Mae Arnold Thacker Scholarship Fund, to students in their final year of music study. The awards are made in the amount of $200 per semester to outstanding senior music majors, who carry a minimum overall grade-point-average of 3.0, and who demonstrate major evidence of accomplishment in their chosen field or music concentration.

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

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

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

ARDEN J. ELSASSER MEMORIAL SCHOLARSHIP—This scholarship has been established by the League of Women Voters of the Kalamazoo area in memory of Arden J. Elsasser who gave faithful service to this organization and contributed to the Kalamazoo community. The award, which is made annually, will normally be $150. This amount may be varied depending on the availability of funds. Application is open to women undergraduates or graduates majoring in political science at Western Michigan University. Applicants must have a minimum grade point average of 3.0 overall and in Political Science, and must have second semester junior standing by the end of the term in which the award is granted. See Chairman, Political Science Department for information and application.

SCIENCE

PAUL ROOD FELLOWSHIP—The generous gift of Dr. and Mrs. Paul Rood has made it possible to grant in the freshman year to outstanding men and women planning to major in physics amounts up to $300. These stipends may be continued for students maintaining a high scholastic record in physics, mathematics and related sciences. Application forms may be obtained from the Department of Physics, Western Michigan University.

SPEECH PATHOLOGY AND AUDIOLOGY

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

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

College of Business

GENERAL SCHOLARSHIPS OPEN TO ALL STUDENTS IN COLLEGE OF BUSINESS

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

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

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

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

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

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

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

ACCOUNTANCY

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

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

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

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

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

BUSINESS EDUCATION AND ADMINISTRATIVE SERVICES

CLARAGE FAN COMPANY SECRETARIAL SCHOLARSHIP—This scholarship in the amount of $150 per year is open to students in the Secretarial Internship program. Summer employment is also available for recipients while on the scholarship. Inquiries should be directed to Mr. T. W. Null, Department of Business Education and Administrative Services, College of Business.
NATIONAL SECRETARIES ASSOCIATION SCHOLARSHIP—Applicants must submit an essay stating “Why I am Preparing to be a Secretary (or Teacher).” Open to any student in the secretarial curriculum having an academic average of B and the recommendation of the faculty based on character, scholastic aptitude, endeavor and financial need. Contact Mr. T. W. Null, Coordinator, Department of Business Education and Administrative Services, College of Business, Western Michigan University.

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

GENERAL BUSINESS

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

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

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

MARKETING

GILMORE BROTHERS RETAILING SCHOLARSHIPS—Two scholarships each covering full tuition and fees for two semesters are annually available to retailing majors in the Marketing Department. These scholarships are granted on the basis of need, scholastic performance, good character, a pleasing personality, and an interest in retailing as a career. Contact the coordinator of the retailing program in the Marketing Department.

College of Education

PHYSICAL EDUCATION

M. J. GARY SCHOLARSHIP FUND—The M. J. Gary Scholarship Fund was begun in 1967 to assist academically qualified students-athletes attending Western Michigan University. The M. J. Gary Scholarship program is administered in accordance with the rules and regulations of the National Collegiate Athletic Association and the Mid-American Conference.
SPECIAL EDUCATION

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

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

GRANTS

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

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

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

LONG TERM LOANS

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

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

UNITED STUDENT AID FUND PROGRAM—Students unable to qualify for a National Defense Student Loan and unable to obtain a Michigan Higher Education Assistance Authority loan (or a nonresident of Michigan unable to obtain a federally guaranteed student loan in his own state) may apply to his local lending institution which participates in this program. The names of participating institutions can be obtained from United Student Aid Funds, Inc., 5259 North Tacoma Avenue, Indianapolis, Indiana 46220. The loan is not to exceed $1,500 per academic year for an undergraduate or graduate student.

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

SHORT TERM LOANS

There are 80 short-term loan funds providing emergency assistance for enrolled full-time undergraduate and graduate students to meet educational expenses. These have been established by University friends, alumni, faculty, and staff. Many of these funds are available for a maximum of 6 months at a simple interest rate of 5%. Some funds are restricted to students in certain curricula, of various academic ranks, from a given geographical location, etc. Application for these loans are made in person at the Office of Student Financial Aid.
SHORT TERM LOANS

A. A. U. W. GRADUATE SOCIAL WORK Fund
A. A. U. W. NURSERY EDUCATION Loan Fund
ALUMNI Short-Term Loan Fund
AMERICAN BUSINESS CLUB Loan Fund
A. ROBERT ANDERSON MEMORIAL Loan Fund
ASSOCIATED WOMEN STUDENTS Loan Fund
AUSCO Loan Fund
FANNIE BALLOU MEMORIAL Fund
AMELIA BISCOMB MEMORIAL Loan Fund
WILLIAM R. AND EMMA WALES BROWN Student Loan Fund
ERNEST BURNHAM RURAL Loan Fund
CHAPMAN Student Loan Fund
DOROTHY DELANO Loan Fund
DISTRIBUTIVE EDUCATION Loan Fund
MICHAEL FINLEY MEMORIAL Loan Fund
FOREIGN STUDENT AID Loan Fund
JAMES GARDNER MEMORIAL Loan Fund
LEROY H. HARVEY MEMORIAL Loan Fund
EUNICE E. HERALD HOME ECONOMICS Loan Fund
DELDEE M. HERMAN FORENSIC Loan Fund
JOHN C. HOEKJE Loan Fund
INTER-FRATERNITY COUNCIL Loan Fund
FREBURN W. JAMES Loan Fund
KALAMAZOO AREA CHAPTER MAEDC Loan Fund
KALAMAZOO LADIES' LIBRARY ASS'N. Loan Fund
KALAMAZOO MOTOR FREIGHT Loan Fund
KIWANIS EDUCATIONAL AID Fund
THE DR. RADFORD KUYKENDALL Loan Fund
ALICE LOUISE LEFEVRE MEMORIAL Fund
ELIZABETH E. LICHTY Loan Fund
MARVEL F. LIDDY Student Loan Fund
THE DAVID E. LING MEMORIAL Loan Fund
LARRY G. LOCHNER MEMORIAL Fund
RAYTH W. LOWER MEMORIAL Loan Fund
THE R. C. MAHON FOUNDATION Loan Fund
MILDRED MALONEY MEMORIAL Loan Fund
MATHEMATICS FACULTY MEMORIAL Loan Fund
WILLIAM McCracken Loan Fund IN CHEMISTRY
MEXICAN-AMERICAN Loan Fund
MICHIGAN BROADCASTING Loan Fund
FREDERICK W. MICHLICH MEMORIAL Loan Fund
FREDERICK W. MICHLICH MEMORIAL Fund for SPECIAL EDUCATION
OCCUPATIONAL THERAPY Fund
OMNIBUS Loan Fund
PANHELLENIC (DETROIT, GRAND RAPIDS) Loan Funds
PANHELLENIC WMU COUNCIL Loan Fund
TRUMAN A. PASCOE MEMORIAL Fund
RAY C. PELLETT MEMORIAL Loan Fund
PIMA, (MICHIGAN DIVISION) ROTATING Loan Fund
ARCHIE S. POTTER MEMORIAL Fund

DOUGLAS V. RATCLIFFE MEMORIAL Loan Fund
NELLIE N. REID MEMORIAL Loan Fund
SOPHIA REED—MARY MOORE HOME ECONOMICS Loan Fund
ROTARY Student Loan
KATHERINE SHUVER Loan Fund

SIGMA PHI OMEGA BOB HAYES MEMORIAL Fund
SIGMA TAU GAMMA MEMORIAL Loan Fund
J. TOWNER SMITH Loan Fund
SOUTHWESTERN STATE EMPLOYEES' CREDIT UNION Loan 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) ROTATING Loan Fund
THE UNIVERSITY DAMES OF WMU Loan Fund

DWIGHT B. WALDO MEMORIAL Fund
WALTER WEGERLY SCHOLARSHIP Loan Fund
JAMES A. WELCH FOUNDATION Loan Fund
WMU LANGUAGE DEPARTMENT Loan Fund
WMU PAPER TECHNOLOGY ALUMNI ASSOCIATION Loan Fund

WMU SPEECH Loan Fund
WMU SOUTHERN CALIFORNIA Loan Fund
W. DEAN WORDEN Loan Fund
CRYSTAL WORNER MEMORIAL Fund
EDUCATIONAL OPPORTUNITY GRANT PROGRAM

Under this program federal funds are made available to Western Michigan University to award grants to undergraduate students of exceptional financial need. Ordinarily only students whose family gross income is $6,000 or less may qualify. These grants range in amount from $200 to $1,000. The Office of Student Financial Aid will contact those students who according to the analysis of their Parents' Confidential Statement initially qualify for this grant.

THE COLLEGE WORK-STUDY PROGRAM

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

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

LAW ENFORCEMENT EDUCATION PROGRAM

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

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

Applications for the grant are obtainable from WMU's Office of Student Financial Aid.

MONTHLY EDUCATION PAYMENT PLANS

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

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

The Tuition Plan
Concord, New Hampshire 03301
STUDENT EMPLOYMENT

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

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

OFF-CAMPUS EMPLOYMENT

Students in good health and with reasonable ambition can carry an average academic load (12-16 credit hours) and work from ten to twenty hours per week. Men students may find work in the city of Kalamazoo in such places as restaurants, hotels and motels, service stations, police departments, factories and hospitals, in drug, clothing, department and appliance stores, and as custodians, chauffeurs, truck drivers, etc. Women students may find work in cafeterias, office and retail stores, and as waitresses and babysitters. Students interested in part-time off-campus work opportunities should apply at the Office of Student Financial Aid. They should not do so, however, prior to their arrival for classes.

ON-CAMPUS EMPLOYMENT

On the Campus, students are employed in cafeterias, offices, at switchboards, as staff assistants, custodians, waitresses, stenographers and machine operators. Students seeking work in Residence Halls and Food Service areas, Libraries, Maintenance, or various departmental student positions are encouraged to make direct application to the Dormitory Director, appropriate Departmental Supervisor, or Food Service Manager concerned.

AWARDS

Departmental

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**PAPER SCIENCE AND ENGINEERING**—Awards from $100 to $500 given to students above freshman level who demonstrate superior performance in the curriculum. These awards may be for one year only, and vary in amount and number. These awards are made possible by American Cyanamid Co., Junior Award—$500; Boxboard Research and Development Association, Senior Student Award—$250; Kalamazoo Valley Section Tappi, Senior Thesis Awards—$100, $60
Awards

and $40; Northwest Division of the Paper Industry Management Association Award—$300; Paper Industry Management Association, Scholarship Award—$200.

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

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

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

Organizational

ASSOCIATED WOMEN STUDENTS—A prize to the outstanding woman student.

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

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

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

TAU KAPPA EPSILON—A scholarship cup awarded annually by the Committee on Scholarship to the outstanding men's organization.
**ALUMNI**

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

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

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

**ATHLETICS**

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

**INTERCOLLEGIATE**—The University is represented by teams in football, baseball, basketball, indoor and outdoor track, cross country, tennis, wrestling, swimming, gymnastics, golf, ice hockey and soccer.

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

Western Michigan University is a member of the Central Collegiate Conference. Participation in this conference furnishes competition with a number of the stronger track teams in the middle west.

**INTRAMURAL**—An extensive intramural program provides opportunity for students to engage in competitive sports on campus as members of clubs, fraternities or independent teams. Sports offered include archery, badminton, basketball, billiards, bowling, cross country, field hockey, free throw shooting, golf, gymnastics, handball, paddleball, soccer, softball, swimming, table tennis, tennis, touch football, track, volleyball, wrestling. Any sport in which a sufficient number of students indicate an interest and for which facilities are available may be set up in the intramural schedule.

**AUDIO SERVICES**

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

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

SPEECH AND HEARING CLINIC

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

DRAMA

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

DIVISION OF CONTINUING EDUCATION

The Division offers off-campus educational opportunities to persons who desire to pursue their education on a part-time basis.

Serving primarily the sixteen counties of Southwestern Michigan, Western’s offerings provide a variety of services including extension classes and correspondence courses, conferences, short courses and seminars for teachers, business leaders and other interested adults. Course offerings in the sixteen counties are planned in conference with community leaders and departmental representatives from our campus. Credit courses are offered on both the undergraduate and graduate levels. The Division is emphasizing the development of degree programs for graduates at community colleges who are unable to study on campus.

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

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

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

Off-campus services are channeled through three Centers located in Benton Harbor, Grand Rapids and Muskegon. Individuals interested in further information should contact the Division Office in Walwood Union Building or the Center nearest them.

EDUCATIONAL RESOURCES CENTER

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

UNIVERSITY LIBRARIES

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

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

Special collections include:

1. The Ann Kercher Memorial Collection on Africa is an extensive collection of materials on Africa south of the Sahara. Started a decade ago, it has grown rapidly to become a noteworthy addition to the University holdings.
2. The South Asia Collection is another area of unusual strength. Together with the African collection it represents the University's strong commitment to area studies.
3. The Randall Frazier Memorial Collection, honoring a notable alumnus, has a wealth of material on the history and culture of Black America.
4. The Regional History Collection is a unique group of items on the thirteen southwest counties of Michigan. In addition to books, this collection contains many manuscripts of early residents of this area.
5. Another area of strength is Medieval Studies, involving history, religion, philosophy and culture of the medieval period.
6. The C. C. Adams Ecological Collection consists of the personal collection and papers of the pioneer American ecologist, Charles C. Adams.

The microfilm collection of over 200,000, contains such items as the Human Relations Area File, American Periodical Series, Early American Newspapers of the 18th and 19th centuries and books printed in Great Britain, 1475-1640.
The Business Library, located in North Hall, has a collection of some 23,000 books, supplemented by special microform collections, and currently subscribes to 500 periodicals and newspapers.

The Music Library is on the second floor of Maybee Music Hall. In addition to a book collection of some 10,000 volumes and 75 periodical subscriptions, this branch contains a collection of 6,000 phonograph records and extensive listening facilities.

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

The Educational Resources Center Library in Sangren Hall comprises some 67,000 volumes and receives 300 periodical titles. The Center is a cooperative venture between the University Libraries and the College of Education, combining the best of library and audiovisual facilities and practices into a single center for the improvement of instruction and learning.

The University Library is a member of the Center for Research Libraries in Chicago, a special collection of nearly three million items to which there is immediate access via teletype. Teletype facilities also permit us to communicate rapidly with other research libraries throughout the country and for expediting loan requests to and from other libraries. Any student or faculty member may obtain interlibrary loan services. Related to these services are the services available in the extension centers in Benton Harbor, Muskegon and Grand Rapids, each of which has a library to serve off-campus students. These libraries are part of the entire University libraries system.

MOTION PICTURE SERVICES

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

MOTOR VEHICLES

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

MULTIPLE AUDIO DISTRIBUTION

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

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

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

PUBLICATIONS

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

The positions of editor, business manager, departmental editors, circulation and advertising managers are paid positions. Staff jobs are open to all university students.

The Western Herald offices are located in the Student Services Building. The paper is printed in the University's print shop.

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

The positions of editor, associate editor, business manager and photographers are paid jobs. More than 20 staff posts are open to university students each fall. Offices are in the Student Services Building.

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

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

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

RADIO

WMUK is the FM voice of Western Michigan University broadcasting at 102.1 on the dial with 39,000 watts of stereo power.

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

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

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

WIDR is operated by the students from studios and offices located in the Student Services Building. It operates on a frequency of 750 AM.

R.O.T.C.

The U.S. Army Reserve Officer Training Corps (R.O.T.C.) Program at Western Michigan University offers the student an opportunity to secure a commission as a Second Lieutenant in the United States Army while studying for and obtaining a bachelor degree in the area of his choice.

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

The Military Science Department sponsors several extracurricular activities that students here at Western have found to be an interesting challenge. These include the University Rimfire Rifle Club, The R.O.T.C. Rifle Team, the Western Rangers (they specialize in small unit and counter guerrilla tactics) and the Scabbard and Blade Society which is a national honorary military society for those with superior academic records.

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

TELEVISION

In its role as one of the mass media services provided by the WMU Broadcasting Department, the facilities support over three dozen courses with televised instructional materials over a closed-circuit network of seven channels, reaching 150 classrooms as well as various non-academic areas. These television lessons are produced in a modern, four-camera television studio utilizing broadcast quality equipment and systems. Television materials may be preserved on videotape, using one of the six studio or eleven “portable” recording systems. Supporting the facility is a staff of media producers, engineers, graphic artists, cinematographer/photographer, and various other special-skills personnel.

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

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

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

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

EAST CAMPUS

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

PRINTING SERVICES—University print shop and mimeographing service.

NORTH HALL—College of Business and the Business Library.

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

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

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

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

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

WEST CAMPUS

ADMINISTRATION—Administrative offices.

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

BEHAVIORAL RESEARCH LABORATORY—Psychology Department.

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

DISTRIBUTIVE EDUCATION—Distributive Education Department.

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

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

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

INDUSTRIAL ENGINEERING AND TECHNOLOGY—Departments of Home Economics, Industrial Arts, Engineering and Technology, and Transportation Technology.

KANLEY MEMORIAL CHAPEL—This is the campus religious center. It was made possible through a gift from the estate of the late William Kanley, an alumnus, and was opened in 1951.
JAMES O. KNAUSS HALL—Instructional facility consisting of 4 lecture halls and exhibit space.

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

HARPER C. MAYBEE HALL—Music Department.

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

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

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

PAUL V. SANGREN HALL—College of Education; the Departments of Art, Political Science, and Sociology; the Educational Resources Center.

LAURA V. SHAW THEATRE—The University Players present productions in this 600-seat theatre.

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

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

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

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

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

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

OFF CAMPUS

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

KLEINSTUCK NATURE PRESERVE—Given in 1922 by Mrs. Caroline Hubbard Kleinstuck, this 50-acre tract provides instructional space for biological sciences near the campus and inside the city of Kalamazoo.
Athletic Facilities

ATHLETIC FACILITIES

GARY PHYSICAL EDUCATION CENTER

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

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

READ FIELDHOUSE

Provides indoor facilities for intercollegiate athletic programs of basketball, and track. It has a spectator seating capacity of 9,500. The hard surface main floor area is 160 feet by 212 feet. A 220 yard rubber-asphalt indoor track is provided.

WALDO STADIUM

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

HYAMES FIELD

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

KANLEY FIELD

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

INTRAMURAL FIELDS

Three multipurpose recreation fields are located in Goldsworth Valley adjacent to Goldsworth Apartments.
These fields are used by physical education classes and the Intramural-Recreational Sports Program.
TENNIS COURTS

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

BOWLING ALLEYS

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

OAKLAND GYMNASIUM

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

Samuel I. Clark, Director of Honors

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

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

The Honors College student, confident that “getting through school and making a living” are neither problems nor ultimate aims, can afford to indulge in imaginative explorations, creative research, and free critical inquiry. There is no need to be competitive with fellow students or aggressive toward society or natural environment. The Honors College student is for public service.

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

A minimum grade point average of “8” is required both to enter the Honors College and to continue in its programs. Upon admission to Western Michigan University students may be admitted to the Honors College in one of three ways: directly from high school into the Freshman General Education Honors Program; as a transfer student entering Western from another institution; or as a Sophomore or Junior after a year’s work at Western. Honors College members must, in their Senior year, write an Honors College paper (or produce a creative work of art) and be orally examined by their faculty. An Honors College graduate is so designated upon graduation.

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

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

The program seeks to present a challenging and engaging educational experience for many of the University’s most promising entering students. The program offers opportunity for small classes, provocative instructors, and considerable intellectual freedom. General Education Honors consists of approximately 40 semester hours of study, pursued mainly during the Freshman and Sophomore years. The following courses are generally required:
Suggested first year (Fall and Winter semesters)

- Humanities I and II .................................................. 8 credit hours
- Life Sciences I and II ................................................ 8 credit hours
- Civilization of the West I and II .................................. 8 credit hours

Suggested second year (Fall and Winter semesters)

- Physical Properties of Nature I and II ......................... 8 credit hours
- Social Science I and II .............................................. 8 credit hours
- Independent Study (if desired) ................................... 8 credit hours

In order to provide for individual differences in academic goals and interests, alternative courses can be substituted for these basic courses generally required.

DEPARTMENTAL HONORS PROGRAMS exist in the academic departments listed below. Students enter these departmental honors programs by direct application to the departments. A student need not be in the Honors College to be a member of a departmental honors program. In general, departmental honors programs are reserved for students of high promise and performance, who wish to pursue a special field of study with particular diligence. These programs usually require a minimum “B” average both to enter and to remain in them. They generally serve Junior and Senior students.

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

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

The Honors College Curriculum is designed for students who wish to avail themselves of the maximum advantages of the Honors College. The curriculum can be entered at the time a student is first admitted to the University or at a later date. The curriculum encompasses the entire college career of a student, provides maximum intellectual freedom and flexibility, leads to the B.A. degree and is an excellent preparation for graduate school. Students must be or become members or provisional members of the Honors College to be enrolled in the curriculum; however, not all members of the Honors College are enrolled in the Honors College Curriculum.

The Curriculum expects students to study a variety of subjects in order to enlarge their knowledge; they are expected to pursue one area of study with some concentration, and they are expected to do “B” work.

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

A senior paper and an oral examination are also required of students in the curriculum.

The formal expectations of the curriculum are as follows:

1. Adequate quality of performance (routinely established through a minimum “B” grade point average).

2. Minimal competency in the Humanities (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Humanities).

3. Minimal competency in the Social Sciences (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Social Science).

4. Minimal competency in the Natural Sciences involving:
   A. Competency in the Biological Sciences (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Life Sciences).
The Honors College

B. Competency in the Physical Sciences (routinely satisfied by the 8 hours, two semesters sequence in the Honors College titled Physical Properties of Nature).

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

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

7. Minimal competency in Mathematics (routinely satisfied by four years of high school mathematics or first year courses in college mathematics).

8. Minimal competency in Physical Education (routinely satisfied by two semester hours of physical education).

9. A departmental or interdepartmental major concentration.

10. A departmental or interdepartmental minor concentration.

11. An Honors College senior paper (or equivalent) properly approved and accepted.

12. An Honors College oral examination properly passed.

13. Adequate overall course work in the University (routinely satisfied by 122 hours of course work approved by the Honors College).

DESCRIPTION OF COURSES

GENERAL EDUCATION HONORS COURSES

Honors College 100 Civilization of the West I

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

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

An introduction to and a critical examination of the principles of such subdivisions of biology as ecology, genetics, growth and development, taxonomy, anatomy and physiology, how these principles evolved and their impact on man.

Honors College 107 Life Sciences II

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

A study of man's creative and imaginative life as this is revealed in philosophical, religious and esthetic works.
Honors College 121 Humanities II 4 hrs.
Continuation of Honors College 120, Humanities I. Prerequisite: Humanities I.

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

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

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

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

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

UPPER LEVEL HONORS COLLEGE COURSES

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

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

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

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

GEORGE E. KOHRMAN,
Dean

GORDON O. JOHNSON
Administrative Assistant

E. J. BRUNE,
Director of Cooperative Education

Departments:
Agriculture
Distributive Education
Engineering and Technology
Home Economics
Industrial Education
Military Science
Occupational Therapy
Paper Science and Engineering
Transportation Technology
OBJECTIVES OF THE COLLEGE OF APPLIED SCIENCES


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

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

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

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

These objectives are met through twenty-five undergraduate curriculums outlined later in this section of the catalog. In addition, five master's degree curriculums are provided by the various departments in the College. These programs and courses are described in the University Graduate Bulletin.

COOPERATIVE EDUCATION PROGRAM

Students enrolled in the engineering, engineering technology, and related degree curricula may elect a cooperative plan of education.

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

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

THE GENERAL CURRICULUM

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

Students electing this curriculum are required to complete a major, minor, the General Studies program (see General Studies, page 25 of this catalog), and two semester hours of physical education. Ordinarily, these requirements total 80-90 semester hours. The balance of the bachelor of science degree program, amounting to approximately 35 semester hours, may be elected from any department.
Departments within the College of Applied Sciences which offer majors in the General Curriculum are Agriculture, Distributive Education, Home Economics, and Industrial Education. Approval of the Department Chairman in these areas must be secured in order to enroll in this curriculum.

**COURSE DESCRIPTIONS**

**120 Technical Communication**

3 hrs. Fall, Winter, Spring

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

**300 Coordinated Industry**

3 hrs. Fall, Spring, Summer

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

**520 Principles of Vocational Education**

3 hrs. Fall, Summer

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

Bachelor of Science

Lee O. Baker, Head

Carla A. Stuewer

The Department of Agriculture recognizes the following responsibilities:

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

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

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

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

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

Agriculture

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
<th>Third Year</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>GS 140 General Studies Reading</td>
<td>2</td>
<td>GS 222 Arts &amp; Ideas or</td>
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<tr>
<td>AGR 110 Animal Industry</td>
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<td>GS 224 Non-Western Arts &amp; Ideas</td>
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<td>AGR 111 Animal Industry</td>
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<td>MATH 100 or 122 Mathematics</td>
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<td>GS 304 Intro. to Non-Western World</td>
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<tr>
<td>GS 107 Biological Science</td>
<td>4</td>
<td>ACTY 201 Accounting Concepts and Applications or</td>
<td></td>
</tr>
<tr>
<td>GS 108 Physical Science</td>
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<td>ACTY 210 Principles of Accounting</td>
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<tr>
<td>CAS 104 Business &amp; Prof.</td>
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<td>MGMT 200 Statistics or</td>
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<td>Speech</td>
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<tr>
<td>Physical Education</td>
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<td>BUS 340 Business Law</td>
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<td></td>
<td>29</td>
<td>AGR 322 Agriculture, Marketing, and Finance</td>
<td>4</td>
</tr>
</tbody>
</table>

*Minor requirements must be met.
COURSE DESCRIPTIONS

100 Agriculture Science 3 hrs.
A broad perspective of the field of agriculture and an overview of the entire agriculture society is presented so that students may obtain some idea of agriculture's place today in our economy.
It is a survey type of course with many different fields being explored. We will examine the historical development of agriculture, and consider the various problems pertaining to agricultural production and farm management. We will explore opportunities in the many agriculturally related fields.

110 Animal Industry 3 hrs.
The fundamental problems and essential general concepts of livestock production and marketing in the United States are studied. It is an introduction to types, breeds, selection, feeding and management of dairy cattle, beef cattle, and swine.

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

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

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

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

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

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

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

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

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

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

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

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

Bachelor of Science Degree

Raymond A. Dannenberg
William O. Haynes

Richard Nesich
Lawrence A. Williams

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

WORK-STUDY PROGRAMS

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

DISTRIBUTIVE TEACHER EDUCATION

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

SERVICES

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

The Department also assists schools and businesses in planning and conducting adult education programs, workshops, conferences and institutes.

DISTRIBUTIVE EDUCATION CURRICULUM

This four-year curriculum contains three program options and the student selects one of them.

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

A. General Studies
Requirements as described on page 25 of the catalog must be met.
### B. Curriculum Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AS 120</td>
<td>Technical Communication</td>
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<td>ACTY 210 and 211</td>
<td>Principles of Accounting</td>
<td>6</td>
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<tr>
<td>CAS 104</td>
<td>Business and Professional Speech</td>
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<td>PSY 150</td>
<td>Psychology I</td>
<td>3</td>
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<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
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<tr>
<td>ECON 201 and 202</td>
<td>Principles of Economics</td>
<td>6</td>
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<tr>
<td>D ED 202 and 302</td>
<td>Coordinated Distribution Practices</td>
<td>0-12</td>
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<tr>
<td>D ED 500</td>
<td>Seminar in Distributive Education</td>
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### C. Major Areas of Specialization

**Option 1.—Distributive Teacher Education**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>D ED 572</td>
<td>Teaching Techniques in Cooperative Education</td>
<td>2</td>
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<tr>
<td>D ED 573</td>
<td>Coordination Techniques in Cooperative Education</td>
<td>2</td>
</tr>
<tr>
<td>D ED 570</td>
<td>Organization and Operation of Distributive Education</td>
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<tr>
<td>D ED 130</td>
<td>Food Distribution Industry</td>
<td>3</td>
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<tr>
<td>D ED 120</td>
<td>Introduction to Petroleum Industry</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 375</td>
<td>Principles of Retailing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 270</td>
<td>Salesmanship</td>
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<td>MKTG 374</td>
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**Option 2.—Food Distribution 3**

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<tr>
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<tbody>
<tr>
<td>D ED 130</td>
<td>Food Distribution Industry</td>
<td>3</td>
</tr>
<tr>
<td>D ED 132</td>
<td>Food Distribution Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>D ED 231</td>
<td>Food Distribution Supervision</td>
<td>3</td>
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<tr>
<td>D ED 232</td>
<td>Food Distribution Operations</td>
<td>3</td>
</tr>
<tr>
<td>D ED 109</td>
<td>Industry Survey</td>
<td>2</td>
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**Option 3.—Petroleum Distribution**

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<tr>
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<td>Industry Survey</td>
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<tr>
<td>D ED 120</td>
<td>Introduction to Petroleum Industry</td>
<td>3</td>
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<tr>
<td>D ED 220</td>
<td>Properties and Application of Petroleum Products</td>
<td>3</td>
</tr>
<tr>
<td>D ED 230</td>
<td>Service Station Supervision</td>
<td>3</td>
</tr>
<tr>
<td>D ED 380</td>
<td>Handling of Petroleum Products</td>
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<tr>
<td>D ED 327</td>
<td>Petroleum Distribution Finance</td>
<td>3</td>
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<tr>
<td>D ED Electives</td>
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</table>

### D. Minor Sequence in General Business recommended

15-20 hrs.

### E. Physical Education

2 hrs.

### F. Curriculum Electives

0-7 hrs.

### G. Education Courses—Option 1. only

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>TEED 250</td>
<td>Human Development and Learning</td>
<td>4</td>
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<tr>
<td>TEED 300</td>
<td>Teaching and Learning</td>
<td>3</td>
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<tr>
<td>TEED 410</td>
<td>Seminar in Education</td>
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<tr>
<td>TEED 470</td>
<td>Directed Teaching</td>
<td>9</td>
</tr>
<tr>
<td>AS 520</td>
<td>Principles of Vocational Education</td>
<td>3</td>
</tr>
</tbody>
</table>

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

A major can be earned only by being enrolled in the four-year curriculum offered by the department.

A minor may be secured upon the approval of the departmental adviser.
The two-year certificate programs are: (1) Food Distribution which emphasizes the merchandising, operating and supervising functions of the retail food outlet. (2) Petroleum prepares young people in the distribution methods and techniques used by the petroleum industry. Both of them are work-study programs.

**FOOD DISTRIBUTION**

A. Minimum hours required for this curriculum ........................................... 62 hrs.

B. Course Requirements

1. General Studies ................................................................. 10 hrs.
   GS 140 General Studies ........................................................ 2
   GS 100 Early Western Civilization ........................................... 4
   GS 200 Man and Society ....................................................... 4

2. Communications Arts and Sciences, Language, Literature
   Philosophy and Religion ...................................................... 6 hrs.
   CAS 104 Business and Professional Speech .............................. 3
   AS 120 Technical Communication ......................................... 3

   PSY 150 Psychology I .......................................................... 3

4. Social Science ........................................................................ 6 hrs.
   ECON 201 and 202 Principles of Economics ............................... 6

5. Applied Sciences—Food Distribution ....................................... 22 hrs.
   D ED 130 Food Distribution Industry ...................................... 3
   D ED 132 Food Distribution Merchandising .............................. 3
   D ED 231 Food Distribution Supervision .................................. 3
   D ED 232 Food Distribution Operations .................................. 3
   D ED 109 Industry Survey ...................................................... 2
   H Ec 116 Super Market Foods ............................................... 2
   D ED 202 Coordinated Distribution Practices ......................... 6

   ACTY 210 Principles of Accounting ....................................... 3

7. Physical Education ................................................................. 2 hrs.

8. Electives ................................................................................ 10 hrs.

**PETROLEUM DISTRIBUTION**

A. Minimum hours required for this curriculum ................................. 62 hrs.

B. Course Requirements

1. General Studies
   GS 140 General Studies Reading ............................................ 2
   GS 100 Early Western Civilization ......................................... 4
   GS 108 Physical Science ...................................................... 4
   GS 202 Man and Society ...................................................... 4
   GS 222 Arts and Ideas ......................................................... 4

2. Communication Arts and Sciences, Language, Literature,
   Philosophy and Religion ...................................................... 6 hrs.
   CAS 104 Business and Professional Speech ............................ 3
   AS 120 Technical Communication ....................................... 3
College of Applied Science

   PSY 150 Psychology I ................................................................. 3

4. Social Science ......................................................................................... 6 hrs.
   ECON 201 and 202 Principles of Economics .......................................... 6

   D ED 120 Introduction to Petroleum Industry .................................. 3
   D ED 220 Properties and Application of Petroleum Products .......... 3
   D ED 230 Service Station Supervision ............................................. 4
   D ED 109 Industry Survey ............................................................. 2
   D ED 202 Coordinated Distribution Practices .................................. 6

   ACTY 210 Principles of Accounting .................................................. 3

7. Physical Education .................................................................................... 2 hrs.

8. Electives ................................................................................................... 6 hrs.

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

COURSE DESCRIPTIONS

109 Industry Survey ......................................................... 2 hrs.
   Inspection trips are made to representative businesses and industrial establish-
   ments to observe such functions as production, transportation, storage, research
   and marketing. Company representatives will lecture to the class on the phases
   listed. Written reports are to be made of the visits, and a fee of $25.00 for
   transportation is required from each student.

202 Coordinated Distribution Practices .............................................. 3 hrs.
   The student will be employed as a trainee in a work situation for an entire term
   under the supervision of the University and the participating company. Written
   reports will be required and a performance appraisal of the trainee will be made
   by the employer. Students may elect two units for a total of six semester hours.
   Freshman-Sophomore level.

302 Coordinated Distribution Practices .............................................. 3 hrs.
   This is an advanced course in supervised work experience under the supervision
   of the University and the participating company. Written reports will be required
   and a performance appraisal of the trainee will be made by the employer. Students
   may elect two units for a total of six semester hours. Junior-Senior level.

500 Seminar in Distributive Education .............................................. 2-4 hrs.
   An intensive study of problems related to distribution and education for distri-
   bution. This seminar is especially recommended for seniors and graduates in the
   Distributive Education Department.

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

FOOD

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

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

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

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

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

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

PETROLEUM

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

220 Properties and Application of Petroleum Products
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.
320 Service Station Supervision 3 hrs.
The responsibilities and activities of the petroleum company salesman and super-
vision as they relate to retail establishment are dealt with. Such items as mer-
chandising policies, advertising, inventory, product knowledge, plant layout, location,
equipment and selling to the consumer are covered.

327 Petroleum Distribution Finance 3 hrs.
A course dealing with service station dealer finance counseling. An understand-
ing of general finance of petroleum businesses, including retail outlets, jobber oper-
ations and major oil companies. Such topics as service station financing by major
petroleum companies and jobbers, securing capital, interest, insurance and analysis
of profit and loss statements are discussed. It also deals with principles of credit,
and collections as it relates to the petroleum industry.

328 Petroleum Jobber Operations 3 hrs.
An overall study of petroleum jobber operations with special emphasis on heating
oil, including degree day forecasting, delivery dispatching, credit and collection
control, sales and cost analyses, employee productivity and operating expense
accounting with the use of electronic data processing.

380 Distribution and Handling of Petroleum Products 3 hrs.
A course covering the wholesale and retail distribution channels used by major and
independent companies. The transportation and handling of petroleum products
from the oil field to the retail outlet. The analysis of a sales territory and the selec-
tion of a service station site.

DISTRIBUTIVE-COOPERATIVE
TEACHER EDUCATION

570 Organization and Operation of Distributive Education 2 hrs.
Deals with the organization and operation of distributive education in relation to
the total educational program. It is concerned with preparatory, cooperative, and
adult programs. Consideration is given to advisory committees and local, state
and federal relationships.

571 Job Supervisory Training 2 hrs.
This course provides for mastery of the techniques necessary for curriculum
development in the high school, community college, area vocational center and
adult education programs. Recommended for cooperative teacher coordinators.

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

573 Coordination Techniques in Cooperative Education 2 hrs.
This is a study of duties and responsibilities of the coordinator. The organization
and establishment of training programs, supervision of trainees on the job, develop-
ment of individual training programs, establishing working relationships between
the school, business, and home; and participation in extra-curricular activities in
the community. Especially adapted to prospective coordinators.
The various degree curricula offered by the Department of Engineering and Technology are designed primarily to prepare product and manufacturing oriented engineering personnel for industry. The programs provide extensive laboratory experience requiring the application of engineering principles to such industrial functions as product design and improvement, production planning and control, manufacturing engineering, and plant engineering.

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

A minor may be secured upon approval of the department's chief counselor and by completing fifteen to twenty semester hours of work. No minor will be given in Industrial Supervision or Industrial Engineering. Minors for students enrolled in curricula in the Engineering and Technology Department may only be obtained from departmental offerings in departments other than the Engineering and Technology, and Transportation Technology Departments.

The following curricula are offered:

FOUR YEAR CURRICULA—B.S. DEGREE
1. Industrial Engineering
2. Industrial Supervision
3. Manufacturing
4. Electrical Engineering Technology
5. Engineering Graphics Technology
6. Mechanical Engineering Technology
7. Metallurgical Engineering Technology

TWO YEAR CURRICULUM—CERTIFICATE
Drafting and Design Technology

*Effective July 1, 1972, this Department will be divided into the three following departments: Engineering and Technology; Electrical Engineering Technology; Mechanical Engineering Technology.
COMMUNITY COLLEGE—TRANSFER PROGRAM

TWO-PLUS-TWO PROGRAM. A new program leading to the Bachelor of Science degree based on the Associate Degree in Applied Science makes available to every qualified student who has received this degree an opportunity to graduate in the equivalent of two additional academic years. The new program in Manufacturing has been designed to accept individuals at their individual level of development and design a specific program which relates to both their background and their future career goals. This program is flexible. It can be designed to include any area of interest of the student related to job opportunities in the manufacturing industries. Individual counseling and planning can begin, either prior to the students receiving his associate degree or immediately upon enrollment and subsequent visitation to the campus, by contacting the counseling office of the Department of Engineering and Technology.

This is the first program at Western Michigan University specifically designed to build a meaningful educational program upon the acceptance of the professional development of the student through recognition of his past achievements rather than examining course equivalents. Detailed information concerning the program may be obtained by writing the Counseling Office of the Department of Engineering and Technology.

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 he has previously taken. A student is then required to complete a normal curriculum as outlined. Of the minimum of thirty credits required of all candidates for bachelor's degree (page 24) in Engineering and Technology 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.

FOUNDRY PROGRAM

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

COOPERATIVE EDUCATION PROGRAM

Students enrolled in the Engineering, Engineering Technology and related degree curricula may elect a cooperative plan of education.

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

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

A student oriented counseling service for each academic program and related professional careers associated with the Engineering and Engineering Technology areas 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 career goals. In addition, proper planning will maximize their benefits from the courses taken and minimize their problems with respect to registration.

Course offerings by semester for the years 1972-76 may be obtained in the department counseling office, Room 2038, I & ET Building.
The Industrial Engineering curriculum provides the essential foundation, experience and understanding in science, mathematics, humanities and engineering so graduates may find gainful employment in industries or utilities. The Industrial Engineer is particularly responsible for the improvement and development of management and production techniques. Special emphasis is placed on studies dealing with production planning and control, plant organization, technical design related to manufacturing processes, inspection, plant safety and employee and employer relations.

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

A bachelor of science degree requires 128 semester credit hours.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS 100 or 101 Western Civilization</td>
<td>4</td>
<td>AS 120 Technical Communications*</td>
<td>3</td>
</tr>
<tr>
<td>MATH 122 Mathematics I</td>
<td>4</td>
<td>CHEM 103 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 101 Introduction to Industry</td>
<td>3</td>
<td>GS 140 General Studies Reading</td>
<td>2</td>
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<tr>
<td>ENGT 230 Engineering Drafting</td>
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<td>MATH 123 Mathematics II</td>
<td>4</td>
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<td>ENGT Mfrg. Processes Elective</td>
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<th>Semester 4</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>ECON 201 Principles of Economics**</td>
<td>3</td>
<td>ECON 202 Principles of Economics**</td>
<td>3</td>
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<tr>
<td>MATH 222 Mathematics II</td>
<td>4</td>
<td>MATH 223 Mathematics IV</td>
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<tr>
<td>PHYS 210 Mechanics and Heat</td>
<td>4</td>
<td>PHYS 211 Electricity and Light</td>
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<tr>
<td>ENGT 256 Statics</td>
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<td>ENGT 353 Strength of Materials</td>
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<td>PEM Physical Education</td>
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</tbody>
</table>

*B ED 142, ENG 105 a or b, or GS 116 may be substituted.
**Satisfies GS Social Studies requirement.
Industrial Engineering

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<tr>
<th>Semester 5</th>
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<th>Semester 6</th>
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<tbody>
<tr>
<td>GS Humanities</td>
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<td>GS 304 Non-Western World</td>
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<tr>
<td>MATH 360 Statistical Methods</td>
<td>4</td>
<td>ENGT 141 Fund. of Electronics and Machines</td>
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<td>ENGT 140 Fund. of Circuits and Electronics</td>
<td>3</td>
<td>ENGT 307 Engineering Economy</td>
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<td>ENGT 305 Work Analysis</td>
<td>3</td>
<td>ENGT 308 Quality Control</td>
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<tr>
<td>ENGT 355 Dynamics</td>
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<td>Technical Elective</td>
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<tr>
<th>Semester 7</th>
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<th>Semester 8</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>ENGT 252 Metallurgy</td>
<td>4</td>
<td>GS Jr.-Sr. Elective</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 404 Material handling &amp; Layout</td>
<td>4</td>
<td>ENGT 402 Industrial Supervision</td>
<td>3</td>
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<tr>
<td>Engt 407 Operations Control in Mfrg.</td>
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<td>Technical Electives</td>
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<td>Technical Electives</td>
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</tbody>
</table>

All courses in either Group A or Group B technical electives must be completed to satisfy the requirements for a B.S. degree. The students must select either group A or B and inform their counselor in writing of their selection prior to registering for the equivalent of the sixth semester in the program.

### Group A—Technical Electives—Systems

<table>
<thead>
<tr>
<th>Semester to Be Taken</th>
<th>Course</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>ACTY 201 Accounting Concepts and Applications</td>
<td>3</td>
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<tr>
<td>6</td>
<td>ENGT 357 Thermo—Fluid Dynamics</td>
<td>4</td>
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<tr>
<td>8</td>
<td>ENGT 403 Industrial Labor Relations</td>
<td>3</td>
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<tr>
<td>7</td>
<td>ENGT 405 Work Design</td>
<td>3</td>
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<tr>
<td>8</td>
<td>ENGT 409 Industrial Engineering Experimental Design</td>
<td>3</td>
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<tr>
<td>8</td>
<td>ENGT 439 Report Preparation</td>
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</tbody>
</table>

### Group B—Technical Electives—Design

<table>
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<tr>
<th>Semester</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>7</td>
<td>ENGT 352 Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>ENGT 356 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>ENGT 358 Mechanism Analysis</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>ENGT 360 Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>ENGT 452 Mechanical Engineering Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>ENGT 453 Product Engineering</td>
<td>3</td>
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</tbody>
</table>

Engineering and Technology Academic Counselors (located in Room 2038, Industrial and Engineering Technology Building) are available for recommending and approving electives appropriate to the student’s educational objectives.
Industrial Supervision
Bachelor of Science Degree

The Industrial Supervision curriculum provides: the essential academic background in humanities, social sciences and communications; the necessary technical subjects; and an involvement with the basic human relation skills as advocated by industry when dealing with people. The Industrial Supervisor may direct production employees working on line operations or may direct staff personnel specifically assigned to assist the line in meeting its objectives.

A selection of one of the two groups of courses provides the student an opportunity to concentrate in either the supervision of line/manufacturing operations or the supervision of staff/management functions directly allied to the line.

A bachelor of science degree requires 128 semester credit hours.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
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<tbody>
<tr>
<td>AAS 120 Technical Communications*</td>
<td>3</td>
<td>CAS 104 Bus. and Professional Speech</td>
<td>3</td>
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<tr>
<td>MATH 106 Introduction to Computers</td>
<td>1</td>
<td>CHEM 103 General Chemistry</td>
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<tr>
<td>MATH 100 Algebra or</td>
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<td>GS 140 General Studies Reading</td>
<td>2</td>
</tr>
<tr>
<td>MATH 122 Mathematics I</td>
<td>4</td>
<td>MATH 200 Analysis and Applications or</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 101 Introduction to Industry</td>
<td>3</td>
<td>MATH 123 Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 132 Technical Drafting</td>
<td>2</td>
<td>ENGT 151 Machining Metals</td>
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<td>ECON 201 Principles of Economics**</td>
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<tr>
<td>MATH 260 Elementary Statistics</td>
<td>4</td>
<td>GS 100 or 101 Western Civilization</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110 General Physics</td>
<td>4</td>
<td>PHYS 111 General Physics</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 252 Metallurgy</td>
<td>4</td>
<td>ENGT 152 Industrial Processes or</td>
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<td>ENGT 254 Metal Casting I</td>
<td>3</td>
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<td>PEM Physical Education</td>
<td>1</td>
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<tbody>
<tr>
<td>ACTY 210 Principles of Accounting</td>
<td>3</td>
<td>GS 304 Non-Western World</td>
<td>4</td>
</tr>
<tr>
<td>BUS 340 Legal Environment</td>
<td>3</td>
<td>ENGT 308 Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>GS Humanities Requirement</td>
<td>4</td>
<td>ENGT 401 Industrial Safety</td>
<td>2</td>
</tr>
<tr>
<td>ENGT 305 Work Analysis</td>
<td>3</td>
<td>ENGT 405 Work Design</td>
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</tr>
<tr>
<td>ENGT 306 Production Control</td>
<td>3</td>
<td>Technical Elective</td>
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<td></td>
<td>16</td>
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<td>15</td>
</tr>
</tbody>
</table>

*ED 142, ENG 105 a or b, or GS 116 may be substituted.
**Satisfies GS social studies requirement.
Semester 7
ENGT 402 Industrial Supervision 3
ENGT 404 Material Handling and Layout 4
ENGT 406 Conference Leadership 3
Technical Elective 6

Semester 8
Junior-Senior Elective 4
PSY 540 Industrial Psychology 3
ENGT 403 Industrial Labor Relations 3
Technical Elective 5

Spring or Summer
ENGT 400 Modern Industrial Practices 6 hrs.

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.

**Group A—Technical Electives (Line Supervision/Manufacturing)**

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>ENGT 307 Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 250 Production Tooling</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 350 Pressworking of Metals</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 251 Industrial Welding</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 370 Metal Casting II</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 140 Fundamentals of Circuits and Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 141 Fundamentals of Electronics and Machines</td>
<td>3</td>
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</tbody>
</table>

Students will select 12 S.H. from the above listing.

**Group B—Technical Electives (Staff Supervision/Management)**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>ENGT 307 Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 505 Methods Synthesis</td>
<td>3</td>
</tr>
<tr>
<td>ENGT 508 Advanced Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>ACTG 211 Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 300 Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 270 Salesmanship</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370 Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

Students will select 12 S.H. from the above listing.

Engineering and Technology Academic Counselors (located in Room 2038, Industrial and Engineering Technology Building) are available for recommending and approving electives appropriate to the student's educational objectives.
MANUFACTURING

Bachelor of Science Degree

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

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

ACADEMIC PROGRAM

MINIMAL LEVEL OF ACHIEVEMENT

Evidence of minimal level of achievement in the areas of Graphics, Materials and their Processing, Science, Electrical Engineering Technology, Technical Analysis, Manufacturing Management and General Education must be presented to his counselor prior to his second enrollment. The counselor will recommend the area in which the student should enroll in ENGT 490, an independent study project which will be designed to show an overall minimal competence in the program areas.

GENERAL PROGRAM

In addition to the minimal demonstrable achievements, the student in conference with his counselor will elect studies in the following areas with approximately the credit hours set forth:

<table>
<thead>
<tr>
<th>Area</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Materials and their Processing</td>
<td>6</td>
</tr>
<tr>
<td>2. Electrical Engineering Technology</td>
<td>9</td>
</tr>
<tr>
<td>3. Technical Analysis</td>
<td>9</td>
</tr>
<tr>
<td>4. Manufacturing Management</td>
<td>9</td>
</tr>
<tr>
<td>5. General</td>
<td>12</td>
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<tr>
<td>6. Technical Electives</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

Physical Education (students who have not had two semester hours of physical education in the associate degree program will be required to register in two hours of physical education at Western Michigan University)

The above program of sixty academic credit hours in conjunction with the sixty credit hours resulting from an associate degree will yield a total of 120 university semester credit hours required for a normal Bachelor of Science degree. Credits in Physical Education or other supportive courses will be considered as being in addition to the 120 semester hours required.
The Electrical Engineering Technology curriculum is an applied engineering program in the following fields: electrical power, instrumentation, communication electronics, industrial electronics and computer design. Electives may be used to broaden the program to include an area such as supervision, design and development, manufacturing or industrial sales and distribution.

A bachelor of science degree requires 128 semester credit hours.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS 120 Technical Communications</td>
<td>3</td>
<td>CHEM 101, 102 or 103 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 122 Mathematics I</td>
<td>4</td>
<td>GS 140 General Studies Reading</td>
<td>2</td>
</tr>
<tr>
<td>ENGT 150 Industrial Calculations</td>
<td>1</td>
<td>MATH 106 Introduction to Computers</td>
<td>1</td>
</tr>
<tr>
<td>ENGT 243 Basic Logic Circuits</td>
<td>3</td>
<td>MATH 123 Mathematics II</td>
<td>4</td>
</tr>
<tr>
<td>ENGT Mfrg. Processes Elective</td>
<td>3</td>
<td>ENGT 240 Electrical Circuits</td>
<td>4</td>
</tr>
<tr>
<td>PEM Physical Education</td>
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<td>PEM Physical Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>Semester 3</th>
<th>S.H.</th>
<th>Semester 4</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS 100 or 101 Western Civilization</td>
<td>4</td>
<td>GS Social Studies Requirement</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 210 Mechanics and Heat</td>
<td>4</td>
<td>PHYS 211 Electricity and Light</td>
<td>4</td>
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<tr>
<td>ENGT 230 Engineering Drafting</td>
<td>3</td>
<td>ENGT 242 Electromagnetic Devices</td>
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<td>ENGT 241 Electronic Circuits</td>
<td>4</td>
<td>ENGT 252 Metallurgy</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
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<table>
<thead>
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<th>Semester 5</th>
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<th>Semester 6</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>GS Humanities</td>
<td>4</td>
<td>GS 304 Non-Western World</td>
<td>4</td>
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<tr>
<td>ENGT 256 Statics</td>
<td>3</td>
<td>ENGT 342 AC Machines</td>
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<tr>
<td>ENGT 340 Electronic Devices</td>
<td>4</td>
<td>ENGT 345 Transmission Lines and Fields</td>
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<td>ENGT 344 Electrical Circuit Analysis</td>
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<td>ENGT 355 Dynamics</td>
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<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

1 B ED 142, ENG 105 a or b, or GS 116 may be substituted.
2 Counselors may approve PHYS 110 and 111 as substitutes.
3 ECON 201 and 202 may be substituted.
<table>
<thead>
<tr>
<th>Semester 7</th>
<th>S.H.</th>
<th>Semester 8</th>
<th>S.H.</th>
</tr>
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<tbody>
<tr>
<td>GS</td>
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<td>ENGT</td>
<td></td>
</tr>
<tr>
<td>ENGT 341 Industrial Electronics</td>
<td>4</td>
<td>ENGT 440 Measurement and Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 353 Strength of Materials</td>
<td>3</td>
<td>ENGT 441 Communication Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 443 Digital Circuits and Systems</td>
<td>4</td>
<td>ENGT 442 Servomechanisms</td>
<td>4</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>3</td>
<td>Approved Electives</td>
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<tr>
<td></td>
<td>18</td>
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<td>15</td>
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</tbody>
</table>

Engineering and Technology Academic Counselors (located in Room 2038, Industrial and Engineering Technology Building) are available for recommending and approving electives appropriate to your educational objectives.

*ENGT 541, 542, 545 or four hours of upper-class ENGT courses may be substituted for any one of these courses with the approval of the departmental counselor.*
The Engineering Graphics Technology curriculum is a program in the field of symbolic communication related to the product and tooling activities of industry including the areas of communication methods, graphics science, and industrial processes and materials. The program prepares students to assume leadership roles in design and drafting activities.

A bachelor of science degree requires 128 semester hours.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 104 Bus. and Prof. Speech</td>
<td>3</td>
<td>AAS 120 Technical Communications*</td>
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<tr>
<td>GS 140 General Studies Reading</td>
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<td>BUS 182 Beginning Typewriting</td>
<td>2</td>
</tr>
<tr>
<td>MATH 100 Algebra or</td>
<td>4</td>
<td>CHEM 103 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 122 Mathematics I</td>
<td>3</td>
<td>MATH 200 Analysis &amp; Applications or</td>
<td></td>
</tr>
<tr>
<td>ENGT 151 Machining Metals</td>
<td>1</td>
<td>MATH 123 Mathematics II</td>
<td>4</td>
</tr>
<tr>
<td>ENGT 230 Engineering Drafting</td>
<td>3</td>
<td>ENGT 231 Descriptive Geometry</td>
<td>3</td>
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<tr>
<td>PEM Physical Education</td>
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<td>PEM Physical Education</td>
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<td></td>
<td>16</td>
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<table>
<thead>
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<th>Semester 3</th>
<th>S.H.</th>
<th>Semester 4</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS 100 or 101 Western Civilization</td>
<td>4</td>
<td>MATH 306 Intro. to Computer Language</td>
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</tr>
<tr>
<td>MATH 106 Introduction to Computers</td>
<td>1</td>
<td>ENGT 141 Fund. of Electronics and Machines</td>
<td>3</td>
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<tr>
<td>PHYS 110 General Physics</td>
<td>4</td>
<td>ENGT 330 Machine Drafting</td>
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<tr>
<td>ENGT 140 Fund. of Circuits and Electronics</td>
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<td>ENGT 235 Graphical Solutions</td>
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<tr>
<td>ENGT 152 Manufacturing Processes</td>
<td>3</td>
<td>ENGT 254 Metal Casting I</td>
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<table>
<thead>
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<th>Semester 5</th>
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<th>Semester 6</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS Social Studies Requirement</td>
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<td>GS Humanities Requirement</td>
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<tr>
<td>ENGT 250 Production Tooling</td>
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<td>ENGT 335 Design of Prod. Tooling II</td>
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<td>ENGT 331 Production Drafting</td>
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<td>ENGT 359 Numerical Control of Prod.</td>
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<tr>
<td>ENGT 334 Design of Prod. Tooling I</td>
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<td>ENGT 406 Conference Leadership Approved Electives</td>
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<tr>
<td>ENGT 353 Strength of Materials</td>
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</tbody>
</table>

**Total Semester Hours:** 128
<table>
<thead>
<tr>
<th>Semester 7</th>
<th>S.H.</th>
<th>Semester 8</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>GS</td>
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<td>GS</td>
<td>4</td>
</tr>
<tr>
<td>304 Non-Western World</td>
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<td>Junior-Senior Elective</td>
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<tr>
<td>ENGT</td>
<td>3</td>
<td>ENGT</td>
<td>3</td>
</tr>
<tr>
<td>402 Industrial Supervision</td>
<td>3</td>
<td>453 Product Engineering</td>
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<td>ENGT</td>
<td>3</td>
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<tr>
<td>430 Industrial Design</td>
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<td>455 Computer Graphics</td>
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<td>ENGT</td>
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<td>ENGT</td>
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<td>439 Report Preparation Approved Electives</td>
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<td>552 Technical Illustration</td>
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</tr>
</tbody>
</table>

Approved Electives

Engineering and Technology Academic Counselors (located in Room 2038, Industrial and Engineering Technology Building) are available for recommending and approving electives appropriate to the student's educational objectives.

*B ED 142, ENG 105 a or b, or GS 116 may be substituted.
Mechanical Engineering Technology

Bachelor of Science Degree

The Mechanical Engineering Technology Curriculum is an applied engineering program in the following fields: Manufacturing, Product Development, Energy Conversion, and Construction. Electives may be used to broaden the program to include an area such as supervision/administration, industrial marketing, testing and development.

A Bachelor of Science Degree requires 128 semester credit hours.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>120</td>
<td>CHEM</td>
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<td>MATH</td>
<td>122</td>
<td>MATH</td>
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</tr>
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<td>ENGT</td>
<td>150</td>
<td>ENGT</td>
<td>231</td>
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<tr>
<td>ENGT</td>
<td>151</td>
<td>ENGT</td>
<td>252</td>
</tr>
<tr>
<td>PEM</td>
<td>230</td>
<td>PEM</td>
<td>1</td>
</tr>
<tr>
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</tr>
<tr>
<td>Semester 3</td>
<td>S.H.</td>
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</tr>
<tr>
<td>GS</td>
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<td>GS</td>
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</tr>
<tr>
<td>MATH</td>
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<td>PHYS</td>
<td>211</td>
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<tr>
<td>PHYS</td>
<td>210</td>
<td>ENGT</td>
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<td>ENGT</td>
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<td>ENGT</td>
<td>251</td>
<td>ENGT</td>
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<tr>
<td>Semester 5</td>
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<tr>
<td>GS</td>
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<tr>
<td></td>
<td></td>
<td>ENGT</td>
<td></td>
</tr>
</tbody>
</table>

1ED 142, ENG 105 a or b, or GS 116 may be substituted.
2Counselors may approve PHYS 110 and 111 as substitutes.
3Counselors may approve GS 100 or 101 as substitutes.
4Counselors may approve ENGT 142, and 143 as substitutes.
5Counselors may approve ENGT 145, 146, or 147 as substitutes.
6Counselors may approve ENGT 149, 150, or 151 as substitutes.
7Counselors may approve ENGT 152, 153, or 154 as substitutes.
8Counselors may approve ENGT 155, 156, or 157 as substitutes.
9Counselors may approve ENGT 158, 159, or 160 as substitutes.
<table>
<thead>
<tr>
<th>Semester 7</th>
<th>S.H.</th>
<th>Semester 8</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS 304 Non-Western World</td>
<td>4</td>
<td>GS Junior-Senior Elective</td>
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</tr>
<tr>
<td>ENGT 356 Fluid Mechanics</td>
<td>3</td>
<td>ENGT 450 Air Conditioning</td>
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<td>ENGT 451 Heat Transfer</td>
<td>3</td>
<td>ENGT 452 Mech. Engrg. Lab.</td>
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<td>ENGT 453 Product Engineering</td>
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</tr>
</tbody>
</table>

Engineering and Technology Counselors (located in Room 2038, Industrial and Engineering Technology Building) are available for recommending and approving electives appropriate to the students educational objectives.
# Metallurgical Engineering Technology

## Bachelor of Science Degree

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

A bachelor of science degree requires 128 semester credit hours.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>120</td>
<td>CHEM</td>
<td>109</td>
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<tr>
<td></td>
<td>Technical Communications*</td>
<td>3</td>
<td>General Chemistry</td>
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<td>CHEM</td>
<td>103</td>
<td>GS</td>
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<td>General Chemistry</td>
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<td>MATH</td>
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<td>Mathematics I</td>
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<td></td>
<td>Engineering Drafting</td>
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<td>Physical Education</td>
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<tr>
<td>GS</td>
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<td>Humanities</td>
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<tr>
<td>PHYS</td>
<td>110</td>
<td>PHYS</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>or 210 General Physics</td>
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<td>or 211 General Physics</td>
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<tr>
<td>ENGT</td>
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<td>Fund. Circuits and Elec.</td>
<td>4</td>
<td>Metal Casting I</td>
</tr>
<tr>
<td>ENGT</td>
<td>151</td>
<td>ENGT</td>
<td>256</td>
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<td></td>
<td>Machining Metals</td>
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<td>Statics</td>
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<td>15</td>
<td>PEM</td>
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<tr>
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<td>Physical Education</td>
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<thead>
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<th>Semester 5</th>
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<th>Semester 6</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>GS</td>
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<td>GS</td>
<td>100</td>
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<td>or 101 Western Civilization</td>
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<td>Thermodynamics</td>
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<td>Testing of Materials</td>
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Engineering and Technology Academic Counselors (located in Room 2038, Industrial and Engineering Technology Building) are available for recommending and approving electives appropriate to the student's educational objectives.

*ED 142, ENG 105 a or b, or GS 116 may be substituted.

**ECON 201 and 202 may be substituted.
(Students may secure a two-year vocational certificate in Drafting and Design by completing the curriculum below, or in Electronics by completing a series of courses which have been approved by the counselor in that field.)

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

<table>
<thead>
<tr>
<th>Semester 1</th>
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<td>Geometry 231</td>
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<td>Machining Metals 151</td>
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<td>Metallurgy 252</td>
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<td>Engin. Drafting 230</td>
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<td>Fund. of Electron. and Mach. 141</td>
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<td>Production Tooling 250</td>
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<td>Machine Drafting 330</td>
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150 Industrial Calculations
1 hr. Fall, Winter
Methods of calculation used in industry. Approximations, slide rule, calculators, and computers in relation to industrial calculations. Slide rule instruction. Prerequisite: Math 100 or H.S. trig. and logarithms.

300 Coordinated Industry (Cooperative Education Program)
See College of Applied Sciences AAS 300.

490 Independent Research and Development
1-4 hrs.
Individual research or special project in engineering and technology. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chairman. Students may register more than once, not to exceed 4 hrs.

INDUSTRIAL ENGINEERING

101 Introduction to Industry
3 hrs. Fall
The anatomy of manufacturing industries, operational responsibilities and relationships in companies of various sizes and using various processes. Includes a foundation in basic analytical methods.

305 (304) Work Analysis
3 hrs. Fall, Winter, Spring
Methods engineering and measurement of human work systems. Techniques for operation analysis, work measurement and work sampling. Predetermined basic motion-time systems and standard data development are introduced. Prerequisite: ENGT 101 or 150, Math 260 or 360.

306 Production Control
3 hrs. Fall, Winter, Summer
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. Prerequisites: ENGT 101 or 150, Math 260. Not open to Industrial Engineering majors.

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

308 Quality Control
3 hrs. Fall, Winter, Spring
Methods for controlling the quality of materials in a production system. Principles and techniques of administration and the application of statistical methods. Use of
standard practices in quality control measures: frequency distribution, control charts, sampling procedures, and continuing analysis. Prerequisites: ENGT 101 or 150, Math 260 or 360.

404 Material Handling and Layout 4 hrs. Fall, Winter, Spring
Planning and integrating an effective and economical interrelationship between men, equipment, and materials in the manufacture and distribution of any given product. Prerequisites: ENGT 305, 307, 306 or 407 (May be concurrent).

405 (506) Work Design 3 hrs. Fall, Winter
Human engineering factors, psychological factors, and principles of effective work as related to manual and machine systems. Techniques and supervisory aspects of work systems improvement. Prerequisite: ENGT 305.

407 Operations Control in Manufacturing 3 hrs. Fall

409 Industrial Engineering Experimental Design 3 hrs. Winter
Projects in industrial engineering disciplines involving student research and experimentation. Instrumentation methods and measurement techniques. Prerequisite: ENGT 305, 308.

439 Report Preparation 3 hrs. Winter
Techniques and procedures used as a basis for preparing a report. Planning, conducting, analyzing and communicating the results of a useful project. Prerequisites: Senior standing, AAS 120 or equivalent.

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

508 Advanced Quality Control 3 hrs. Fall
Analysis and application of new concepts in the fields of quality control. Tests of significance, probability studies and other uses of statistics as applied to quality control. Prerequisite: ENGT 308.

INDUSTRIAL SUPERVISION

400 Modern Industrial Practices 6 hrs. Spring, Summer
Students will observe and analyze actual supervisory and managerial functions in industrial and service establishments. Conference procedures will be used in exploring many facets of supervisory and managerial practices and procedures. A charge of $20 for transportation is required. Prerequisite: ENGT 308, 401, 402, 403, 404, 405 or consent.

401 (504) Industrial Safety 2 hrs. Fall, Winter, Spring
Importance of safety in industry. Cost of accidents, fundamentals of accident prevention; elements of effective safety programs, accident investigation, and first aid. Prerequisite: Upperclass.
402 (502) Principles of Industrial Supervision  
Supervisory duties and responsibilities of foremen, engineers, and technicians in industry. Prerequisite: Senior standing.

3 hrs. Fall, Winter, Spring

403 (500) Industrial Labor Relations  
Relationships between government agencies, labor organizations and management. Emphasis on development of collective bargaining procedures. Prerequisite: Senior standing.

3 hrs. Fall, Winter, Summer

406 Conference Leadership  
Basic methods of planning and presenting an industrial conference. Techniques of leadership with opportunity for practical application of these techniques. Prerequisite: CAS 104, upperclass.

3 hrs. Fall, Winter

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

3 hrs. Winter

502 Industrial Supervision  
The supervisor's duties, obligations and responsibilities in his industrial role. The practical application of behavioral science principles to the industrial environment. Not open to students with credit in ENGT 402.

3 hrs. Fall
College of Applied Science

Electrical Engineering Technology

140 Fundamentals of Circuits and Electronics 3 hrs. Fall, Winter, Spring

Basic principles of electricity, magnetic devices and electronics with emphasis on applications in other disciplines. May not be used as prerequisite for other EET courses except 141. Cannot be used as credit in EET curriculum. Prerequisites: Math 100 and High School Physics.

141 Fundamentals of Electronics and Machines 3 hrs. Fall, Winter, Spring

Basic principles of electronics, AC machines and DC machines with emphasis on applications in other disciplines. May not be used as prerequisite for other EET courses. Cannot be used as credit in EET curriculum. Prerequisite: ENGT 140.

240 Electrical Circuits 4 hrs. Fall, Winter

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

241 Electronic Circuits 4 hrs. Fall

An introduction to analysis and design of electronic devices, circuits, and systems. Rectification, large and small signal amplification, oscillators, switching and shaping circuits using tubes, semi-conductors and integrated circuits. Introduction to equivalent circuits using z, y, and h parameters. Prerequisite: ENGT 240.

242 DC Machines and Transformers 4 hrs. Winter

Fundamentals of magnetism and magnetic circuits. Analysis and application of the following: DC machines, DC motor controls, single-phase transformers, and electric power circuit protective devices. Prerequisite: ENGT 240.

243 Basic Logic Circuits 3 hrs. Fall

Study of Boolean Algebra. Basic analysis and design of digital logic circuits and systems. Prerequisite: Math 100.

340 Electronic Devices 4 hrs. Fall, Winter, Spring

Analysis, design and construction of modern electronic circuits using solid-state devices and integrated circuits. Prerequisites: ENGT 241, 344 (344 may be taken concurrently).

341 Industrial Electronics 4 hrs. Fall, Winter, Spring

342 AC Machines 4 hrs. Winter, Spring


344 Electrical Circuit Analysis 4 hrs. Fall, Winter, Spring

A rigorous treatment of steady state AC analysis including three-phase power, resonance, and important network theorems using differential equations and a digital computer. Solutions of complete circuit response using differential equations. Prerequisites: ENGT 242, Math 106, 123.

345 Transmission Lines and Fields 3 hrs. Winter, Summer

Basic field theory and the study of transmission lines at radio frequencies and power frequencies. Prerequisite: ENGT 344.

440 Measurements and Instrumentation 4 hrs. Winter

Theory, calibration, and application of electronic instruments used in the measurement of electrical, magnetic and nonelectrical quantities. Design, construction and standardization of electronic instruments used in measurement and control. Prerequisites: ENGT 243, 340.

441 Communication Electronics 4 hrs. Winter

Introduction to linear systems. Analysis of amplitude, angle and pulse modulation systems and noise effects. Analysis and design of common communication circuits. Prerequisites: ENGT 340, 345.

442 Servomechanisms 4 hrs. Winter, Spring

Analysis and synthesis of linear feedback systems by the use of Laplace transforms, Bode diagrams, Nyquist plots, Nichols charts and Root-Locus plots. Computer-aided analysis. Prerequisite: ENGT 344 or 360.

443 Digital Circuits and Systems 4 hrs. Fall

Electronic, logic and linguistic aspects of the design of computers, input-output interfaces and other digital systems. Prerequisites: ENGT 243, 340.

541 Electrical Fields 3 hrs. Fall

Electrostatics including such topics as Coulomb's Law, Gauss's Law, Maxwell's equations, Laplace's and Poisson's equations, Faraday's Law, Stoke's Theorem and Ampere's Law. Use is made of vector calculus in rectangular, cylindrical and spherical coordinates. Prerequisite: ENGT 345 or Math 223.

542 Advanced Circuits 3 hrs. Winter

Advanced circuit analysis, steady-state and transient responses, writing and solving integro-differential equations by classical methods by Laplace transforms, network theorems, Fourier series analysis, complex frequency, poles and zeros. Prerequisite: ENGT 344.

545 Electrical Power Systems 3 hrs. Spring

Engineering considerations of generating equipment, transmission and distribution systems, switch gear and industrial power distribution. Prerequisite: ENGT 342.
132 Technical Drafting  2 hrs. Fall, Winter, Summer
Basic principles and techniques of engineering drafting as related to industrial manufacturing processes. Open only to students having had no drafting in high school.

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

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

235 Graphical Solutions  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: ENGT 231.

330 Machine Drafting  3 hrs.
Elementary design of machine components. Motion and power transmission devices are analyzed from product function and manufacturing feasibility aspects. Dimensioning, including geometric tolerancing, in layout, detail and assembly drawings. Design using standard parts. Prerequisites: ENGT 230.

331 Production Drafting  4 hrs. Fall, Spring
Engineering documentation as it relates to product drafting. Drawings of product components and assemblies, and associated lists are analyzed. Microfilming and reproduction of engineering documents, checking, and standards administration. Prerequisites: ENGT 330.

334 Design of Production Tooling I  2 hrs. Fall

335 Design of Production Tooling II  2 hrs. Winter
Principles of production tooling as related to the design of stamping and extruding dies and injection molds for metal and plastics industries. Cost analysis, production processing, and material considerations in design. Prerequisite: ENGT 334.
Engineering Graphics

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

455 Computer Graphics  
2 hrs. Winter  
A survey of the relationship of computers to engineering graphics with respect to information and data storage and retrieval as applied to design, tooling production and illustration. Prerequisite: ENGT 235, 331, MATH 306.

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

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

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

151 Machining Metals 3 hrs. Fall, Winter, Spring
Theory and laboratory experience in the basic techniques used in metal removal. Introduction to layout, measurement, machine use and cutting tool geometry. Consideration of numerical control and electro discharge machining.

152 Manufacturing Processes 3 hrs. Fall, Winter, Spring
Analysis of processes and controls used in manufacturing products of various materials. Laboratory experience and field trips.

250 Production Tooling 3 hrs. Fall, Winter
Design and fabrication of jigs, fixtures and gauges used in production. Methods, processing and cost considerations in relation to production tooling. Prerequisites: ENGT 132, 151.

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

256 Statics 3 hrs. Fall, Winter, Spring
Mathematical and graphical techniques for ascertaining the magnitude of forces acting on structural bodies under static loads. Concepts of vectors, free body analysis and centroids. Prerequisite: Math 122 or 200, ENGT 101 or 150.

350 Pressworking of Metals 3 hrs. Fall, Winter, Spring
Standard pressworking methods are analyzed in the construction and use of dies for blanking, shaving, bending, forming and stamping metals in standard power presses and brakes. Prerequisite: ENGT 250.

352 Thermodynamics 3 hrs.
Fundamental laws of thermodynamics, including gas and vapor processes, both non-flow and steady-flow, and thermodynamic cycles. Prerequisite: Math 123.

353 Strength of Materials 3 hrs.
Compression, tension, shear, torsion, and bending forces in structural members, including distribution of stress, deflections, buckling, and fatigue on engineering materials. Prerequisites: ENGT 256 and Math 123.

354 Testing of Materials 3 hrs. Fall, Winter, Spring
Principles and methods of destructive and non-destructive testing for determining the mechanical properties of materials. Planning of test procedures, interpretation of test results. Prerequisite: ENGT 353.
355 Dynamics 3 hrs. Fall, Winter, Spring
Kinematics and kinetics of rectilinear and curvilinear motion. Rigid bodies in plane motion and about a fixed axis. Prerequisites: ENGT 256 and Math 123.

356 Fluid Mechanics 3 hrs. Fall, Winter, Summer
Static fluids and hydrostatic pressure on plane and curved surfaces. Analysis of the flow of fluids based on Bernoulli’s theorem. Flow through orifices, pipe systems, and open channels. Prerequisites: ENGT 256 and Math 123.

357 Thermo-Fluid Dynamics 4 hrs. Winter
Introduction to the fundamentals of fluid mechanics, thermodynamics, and heat transfer using a unified approach. Prerequisite: Math 123. (Not open to Mechanical Engineering Technology majors.)

358 (332) Mechanism Analysis 3 hrs. Fall, Winter
Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis. Prerequisites: ENGT 256 and Math 123.

359 Numerical Control of Production 3 hrs. Winter
Use-oriented approach to the majority of the point-to-point processes used in industry. Problems in efficient processing, programming and computer applications. Prerequisites: ENGT 250.

360 Control Systems 3 hrs. Fall, Winter, Spring
Theory and analysis of linear closed-loop control systems containing electronic, electro-magnetic, and mechanical components. Prerequisites: ENGT 140, 256, and Math 123.

450 Air Conditioning 3 hrs. Fall, Winter
Theory of the conditioning of air. Applications related to air purification, humidity control, temperature control, distribution of air, and ventilation. Prerequisite: ENGT 352.

451 Heat Transfer 3 hrs. Fall, Winter, Summer
Steady state and transient conduction, emissivity, radiation, functions, radiation networks, natural and forced convection, and design of heat exchangers. Prerequisites: ENGT 352 and 360.

452 Mechanical Engineering Laboratory 3 hrs. Fall, Winter, Spring
Principles of measurement, testing and evaluation of mechanical engineering systems. Prerequisites: ENGT 352, 353, and 356. Two of these courses may be taken concurrently with the laboratory.

453 (550) Product Engineering 3 hrs. Fall, Winter, Spring
The application of engineering concepts to technical design. Scope of design, analysis and synthesis of design parameters, evaluation of performance, and other factors related to product development. Prerequisites: ENGT 230, 353.

551 Welding Design Analysis 3 hrs. Winter
Production methods and design using modern techniques of electron beam welding, inertia welding, and application of lasers for welding. Use of various protective enclosures, plasma arc welding, automated electronic welding. Weld testing techniques. Prerequisite: ENGT 251.
555 Mechanism Synthesis
Type, number and dimensional synthesis of planar mechanisms by graphical and analytical methods. Computer design using optimization methods. Prerequisite: ENGT 358. (Offered alternate years).

556 Engineering Analysis
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ENGT 360 or equivalent.

557 Advanced Product Design
An engineering design project from concept to adoption. Static and dynamic analysis. Mechanical systems design and layout. Prerequisites: ENGT 360, 453 (Offered alternate years).

558 Mechanical Vibrations
A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Prerequisites: ENGT 355 and 360 or Math 223.
Metallurgical Engineering Technology

252 Metallurgy 4 hrs.
Mechanical properties of metals. Effect of geometry of loading, strain rate, and fatigue on the behavior of metals. Selection and heat treatment of alloys.

254 Metal Casting I 3 hrs. Fall, Winter, Spring
Introduction to cast metals technology and laboratory experience in industrial casting processes. Prerequisite: ENGT 252.

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

370 Metal Casting II 3 hrs. Summer
Theory and application of the metallurgy of casting alloys, gray iron, ductile and malleable iron, steel, brass, bronze and aluminum alloys. Melting, casting and heat treating processes will be analyzed for each alloy. Basic theory of the solidification of metals. Prerequisites: ENGT 254.

372 Physical Metallurgy I 4 hrs. Fall
Introduction to the thermodynamics of metallurgical alloys. Thermodynamic properties of the solid state, binary equilibrium diagrams, solidification of alloys, solid state diffusion, oxidation and corrosion of metals. Prerequisites: Chemistry 103 and Math 123.

373 Physical Metallurgy II 4 hrs. Winter
Introduction to the defect structure of metals and alloys, and simple theories of deformation and fracture. Structure insensitive properties of metals are considered relative to the defect structure of metals. Prerequisites: Chemistry 103, Math 123, and Physics 110.

570 Metal Fabrication 3 hrs. Winter
Fundamentals of elasticity, plasticity and the mechanical forming methods and industrial processes of metal fabrication: rolling, forging, extrusion, drawing, and powder metallurgy. Prerequisites: ENGT 373 or 351 and 354.

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

573 Physical Metallurgy III 3 hrs. Spring
Material selection for resistance to both load and environment. Design parameters for material selection and various metal systems. Corrosion, service failures and mechanical behavior of engineering alloys at high and low temperatures. Prerequisite: ENGT 351 or 373.
574 Casting Design 3 hrs. Fall
Engineering design of castings based on stress analysis and capabilities of production casting processes. Prerequisites: ENGT 254, 256.

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

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

Frances J. Parker, Chairman
Irene Bibza
Margaret Jane Brennan
Julian Dugger
Ann Fulton
Beverly Gillette
Gail Havens
David Holland
Alice Kavanaugh
Phyllis Seabolt
Isabelle Smith
Betty Taylor
Darrell Thomas
Florence Tooke
Donna vanWestrienen
Dian Williamson

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

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

The Home Economics Department offers four-year programs leading to a B.S. degree. Major areas in Home Economics include:

- DIETETICS
- HOME ECONOMICS IN BUSINESS
- HOME ECONOMICS EDUCATION
- HOME ECONOMICS—GENERAL DEGREE

The following courses are open to students from other curricula for a minor of 20 semester hours in Home Economics providing they meet the prerequisites for the courses: 101, 150, 201, 212, 220, 254, 304, 406, 340, 350, 352, 520.

HOME ECONOMICS CURRICULA

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

Bachelor of Science Degree

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

The dietitian after the internship is eligible for positions in hospitals as food administrator, therapeutic dietitian or teaching dietitian. She is also qualified for positions in commercial food establishments as restaurants, hotels, airlines, and industrial feeding. Other areas open to her are school cafeterias, community nutrition positions and food service in the Armed Forces. A minimum of 30 S.H. in Home Economics is required.

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<th>First Year S.H.</th>
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<tr>
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<td>H. Ec. 210 Nutrition 3</td>
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<td>H. Ec. 150 Individual and Family Relationships 4</td>
<td>Chem. 365 Organic Chemistry 4</td>
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<tr>
<td>Chem. 101 or 102 Chemistry 4</td>
<td>H. Ec. 101 Textiles 3</td>
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<td>Chem. 120 Qualitative Analysis 4</td>
<td>H. Ec. 201 Clothing 3</td>
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<td>Chem. 450 Biochemistry 3</td>
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<tr>
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<td>TEED. 250 Human Development and Learning 4</td>
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<tr>
<td>Biol. 412 Microbiology 4</td>
<td>General Studies 4</td>
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<td>Mgmt. 352 Manpower Management or</td>
<td>Acty. 201 Accounting 4</td>
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<td>Mgmt. 300 Fundamentals of Management 3</td>
<td>H. Ec. 518 Advanced and Experimental Foods 4</td>
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<td>GS 304 Non-Western World 4</td>
<td>H. Ec. 512 Institutional Management 3</td>
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<td>H. Ec. 510 Advanced Nutrition 3</td>
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Home Economics in Business

Bachelor of Science Degree

A student completing a Bachelor of Science degree in the Home Economics in Business Curriculum is eligible for positions in many types of business. Some of these are: retailing and buying of clothing and home furnishings, writing for a newspaper or magazine, designing and producing clothing, radio and television production, home service representative for a public utility, appliance and laundry product companies, for the testing of recipes and foods, and many others.

General Studies and Physical Education requirements must be met.
### Clothing-Textile Emphasis

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Prep. and Meal Planning 114</td>
<td>5</td>
</tr>
<tr>
<td>Design 100</td>
<td>2</td>
</tr>
<tr>
<td>Textiles 101</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 101 (Meets General Studies Requirement in Science)</td>
<td>4</td>
</tr>
<tr>
<td>Biological Science 107</td>
<td>4</td>
</tr>
<tr>
<td>Business and Professional Speech 107 or 130 or 104</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 210</td>
<td>3</td>
</tr>
<tr>
<td>Journalism 264</td>
<td>4</td>
</tr>
<tr>
<td>Clothing 201</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstration Techniques 356</td>
<td>2</td>
</tr>
<tr>
<td>Radio and TV Writing 341</td>
<td>3</td>
</tr>
<tr>
<td>Consumer Problems of Clothing 304</td>
<td>3</td>
</tr>
<tr>
<td>Consumer Education 352</td>
<td>3</td>
</tr>
<tr>
<td>Housing and Home Furnishings 350</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Display 420</td>
<td>2</td>
</tr>
</tbody>
</table>

Select 3 hours of the following:
- Socio-Psych. Aspects of Clothing 504 or
- History of Costume 506 or
- Advanced Textiles 500 or
- Flat Pattern Design 508 or
- Tailoring 406

**Suggested Minors**
- Retailing
- Communication Arts—20 hours

### Food Emphasis

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Prep. and Meal Planning 114</td>
<td>5</td>
</tr>
<tr>
<td>Design 100</td>
<td>2</td>
</tr>
<tr>
<td>Textiles 101</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 101 and 120</td>
<td>8</td>
</tr>
<tr>
<td>Business and Professional Speech 104 or 170 or 130</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Science 107</td>
<td>4</td>
</tr>
<tr>
<td>Journalism 264</td>
<td>4</td>
</tr>
<tr>
<td>Nutrition 210</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstration Techniques 356</td>
<td>2</td>
</tr>
<tr>
<td>Radio and TV Writing 341</td>
<td>3</td>
</tr>
<tr>
<td>Quantity Foods 312</td>
<td>3</td>
</tr>
<tr>
<td>Manpower Management 352</td>
<td>3</td>
</tr>
<tr>
<td>Microbiology 412</td>
<td>4</td>
</tr>
<tr>
<td>Organic Chemistry 365</td>
<td>4</td>
</tr>
<tr>
<td>Equipment 520</td>
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</table>

Elected and/or minor

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Nutrition 510</td>
<td>3</td>
</tr>
<tr>
<td>Institutional Management 512</td>
<td>3</td>
</tr>
<tr>
<td>Experimental Foods 518 1</td>
<td>4</td>
</tr>
<tr>
<td>Experimental Foods 519 11</td>
<td>2</td>
</tr>
</tbody>
</table>

**Suggested Minors**
- Communication Arts—20 hours
- Group Science Minor

---

**HOME ECONOMICS EDUCATION**

Bachelor of Science Degree

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

<table>
<thead>
<tr>
<th>First Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Ec.</td>
<td>150 Individual and Family Relationships</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>114 Food Preparation and Meal Planning</td>
</tr>
<tr>
<td>GS</td>
<td>100 or 101 Western Civilization</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>100 Elementary Design</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>101 Textiles</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>201 Clothing</td>
</tr>
<tr>
<td>GS</td>
<td>140 General Studies Reading Physical Education Electives</td>
</tr>
<tr>
<td></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Ec.</td>
<td>304 Consumer Problems of Clothing</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>210 Nutrition</td>
</tr>
<tr>
<td>GS</td>
<td>Science (2 areas)</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>254 Human Growth (or) TEED</td>
</tr>
<tr>
<td>GS</td>
<td>202 Man and Society</td>
</tr>
<tr>
<td>GS</td>
<td>222 Arts and Ideas Electives or minor</td>
</tr>
</tbody>
</table>

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*Note: The S.H. column represents the total semester hours required for each course.*
HOME ECONOMICS—GENERAL CURRICULUM

Bachelor of Science Degree

A student completing a Bachelor of Science degree in the Home Economics General Curriculum will take additional work in one of the major home economics areas. This curriculum is broad in scope and may be used as a base for advanced course work in a specialized area. A minimum of 30 hrs. in Home Economics is required.

Recommended minors: Art, Sociology, Science.

### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Ec. 150 Individual and Family Relationships</td>
<td>4</td>
</tr>
<tr>
<td>H. Ec. 114 Food Preparation and Planning</td>
<td>5</td>
</tr>
<tr>
<td>GS 140 General Studies Reading</td>
<td>2</td>
</tr>
<tr>
<td>H. Ec. 100 Elementary Design</td>
<td>2</td>
</tr>
<tr>
<td>H. Ec. 101 Textiles</td>
<td>3</td>
</tr>
<tr>
<td>H. Ec. 201 Clothing</td>
<td>3</td>
</tr>
<tr>
<td>GS 100 or 101 Western Civilization</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Ec. 304 Consumer Problems of Clothing</td>
<td>3</td>
</tr>
<tr>
<td>H. Ec. 210 Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>GS</td>
<td>210 Nutrition</td>
</tr>
<tr>
<td>GS 202 Man and Society</td>
<td>4</td>
</tr>
<tr>
<td>H. Ec. 254 Human Growth (or)</td>
<td>4</td>
</tr>
<tr>
<td>TEED 250 Education</td>
<td>4</td>
</tr>
<tr>
<td>GS 222 Arts and Ideas</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
</tr>
</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Ec. 354 Home Management (or)</td>
<td>4</td>
</tr>
<tr>
<td>H. Ec. 352 Consumer Education (or)</td>
<td>3</td>
</tr>
<tr>
<td>H. Ec. 406 Tailoring (or)</td>
<td>2</td>
</tr>
<tr>
<td>H. Ec. 350 Housing and Home Furnishings</td>
<td>4</td>
</tr>
<tr>
<td>GS 304 Non-Western World</td>
<td>4</td>
</tr>
<tr>
<td>Elective (Home Ec)</td>
<td>4</td>
</tr>
<tr>
<td>Electives (Minor)</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30-32</strong></td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Ec. 356 Demonstration Techniques</td>
<td>2</td>
</tr>
<tr>
<td>H. Ec. 520 Equipment</td>
<td>2</td>
</tr>
<tr>
<td>Electives (Minor)</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>
FAMILY LIFE EDUCATION MINOR

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

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Ec.</td>
<td>150 Individual and Family Relationships</td>
<td>4</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>220 Sex Education—An Introduction to Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>Soc.</td>
<td>200 Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>450 Teaching Sex Education in the Schools*</td>
<td>2</td>
</tr>
</tbody>
</table>

ELECTIVE COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anth.</td>
<td>220 Introduction to Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>Biol.</td>
<td>101 Animal Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biol.</td>
<td>219 Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>Biol.</td>
<td>205 The Human Body in Health and Disease</td>
<td>4</td>
</tr>
<tr>
<td>Comm.</td>
<td>170 Interpersonal Communication I</td>
<td>3</td>
</tr>
<tr>
<td>Comm.</td>
<td>270 Interpersonal Communication II</td>
<td>3</td>
</tr>
<tr>
<td>Comm.</td>
<td>236 Social Issues and Action Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>Comm.</td>
<td>570 Studies in Communication</td>
<td>3</td>
</tr>
<tr>
<td>Coun.</td>
<td>580 Principles and Philosophy of Guidance</td>
<td>2</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>254 Human Growth and Development</td>
<td>4</td>
</tr>
<tr>
<td>H. Ec.</td>
<td>212 Food for Man</td>
<td>3</td>
</tr>
<tr>
<td>Psy.</td>
<td>150 Introduction to the Science of Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Psy.</td>
<td>160 Personality and Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Psy.</td>
<td>510 Advanced General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Phil.</td>
<td>201 Introduction to Ethics</td>
<td>4</td>
</tr>
<tr>
<td>Soc.</td>
<td>210 Modern Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>Soc.</td>
<td>320 Introduction to Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Soc.</td>
<td>390 Marriage and Family Relations</td>
<td>3</td>
</tr>
<tr>
<td>Soc.</td>
<td>592 Family Life Education and Counseling</td>
<td>2</td>
</tr>
<tr>
<td>Sped.</td>
<td>588 Behavior Disorders in School-Aged Children</td>
<td>3</td>
</tr>
<tr>
<td>TEED.</td>
<td>555 Alcohol Education</td>
<td>2</td>
</tr>
<tr>
<td>TEED.</td>
<td>508 Parent Ed.</td>
<td>2</td>
</tr>
<tr>
<td>TEED.</td>
<td>535 Introduction to Teaching the Disadvantaged</td>
<td>3</td>
</tr>
<tr>
<td>TEED.</td>
<td>560 Practicum: Sociological and Psychological Foundations of Teaching the Disadvantaged</td>
<td>2</td>
</tr>
</tbody>
</table>

*Prerequisite 220, or approval of the instructor; 450 is a special sequence course designed for the teacher.
**Because Family Life is a multi-disciplinary program, students should not elect more than two courses in any one department, exclusive of required courses.
COURSE DESCRIPTIONS

FAMILY AND CHILD DEVELOPMENT

150 Individual and Family Relationships 4 hrs. Fall, Winter
The contributions and concerns of personal and family adjustments in planning for careers and marriage.

220 Sex Education—An Introduction to Human Sexuality 3 hrs. Fall, Winter
This course is designed to cover various concepts of human sexuality, sexual behavior and morality, trends in moral values and behavior patterns, anatomy and physiology of human reproduction, maternal health and current issues in sex education.

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

450 Teaching Sex Education in the Schools 2 hrs. Fall, Winter
In this course, consideration is given to the problems of establishing a sex education program in the school program with focus upon methods, materials, and curriculum development at various grade levels. Prerequisite: H. Ec. 220, or approval of instructor.

FOODS AND NUTRITION

114 Food Preparation and Meal Planning 5 hrs. Fall, Winter
Basic principles of food preparation. Planning, preparing and serving of meals with emphasis on management. Majors.

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

210 Nutrition 3 hrs. Fall, Winter
A study of the essential nutrients and their function in the human body. Prerequisite: Science 8 or 9 hours.

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

312 Quantity Foods 3 hrs. Winter
410 Diet and Disease 2 hrs. Fall

510 Advanced Nutrition 3 hrs. Fall

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

518 Advanced and Experimental Foods 4 hrs.

519 Experimental Foods 2 hrs.
Individual research in chemical and physical properties of foods. Development of research studies, writing and reporting techniques. Prerequisite: H. Ec. 518.

HOME ECONOMICS EDUCATION

340 Home Economics Education 4 hrs. Fall, Winter
Course designed to acquaint students with the teaching field of home economics. Includes basic philosophy of home economics education, observations, unit planning, effective teaching materials as a basis for special methods and student teaching. Planning local programs of homemaking education in high school equipment and the organization of homemaking departments, developing home experiences programs, and methods of teaching for junior and senior high schools as well as adult homemaking classes. Prerequisite: H. Ec. 254 or TEED 250 and 300.

HOME MANAGEMENT

100 Elementary Design 2 hrs. Fall, Winter
A study of the elements and principles of design composition and organization. The experience of design composition through individual projects.

350 Housing and Home Furnishings 4 hrs. Fall, Winter
A study of the economics, psychological, and social aspects of housing. Basic principles in the areas of art, textiles, and consumer buying are applied to the home. Prerequisite: H. Ec. 100.

352 Consumer Education 3 hrs.
A study of the functions of consumers in our economy with emphasis on money management and decision making.

354 Home Management 4 hrs.
A study through lecture and practice of the principles of management in the home.
420 Display
A study of the visual presentation of merchandise, theories and techniques.

520 Equipment
A study of principles of equipment applications to the areas of Home Economics in business and education. Prerequisites: H. Ec. 200, 210.

552 The Homemaking Center and the Equipment
Consideration of fundamentals in planning laboratory and living area in terms of needs with special emphasis on built-ins, furnishings and equipment. Selected problems to be chosen by the individual.

**TEXTILES AND CLOTHING**

101 Textiles
(majors and electives)
A study of basic textiles from the consumer's point of view to provide a knowledgeable use of fibers.

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

304 Consumer Problems of Clothing
Includes selection of appropriate clothing for individual family members. Emphasis is given to the planning and purchasing of clothing in terms of family resources and the family life cycle. Prerequisites: 100, 200, or 201.

406 Tailoring
Principles and practices involved in the custom method of constructing tailored suits or coats; fitting, handling, pressing and custom finishing of wool fabrics. Prerequisites: H. Ec. 100, 101, 201 and 304.

500 Advanced Textiles

502 Textile Clinic
A workshop type program. Specialists and visual aids will present the newest information on textiles. To be followed by a study of methods implementing the new learnings.

504 the Socio-Psychological Aspects of Clothing
A study of the social and psychological implication of clothing for the individual and the family. This course brings together some of the pertinent findings of these two fields as they relate to the total area of clothing, ranging from the individual's selection of clothing as an expression of personality and social status to the impact of the clothing and fashion industries on the national economy.
506 History of Costume  
History and development of Western costume. Dress is studied as an expression of many interacting forces. Areas of influence include social structure, political thought, religious beliefs, cross-cultural interaction, technological developments, and outstanding persons of the period.

508 Flat Pattern Design  
A study of the drafting techniques employed in the flat pattern method for designing clothing. Prerequisites: H. Ec. 101, 201, and 304.
Industrial Education

John L. Feirer, Head
Michael B. Atkins
John L. Bendix
Phillip L. Bruce
Arvon D. Bye
Dennis Darling
Lindsay G. Farnan

Wallace F. Fillingham
W. Lloyd Gheen
Rex E. Hall
Gilbert R. Hutchings
Waldemar E. Klammer
John R. Lindbeck
Erwin Rayford
Charles G. Risher
Walter Schwersinske
James L. Ulmer

The Industrial Education Department offers technical and professional courses for five purposes: (a) to educate teachers and supervisors of industrial arts who will teach general industrial arts in all levels of the public schools; (b) to educate teachers who will be qualified to teach vocational-technical subjects in the secondary schools, or community college; (c) to educate students who wish a broad background in industrial subjects; (d) to educate students in Printing Management; and (e) to educate teachers who will be qualified to teach in Industrial Arts therapy programs.

Industrial Arts—A student must take one major sequence and one minor sequence as shown on page 143. If a student wishes to prepare as a general industrial arts teacher, and also be qualified as a unit area teacher, he must take a major in general industrial arts and a minor in a technical sequence. Students who plan to qualify for unit shop teaching must take one major sequence and one minor sequence in a different technical area or general industrial arts. A student may not elect a major and a minor sequence in the same technical area. For example, the student may major in metalworking and minor in drawing so that he would be qualified to teach only in these two areas. For students not majoring in Industrial Education a general Industrial Arts teaching minor can be taken plus the professional courses: I ED 140 American Industry, I ED 342 Course Construction, and I ED 344 Teaching of Industrial Education. A non-teaching major or minor can be taken in any general or technical area as specified in the Industrial Education sequence. A teaching minor in career education is available through the Industrial Education Department for students majoring in elementary education.

Vocational-Technical Education—A fifty hour combined major and minor sequence leading to

Option I—Vocational Education—Teaching Certificate
Option II—Cooperative Training—Teaching Certificate
Option III—Technical Education—Without Teaching Certificate

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

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

Bachelor of Science Degree

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

Teaching in a general unit shop requires superior competence in two areas of industrial arts through a major concentration in one technical area, and a minor concentration in one other technical area. Fifty percent of the technical work for a major and minor must be taken in the Industrial Education Department.

Minimum hours required for this curriculum ........................................... 122 hrs.
General Studies* See Requirements, Page 25 ........................................
Technical major in one of the following areas:** .................................. 30

General Industrial Arts
Drawing
Electricity-Electronics
Graphics Arts
Metalworking
Power-Automotives
Woodworking

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

Education ................................................................................................. 21

Professional I ED Courses ........................................................................ 9
  I ED 140 American Industry*** ......................................................... 2
  I ED 342 Course Construction .............................................................. 2
  I ED 344 Teaching of Ind. Ed. ............................................................... 2
  I ED 345 Plan & Orgn. of School Shop ................................................. 2
  Physical Education ................................................................................. 2

*AAS 120 Technical Communications and Math 100 Algebra are required.
**I ED 276 Design; and I ED 573 Mech. and Cond. of Equip. are required of all Metalworking majors.
I ED 573 Mech. and Cond. of Equip., is required of all woodworking majors.
***Must be taken during first year on campus.
Western Michigan University has been approved by the State Board of Control of Vocational Education to prepare vocational-industrial and technical teachers for the secondary and post-secondary schools. In order to be eligible for a vocational certificate, the prospective teacher must have completed a B.S. degree, including required courses in education and in addition, (a) have completed two years of industrial experience in the shop area to be taught, or (b) if less than two years, pass a trade competency examination in the shop area to be taught. Each student, in consultation with his major adviser, will work out a fifty hour combined major and minor sequence of vocational-technical courses which will prepare him for teaching in the trade or industrial field of his choice. Twelve semester hours of credit may be earned through Coordinated Industry, Course No. 300. Option I is designed to prepare graduates as teachers in secondary vocational programs. Option II is designed to prepare graduates as coordinators of vocational-industrial cooperative education programs in secondary schools and community colleges. Option III will prepare a person for employment as an instructor in a technical institute or community college or for employment in the training divisions of industry.

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

B. Course Requirements
1. General Studies Requirements (see page 25)
2. Mathematics (6 hrs. of which may be counted for General Studies requirements) ................................................................. 8 hrs.
3. Technical Major .................................................................................. 30 hrs.
5. Option I (Vocational-Industrial Education leading to Secondary Teaching Certificate) ...................................................... 28 hrs.
   Education requirements (See College of Ed.) .................................... 21 hrs.
   I ED 342 Course Construction .......................................................... 2 hrs.
   I ED 344 Teaching of Ind. Education .................................................. 3 hrs.
   I ED 345 Plan and Organ. of School Shop .......................................... 2 hrs.
6. Option II (Industrial Cooperative Education) leading to Secondary Teaching Certificate ..................................................... 30 hrs.
   Education requirements (See College of Ed.) .................................... 21 hrs.
   D ED 572 Teaching Tech. in Coop. Education ................................... 2 hrs.
   D ED 573 Coord. Techs. in Coop. Education ..................................... 2 hrs.
   I ED 342 Course Construction .......................................................... 2 hrs.
   I ED 344 Teaching of Ind. Education .................................................. 3 hrs.
7. Option III (Technical Education) without teaching certificate ....... 30 hrs.
   I ED 342 Course Construction .......................................................... 2 hrs.
   D ED 573 Coord. Techs. in Coop. Education ..................................... 2 hrs.
   ENGT 406 Conference in Leadership ................................................ 3 hrs.
   ENGT 402 Principles of Ind. Supervision ........................................... 3 hrs.
   PSYCH Psychology .......................................................................... 3 hrs.
   Electives ......................................................................................... 14 hrs.
8. Physical Education ........................................................................... 2 hrs.

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

1. General Studies Requirements as described in the catalog must be met (MATH 100, ECON 201 and AAS 120, Tech. Com. or BUS. 142, Bus. Com. required in this curriculum.)

2. Graphic Arts
   - IED 150 Graphic Arts 3 hrs.
   - IED 152 Letterpress Presswork 3 hrs.
   - IED 250 Typographic Design 3 hrs.
   - IED 254 Machine Composition 3 hrs.
   - IED 350 Photolithographic Techniques 3 hrs.
   - IED 351 Lithographic Presswork 3 hrs.
   - IED 450 Advanced Presswork 3 hrs.
   - IED 452 Estimating 3 hrs.
   - PAPR 550 Paper Industry Processes 3 hrs.
   - IED 551 Halftone Photo Processes 3 hrs.
   - IED 552 Estimating 3 hrs.
   - IED 553 Printing Production Management 3 hrs.

3. Industrial Supervision
   - ENGT 150 Industrial Calculations 1 hr.
   - ENGT 305 Work Analysis 3 hrs.
   - ENGT 401 Industrial Safety 2 hrs.
   - ENGT 402 Principles of Industrial Supervision 3 hrs.
   - ENGT 403 Industrial Labor Relations 3 hrs.

4. Business and Management
   - MGMT 200 Statistics 3 hrs.
   - ACTY 201 Accounting Concepts & Applications 3 hrs.
   - MGMT 300 Fundamentals of Management 3 hrs.
   - BUS 340 Legal Environment 3 hrs.
   - MGMT 554 Introduction to Management Science 3 hrs.

5. Data Processing
   - MGMT 102 Computer Usage 3 hrs.
   - MATH 106 Introduction to Computers 1 hr.
   - MATH 306 Introduction to Computer Languages 2 hrs.

6. MATH 100 Algebra 4 hrs.

7. ECON 201 Principles of Economics 3 hrs.

8. AAS 120 Technical Communications or
   - BUS 142 Business Communications 3 hrs.


C. Students must pursue a major sequence of courses in Printing and Graphic Arts and meet the requirements of the curriculum.
OTHER OPTIONS

Industrial Education General Curriculum—Students wishing to secure a broad general industrial background can major in Industrial Education. The exact combination of courses will be determined by the needs of the student.

Industrial Arts Therapy—Students must pursue a major sequence of courses in Industrial Education, selected courses in Special Education, and spend one semester in participation at an approved veteran’s hospital.

COURSE DESCRIPTIONS

Drawing (Industrial Graphics)

120 Survey of Drafting 3 hrs.

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

226 Industrial Graphics 3 hrs.

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

227 Technical Sketching 3 hrs.

A study of freehand and mechanical methods of illustrating. Primary consideration is given to angular, parallel, and oblique perspective as a basis for freehand illustration. Emphasis is then placed on various types of paraline drawings, techniques of shades and shadows, shading films, and pencil and ink renderings for reproduction. Selected problems in surface treatment and textures, still life, and chalkboard practice. Prerequisite: I ED 120.

326 Advanced Industrial Graphics 3 hrs.

Advanced technical work for the specialist desiring to teach drafting. Included are applications of descriptive geometry, gears, cams, linkages, research problems, and checking. Current developments in the field of graphics and their impact will be discussed. Prerequisite: I ED 226.

520 Architectural Graphics 3 hrs.

A graphical study of architectural details and methods of construction relative to frame and masonry veneer residential dwellings. Emphasis placed on residential planning and design principles. Each student required to design a single-family dwelling including preliminary studies, floor plans, elevations, all necessary details, plot plan, specifications, and cost estimate. Drawings will be reproduced. Prerequisites: I ED 120 Survey of Drafting, or equivalent, and I ED 405 Introduction to Building Practices (can be taken simultaneously).
522 Laboratory Practices in Drafting 2 hrs.
A course in the methods and problems of teaching drafting and graphics on the secondary and post-secondary level. In addition, emphasis is placed on a review of secondary and collegiate texts, resource materials, problem design, and checking of drawings. Prerequisite: 12 hrs. in Drafting and Junior classification.

524 Commercial Architectural Design 2 hrs.
A course designed to give basic experience in designing light commercial structures. Emphasis will be placed on planning, traffic flow, exterior design, materials, and structural details. Prerequisite: I ED 520 or equivalent.

525 Architectural Perspective and Rendering 2 hrs.
An intensive study of angular and parallel perspective. Emphasis will be placed on entourage and rendering techniques in preparing architectural presentation drawings. Prerequisite: I ED 520 or equivalent.

**ELECTRICITY-ELECTRONICS***

160 Basic Electricity 3 hrs.
This course provides both theoretical and practical applications of basic electrical principles. The cause, effects, and control of electrical currents in circuits will be discussed and demonstrated. Practical experiences will include wiring, experimentation, repair, and maintenance of electrical equipment.

360 Electronic Servicing Techniques 3 hrs.
A course designed to round out technical competencies of students planning to teach electricity-electronics. Laboratory problems will point toward fundamental applications of electronic test instruments in diagnosing malfunctions and servicing radio, TV, and other electronic services. Also included are fundamentals of ham radio. Prerequisite: 6 hrs. of electricity-electronics.

460 Laboratory Practices in Electricity-Electronics 3 hrs.
Designed for laboratory teachers of electricity-electronics. Emphasis will be placed on textbook selections, course materials, methods, and instructional devices. Laboratory practice will be provided in applying techniques and developments to teaching.

560 Electricity-Electronics for Teachers 2 hrs.
Designed for junior and senior high school shop and laboratory teachers of electricity and electronics. Emphasis will be placed on new methods and materials. Laboratory practice will be provided in applying new techniques and development of teaching projects in electricity and electronics. Industrial Arts and science teachers should find this workshop quite valuable in the light of our increasing technological development.

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

170 Industrial Crafts Techniques
An introductory course for industrial arts teachers in the crafts area, including ceramics, jewelry, art metal, leather, and plastic. Industrial applications and procedures will be stressed.

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

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

276 Industrial Arts Design
A laboratory course dealing with functional, material, and visual requirements for products. Emphasis is upon design practices as they relate to projects and products in a variety of material areas.

370 Organizing and Administering the General Shop
A course concerned with promoting, developing, and improving instruction in both general unit shops and comprehensive general industrial arts laboratories. Emphasis is on curricular organization, personnel administration and management, trends in equipment, supplied, safety and teaching methodology applied to multiple activity instruction. Prerequisite: Junior and 15 hrs. in I ED Tech. Labs.

570 Arts and Crafts Techniques
Advanced laboratory experiences in the fields of internal plastic carving, leather work, model work, archery, photography, and related crafts in conjunction with a study of current technical literature in these areas. Written reports will be required. Course content will be adapted to individual needs.

573 Mechanics and Conditioning of Equipment
A study of the principles of machining wood, metal, and synthetic materials. Practice in installation, adjustment, preventive maintenance and conditioning of power equipment will be included. Particular emphasis will be given the relationship between proper installation and condition to efficient machine operation.

575 General Industrial Arts Laboratory Organization
Practical experience in drawing and planning, woodworking, metalworking, electricity, and craftwork will be required. Course will include selection, development and preparation of materials and instructional media for multiple activities instruction at the junior and senior high school levels. Prerequisite: 15 hours in Industrial Education Technology.

578 Plastics Technology
A comprehensive study of plastic materials and processes encompassing applications of thermoplastic, thermosetting, and other selected synthetic materials.
Product development with emphasis on vacuum forming, compression, extrusion, injection, blow molding, lamination, casting, reinforcing, foaming, coating, and general fabrication.

**GRAPHIC ARTS AND PRINTING MANAGEMENT**

150 Graphic Arts

An introductory course in which the student will have an opportunity to become familiar with the large area of graphic arts. Work is undertaken in hand composition, presswork, bindery, screen, and offset printing, etc. A thorough study of all graphic arts processes used in industry is undertaken. Advantages and best uses as well as disadvantages and limitations are considered for each process.

152 Letterpress Presswork

This course includes cylinder and automatic platen presswork. Emphasis is placed on forms requiring special preparation such as numbering, perforating, and envelope cut-outs. The various types of makeready techniques and impositions receive special consideration. Related information on letterpress inks and paper is included. Prerequisite: I ED 150.

250 Typographic Design

A lecture-laboratory course in which the principles of design and typography are studied and applied to the completion of a printed job. Practical experience in the elements of design, tools, and methods used by the artist are included. Prerequisite: I ED 150.

253 Science for the Graphic Arts

A study of the principles of science involved in such things as printability tests, inks, photographic chemicals, paper, etc.

254 Machine Composition

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

350 Photolithographic Techniques

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

351 Lithographic Presswork

Experience will be given on basic offset equipment regarding lithographic principles, press operations, mechanical adjustments, simple chemical reactions, as well as the advantages and disadvantages of lithography. Other areas to be studied are multi-color processes, inks, and papers. Prerequisites: I ED 150.

356 Printing Machine Maintenance

This course is designed to acquaint the student with the problems of care and maintenance of printing machinery including the Linotype. Simple adjustments are made on the various machines.
College of Applied Science

450 Advanced Presswork
This course is designed to provide the student with practical problems in make-ready and reproduction of various types of forms for both letterpress and lithographic presses, and to provide an introduction to the gravure and flexographic printing processes. Prerequisite: I ED 152 and 351.

451 Printing Processes
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
Study of methods used in estimating the price of printed matter before manufacture, and in the final pricing of that printed matter after manufacture.

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

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

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

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

METAL WORK

130 General Metals
A comprehensive course in the technology of modern metalworking principles and practices; encompassing the areas of hot and cold cutting, joining, forming, fabricating, and finishing techniques utilizing both hand and machine processes.

234 Machine Shop
A basic course in modern metal machining techniques involving theory and practice in the application of Machine Tool Metalworking principles. Prerequisite: I ED 130.

235 Machine Tool Metalworking
Advanced theory and practice in the application of machine tool metalworking processes and procedures. Special problems involving principles of Numerical Control tooling material for production using jigs and fixtures and the use of tables and handbooks. Prerequisite I ED 234.
332 Tooling and Production Metalworking 3 hrs.

An advanced course in numerical control machining and programming. A study of the “state of the art” of the metalworking industry, its economic, social, and educational implications. Prerequisite: I ED 234.

334 Metal Forming and Finishing 3 hrs.

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

335 Patternmaking and Foundry 3 hrs.

Basic principles, techniques, and materials used in pattern construction. Theory and practice in metal casting principles and procedures using green sand, CO2, investment, centrifugal, and shell processes.

336 Hot Metalworking 3 hrs.

A basic course in the joining of metals by fusion welding and brazing low temperature surface alloying materials. Included are principles and practices in the use of materials, tools, and equipment for S.M.A., S.T.A., and G.M.A. welding. Gas welding, brazing, off-hand and automatic flame cutting of ferrous metals, heat treating are also included. Prerequisite: I ED 130.

338 Advanced Metalworking 3 hrs.

Principles and practices in art metalworking and nonconventional metalworking processes. Prerequisite: I ED 130.

538 Problems in Metalworking 2 hrs.

Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Course will emphasize methods of selecting and developing course materials for junior and senior high school students. Course content will be adapted to meet the needs of individual students. Prerequisite: I ED 234.

**POWER MECHANICS-AUTOMOTIVE***

180 Power Mechanics 3 hrs.

Deals with energy sources, power production and transmission. Emphasis on small Otto cycle engines.

280 Applied Energy and Power 3 hrs.

Historic development, economic and ecologic implications of applied energy and power. Emphasis on transportation, production and service applications. Prerequisite: I ED 180.

384 Automechanics for Teachers 3 hrs.

Advanced laboratory course for high school and community college automotive teachers. Emphasis on instructional materials and evaluation instruments. Prerequisite: I ED 342, TRAN 121, TRAN 126, and TRAN 226.

*Courses in Auto Mechanics can be obtained from the Transportation Technology Department or by transfer from community colleges.
582 Applied Fluid Power 2 hrs.
Deals with fluid power development transmission and control systems. Laboratory experience requires application of fluid power to a manual or electrically powered machine.

584 Automotive Technology for Teachers 3 hrs.
Deals with recent technical developments, and current practices in automotive instruction.

585 Advanced Automotive Technology for Teachers 3 hrs.
Designed for automotive teachers and advanced undergraduates. Deals with advanced technical developments, and practices and problems unique to automotive instruction.

586 Laboratory Practices in Automechanics 3 hrs.
Designed for technical school and/or community college transfer students. Emphasis on course development, teaching and evaluation methods, instructional materials and equipment selection. Includes laboratory practice applying teaching techniques. Prerequisites: I ED 584 and I ED 585 or equivalent.

588 Power Laboratory Techniques 2 hrs.
Advanced course treating recent applications of energy and power. Emphasis on laboratory planning and equipping, and instructional material evaluation and application to instruction. Prerequisite: I ED 180, or consent.

WOODWORKING

100 General Woodworking 3 hrs.
A survey course of the woodworking field with laboratory experiences and the development of skills and knowledge in planning and layout; lumber and lumbering; purchasing and measuring lumber and plywood; methods of fastening and adhering wood; preparation of wood for a finish; elementary finishing methods; and sizing stock and wood joinery, with hand tools; electric portable tools and machines.

200 Machine Woodwork 3 hrs.
An introduction to furniture making including design, construction, and finishing. Laboratory experiences in the development of skills and knowledge will be provided on advanced joinery using industrial machines and methods with discussion on the function of the various machines and the planning and purchasing of this type of equipment. Prerequisite: I ED 100 General Woodworking.

201 Wood Finishing 2 hrs.
Principles of wood finishing; finishing materials and their characteristics; equipment and methods of application; finishing schedules; and finishing characteristics of different species of wood. Prerequisite: I ED 100 General Woodworking, and I ED 200 Machine Woodwork.

300 Upholstering and Woodturning 3 hrs.
Mass production of chair frames and upholstering which will include springing, padding, and the application of the final cover. The development of skills and knowledge in advanced techniques of woodturning will also be covered including chucking, plug turning, mandril turning, and other special applications. Prerequisites: I ED 100 and/or 200.
405 Introduction to Building Practices
Introduction to basic structures, building materials, and techniques. Emphasis placed on surveying practices, blueprint reading, building and material specifications, estimating, national and local building codes, financing, utilities, and environmental control.

500 Furniture Production
Design and production of furniture, including the development of all phases of tooling and jig and fixture design necessary for the mass production of a piece of furniture. Prerequisite: 1 ED 200.

502 Wood Technology
Experience in and study of the technical aspects of cellulose materials and their use in construction and manufacture. Included will be a study of the characteristics of lumber, man-made wood products, the materials related to the fabrication of wood products, applied research done by the Forest Products Laboratory and testing of materials. Prerequisite: 1 ED 100.

506 (306) Residential Building Construction
A course designed to cover rough framing of a residential building including prefabrication methods as well as on-site building. Classroom work and laboratory experiences to familiarize students with excavating, foundations, floor, and roof framing, exterior doors, windows, roofing, siding and preparation for interior wall coverings, trim and cabinets. Prerequisites: 1 ED 100 or 200, and 1 ED 405 (can be taken simultaneously).

507 (501) Finish Carpentry and Cabinetmaking
This course is designed to include finished carpentry such as built-in cabinets, and the installation of prefabricated cabinets. It will also include wall coverings, finished flooring, floor coverings, fitting and hanging doors, interior trim and interior painting and finishing. Prerequisites: 1 ED 100 and/or 200.

508 Related Building Trades
Covers areas related to residential building construction, masonry, concrete work, ceramic tile installation, electrical wiring, plumbing, building sheet metal work, and environmental control. Prerequisite: 1 ED 506.

PROFESSIONAL COURSES IN
INDUSTRIAL EDUCATION

140 American Industry
A study of the elements of industry as they apply to common industrial materials. Man and technology, from crafts to automation, including major industries and occupations, will be reviewed. Laboratory experiences, as a company developing a prototype and mass producing a product, will be used. The class will examine industrial-vocational programs in the schools and their relationship to a modern technological society.

342 Course Planning and Construction
Principles and techniques of selecting and analyzing suitable teaching activities and arranging such material into a functional instructional order. Instructional units prepared will be based on an analysis of a trade, occupation, or activity. Opportunity will be provided to prepare a detailed course of study.
344 Teaching of Industrial Education 3 hrs.

This course deals with problems in teaching industrial subjects, the techniques employed in the analysis of instructional units, construction of tests and rating scales, and problems dealing with administration and work. The principle methods of instruction used in industrial subjects will be emphasized. Prerequisite: I ED 342.

345 Plan and Organization of a School Shop 2 hrs.

This is a course to help teachers plan and organize the school shop. Topics concerned include physical needs, selection of activities, shop layout, purchasing equipment, establishing a supply routine, planning personnel organization, and shop management. Prerequisites: Junior and I ED 342.

444 Independent Study in Industrial Education 1-4 hrs.

Open to advanced students in the Industrial Education area with good scholastic records. An independent study program arranged in consultation with a study supervisor. Approval of study program required prior to registration. Prerequisite: 9 hrs. of major area and instructor’s permission.

540 Technical Education Methods 3 hrs.

A course dealing with an analysis and methods of organizing instruction in technical education. Methods of determining objectives, making analysis of instructional units, and developing them into a teaching plan will be emphasized. Consideration will be given to organizing educational programs within industry.

545 Safety Education for Industrial Teachers 2 hrs.

A basic course covering the fundamentals of accident prevention in industrial education laboratories, treating legal responsibility of teachers, safety requirements in relation to equipment, safe guarding, and safe operation.

548 History and Philosophy of Industrial Education 2 hrs.

Industrial education in America, with special attention to European influences, experiments, industrial developments and theories. Emphasizes developments leading to modern practices in industrial arts and vocational industrial education.

598 Readings in Industrial Education 2-4 hrs.

Directed individual or small group study of topics or areas not otherwise treated in departmental courses. Graduate standing and head of department consent required.

SERVICE COURSES

190 Industrial Arts for Elementary Teachers 3 hrs.

This course is planned for prospective elementary school teachers and will include a study of Industrial Arts for grades one through six. Basic constructional techniques in the areas of sketching, woods, metals, leather, graphic arts, electricity, textiles, ceramics, and plastics will be included. An understanding of how industrial arts activities may be correlated with the elementary program will be emphasized. Special Education students may take this course for four hours of credit by arrangement.
191 O.T. General Shop

A course designed exclusively for individuals preparing for occupational therapy. This course will cover the fundamentals of sketching, drawing, plastics, art metals, and elementary electricity.

192 Related Arts and Crafts

A general course in arts and crafts including work in leather, plastic, wood, and other related craft activities.

193 Related Arts and Crafts

A course in arts and crafts including work in graphic arts, art metal, basketry, and other crafts not previously included.

196 O.T. Printing

This course is intended to acquaint the student with the various tools and equipment of a graphic arts shop. Studies are undertaken in such areas as typography, presswork, silk screen, block cutting, bookbinding and etching. Limited to students enrolled in the Occupational Therapy curriculum.

198 O.T. Woodworking

A basic course in shop fundamentals, including the use of hand tools and machines, construction design, fastening devices, and finishing. Limited to students enrolled in the Occupational Therapy curriculum.

590 Industrial Arts for the Elementary Schools

This course is concerned with the problems of organizing, correlating and teaching constructional activities in the elementary grades. Course materials, techniques, and materials in the industrial and craft areas will be stressed through the construction of a teaching unit.

592 Aerospace for Classroom Teachers

A course dealing with the educational, social, economic, and political implications of aerospace in the modern world. A study will be made of basic aerospace materials and activities that are appropriate for different grade levels. Consideration will be given to aerospace literature and visual aids suitable for youngsters. Opportunities will be provided for participation in a variety of aerospace experiences. This course is open to elementary and secondary education students.

593 Arts and Crafts for Special Education Teachers

This course will cover craft techniques in areas of sketching, leather, wood, and other related experiences. Emphasis will be placed on teaching procedures, methods, and materials.

594 Home Mechanics for the Blind

A course to fulfill the needs for general knowledge and basic skills in home mechanics in the areas of woodworking, electricity, plumbing, and general maintenance. Prerequisite: Blind Rehabilitation Program students only.
Military Science

Colonel Charles L. Phillips, Head
LTC Richard C. Collins
MAJ J. Frank Lancaster
MAJ J. Michael Hagman
CPT Robert C. Timian

CPT Eugene E. Makowski
CPT Clifford W. Parent
SGM John D. Manley
MSG Richard L. Waters

This Department is a General Military Science Reserve Officer Training Corps Unit, which provides training in the Senior Division R.O.T.C. United States Army. Graduates may be commissioned Second Lieutenants in a branch of the Regular Army or United States Army Reserve. Enrollment in this program makes a student eligible for a 1D draft deferment if applied for. Students may also obtain a minor in Military Science by meeting the requirements shown on the next page. Transfer students of less than Junior standing who started Army or Air Force R.O.T.C. training in another institution may enroll in the appropriate class of the Basic Course and complete the Basic Course.

The Head of the Department is an officer of the United States Army. He is assisted in his duties by other officers and enlisted men of the Army on active duty. The personnel assigned provide the instruction to the student cadets and the administration of the R.O.T.C. program at the University.

The Military Science Department offers both a basic and an advanced course. Upon completion of the Advanced Courses, the prescribed summer camp training, and requirements for a college degree, students will apply for commissions as Second Lieutenants in the United States Army Reserve. Flight training is available in the Advanced R.O.T.C. Program on a competitive basis. Upon completion of the prescribed courses, distinguished Military Students are eligible to apply for appointments as Second Lieutenants in the Regular Army.

Uniforms are provided by the Government to all students who take R.O.T.C. work. Additional emoluments for advanced course students are described under the heading of Advanced Course.

An R.O.T.C. Activity fee of $2.00 per year is charged for support of R.O.T.C. activities such as rifle team, drill meets, military social events, and for providing suitable achievement awards.

### Military Science Minors

**A. Military Science 300-401**
- Gen. Studies, Social Science 202, 203, or 205: 4 hours
- Management 352: 3 hours
- History 519 or 594: 3 hours
- Elective*: 2 or 3 hours
  
  **Total: 20 or 21 hours**

**B. Military Science 100-401**

A department minor slip is required

*An elective of two or more hours will be chosen by the student from any one of the following areas: Anthropology, Geography, Sociology, or Political Science. This elective must have a course number of 100 or higher and be approved by the student’s minor advisor.

**This minor is open only to those students interested in pursuing a career in the military as a commissioned officer, and who have evidenced superior academic and leadership performance prior to the time they request admittance into this program. A minimum grade point average of 2.75 in department subjects must be maintained.
Military Science

BASIC COURSE

The first two years of Military Science comprise the Basic Course. It is designed to furnish a background of basic military subjects necessary to pursue the Advanced Course and to provide a general knowledge of military affairs to those students that do not enter the advanced program. The requirements for enrollment in the Basic Course are that: the student must be a citizen of the United States, over 14 and under 23 years of age, physically qualified and of good moral character. Students who have had three years of Junior R.O.T.C. (High School R.O.T.C.) or more than one year of active military service may substitute this training or service for the first two years of the basic course upon the approval of the Professor of Military Science. Students who are thus excused from taking the first years of the basic R.O.T.C. course will normally be allowed to enter the advanced course R.O.T.C. program at the beginning of their Junior year. The records of students transferring from other institutions with less than two years basic R.O.T.C. credit will be reviewed by the Professor of Military Science to place such students in the appropriate R.O.T.C. class. Basic Course classes meet for two hours of classroom work and one hour of Leadership Laboratory weekly.

100 Contemporary Problems in National Defense 2 hrs.*

Subjects of current national military implication and interest are studied. Subject material selected involves rules of international land warfare; citizens' rights and the uniform; military involvement around the world; and other topics of current U.S. military/civilian interest.

101 Military Aspects of National Power 2 hrs.*

A study of the factors that contribute to international power; an insight into the causes of war; organization of the United States for defense, and an introduction to leadership and management theory.

200 Principles of Cartology and Military Educational Techniques 2 hrs.*

A study of military terrestrial navigation including practical field experience in terrain identification, intersection and resection techniques, profiles and orientation. Introduction to the principles of planning, preparation, presentation and evaluation of military instruction under varied environmental conditions.

201 Human Behavior and Fundamentals of Tactical Employment 2 hrs.*

A study of the tactical considerations and employment of small military units to include their organization in offensive and defensive warfare. Emphasis is placed on the role of the individual, group interaction and motivation in stress situations.

BASIC SUMMER CAMP

Attendance at a six week Basic Summer Camp may be substituted for the Basic R.O.T.C. course in order to qualify a transfer student or other student for the Advanced R.O.T.C. course. Students will receive travel pay and will be fed, clothed, and quartered at the expense of the Government, and will be paid at the rate of approximately $320.79 per month while in camp. See the professor of Military Science for details of this program.

ADVANCED COURSE

The selection of students for enrollment in the Advanced Course is on a competitive basis. Special attention is given to maintenance of high standards of con-

*See bottom of p. 158.
duct and academic achievement both before and after enrollment in the Advanced Course. The major emphasis of the Advanced Course is on the development of individual leadership and a sense of responsibility. For admittance to the Advanced Course for purpose of attainment of a commission, a student must have completed either the Basic Course or Basic Summer Camp, be selected by the Professor of Military Science, be 25 years of age or under at time of enrollment, execute a contract with the government to finish the course, attend a six week summer camp, and accept a reserve commission if tendered. Students who have had one or more years active service with one of the Armed Forces and students who are transferring from another institution with credit for the Basic Course may by authorized to register for the Advanced Course in the phase with their collegiate academic standing. Advanced Course classes meet for two or three hours of classroom work and one hour of lab weekly. (See below.) Students accepted for the Advanced Course receive payment of $100 per month. Students attending summer camp are fed and quartered at the expense of the Government, paid at the rate of approximately $265.35 monthly while in camp, and are given a travel allowance to the summer camp and return.

A program of flight instruction in connection with R.O.T.C. is of special interest to the advanced course student. Under this plan the Army will pay for flight training of selected seniors who request such instruction and pass required written and physical examinations. Completion of this training may qualify the student for the award of an FAA pilot's license. It further qualifies the advanced course student upon receiving his commission for advanced Army flight training.

300 Leadership, International Relations and Military Logistics 3 hrs.*

This course surveys patterns and causes of international behavior, United States treaty agreements and modern governmental stability operations. Also studied is the military logistical system; administrative behavior; the planning concepts and use of the military staff in the decision making process. One overnight field problem is required during the semester. Prerequisite: MS 100-201 or Basic Summer Camp or permission of PMS.

301 Advanced Concepts of Tactical Employment 2 hrs.*

A study of the tactical considerations of employment of military units with emphasis on the military estimate, planning techniques and co-ordination. Military communications methodology as means of control in both conventional and unconventional warfare. Prerequisite: MS 300 or permission of Professor of Military Science. One overnight field problem is required during the semester.

400

Student will enroll in either History 519 (United States Military History) or History 594 (Problems in Modern Warfare).

NOTE: Student must enroll in Leadership Laboratory.

*Leadership Laboratory

Leadership Laboratory is elected by R.O.T.C. students at all levels. It is taken each semester as an adjunct to the courses above and does not offer separate or additional credit hours. This Laboratory is designed to reinforce the study of theoretical, managerial, and leadership situations presented in the classroom environment by practical experience in the leadership of small groups. Selected classes will be presentations by guest lecturers from both within and outside the academic community on subjects of significant interest which will reinforce previous study or serve as the basis for future study.
401 Military Administrative Leadership and Management  

A comprehensive course in the fundamentals of military administrative management including military law, personnel management, counterintelligence, and military leadership, with emphasis on humanistic aspects. Prerequisites MS 300-MS 400 or permission of the Professor of Military Science.

R.O.T.C. SCHOLARSHIPS

R.O.T.C. Scholarships that provide for tuition, fees, books, and an allowance of $100 per month are available. See Military Science on page 60 in the Scholarships portion of this catalog.
Occupational Therapy

Dean Tyndall, Chairman

Teri Allen
Joy Anderson
Lois Hamlin
Rosalia Kiss
Alice Lewis
Geraldine Richardson
Harriet Schmid
Mabel ValDez

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

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

1. He will declare his intention to follow the Occupational Therapy curriculum at the time of application to the University, or, if he decides to transfer at a later date, he must confer with the departmental counselor.

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

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

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

The following courses are offered on a credit/no credit basis only: OT 236, 440, 441, 450.

OCCUPATIONAL THERAPY

Bachelor of Science Degree

required for this Curriculum ................................................. 128 hrs.

- Developmental Psychology

The following courses are offered on a credit/no credit basis only: OT 236, 440, 441, 450.
3. Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>*Bio. 101 Animal Biology</td>
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<tr>
<td>Bio. 219 Human Physiology</td>
<td>4</td>
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<tr>
<td>O.T. 221 Gross Human Anatomy</td>
<td>6</td>
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<tr>
<td>O.T. 520 Kinesiology</td>
<td>3</td>
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4. Practical Arts

<table>
<thead>
<tr>
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<tr>
<td>O.T. 103 Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 110 General Crafts</td>
<td>3</td>
</tr>
<tr>
<td>I.Ed. 198 O.T. Woodworking</td>
<td>3</td>
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5. General Pathology

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>O.T. 322 Psychiatric Conditions</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 524 Medical and Orthopedic Conditions</td>
<td>4</td>
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6. Occupational Therapy

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>O.T. 111 Therapeutic Media I</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 210 Therapeutic Media II</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 235 Developmental Assessment</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 323 Clinical Neurology</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 332 Application in Psychiatry</td>
<td>4</td>
</tr>
<tr>
<td>O.T. 333 Clinical Instruction in Psychiatry</td>
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<tr>
<td>O.T. 410 Application in Physical Dysfunction-Techniques</td>
<td>4</td>
</tr>
<tr>
<td>O.T. 430 Organization for Patient Services</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 440 Clinical Affiliation</td>
<td>3</td>
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<tr>
<td>O.T. 441 Clinical Affiliation</td>
<td>3</td>
</tr>
<tr>
<td>O.T. 442 Application in Physical Dysfunction-Treatment</td>
<td>4</td>
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<tr>
<td>O.T. 443 Clinical Instruction in Physical Disabilities</td>
<td>2</td>
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<tr>
<td>O.T. 450 Senior Seminar</td>
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</table>

7. Physical Education

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
</table>

8. Electives to make 128 hours

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**COURSE DESCRIPTIONS**

103 (203) Ceramics

3 hrs.

Designed to give a working knowledge of ceramics from pinch pots, slab techniques, tall pots, mold making methods, decoration and glazes through stacking and firing of kilns. Departmental consent.

110 General Crafts

3 hrs.

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

111 Therapeutic Media I

3 hrs.

Designed to assist the student in gaining knowledge and understanding of specific skills and techniques needed to make a selective occupational placement of a worker with a disability. Prerequisite: Occupational Therapy major.

210 Therapeutic Media II

3 hrs.

Designed to develop skill in selection and use of various media for therapeutic application, and in relation to developmental level. Prerequisite: Occupational Therapy major.

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*Biology 101 may be used in this curriculum to waive 4 hours of science required under General Studies 1.
221 (321) Gross Human Anatomy 6 hrs.
A study of the structure and function of the various systems of the body. Lecture and laboratory. Prerequisite: Biology 101 or equivalent, Occupational Therapy major.

235 Developmental Assessment 3 hrs.
A course in theory and methodology of developmental assessment through children's activities, developmental schedules, test batteries for evaluating perceptual and motor development. Experience in assessment of young children will be a part of the laboratory experience. Prerequisite: TEED 250 or consent, OT major.

236 Field Experience 2 hrs.
Participation in a health service or agency to provide experience with hospital procedure and an orientation to patient groups. A daily log is required. Student must submit a proposal for the course for departmental approval prior to registration. Departmental majors only.

322 Psychiatric Conditions 3 hrs.
A series of lectures and discussion periods designed to assist the occupational therapy student to identify and characterize psychiatric conditions, to identify various treatment modalities, to trace the growth of the field of psychiatry, and to identify concepts of the law as applied to the psychiatric patient. Prerequisites: Psych. 150, 160; TEED 250 or concurrently; O.T. major.

323 Clinical Neurology 3 hrs.
Functional neuroanatomy, neuropathology will be presented. Case presentations and demonstrations of neurological examination will be included. Prerequisites: Biology 219, OT 221.

332 Application in Psychiatry 4 hrs.
A study of the philosophy and application of occupational therapy in the psychiatric field. Specific emphasis on the conscious use of one's own personality as a therapeutic tool and acquainting the student with group processes used in occupational therapy situations. Prerequisite: OT 322 or concurrently.

333 Clinical Instruction in Psychiatry 2 hrs.
Clinical experiences designed to develop skill in application of evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Concurrent or subsequent to OT 332.

410 Application in Physical Dysfunction—Techniques 4 hrs.
A study of objectives and functions of occupational therapy in general medicine and rehabilitation—evaluation and treatment techniques will be covered as a basis for treatment planning. Prerequisites: OT 225, 323, 520, 524. Must be taken concurrently with 442.

430 Organization and Related Services 3 hrs.
Designed to assist the student in applying knowledge gained about the public health program to the field of rehabilitation, and to assist the student in gaining knowledge of supervision and administration. Prerequisites: OT 442 or concurrently; OT major.

436 Independent Study in Occupational Therapy 2-4 hrs.
Designed to allow outstanding students to work independently under faculty supervision. Consent of departmental head. Credit variable.
163

Occupational Therapy

440 Clinical Affiliation 3 hrs.
A three month affiliation in hospitals or agencies providing the student experience in designated areas of Occupational Therapy. Departmental consent only. Pre-requisite: Occupational Therapy 322, 333 or 442, 443.

441 Clinical Affiliation 3 hrs.
A three month affiliation in hospitals or agencies providing the student experience in designated areas of Occupational Therapy. Departmental consent only. Pre-requisite: Completion of all academic work.

442 Application in Physical Dysfunction—Treatment 4 hrs.
A continuum course designed to study effects of disease and injury with emphasis on treatment. Prerequisites: OT 225, 323, 520, 524. Must be taken concurrently with 410.

443 Clinical Instruction in Physical Disabilities 2 hrs.
Clinical experiences designed to develop skill in evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Concurrent or subsequent to OT 442.

450 Senior Seminar 2 hrs.
Senior students present cases and problems for consideration of classmates, faculty, and resource persons. The course is required of all seniors but audience is open.

510 Arts and Crafts for Home Teachers of the Blind 2 hrs.
Includes methods and techniques of teaching needlework, ceramics, and leatherwork to visually handicapped adults. Prerequisite: Occupational Therapy majors must have consent of Department Chairman.

520 Kinesiology 3 hrs.
Investigation and analysis of human motion. Includes a study of body mechanics, principles of muscle contraction, surface anatomy, range of motion, muscle testing, and activity analysis. This study is accompanied by a review of basic functions of the musculo-skeletal and nervous system. Prerequisites: Occupational Therapy 221, Biology 219.

524 Medical and Orthopedic Conditions 4 hrs.
A series of lectures concerned with medical and orthopedic conditions which are treated by the occupational therapist. Prerequisite: Occupational Therapy 221.
The Department of Paper Science and Engineering offers two B.S. and M.S. programs which provide extensive foundational scientific and technical education to prepare graduates for professional employment in the research and development, technical-manufacturing, and technical-marketing areas of the paper, pulp, and related industries. The breadth and depth of the program is such that a significant number of graduates have progressed into management positions and to graduate school in the sciences.

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

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

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

**COMPARISON OF OPTIONS**

<table>
<thead>
<tr>
<th>COURSE TYPE</th>
<th>Paper Science Option</th>
<th>Paper Engineering Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Science</td>
<td>30 semester hours</td>
<td>30 semester hours</td>
</tr>
<tr>
<td>Chemistry</td>
<td>34</td>
<td>16</td>
</tr>
<tr>
<td>Engineering and Related</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>Mathematics</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Technical or Science electives</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>General Studies</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>136 semester hours</td>
<td>136 semester hours</td>
</tr>
</tbody>
</table>

Industrial experience in both options is provided through employment by paper or related companies for at least two out of the three summers, as well as through operation of the outstanding pilot plant papermaking and coating machines of the department. The pilot plant and laboratory facilities are among the best in the world.
Close cooperation with the paper industry is maintained through committees of the Paper Technology Foundation, Inc. An extensive scholarship program is made possible through the membership of the Foundation. Information about these scholarships may be found in the scholarship section of this catalog.

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

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

### PAPER SCIENCE
**Bachelor of Science Degree**

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>S.H.</th>
<th>Semester 2</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPR 100 Introduction to Pulp and Paper Mfg.</td>
<td>3</td>
<td>PAPR 101 Introduction to Pulp and Paper Mfg.</td>
<td>3</td>
</tr>
<tr>
<td>MATH 122 Mathematics I</td>
<td>4</td>
<td>MATH 123 Mathematics II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102 General Chemistry</td>
<td>4</td>
<td>CHEM 120 Qualitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>AS 120 Technical Communication Physical Education</td>
<td>3</td>
<td>GS 140 General Studies Reading</td>
<td>4</td>
</tr>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Semester 3</th>
<th>S.H.</th>
<th>Semester 4</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>PAPR 203 Pulp Manufacture</td>
<td>3</td>
<td>PAPR 202 Paper Manufacture</td>
<td>4</td>
</tr>
<tr>
<td>MATH 222 Mathematics III</td>
<td>4</td>
<td>MATH 223 Mathematics IV</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 210 Mechanics and Heat</td>
<td>4</td>
<td>PHYS 211 Electricity, Sound and Light</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 222 Quantitative Analysis Physical Education</td>
<td>4</td>
<td>PAPR 251 Effluent Control and Microbiology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total</strong> 16</td>
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<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td><strong>Total</strong></td>
<td>18</td>
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<table>
<thead>
<tr>
<th>Semester 5</th>
<th>S.H.</th>
<th>Semester 6</th>
<th>S.H.</th>
</tr>
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<tbody>
<tr>
<td>CHEM 361 Organic Chemistry</td>
<td>4</td>
<td>GS 304 Non-Western World</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 306 Process Engineering I</td>
<td>4</td>
<td>PAPR 307 Process Engineering II</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 305 Mechanics &amp; Optics of Fiber Systems Elective, Technical ¹</td>
<td>4</td>
<td>PAPR 333 Chemistry of Wood &amp; Pulp</td>
<td>4</td>
</tr>
<tr>
<td>Elective, Gen. Studies ⁴</td>
<td>3</td>
<td>MATH 360 Statistical Methods</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 440 Current Topics in Pulp and Paper</td>
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<td>PAPR 440 Current Topics in Pulp and Paper</td>
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<tr>
<td></td>
<td></td>
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<td><strong>Total</strong> 17</td>
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</tbody>
</table>

¹Either Western Civilization GSSC 100 or GSSC 101, or Arts & Ideas GS 221.

²Two summers of mill practice are suggested. Credit for summer mill experience as a technical elective may be earned after the sixth semester of study by completing a satisfactory report.


⁴General Studies Electives should be Senior level.
### PAPER ENGINEERING

Bachelor of Science Degree

#### Semester 1

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PAPR 100 Introduction to Pulp &amp; Paper</td>
<td>3</td>
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<tr>
<td>MATH 122 Mathematics I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>AS 120 Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td></td>
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#### Semester 2

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PAPR 101 Introduction to Pulp &amp; Paper</td>
<td>3</td>
</tr>
<tr>
<td>MATH 123 Mathematics II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 120 Qualitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>GS 140 General Studies Reading</td>
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</tr>
<tr>
<td>General Studies</td>
<td>4</td>
</tr>
<tr>
<td></td>
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#### Semester 3

<table>
<thead>
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<tbody>
<tr>
<td>PAPR 203 Pulp Manufacture</td>
<td>3</td>
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<tr>
<td>CHEM 365 Intro. to Organic Chem.</td>
<td>4</td>
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<tr>
<td>ENGT 256 Statics</td>
<td>3</td>
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<tr>
<td>PHYS 210 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>ECON 201 or ECON 203 Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
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#### Semester 4

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PAPR 202 Paper Manufacture</td>
<td>4</td>
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<tr>
<td>CHEM 222 Quantitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211 Electricity, Sound Light</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 251 Effluent Control &amp; Microbiology</td>
<td>2</td>
</tr>
<tr>
<td>Elective, Gen. Studies</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

PAPR 310 Summer Mill Practice

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1. Two summers of mill practice are suggested. Credit for summer mill experience as a technical elective may be earned after the sixth semester of study by completing a satisfactory report. Other electives should be approved by Department Chairman.
2. General Studies Electives should be Senior level.
4. Students not desiring research positions or not going to graduate school in sciences may elect Chem. 565 (in Semester 7) and an elective (in Semester 8) approved by Department Chairman. This approach will not qualify the student for a chemistry major.
Semester 5  S.H.  Semester 6  S.H.
PAPR 305 Mechanics & Optics of Fiber System 4  PHYS 342 Elec. Measurements & Electronics 5
PAPR 306 Process Engineering I 4  PAPR 307 Process Engineering II 4
ENGT 352 Thermodynamics 3  MATH 360 Statistical Methods 4
Elective, Technical 4  (or 260)
Elective, General Studies 4  ENGT 360 Control Systems 3
PAPR 440 Current Topics in Pulp and Paper 1

Semester 7  S.H.  Semester 8  S.H.
PAPR 590 Instrumentation and Process Control 3  PAPR 591 Instrumentation and Process Control 3
ENGT 452 Mechanical Engineering Lab 3  PAPR 442 Coating & Converting of Paper 3
MATH 506 Programming for Computers 3  PAPR 471 Senior Thesis 2
(or 106 and 306)  GSSC 304 Non-Western World 4
Elective Technical 4
PAPR 470 Senior Thesis 2  PAPR 440 Current Topics in Pulp and Paper 1
Physical Education 1
Elective Technical 4
I ED 451 Printing Processes 2
PAPR 440 Current Topics in Pulp and Paper 1

100 Introduction to Pulp and Paper Manufacture 3 hrs.
A lecture-laboratory consideration of the fundamentals of papermaking processes and equipment. Some time will also be spent on coating, printing and other uses of paper. In this the student should acquire a basic understanding of the nature and scope of the paper industry. Prerequisites: High school chemistry, general chemistry, 101 or 102 concurrent.

101 Introduction to Pulp and Paper Manufacture 3 hrs.
A continuation of course 100 with major emphasis on pulping and bleaching processes and equipment. Some time will also be spent on fiber microscopy and paper testing. Prerequisites: Paper 100 or consent.

202 Paper Manufacture 4 hrs.
Study of the theories and practices of stock preparation, sheet formation, wet pressing, and drying of paper is made by emphasizing the latest equipment available to the industry. Surface treatment of papers and the influence of furnish additives such as size, fillers, colors, and wet and dry strength additives are studied to show their effects on the paper produced. The lectures are augmented by laboratory work and pilot machine exercises. Prerequisites: Paper 100 and 101.
College of Applied Science

203 Pulp Manufacture 3 hrs.
An advanced study of various pulping processes, pulp bleaching, heat, and chemical recovery, and by-product utilization is made from the chemical and engineering standpoint. Lecture studies are augmented by laboratory exercises. Prerequisites: Organic Chemistry 360, Paper 100, 101 and Organic Chemistry 360 or 365 concurrent.

251 Effluent Control and Microbiology 2 hrs.
The causes and control of paper and pulp mill effluents in air and stream are discussed. The relationship between microbiology, stream pollution, papermill operations, and finished product are explored.

305 Mechanics and Optics of Fiber Systems 4 hrs.
Lecture and laboratory study of the fundamental properties of fibers and fiber systems. Theories and techniques for evaluating 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. Prerequisites: Paper 202 and Physics 210.

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

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

310 Summer Mill Practice 2 hrs. Spring and/or Summer
Full time employment in a pulp and/or paper mill or related industry in order to provide first-hand industrial experience. Typed report required. Only open to departmental majors. Prerequisite: One summer of summer employment.

333 Chemistry of Wood and Pulp 4 hrs.
A combined lecture-laboratory consideration of the chemistry of wood, pulp, and pulping by-products. Included topics are cellulose, lignin, accessory carbohydrates, exractives, and spent liquor utilization. Prerequisites: Chemistry 360, 361 or 365 (concurrent). Chemistry 361 or 365.

440 Current Topics in Paper and Pulp 1 hr.
This course will be handled on a seminar basis utilizing guest speakers, University staff, and students. Its purpose is to add depth and breadth to the background of students.

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

470 Senior Thesis 2 hrs.
This course is designed to increase the student's ability to develop a research or
technical problem; to critically analyze the available information on this problem; to use this analysis to plan on experimental investigation; to carry out the experiments, and, finally, to present the completed program effectively both in writing and orally. About one-half of the semester is spent on developing the problem and completing the literature search. The second half is devoted to planning and initiating the experimental work.

471 Senior Thesis

A continuation of 470, including completion of the laboratory work and preparation of the final typed paper in duplicate. Oral presentation will be arranged.

530 Polymer Chemistry

A study of the molecular structure and polymerization reactions of high molecular weight compounds in relation to mechanical and rheological behavior and chemical properties. Methods for characterization of bulk and solution properties of polymers are considered in detail. Prerequisite: Chemistry 361 or 365.

550 Paper Industry Processes

Offered primarily for students in graphic arts and printing management programs in order to provide a basic understanding of the major aspects of the science and technology of pulping, papermaking, coating, and evaluation of materials, especially as they relate to printing.

560 Advanced Topics in Pulp and Paper Engineering

A unified consideration of the pulp and paper plant and its subsystems stressing operating efficiencies from the engineering viewpoint. Includes design considerations, material and energy balances, power distribution, evaluation at equipment performance, and typical operating costs. Prerequisites: Paper 202, 203 and 307.

590 Instrumentation and Process Control

A detailed consideration of the theory and practice of electronic and pneumatic sensing instruments and process control. Simulation of process dynamics and computer application will be emphasized.

591 Instrumentation and Process Control

Continuation of Course 590.
Transportation Technology

Harley D. Behm, Chairman
John W. Cummings
Charles E. Dee
Herbert E. Ellinger
Forrest O. Hutchins
LaVerne M. Krieger
Herman W. Linder

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

The Transportation Technology Department offers bachelor of science degree curricula in Automotive and Aviation Engineering technology, and a two-year curriculum in Aircraft Technology.

A major can only be obtained by completing one of the curricula. A minor may be secured upon the approval of the departmental counselor and by completing 15 to 20 semester hours of work, depending upon the area of specialization.

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

All options of the aviation curricula permit students to qualify for the Federal Aviation Administration Airframes and Powerplants license with some additional course work. The equivalent of the Aircraft Technology curriculum must be completed prior to taking the F.A.A. examination.

COOPERATIVE EDUCATION

Students enrolled in any Transportation Technology degree curriculum may pursue a cooperative plan of education whereby one semester is spent in industry followed by one semester of study on the campus. Only students of junior standing with an acceptable scholastic record are eligible.

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

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

Academic Counseling

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

The following academic counselors are located in room 2032, Industrial and Engineering Technology building:

Automotive Curricula ............................................................ Mr. Herbert Ellinger
Aviation Curricula ............................................................... Mr. C. N. VanDeVenter

Additional Costs

Special lab fees are in effect for flight courses to cover the cost of airplane operation. The fee varies from $300 to $450, depending on the course.

Each student is required to have his own tools for aviation courses in airframes and powerplants. A basic list of required tools may be purchased for less than $100.
TRANSPORTATION TECHNOLOGY CURRICULA

AUTOMOTIVE ENGINEERING TECHNOLOGY

Bachelor of Science Degree

OPTION I—MANAGEMENT AND SERVICE

The Management and Service Option of the Automotive Engineering Technology curriculum prepares students for positions in supervision or management, sales, and service where technical knowledge of automobile construction and operation is necessary.

A bachelor of science degree requires 128 semester credit hours.

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<th>Semester 1</th>
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*B ED 142, Eng 105 a or b, or GS 116 may be substituted.
AUTOMOTIVE ENGINEERING TECHNOLOGY

Bachelor of Science Degree

OPTION II—PRODUCTION AND TESTING

The Production and Testing Option of the Automotive Engineering Technology curriculum is an applied engineering program leading to positions in design, development, testing, manufacturing, or service engineering within automotive-related industries.

A bachelor of science degree requires 128 semester credit hours.

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*B ED 142, ENG 105 a or b, or GS 116 may be substituted.
AVIATION ENGINEERING TECHNOLOGY

Bachelor of Science Degree

OPTION I—MANAGEMENT AND TRANSPORTATION

The Management and Transportation Option of the Aviation Engineering Technology curriculum offers preparation for careers in the business and operations facets of the aviation industry as well as for supervision or management positions where technical knowledge of aircraft construction, operation and repair is an asset.

A bachelor of science degree requires 128 semester credit hours.

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*B ED 142, ENG 105 a or b, or GS 116 may be substituted.
AVIATION ENGINEERING TECHNOLOGY

Bachelor of Science Degree

OPTION II—PRODUCTION AND TESTING

The Production and Testing Option of the Aviation Engineering Technology curriculum is an applied engineering program offering preparation for careers in the aircraft industry in manufacturing, product development, technical sales, and other areas requiring application of technical skills and knowledge.

A bachelor of science degree requires 128 semester credit hours.

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*B ED 142, ENG 105 a or b, or GS 116 may be substituted.
The Professional Pilot Option is oriented toward career-pilot positions in general aviation. Appropriate electives allow broadening to such fields as aircraft operations and airport management.

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<td>PHYS 106 Elementary Physics</td>
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<td>CHEM 103 General Chemistry</td>
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<td>MATH 106 Intro. to Computers</td>
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<td>TRAN 203 Primary Flight</td>
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<td>TRAN 115 Aircraft Carburation and Fuel Systems</td>
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<td>TRAN 212 Powerplant Eval. &amp; Sys</td>
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<td>GEOG 225 Intro. to Meteorology and Climatology</td>
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<td>TRAN 201 Intro. to Flight</td>
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<td>ENGT 140 Fundamentals of Electric Circuits &amp; Electronics</td>
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<td>TRAN 217 Airframe Electrical Sys.</td>
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<td>TRAN 215 Propellors &amp; Jet Propulsion</td>
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<td>GS 222 or 224 Arts and Ideas</td>
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<td>TRAN 300 Intermediate Pilot Ground School</td>
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<td>TRAN 303 Commercial Flight</td>
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<td>TRAN 301 Intermediate Flight</td>
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<td>TRAN 400 Advanced Pilot Ground School</td>
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**SPRING OR SUMMER SESSION—TRAN 218-Aircraft Servicing 5 S.H.**

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<td>ECON 201 Principles of Econ.</td>
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<td>ECON 202 Principles of Econ.</td>
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<td>ACTY 201 Accounting Concepts and Applications</td>
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<td>GS 304 Non-Western World</td>
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<tr>
<td>TRAN 222 Fuels and Lubricants</td>
<td>2</td>
<td>GS 400 or 408 Sr. Elective</td>
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<td>ENGT 252 Metallurgy</td>
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<td>TRAN 403 Flight Instructor Fund.</td>
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<td>TRAN 401 Instrument Flight</td>
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*B ED 142, ENG 105 a or b, or GS 116 may be substituted.
The Aircraft Technology curriculum is intended for students who wish to qualify for the Federal Aviation Administration Airframe and Powerplant Mechanics License. This program is being revised to conform to new FAA standards. Requirements may differ slightly from those listed here.

**Minimum hours required for this curriculum**

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<td>TRAN 110</td>
<td>Introduction to Aviation</td>
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<td>TRAN 113</td>
<td>Airframe Structures</td>
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<td>TRAN 114</td>
<td>Reciprocating Powerplants</td>
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<td>TRAN 115</td>
<td>Aircraft Carburetion &amp; Fuel Systems</td>
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<td>ENGT 132</td>
<td>Technical Drafting</td>
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<td>Fundamentals of Electric Circuits and Electronics</td>
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<td>TRAN 214</td>
<td>Aircraft Welding</td>
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<td>TRAN 218</td>
<td>Aircraft Servicing</td>
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<td>TRAN 219</td>
<td>FAA Maintenance Regulations</td>
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<td>TRAN 222</td>
<td>Fuels and Lubricants</td>
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<td>ENGT</td>
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**COURSE DESCRIPTIONS**

**AUTOMOTIVE**

**121 Automotive Chassis**

3 hrs.

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

*B ED 142, ENG 105 a or b, or GS 116 may be substituted.

**Recommended Elective: Introduction to Flight 201.**
122 Automatic Transmissions 3 hrs.

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

126 Automotive Carburetion and Electricity 4 hrs.

Theory and practice in diagnosing, adjusting and tuning modern automotive engines and electrical accessories. Laboratory practice is provided using oscilloscopes, distributor testers, generator test benches, and other engine and electrical testing equipment.

222 Fuels and Lubricants 2 hrs.

A study of petroleum products and their application to the fuel and lubricant requirements of automobiles and aircraft. Laboratory tests are conducted to ascertain octane requirements, octane numbers, viscosity, volatility, flash and fire point, grease penetration, API degree, and dropping point of grease.

226 Automotive Engines 4 hrs.

A study of the design, dynamic characteristics, elementary thermodynamics, and basic service techniques of automotive engines. Theory is supplemented with laboratory work involving disassembly, visual and mechanical inspection of parts, plotting charts and graphs of engine characteristics, performing service operations, assembly, and engine operation. Prerequisite: MATH 100 or equivalent.

322 Automotive Service Management 2 hrs.

Principles involved in management of automotive repair shops including establishing objectives, organizational problems, controls, personnel management, merchandising, pricing, and customer relations.

325 Automotive Testing 4 hrs.

Theory and application of the basic principles of engineering measurements, as applied to automotive testing. Laboratory assignments involve calibration of instruments, obtaining data, dynamometer operation, engine testing, and evaluation of engine performance. Written reports of laboratory assignments are required. Prerequisites: TRAN 121, 122, 126, 222 and 226, MATH 122, 106.

326 Automotive Diagnosis 3 hrs.

Procedures and techniques used in evaluating performance and identifying malfunctions in automotive systems. Laboratory equipment as well as service shop test equipment will be used in diagnostic procedures. Prerequisites: TRAN 121, 122, 126, 222 and 226.

421 Automotive Analysis 3 hrs.

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 4 hrs.

Individual and group design projects will be selected on subjects relating to automotive testing, development, or modification. The student will design, build,
test, develop and evaluate his project. Written reports including project request, progress reports, and final reports are required. Prerequisite: TRAN 325 and ENGT 452 or approval of instructor.

498 Studies in Transportation Technology 1-4 hrs.
An individual study program arranged in consultation with a study supervisor. Approval of study program required prior to registration. May be repeated up to a maximum of four hours.

AVIATION

110 Introduction to Aviation 3 hrs.
A first course in aviation including a review of aviation history, theory of flight and elementary aerodynamics, weight and balance, powerplants, structures, and helicopter theory.

113 Airframe Structures 4 hrs.
Theory and laboratory experience relating to fabric and metal covered structures, honey-comb construction, and plastics. Prerequisite: TRAN 110.

114 Reciprocating Powerplants 3-4 hrs.
Study of aircraft reciprocating powerplants. Classroom and laboratory experiences involving principles of operation, nomenclature, inspection, and overhaul procedures. Students working toward the A & P license must register for additional work in the laboratory in consultation with their academic counselor. Prerequisite: TRAN 110.

115 Aircraft Carburetion and Fuel Systems 3-4 hrs.
Basic principles of carburetion and induction systems including operation, installation, inspection, adjustment, and service of float-type and pressure-operated carburetors, direct fuel injection units, superchargers, and turbochargers. Students working toward the A & P license must register for additional laboratory work in consultation with their adviser. Prerequisite: TRAN 110.

200 Private Pilot Ground School 4 hrs.
A beginning course for students engaged in primary flight training, or interested in such training. Topics covered include flight theory, Federal Air Regulations, aviation weather, navigation, performance factors, and weight and balance. Upon completion, the student will take the Federal Aviation Administration written examination for private pilots.

201 Introduction to Flight 2 hrs.
A course for any full-time University student. Familiarization with the airplane and its control in all flight situations and maneuvers necessary for solo flight, basic instrument and cross-country flying experience. Approximately 20 hours of flight time. Prerequisite: Third-class medical certificate prior to enrollment and completed TRAN 200 or taking concurrently.

203 Primary Flight 3 hrs.
A continuation of 201 with emphasis on developing skill in executing flight maneuvers and cross-country flying. Successful students will qualify for the FAA private pilot license. Approximately 40 hours of flight time. Prerequisite: Faculty approval, TRAN 200 and 201.
College of Applied Science

212 Powerplant Evaluation and Systems 4 hrs.
Classroom and laboratory work covering ignition systems, powerplant testing and diagnosis and the operation of aircraft powerplants. Prerequisites: TRAN 114, 115.

213 Airframe Hydraulic, Pneumatic & Auxiliary Systems 2 hrs.
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 3 hrs.
Welding theory and practice involving steel and aluminum structural parts. Practice in completing repairs in a manner approved by the FAA, using oxy-acetylene, electric arc, and shielded arc welding processes.

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

217 Airframe Electrical Systems 3 hrs.
A review of basic electricity and study and laboratory practice in aircraft electrical components and systems, electrical instrumentation, and auto pilot systems. Prerequisites: TRAN 110, ENGT 140.

218 Aircraft Servicing 4 hrs.
Provides the student with an opportunity to conduct 100 hour and annual inspections, routine and preventive maintenance, minor repairs on certificated flying aircraft, and a review of FAA publications. The student will also have the opportunity to learn servicing of aircraft and the management of a small airport. Required for all students who plan to qualify for the FAA Airframe and Powerplant Mechanics Certificate. Prerequisite: Instructor consent.

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

300 Intermediate Pilot Ground School 2 hrs.
A continuation of TRAN 200 in which advanced systems and methods for commercial and instrumental flying are explored. This course includes the Federal Aviation Administration Commercial Pilot written examination. Prerequisite TRAN 200, 201 or Private Pilot License.

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

303 Commercial Flight 3 hrs.
Additional dual and solo instruction with appropriate refresher work to develop a student's skills to commercial pilot standards. Transition to transportational aircraft is included. Upon completion, a student may become eligible for certifi-
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Transportation Technology

cation as a commercial pilot. Approximately 50 hours flying time. Prerequisite: TRAN 301 and completed or taking TRAN 300 concurrently.

340 Airport Management 3 hrs.
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 AET curriculum, or approval of instructor.

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

401 Instrument Flight 3 hrs.
Basic instrument flying, cross-country navigation and communication, and instrument approach procedures. Successful completion will qualify the student for an instrument rating. Approximately 40 hours flight time. Prerequisite: TRAN 303, 400.

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

498 Studies in Transportation Technology 1-4 hrs.
An individual study program arranged in consultation with a study supervisor. Approval of study program required prior to registration. May be repeated up to a maximum of 4 hours.
College of Arts and Sciences

CORNELIUS LOEW, Dean

TILMAN C. COTHRAN, Associate Dean

JAMES P. ZIETLOW, Associate Dean

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

Institute of International and Area Studies
School of Social Work

The Medieval Institute
Black Americana Studies
COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences offers a variety of subjects that combine to develop a student who will be at home in the world of ideas, and whose experience of living will be deepened by an understanding of his cultural heritage. It aims to offer him training in thinking objectively, critically, and creatively. Its offerings serve not only the special student of the sciences and humanities but also provide a background of liberal education for students in the other Colleges of the University and for those in the pre-professional courses.

DEGREE CURRICULA

I. LIBERAL ARTS CURRICULUM

Bachelor of Arts Degree

A. Sixty hours work in the College of Arts and Sciences of which sixteen hours should be distributed as follows: four hours in each of the two divisions of Science and Mathematics, and of Social Sciences. Also, four hours from the area of literature, speech, philosophy and religion, and four hours from the area of fine arts.

B. General Studies requirements.

C. Thirty hours of work in 300, 400 and 500 courses exclusive of General Studies.

D. Twelve hours of college work in a foreign language (or 3 years of high school preparation in a foreign language.)

E. Four hours of college mathematics (or two years of high school preparation from the following: algebra, geometry, and/or trigonometry).

F. Physical education, two hours.

G. Completion of a major and minor in the College of Arts and Sciences and electives to make a total of 122 hours.

II. THE GENERAL CURRICULUM

Bachelor of Arts or Bachelor of Science Degree

In this curriculum a student may satisfy the requirements for pre-professional curriculum. If 122 hours are completed in this program the student will be eligible for a degree of Bachelor of Arts or Bachelor of Science.

A. General Studies Requirements (see page 25 of this catalog.)

B. Physical Education ................................................................. 2-8 hours.

C. A major in one of the Departments of the College of Arts and Sciences.

D. University courses to complete a minor.

E. University electives to make a total of 122 hours.

F. Eight hours of college work in a foreign language or 2 years of high school preparation in a foreign language (for B.A. degree only).
Inter-Disciplinary Programs

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

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

INTERNATIONAL AND AREA STUDIES

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

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

The Institute regularly publishes a pre-registration listing of available core courses for the various programs. This list occasionally contains courses in addition to those included below. Students should consult the pre-registration listing for each semester or session.
AFRICAN STUDIES PROGRAM

Head: Robert Hannah

African Studies Curriculum
Adviser: Robert Hannah

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

1. Completion of University requirements of a B.A. degree—122 semester hours of course work.
2. Completion of all General Studies requirements.
3. Completion of departmental requirements for a major in one of the following disciplines:
   - Anthropology
   - Economics
   - History
   - Geography
   - Sociology
   - Political Science

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

5. The African Studies Program strongly recommends the study of African languages or European languages widely spoken on the continent, e.g. French. Students must demonstrate intermediate proficiency in a language meeting the above criteria or have taken the Black Americana Studies core sequence currently listed as Arts and Sciences 200, 300, and 500.

Advisement

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

African Studies Minor
Adviser: Robert Hannah

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

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

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

- History 386 Introduction to African History and Civilization ........................................ 3 hrs.
In addition, students enrolled in this minor must also elect at least three of the following five courses:

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

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

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

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

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

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**African Studies Core Courses**

**Anthropology**
334 Cultures of North Africa and the Middle East .................. 3
335 Cultures of Africa .................................................. 3
525 Modern African Cultures .......................................... 3
545 Topics in Ethnology: Africa ....................................... 3

**Arts and Sciences**
200 Black Presence ....................................................... 4
300 Black Experience .................................................... 4
500 Black Humanism ...................................................... 4

**Economics**
585 The Economics of Sub-Saharan Africa ............................ 3

**Geography**
386 Geography of Middle and South Africa ........................... 3 hrs.
387 Geography of Middle East and North Africa ..................... 3

**History**
386 Introduction to African History and Civilization ............... 3
587 Ancient and Medieval Africa ...................................... 3
588 Modern Africa ....................................................... 3

**Liberal Arts**
504 Social Studies Seminar: East Africa .............................. 6

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

**Political Science**
341 African Political Systems .......................................... 4
549 Problems of Foreign Political Systems: Africa ................. 3-4

**Religion**
304 African Religions ................................................... 4
307 The Islamic Tradition .............................................. 4
500 Historical Studies: Islam in the Modern World ................. 4

**Social Science**
506 Studies in the Non-Western World ................................ 2-3

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"Courses listed each semester in the International and Area Studies list of African Studies core courses."
Asian Studies Curriculum
Adviser: Andrew Nahm

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

1. Completion of University requirements for a B.A. degree—122 semester hours of course work.
2. Completion of all General Studies requirements.
3. Completion of departmental requirements for a major in any one of the departments comprising the College of Arts and Sciences.
4. Foreign language and/or linguistics competence as dictated by major disciplinary concentration, career objectives, and Asian interests. (Six to eight semester hours in approved foreign language and/or linguistics course will be accepted toward satisfaction of the 30 semester hour Asian Studies requirement; see Linguistics 500, 505, 506, 507, 508, 509).
5. In consultation with the Asian Studies Adviser, select no less than 30 semester hours of Asian Studies Courses, at least two courses from each of the three categories listed below:
   a. Historical Studies (Department of History)
   b. Humanistic Studies (Departments of English, Linguistics, Philosophy and Religion)
   c. Social Scientific Studies (Departments of Anthropology, Economics, Geography, Political Science and Sociology)

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

Advisement

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

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

Asian Studies Minor
Adviser: Andrew Nahm

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

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

### Asian Studies Core Courses

#### a. Historical Studies

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<td>380</td>
<td>Traditional Civilization of East Asia</td>
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<tr>
<td>381</td>
<td>The Modern Far East</td>
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<tr>
<td>580</td>
<td>Traditional China</td>
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<tr>
<td>581</td>
<td>Modern China</td>
<td>3</td>
</tr>
<tr>
<td>582</td>
<td>Japan's Transition from a Feudal State to a Modern Nation</td>
<td>3</td>
</tr>
<tr>
<td>583</td>
<td>Modern Japan</td>
<td>3</td>
</tr>
<tr>
<td>584</td>
<td>Modern Korea</td>
<td>3</td>
</tr>
<tr>
<td>585</td>
<td>Southeast Asia in the Twentieth Century</td>
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#### b. Humanistic Studies

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<th>Title</th>
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<tr>
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<td>Non-Western Literature in Translation*</td>
<td>4</td>
</tr>
<tr>
<td>555</td>
<td>Studies in the Art and Thought of Major Writers</td>
<td>4</td>
</tr>
<tr>
<td>224</td>
<td>Non-Western Arts &amp; Ideas (Asia)</td>
<td>4</td>
</tr>
<tr>
<td>Philosophy</td>
<td></td>
<td></td>
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<tr>
<td>306</td>
<td>Asian Thought: China</td>
<td>4</td>
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<tr>
<td>Religion</td>
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<tr>
<td>302</td>
<td>Religion in the Indian Tradition</td>
<td>4</td>
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<tr>
<td>303</td>
<td>Religion in the Chinese and Japanese Traditions</td>
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<tr>
<td>307</td>
<td>The Islamic Tradition</td>
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</tr>
<tr>
<td>500</td>
<td>Historical Studies in Religion*</td>
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<tr>
<td>e.g.</td>
<td>Contemporary Religious Movements in Japan</td>
<td>4</td>
</tr>
<tr>
<td>e.g.</td>
<td>Zen Buddhism</td>
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#### c. Social Studies

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<thead>
<tr>
<th>Course</th>
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<tr>
<td>336</td>
<td>Cultures of Asia</td>
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<td>500 (546)</td>
<td>Topics in Archeology*</td>
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<tr>
<td>545</td>
<td>Topics in Ethnology*</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
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<td></td>
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<tr>
<td>587</td>
<td>Studies in Asian Economics</td>
<td>3</td>
</tr>
<tr>
<td>Geography</td>
<td></td>
<td></td>
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<tr>
<td>385</td>
<td>Geography of the Pacific Realm</td>
<td>3</td>
</tr>
<tr>
<td>388</td>
<td>Geography of East Asia</td>
<td>3</td>
</tr>
<tr>
<td>389</td>
<td>Geography of Southeast Asia</td>
<td>3</td>
</tr>
<tr>
<td>390</td>
<td>Geography of South Asia</td>
<td>3</td>
</tr>
<tr>
<td>550</td>
<td>Studies in Historical Geography*</td>
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<tr>
<td>Political Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>342</td>
<td>Asian Political Systems</td>
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<tr>
<td>543</td>
<td>Politics and Institutions of South Asia</td>
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</tr>
</tbody>
</table>

*Courses marked with an asterisk may be included in the student's program when they concentrate on Asia or some subdivision thereof.
**COMPARATIVE/CROSS-CULTURAL STUDIES PROGRAM**

**Comparative/Cross-Cultural Studies Curriculum**

**Adviser:** F. J. Mortimore

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

1. Completion of University requirements for a B.A. degree—122 semester hours of course work.
2. Completion of all General Studies requirements.
3. Completion of departmental requirements for a major in one of the following disciplines:
   - Anthropology
   - Economics
   - Geography
   - History
   - Languages
   - Political Science
   - Sociology

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

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

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

Comparative/Cross-Cultural Studies Minor

Adviser: F. J. Mortimore

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

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

Comparative/Cross-Cultural Studies Core Courses

<table>
<thead>
<tr>
<th>Anthropology</th>
<th></th>
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<tbody>
<tr>
<td>220 Introduction to Anthropology: Cultural Anthro...</td>
<td>3 hrs.</td>
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<tr>
<td>331 Art and Culture</td>
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<tr>
<td>370 Language in Culture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>520 History of Ethnological Theory</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>532 Culture and Personality</td>
<td>3</td>
<td></td>
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<tr>
<td>534 Peasant Societies in Cross-Cultural Perspective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>535 The Anthropology of Religion</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>536 Cultural Evolution</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>537 Political Anthropology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>538 Legal Anthropology</td>
<td>3</td>
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<tr>
<td>539 Economic Anthropology</td>
<td>3</td>
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</tr>
<tr>
<td>540 Cultural Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>575 Studies in Languages of the World</td>
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<table>
<thead>
<tr>
<th>Economics</th>
<th></th>
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<tr>
<td>480 International Economics</td>
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<td></td>
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<tr>
<td>508 Institutional Economics</td>
<td>4</td>
<td></td>
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<tr>
<td>580 International Trade: Theory and Policy</td>
<td>3</td>
<td></td>
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<tr>
<td>583 Studies in Economic Planning</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>584 Comparative Economic Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>588 Economic Development</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>Geography</th>
<th>4 hrs.</th>
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<tbody>
<tr>
<td>105 Physical Geography</td>
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<tr>
<td>205 Introduction to Human Geography</td>
<td>3</td>
</tr>
<tr>
<td>244 Economic Geography</td>
<td>3</td>
</tr>
<tr>
<td>540 Political Geography</td>
<td>3</td>
</tr>
<tr>
<td>541 Geographic Foundations of National Power</td>
<td>3</td>
</tr>
<tr>
<td>543 Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>544 Agricultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>546 Transportation Geography</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>History</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>594 War in the Modern World</td>
<td>3</td>
</tr>
<tr>
<td>595 History of War</td>
<td>3</td>
</tr>
</tbody>
</table>
LATIN AMERICAN STUDIES PROGRAM

Head: David Hanson

Latin American Studies Curriculum
Adviser: David Hanson

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

1. Completion of University requirements for a B.A. degree—122 semester hours of course work.
2. Completion of all General Studies requirements.
3. Completion of departmental requirements for a major in one of the following disciplines:
   - Anthropology
   - Economics
   - Geography
   - History
   - Language (Spanish)
   - Political Science
   - Sociology
4. Completion of the Latin American Studies concentration consisting of no less than 30 semester hours selected from the list of Latin American Studies Courses.
5. Demonstration of intermediate-level proficiency in Spanish.
Advisement

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

Latin American Studies Minor
Adviser: David Hanson

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

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

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

Latin American Studies Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>337</td>
<td>Indian Cultures of Mexico, Central and South America</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>501</td>
<td>Rise of Civilization: Mesoamerica</td>
<td>3</td>
</tr>
<tr>
<td>545</td>
<td>Topics in Ethnology: Latin America</td>
<td>3</td>
</tr>
<tr>
<td>381</td>
<td>Geography of South America</td>
<td>3</td>
</tr>
<tr>
<td>382</td>
<td>Geography of Middle America</td>
<td>3</td>
</tr>
<tr>
<td>550</td>
<td>Studies in Historical Geography: Latin America</td>
<td>3</td>
</tr>
<tr>
<td>370</td>
<td>Colonial Latin America</td>
<td>3</td>
</tr>
<tr>
<td>371</td>
<td>Modern Latin America</td>
<td>3</td>
</tr>
<tr>
<td>571</td>
<td>Mexico: The Building of a Nation</td>
<td>3</td>
</tr>
<tr>
<td>572</td>
<td>The Plata Region: Argentina, Paraguay, Uruguay</td>
<td>3</td>
</tr>
<tr>
<td>323</td>
<td>Life and Culture of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>329</td>
<td>Introduction to Spanish-American Literature</td>
<td>3</td>
</tr>
<tr>
<td>560</td>
<td>Studies in Spanish Literatures: Spanish-American Short Story</td>
<td>3</td>
</tr>
<tr>
<td>560</td>
<td>Contemporary Spanish-American Novel</td>
<td>3</td>
</tr>
<tr>
<td>343</td>
<td>Latin American Political Systems</td>
<td>4</td>
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<tr>
<td>549</td>
<td>Problems of Foreign Political Systems: Latin America</td>
<td>3-4</td>
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<tr>
<td>559</td>
<td>Ethnic Relations: Latin America</td>
<td>3</td>
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<tr>
<td>571</td>
<td>Social Change: Latin America</td>
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Political Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>534</td>
<td>Peasant Societies in Cross-Cultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>588</td>
<td>Economic Development</td>
<td>4</td>
</tr>
</tbody>
</table>

Economics
College of Arts and Sciences

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

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

SLAVIC STUDIES PROGRAM

Head: George Klein

SLAVIC STUDIES CURRICULUM
Adviser: George Klein

The Slavic Studies Curriculum is designed for those undergraduate students seeking a liberal education and who anticipate careers which require a broad understanding of Slavic affairs, or for those who plan to enter graduate programs leading to advanced degrees in Slavic Studies. The Curriculum, which leads to a Bachelor of Arts degree, consists of five parts:

1. Completion of University requirements for a B.A. degree—122 semester hours of course work.
2. Completion of all General Studies requirements.
3. Completion of departmental requirements for a major in one of the following disciplines: anthropology, economics, geography, history, Russian, political science or sociology.
4. Completion of a Slavic Studies concentration consisting of no less than 30 semester hours selected from the list of Slavic Studies Core and Cognate Courses.
5. Demonstration of intermediate-level proficiency in a Slavic language.

Slavic Studies Minor
Adviser: George Klein

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

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

Slavic Studies Core Courses

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

Economics
501 Studies in Economic Theory* ..................................................... 3
583 Studies in Economic Planning .................................................... 3
586 Economics of the Soviet Union and Eastern Europe .................... 3
598 Readings in Economics* ............................................................ 1-3

*Courses marked with an asterisk may be included when they concentrate on the slavic area or some subdivision thereof.
Geography

384 Geography of U.S.S.R. and Eastern Europe .......................... 3
550 Studies in Historical Geography: Eastern Europe .................. 3
598 Readings in Geography* .................................................. 1-3

History

340 Tsarist Russia ............................................................. 3
341 The Soviet Union ....................................................... 3
344 Eastern Europe ......................................................... 3
345 The Baltic Region ........................................................ 3
470 Independent Research in History: Slavic Area ....................... 2-3
540 Tsarist Russia: Society and Culture ................................... 3
541 The Soviet Union in World Affairs ..................................... 3
542 Nationalities in the Soviet Union ....................................... 3
594 War in the Modern World* ............................................ 3
595 History of War* .......................................................... 3
598 Independent Readings in History: Slavic Area ....................... 2-3

Political Science

344 Soviet and East European Political Systems ......................... 4
346 Governments of the Soviet Union and Eastern Europe ............. 4 hrs.
549 Problems of Foreign Political Systems: Eastern Europe .......... 3-4

Sociology

571 Social Change: Slavic Area ............................................. 3

Slavic Studies Cognate Courses

Economics

484 Comparative Economic Systems ........................................ 4
590 Contemporary Communism—A Survey .................................. 2

Geography

540 Political Geography ..................................................... 3
541 Geographic Foundations of National Power .......................... 3

Language

100 Basic Russian .............................................................. 4
101 Basic Russian ............................................................. 4
200 Intermediate Russian ................................................... 4
201 Intermediate Russian .................................................... 4
310 Russian Civilization ..................................................... 3
316 Russian Composition .................................................... 3
317 Russian Conversation ................................................... 4
328 Introduction to Russian Literature .................................... 3
375 Russian Literature in English Translation ............................ 3
550 Independent Study in Russian ......................................... 1-3
552 Advanced Russian Composition and Conversation .................. 3
560 Studies in Russian Literature .......................................... 3

Linguistics

505 Basic Critical Languages ................................................ 4
506 Intermediate Critical Languages ....................................... 4
507 Advanced Critical Languages .......................................... 4
508 Reading Critical Languages ............................................. 4
509 Writing Critical Languages ............................................ 4

*Courses marked with an asterisk may be included when they concentrate on the slavic area or some subdivision thereof.
<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>250</td>
<td>International Relations</td>
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<tr>
<td>340</td>
<td>European Political Systems</td>
<td>4</td>
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<tr>
<td>490</td>
<td>Political Science Honors Seminar</td>
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</tr>
<tr>
<td>560</td>
<td>Comparative Political Ideology</td>
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</table>
The Medieval Institute

John R. Sommerfeldt, Director
George H. Demetrakopoulos, Assistant Director

Knowledge of medieval and Renaissance culture is being increasingly recognized as essential to an understanding of modern culture. The Medieval Institute was established by the University to develop and coordinate interdisciplinary programs in medieval studies. In addition to an undergraduate minor, the Institute offers a graduate program leading to an M.A. in Medieval Studies.

Western Michigan University has sufficient library resources and medieval specialists to provide a good academic environment for the study of the Middle Ages. The Institute hosts an annual Conference on Medieval Studies which has brought the University wide recognition throughout the world. Studies in Medieval Culture, a publication which includes many of the best papers presented at these conferences, also has gained an enviable reputation among medievalists here and abroad. In addition, the Institute sponsors a lecture series each year on campus on medieval and Renaissance culture and civilization.

The headquarters of the Medieval Institute is located at 1013 Sutherland Avenue.

MINOR PROGRAM

Students with a minor in medieval studies must elect twenty hours to include the following:

1. One history course chosen from the following list.
2. One literature course chosen from the following list.
3. One course in intellectual history, philosophy, or theology chosen from the following list.

<table>
<thead>
<tr>
<th>Art</th>
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<tbody>
<tr>
<td>220 History of Art (to the Renaissance).........</td>
<td>3 hrs.</td>
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<tr>
<td>425 Problems in Art History: Medieval Art</td>
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<td>500 Independent Studies</td>
<td>2-3</td>
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<tr>
<td>585 Renaissance Art</td>
<td>1-6</td>
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</table>

| Communication Arts and Sciences                  |       |
| History of Theatre: From the Beginnings to the English |       |
| Renaissance                                       | 3     |
| 598 Independent Studies in Speech                | 4     |

| Economics                                          |       |
| 598 Readings in Economics                          | 1-3   |

<p>| English                                             |       |
| 252 Shakespeare                                     | 4     |
| 332 English Renaissance Literature                  | 4     |
| 372 Development of Modern English                   | 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     |</p>
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>554</td>
<td>Milton</td>
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<tr>
<td>555</td>
<td>Studies in Major Writers</td>
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<td>598</td>
<td>Readings in English</td>
<td>1-4</td>
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<tr>
<td>504</td>
<td>Foreign Studies Seminar: Social Sciences</td>
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<tr>
<td>505</td>
<td>Foreign Studies Seminar: Humanities</td>
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<tr>
<td>340</td>
<td>Tsarist Russia</td>
<td>3</td>
</tr>
<tr>
<td>344</td>
<td>Eastern Europe</td>
<td>3</td>
</tr>
<tr>
<td>345</td>
<td>The Baltic Region</td>
<td>3</td>
</tr>
<tr>
<td>351</td>
<td>Ancient Rome</td>
<td>3</td>
</tr>
<tr>
<td>352</td>
<td>Early Medieval History</td>
<td>3</td>
</tr>
<tr>
<td>353</td>
<td>Later Medieval History</td>
<td>3</td>
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<tr>
<td>470</td>
<td>Independent Research in History</td>
<td>2-3</td>
</tr>
<tr>
<td>506</td>
<td>Main Currents of Early Western Thought</td>
<td>3</td>
</tr>
<tr>
<td>534</td>
<td>Medieval France</td>
<td>3</td>
</tr>
<tr>
<td>535</td>
<td>Medieval England</td>
<td>3</td>
</tr>
<tr>
<td>552</td>
<td>The Medieval Church</td>
<td>3</td>
</tr>
<tr>
<td>553</td>
<td>Medieval Economy and Society</td>
<td>3</td>
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<td>554</td>
<td>The Renaissance</td>
<td>3</td>
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<tr>
<td>555</td>
<td>The Reformation</td>
<td>3</td>
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<td>587</td>
<td>Ancient and Medieval Africa</td>
<td>3</td>
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<td>593</td>
<td>Philosophy of History</td>
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</tr>
<tr>
<td>598</td>
<td>Independent Reading in History</td>
<td>2-3</td>
</tr>
<tr>
<td>322</td>
<td>French Civilization</td>
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<td>328</td>
<td>Survey of French Literature (early)</td>
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<td>544</td>
<td>Seminar in France</td>
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<td>550</td>
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<tr>
<td>560</td>
<td>Studies in French Literature: Medieval and Renaissance</td>
<td>3</td>
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<tr>
<td>510</td>
<td>German Life and Culture</td>
<td>3</td>
</tr>
<tr>
<td>528</td>
<td>Survey of German Literature: Early</td>
<td>3</td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in German</td>
<td>1-3</td>
</tr>
<tr>
<td>559</td>
<td>History of the German Language</td>
<td>3</td>
</tr>
<tr>
<td>560</td>
<td>Studies in German Literature</td>
<td>3</td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in Latin</td>
<td>1-3</td>
</tr>
<tr>
<td>560</td>
<td>Studies in Latin Literature: Medieval Latin</td>
<td>3</td>
</tr>
<tr>
<td>568</td>
<td>Mythology</td>
<td>3</td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in Russian</td>
<td>1-3</td>
</tr>
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<td>322</td>
<td>Life and Culture of Spain</td>
<td>3</td>
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<tr>
<td>550</td>
<td>Independent Study in Spanish</td>
<td>1-3</td>
</tr>
<tr>
<td>560</td>
<td>Studies in Spanish Literatures</td>
<td>3</td>
</tr>
<tr>
<td>598</td>
<td>Readings in Linguistics</td>
<td>1-4</td>
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<tr>
<td>370</td>
<td>Music History and Literature (early)</td>
<td>3</td>
</tr>
<tr>
<td>517</td>
<td>Collegium Musicum</td>
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<tr>
<td>570</td>
<td>Introduction to Musicology</td>
<td>3</td>
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<tr>
<td>598</td>
<td>Readings in Music</td>
<td>2</td>
</tr>
<tr>
<td>300</td>
<td>History of Ancient Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>308</td>
<td>History of Medieval Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>498</td>
<td>Independent Study</td>
<td>2-4</td>
</tr>
<tr>
<td>501</td>
<td>Seminar in History of Philosophy</td>
<td>4</td>
</tr>
</tbody>
</table>
Political Science
  360  Introduction to the History of Political Theory, I ................... 3

Religion
  305  The Christian Tradition ................................................. 4
  306  The Jewish Tradition .................................................... 4
  307  The Islamic Tradition ................................................... 4
  500  Historical Studies in Religion: Christian Theology to 1500 ...... 4
  500  Historical Studies in Religion: Christian Theology since 1500 .... 4

Science
  598  Readings in Science ..................................................... 1-4

4. Other courses on the Middle Ages chosen with the consent of the adviser ................................................................. 9-10 hrs.
Black Americana Studies

Carleton L. Lee, Director

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

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

200 Black Presence 4 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 eras.

300 Black Experience 4 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.

500 Black Humanism 4 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 viability of the Black Presence and Experience. What universal elements can be identified in “soul?” What are the unique qualities of “soul?” What would American life and culture be like without this elusive quality?
### 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:

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>220</td>
<td>Introduction to Anthropology: Cultural Anthropology</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>331</td>
<td>Art and Culture</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>335</td>
<td>Cultures of Africa</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>532</td>
<td>Culture and Personality</td>
<td>3</td>
</tr>
<tr>
<td>Art</td>
<td>521</td>
<td>Topics in Art History: Variable Topics</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>201</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>202</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>Labor Problems</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>223</td>
<td>Black American Literature</td>
<td>4</td>
</tr>
<tr>
<td>History</td>
<td>314</td>
<td>History of the American Negro</td>
<td>3</td>
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<tr>
<td></td>
<td>386</td>
<td>Introduction to African History and Civilization</td>
<td>3</td>
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<tr>
<td></td>
<td>514</td>
<td>Black History: Impact of Black People on American Thought and Life</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>587</td>
<td>Early African History</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>588</td>
<td>Recent African History</td>
<td>3</td>
</tr>
<tr>
<td>Political Science</td>
<td>204</td>
<td>Politics of Race</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>304</td>
<td>Political Perspectives of Black America</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>341</td>
<td>African Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>304</td>
<td>African Religions</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>311</td>
<td>Myth and Ritual</td>
<td>4</td>
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<td></td>
<td>321</td>
<td>The History of the Study of Religion</td>
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<tr>
<td></td>
<td>500</td>
<td>Historical Studies in Religion (Religion of Black America)</td>
<td>2-4</td>
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<tr>
<td>Sociology</td>
<td>200</td>
<td>Principles of Sociology</td>
<td>3</td>
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<tr>
<td></td>
<td>314</td>
<td>Race Relations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>355</td>
<td>Social Structure of Black America</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>371</td>
<td>Dynamics of Contemporary Social Change</td>
<td>3</td>
</tr>
</tbody>
</table>
Environmental Studies Program

Robert W. Kaufman, Director

The Environmental Studies Program provides a variety of intellectual experiences designed to provoke thought about man’s relationship to society and to the natural environment. A group of selected concepts are presented in core courses as integrating ideas crossing disciplinary lines. The selected concepts are intended to provide students with a comparative analytical base that is divorced from existing ideologies, institutions, and behavior patterns. The specific requirements for the minor are set out below.

The program will provide students who are majoring in various disciplines (and programs) an opportunity to engage in a formal program of environmental studies. The device chosen is called a “coordinate.” As used in this program a “coordinate” means that the student selects a discipline (or program) in which to major, then elects a minor in Environmental Studies designed to complement the work in his discipline (program) and/or some special academic interest he may have developed.

The Environmental Studies Program may therefore be viewed as a means of unifying the academic pursuits of students as they choose electives normally permitted in their field of study. While a range of courses will be offered, each program will be constructed by the student through conferences with instructors, and the Program Director.

MINOR PROGRAM

Students with a minor in Environmental Studies must elect 20 hours (24 in Education) including the following courses:

1. Anthropology 100 Man in Evolutionary Perspective 3
   (Not required of Anthropology Majors)
   Biology 300 Environmental Biology 3
   (Not required of Biology Majors)
   Chemistry 140 Introductory Environmental Chemistry 4
   (Not required of Chemistry Majors)
   Geography 350 Principles of Conservation & Resource Management 3
   (Not required of Geography Majors)

2. Senior Seminar in Environmental Studies 3
   A seminar designed as an integrating academic experience.

3. At least 8 hours (12 hours for Education Majors) in at least two departments. This program of courses should be planned in consultation with the Director of the Program.
DESCRIPTION OF COURSES

Foreign Studies Seminars

Students may receive up to six hours credit in any combination of departments as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the College of Arts and Sciences.

Arts and Sciences 503 Foreign Studies Seminar 1-6 hrs.
Foreign studies seminars in the sciences organized and conducted outside the U.S. by the College of Arts and Sciences for exceptionally talented undergraduates or graduate students: Students completing such a seminar may receive credit in the departments of Psychology, Geography, Geology, Biology, Physics or Chemistry if approved by the Head of the Department prior to registration for the seminar. May be repeated for credit.

Arts and Sciences 504 Foreign Studies Seminar 1-6 hrs.
Seminars in the Social Sciences conducted outside the U.S.: Students who complete such a seminar may receive credit in the departments of Anthropology, Economics, Geography, History, Political Science or Sociology if the credit is approved by the Head of the Department prior to registering for the seminar. May be repeated for credit.

Arts and Sciences 505 Foreign Studies Seminar 1-6 hrs.
Seminars in the Humanities conducted outside the U.S.: Students completing such a seminar may receive credit in the departments of Philosophy, Religion, Modern and Classical Languages, English, Art, Music or Communication Arts and Sciences if the credit is approved by the Head of the Department prior to registering for the seminar. May be repeated for credit.

504 Social Studies Seminar: England 6 hrs.
A foreign study seminar especially designed for teachers and advanced college students in the social studies. It consists of regularly scheduled lectures and discussions on British life, institutions, social problems, and international relations. Following twelve days of travel in the British Isles, the seminar is in formal session at Oxford University for a period of about four weeks. After this, the party spends approximately a month touring several countries on the Continent. Graduate or undergraduate credit for this course, scheduled as Arts and Sciences 504, may be earned. A maximum of 3 hours credit in each of two departments in the Social Science area, under such conditions and stipulations as the individual departments may determine, may be allowed, but arrangements for this must be made in advance with the heads of the departments in which the student wishes to earn credit.

504 Social Studies Seminar: Yugoslavia 6 hrs.
A lecture and study program in Yugoslavia, with lectures, followed by discussion forums by leading scholars in Yugoslavia and travel in the country. Designed for exceptionally talented undergraduate students and graduate students, the seminar introduces participants to the social and political system, philosophical and
Arts and Sciences 515 Civilization Studies Seminar 1-6 hrs.

College of Arts and Sciences

religious beliefs, art and literature, peoples, customs, and traditions of Yugoslavia. A maximum of three hours undergraduate or graduate credit may be earned in each of two departments of the Social Science area, under such conditions and stipulations as the individual departments may make. Arrangements must be made in advance with the heads of the departments in which the student wishes to earn credit.

504 Social Studies Seminar: East Africa 6 hrs.

A lecture and field-study program of approximately six weeks in Kenya and Uganda, especially designed for students and teachers in the social sciences with a special interest in Africa. A lecture series, focusing on the general theme "Education and Planning for Development" and combined with discussion forums is presented at the University College, Nairobi. University authorities and prominent leaders in African affairs deliver the lectures. Field study trips follow the lecture series. Three additional weeks are devoted to global travel. A maximum of three hours undergraduate or graduate credit may be earned in each of two Social Science Departments, under such conditions and stipulations as the individual Departments may determine but arrangements for this must be made in advance with the heads of the department in which the students wishes to earn credit.

Foreign Institute Seminars

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

Seminar in the Social Sciences dealing with designated civilizations, cultures or areas. Students who complete such a seminar may receive credit in the departments of Anthropology, Economics, Geography, History, Political Science or Sociology if the credit is approved by the Head of the Department prior to registering for the seminar. May be repeated for credit.

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

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

Peter Schmitt, Director

Lewis Carlson, Adviser

399 Field Experience (Community Participation) 2-8 hrs.

A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

500 Studies in American Culture 3 hrs.

An interdisciplinary study of perennial issues in American life. The materials for this course are drawn from literature, the arts, the social sciences, and philosophy.

This is an interdepartmental program bringing to bear insights of literature and the social sciences on the problems of American life. It provides an excellent background for students planning careers in journalism, politics, public relations, teaching, the foreign service, mass communications, or library work. 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.
Group Majors and Minors

Departmental major and minor requirements are listed under the individual Science Departments (Biology, Chemistry, Geography, Geology, Mathematics, Physics, and Psychology), and students must consult departmental advisers concerning them. Group majors and minors are intended for students in Elementary Education, Junior High or Dietetics curricula. Group Science minors are also available for students in Special Education. Group science programs will not ordinarily be approved for students in other curricula, except in rare cases with special permission of the Group Science Adviser, Robert C. Nagler (3342 McCracken Hall).

GROUP SCIENCE MAJORS AND MINORS

1. The Group Science minor for Elementary Education:
   - Biology 100, 101 or 107 ......................................................... 3-4 hrs.
   - Biology 210 or 234 or 403 ...................................................... 4
   - Geog. 105 or Geol. 230 .......................................................... 4
   - Geog. 225 or 226 or Geol. 130 or 131 .................................... 4
   - Physical Science 108 or Chem. 140 ............................................ 4
   - Physics 104 or 105 ................................................................. 4
   - Total: 24

2. The Group Science major for Elementary Education supplements the minor with 12 hours of advanced work from other Science courses. Regional Geography and Psychology will not ordinarily be accepted unless they are strongly oriented toward the natural sciences.

3. The Junior High Science major for teachers in Junior High School will include 12-13 hours of Biological Science, 11-12 hours of Earth Science and 12 hours of Physical Science. It is also recommended that students with a Junior High Science major elect in their General Studies advanced course, Science in Intellectual History 401, 4 hours. A total of 36 hours is required. The following courses are recommended:

   12-13 hours Biological Science
   - Biology 100, 101, and 102 ...................................................... 9 hrs.
   - One of the following: ............................................................. 3-4 hrs.
     Biology 210—Mammalian Anatomy
     Biology 221—The Plant Kingdom
     Biology 234—Outdoor Science
     Biology 301—Ecology
     Biology 306—Genetics
     Biology 541—Invertebrate Zoology

   11-12 hours Earth Science
   - Geography 105 ........................................................................ 4 hrs.
   - From the following: ................................................................. 3-4
     Physics 104—Astronomy ............................................................. 4
     Geology 130—Physical Geology ................................................ 4
Geology 131—Earth History and Evolution ................................................. 4
Geology 300—Oceanography ................................................................. 3
Geology 301—Minerals and Rocks ......................................................... 3
Geography 225—Introduction to Meteorology and Climatology .......... 4
Geography 226—Advanced Physical Geography ............................... 4
Geography 350—Principles of Conservation and Resource Management .. 3

12 hours Physical Science

Physics 106, 110 or Physical Science 108 ............................................. 4 hrs.
Chemistry 101, 102, 103 or 140 ......................................................... 4
One of the following: ................................................................. 4
Chemistry 109 General Chemistry .................................................. 4
Physics 111 General Physics ......................................................... 4
Physics 104 or 105—Astronomy ....................................................... 4

4. Related Course Offerings

The following related freshman courses are offered: Biological Science; Physical Geography; Physical Science; or Geological Science. Descriptions of these courses are found under the College of General Studies. In addition to these, the following related courses are offered, of which only the latter three may be used in the Group Science major and minor:

203 Teaching of Elementary Science ................................................... 3 hrs.

This course covers important subject matter of the physical and biological sciences with methods for its effective presentation in the classroom. Extension only.

308 Teaching of Physical Science ....................................................... 2 hrs.

Study of problems of teaching high school chemistry, physics, and physical science. The main emphasis is on effective methods of instruction. Practical methods of instruction. Practical methods of apparatus ordering, maintenance and planning of laboratories are also considered. Prerequisite: One year of college chemistry and one year of college physics.

501 Higgins Lake Field Course ............................................................ 1 hr.

A one-week course offered in cooperation with Eastern Michigan University, Central Michigan University and the Michigan Department of Conservation. The student may concentrate in any one of four areas of study—Conservation, Game Bird Ornithology, Botany of Flowering Plants, and the Natural History of Michigan Mammals. The one-week course in Conservation is acceptable towards major or minors in Geography, Biology, and Group Science. The course may be repeated provided there is no repetition in the area of specialization.

510 Studies in Space Science ............................................................... 3 hrs.

The properties, structure, and evolution of stars will be emphasized in this course. Topics covered will also include: tools and methods of investigation, galaxies, cosmogony, and cosmological theories. Prerequisites: Physics 106, or Physics 110 and Physics 111, or equivalent, Astronomy 104 or equivalent.

530 Conservation Education ............................................................... 2 hrs.

Survey of the whole field of conservation through lecture, laboratory, library, and field experience. Consideration will be given to ways of including conservation in the elementary and secondary curricula. Students will have contact with personnel of local, state, and federal conservation agencies. Designed primarily for teachers in service. Prerequisite: Consent of Instructor.
Social Science Major
And Minor

In addition to majors and minors in the individual Social Science departments (Anthropology, Economics, History, Political Science, and Sociology), a major and a minor in Social Science are offered. Requirements for the departmental majors may be found under the departmental listings. Students desiring to major or minor in Social Science in preparation for a career in social work should consult with the Social Work Adviser, Robert Barstow. Others planning to major or minor in Social Science should consult with William Fox (3411 Sangren Hall).

Major and minor programs should be arranged in conference with the Adviser indicated above by the fourth semester of the student's college career.

1. Requirements for the Major in Social Science
   a. At least 36 hours credit in the Social Science departments above. Courses listed under "General Studies" may not be counted toward the major in Social Science.
   b. The following basic courses must be completed. They may be applied towards either the Social Science major or a minor in one of the departments.*
   
   Anthropology 100 or 210 or 220
   Economics
   201 & 202 for Sec. Educ. & others
   History 210 and 211
   Political Science 200
   Sociology 200
   c. A total of 9 hours credit in 300 or 500 level courses.
   d. No more than 16 hours credit in any one Social Science Department may be used to apply to the required total of 36 hours.
   e. Majors in Secondary and Elementary Education Curricula may include up to 2 courses in Geography in their major program, provided such courses are not specified for "science credit."
   f. In addition to the above, majors in the Secondary Education Curriculum must elect Social Science 300 (Teaching of Social Studies in Secondary Schools).

2. Requirements for the Minor in Social Science
   a. The Social Science minor in the Secondary Education Curriculum, is open only to students who are majoring in English, Geography, or one of the Social Science departments listed above.
   b. At least 24 hours credit in the Social Science departments listed above. This may not include any courses listed under "General Studies." Students enrolled in the Elementary or Secondary Education curricula may include one course in Geography, provided such course is not specified for "science credit."
   c. At least 6 hours credit in 300 or 500 level courses.

*Elementary Education majors may satisfy this requirement by completing the specified courses in four of the five departments listed.
d. In the event that the major is in one of the listed Social Science departments, the minor in Social Science must include courses in all the other listed departments.

3. Related Course Offering.

300 Teaching of Social Studies in Secondary Schools 3 hrs.
Fall, Winter

Definition of objectives; selection, organization, and use of materials; procedures and problems of effective teaching in this area. Prerequisite: Junior standing. Secondary Ed. curriculum only.

500 Data Processing for Behavioral Scientists 3 hrs.

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

Prerequisite: Consent of instructor.
Medical Technology

John J. Josten, Adviser

A Bachelor of Science degree is awarded in the field of Medical Technology on completion of the following series of courses and a one-year internship in Medical Technology at a hospital affiliated with Western Michigan University. The curriculum fulfills the minimum requirements of the American Society of Clinical Pathologists as well as their recommendations for a strong program. A major is allowed in Medical Technology with 30 hours credit for the year of internship. This credit is only allowed if the internship is preceded by the requirement work in Chemistry and Biology, and is taken at an affiliated hospital. Minors are taken in both Biology and Chemistry.

The hospitals with which Western Michigan University is affiliated are: Borgess Hospital and Bronson Hospital, Kalamazoo; Blodgett Memorial Hospital, Butterworth Hospital, and St. Mary's Hospital, Grand Rapids; McLaren Hospital, Flint; Wayne County General Hospital, Eloise; Hackley Hospital, Muskegon, Pontiac General Hospital, Pontiac; Munson Medical Center, Traverse City; and Burns Clinic-Little Traverse Hospital, Petoskey.

Tuition must be paid during the year of internship and grades for the work completed during that year are recorded on the student's record.

At the completion of the course, the Registry examination must be passed to become a Registered Medical Technologist.

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

B. Course Requirements

1. General Studies Requirements, as described on page 25 of this catalog must be met.

2. Science and Mathematics
   (Suggested course sequence)

   First Year
   - Principles of Biology 100 .................................................. 3
   - General Chemistry 101 or 102 ........................................... 4
   - Animal Biology 101 ......................................................... 3
   - Qualitative Analysis 120 .................................................. 4
   - Mathematics 100 (if not elected in high school) ............... 4

   Second Year
   - Mammalian Anatomy 210 .................................................. 4
   - Introduction to Organic Chemistry 365 ............................. 4
   - Quantitative Analysis 222 ............................................. 4
   - Elementary Physics 106 ................................................. 4

   Third Year
   - Microbiology 412 .......................................................... 4
   - Animal Physiology 554 .................................................... 3
   - Pathogenic Microbiology 513 .......................................... 3
   - Introductory Biochemistry 452 ...................................... 5


4. Physical Education ............................................................... 2-8 hrs.
C. Degree Requirements must be met.

435 Medical Technology Internship

A course in clinical laboratory methods with instruction in one of the hospital medical technology schools under contract with Western Michigan University. This course is taken for two semesters.
Courses are designed to (1) give students a better understanding of the nature of man; (2) broaden familiarity with the diverse ways of human life, both past and present; (3) meet the needs of students preparing to teach in the social science field; and (4) prepare students to do graduate work in Anthropology.

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

A combined major in Sociology and Anthropology consists of a minimum of 30 hours. Courses Anthropology 210, 220 and 250 and Sociology 200, 382 and 504 are required with at least 12 hours in each of the two fields, Sociology and Anthropology.

A minor in Anthropology consists of a minimum of 20 hours. Anthropology 210, 220, and 250 are required. As much as 6 hours from related fields may be counted toward the minor if deemed appropriate by one of the Department's Undergraduate Advisers.

All major and minor programs must be approved by one of the Department's Undergraduate Advisers.

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

210 Introduction to Archeology 3 hrs. Fall, Winter
A survey of archeology as a subdiscipline of anthropology; the how and why of archeology, with emphasis on methods and concepts for the study of prehistoric cultures. Case studies and examples drawn from selected areas of the world.

220 Introduction to Cultural Anthropology 3 hrs. Fall, Winter
A study of the nature of culture through an investigation of the ways of life of both “primitive” and “civilized” peoples. The structure and functions of culture are considered along with its relationships to the environment, society and the individual.

250 Introduction to Physical Anthropology 3 hrs. Fall, Winter
A survey of physical anthropology; the evolution of man and the primates; the living primates, human osteology, human genetics and population variation.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits/Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 (341)</td>
<td>The Archeology of North America</td>
<td>3 hrs. Winter</td>
</tr>
<tr>
<td>331</td>
<td>Art and Culture</td>
<td>3 hrs. Fall</td>
</tr>
<tr>
<td>334</td>
<td>Cultures of North Africa and the Middle East</td>
<td>3 hrs. Winter</td>
</tr>
<tr>
<td>335</td>
<td>Cultures of Africa</td>
<td>3 hrs. Fall</td>
</tr>
<tr>
<td>336</td>
<td>Cultures of Asia</td>
<td>3 hrs. Winter</td>
</tr>
<tr>
<td>337</td>
<td>Indian Cultures of Mexico, Central and South America</td>
<td>3 hrs. Fall</td>
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<td>339</td>
<td>Native Cultures of North America</td>
<td>3 hrs. Winter</td>
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<td>350 (347)</td>
<td>Human Evolution</td>
<td>3 hrs. Fall</td>
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<tr>
<td>370 (332)</td>
<td>Language in Culture</td>
<td>3 hrs. Winter</td>
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<tr>
<td>498</td>
<td>Honors Study</td>
<td>2 hrs. Fall, Winter</td>
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<tr>
<td>500 (546)</td>
<td>Topics in Archeology</td>
<td>3 hrs. Fall, Winter</td>
</tr>
</tbody>
</table>

*Anthropology*

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

A study of artistic activity in cultures of Africa, Oceania and the Americas, with attention to prehistoric as well as recent products. Relations between the visual arts and other aspects of culture. Prerequisite: 220 or consent of instructor.

A study of the peasant, urban, and nomad cultures from Morocco to Afghanistan, including consideration of Islamic civilization and recent ideological trends. Prerequisite: 220 or consent of instructor.

A study of the development of cultures in the ecological setting of sub-Saharan Africa from ca. 5500 B.C., with the beginnings of agriculture on the continent, to the European partition of Africa. Prerequisite: 220 or consent of instructor.

A study of the social and cultural characteristics of the various peoples of Asia with concern for both the great civilizations and the lesser known tribal cultures. Prerequisite: 220 or consent of instructor.

A study of the Indian cultures of Mexico, Central and South America with attention to both their aboriginal traditions and their role in contemporary life in Latin America. Prerequisite: 220 or consent of instructor.

Study of the aboriginal cultures of America from the Arctic to the Rio Grande, with emphasis on contrasting patterns of regional cultures. Prerequisite: 220 or consent of instructor.

Study of both the indirect evidence and the fossil evidence concerning human evolution, including comparisons with other primates, living and extinct, and a consideration of the present-day races of man. Prerequisite: 250 or consent of instructor.

A consideration of the evolution of language as a symbolic system of communication. The relations of language to cognition, social structure, cultural variation and nationalism; proxemics and other similar epilinguistic phenomena. Some consideration will be given to the ethnography of communication and related subjects. Pre-requisite: Anthro. 220 or Ling. 200, or consent of instructor.

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.

A consideration of the prehistory of a particular geographic area (e.g. the south-
western United States, the Circumpolar) or of selected theoretical problems (e.g., artifact typology, prehistoric ecology). The topic to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 210 or consent of instructor.

501 (544) The Rise of Civilization 3 hrs. Fall, Winter

The archeological sequence in one or more of the nuclear centers of prehistoric civilization will be considered in some detail. The course may focus intensively upon one area (e.g., the Near East, or Meso-America), or it may give equal emphasis to two or more areas in a comparative framework. The specific area or areas to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 210 or consent of instructor.

510 (541) Field Methods in Archeology I 3 hrs. Summer

Instruction in the archeology of a particular area (e.g., Great Lakes, southwestern United States, Aleutians), with particular attention to prehistoric cultural developments and ecological relationships as these appear in the process of excavation. (May be repeated for credit.) Prerequisite: Consent of instructor.

511 (542) Field Methods in Archeology II 3 hrs. Summer

Practical application of the basic skills used in the excavation of archeological sites, including surveying techniques, methods of excavation, compilation of field data sheets, and classification of artifacts. To be taken concurrently with 510. (May be repeated for credit.) Prerequisite: Consent of instructor.

520 History of Ethnological Theory 3 hrs. Winter

A systematic examination of the evolution of the significant theoretical problems and contributions in anthropology over the last two centuries. Developments are examined in relation to the prominent figures in the discipline and their times. Prerequisite: 220 or consent of the instructor.

521 Formal Approaches to Anthropology 3 hrs. Winter

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

522 Ethnographic Field Techniques 3 hrs. Winter

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

523 Ethnographic Field Session 3 hrs. Spring

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

525 Modern African Cultures 3 hrs. Winter

The treatment of African societies and cultures within a contemporary framework. Examination of current developments which reveal both the continuity and discontinuity of basic African traditions. New dimensions, varieties, themes and patterns in African cultures explored from the anthropological approach. Prerequisite: 220 or consent of instructor.
531 Medical Anthropology 3 hrs. Fall
An examination of anthropological techniques and findings relating to medical beliefs and practices on a cross-cultural basis. Concern with the sociocultural aspects of health, illness, and folk and scientific systems of medical care. Prerequisite: 220 or consent of instructor.

532 Culture and Personality 3 hrs. Winter
An investigation of the interaction of culture and personality with particular attention to the role of culture as a force in the development of the individual. Prerequisite: 220 or consent of instructor.

534 Peasant Societies in Cross-Cultural Perspective 3 hrs. Winter
A cross-cultural study of the development of peasant groups as a cultural type. Theoretical and substantive emphasis is on the cultural antecedents of peasant societies, the conditions promoting change from fold to peasant status, and the relationships between peasant groups and urban, national societies. Prerequisite: 220 or consent of instructor.

535 The Anthropology of Religion 3 hrs. Fall
An examination of anthropological theories and findings relating to the origin, nature and function of religion as a universal category of culture. A scientific cross-cultural consideration of religious beliefs and practices and their relation to concepts of the nature of the universe. The role of religion in revitalistic reactions to culture contact. Prerequisite: 220 or consent of instructor.

536 Cultural Evolution 3 hrs. Winter
An inquiry into the dynamics of culture through a study of selected theories of culture change and their application to concrete situations such as the rise of complex civilizations and the reactions of non-Western societies to contact with the West. Prerequisite: 210 or 220 or consent of instructor.

537 Political Anthropology 3 hrs. Fall
Theoretical and descriptive analysis of the political aspect of social organization, ranging from primitive to complex societies; the relationship of politics to technological development, habitat, symbolic systems and other aspects of social organization. Prerequisite: 220 or consent of instructor.

538 Legal Anthropology 3 hrs. Winter
A study of law through the theory and method of comparative legal dynamics. The relation of law to the whole of culture; the function of law as revealed in the comparative study of societies ranging from simple to complex. Prerequisite: 220 or consent of instructor.

539 Economic Anthropology 3 hrs. Fall
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: Anth. 220, Econ. 200 and/or consent of instructor.

540 Cultural Ecology 3 hrs. Winter
A cross-cultural, comparative inquiry into the general and specific ways in which the interaction of society and environment determines the forms societies take, especially in respect to demography, territoriality, and the organization of kinship,
politics, law, religion and economics. Prerequisite: 210 or 220 or consent of instructor.

542 Complex Cultures 3 hrs. Winter

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

545 Topics in Ethnology 3 hrs. Fall, Winter

An intensive study of the cultures of an area of the world (e.g. Japan, Philippines, Caribbean, East Africa) or selected problems (e.g. kinship systems, millenarian movements). Topic will be announced each semester. (May be repeated for credit.) Prerequisite: 220 or consent of instructor.

549 Anthropology of Education 3 hrs. Fall

A study of education as the process which transmits the culture of one generation of a society to the next. Particular attention is given to education in primitive and peasant societies generally lacking formal institutions of education. Prerequisite: Soc. 200 or 600 or Anth. 220 or consent of instructor.

550 (547) The Primates 3 hrs. Winter

A study of the Order Primates with emphasis on the similarities and differences in the physical features of man, the apes, the monkeys and the Lower Primates. Field studies of the behavior and social organization of monkeys and apes will be reviewed to gain insight into the early behavior and social organization of man. Prerequisite: 250 or consent of instructor.

551 Human Osteology 3 hrs. Winter

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

555 Topics in Physical Anthropology 3 hrs. Fall

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

575 (548) Studies in Languages of the World 3 hrs.

Intensive study of a group of languages (varying from semester to semester) that are either genetically related (e.g. Slavic languages), typologically similar (e.g. "tone" languages), or geographically proximate (e.g. African languages). May be repeated for credit.

580 Linguistic Field Techniques 3 hrs.

Interview techniques for the elicitation of oral language data, and methods of analysis of the data into significant linguistic units for their eventual arrangement in the form of a grammar and dictionary. Consent of instructor.

598 Readings in Anthropology 1-4 hrs. Fall, Winter

Independent study arranged in consultation with an instructor. Intended for advanced students with good academic records. One to 2 hours credit per semester, cumulative to 4 hours. Prerequisite: consent of instructor.
Biology

Clarence J. Goodnight, Head

Leonard J. Beuving
Richard D. Brewer
Darwin A. Buthala
Raymond C. Deur
Robert C. Eisenberg
Joseph G. Engemann
Gyula Ficsor
Dona J. Fowler
Stephen B. Friedman
Imy V. Holt
Edgar Inselberg

John J. Josten
Jean M. Lawrence
Ronald W. Olsen
Richard W. Pippen
Phoebe Rutherford
Beth Schultz
Donna N. Schumann
Marjory A. Spradling
Gian C. Sud
Leo C. Vander Beek
William C. Van Deventer
Jack S. Wood

A major in biology consists of a minimum of 30 credit hours in biology courses including the basic core curriculum. A minor in biology consists of a minimum of 15 credit hours (in secondary education, 20 hours) including at least two courses from the basic core curriculum. All major and minor programs are taken under the direction of and with the approval of a departmental advisor. You can be assigned to the advisor closest to your interests by the Biology Information Office, Room 100, Wood Hall.

The basic core curriculum for biology majors consists of Biology 100, 101, 102, 301, 306, and 317. Only courses in which a grade of "C" or better is obtained may be counted towards a major or minor.

Students majoring in biology are required to take a minimum of 12 semester hours of college chemistry, including a course in organic, 8 hours of college mathematics, and 8 hours of general physics. Students in secondary and elementary education who are majoring in biology may substitute 4 hours of geology for the second 4 hours of physics. For those planning to undertake graduate work in biology, two semesters of organic chemistry, quantitative chemical analysis, an additional semester of calculus, and statistics are strongly recommended.

All students minoring in biology are required to take 8 semester hours of college chemistry and 4 hours of college mathematics.

Students majoring in biology in a secondary education curriculum may take a group science minor as follows: (1) 12 hours of chemistry (including organic); and (2) either 8 hours of geology and 4 hours of physics or 8 hours of physics and 4 hours of geology. A total of 24 hours are required for a group minor.

An honors program in biology is available for students who demonstrate superior abilities during their first two years of college work.

Associated with the Biology Department is the Charles C. Adams Center for Ecological Studies, established in 1956 following the gift to Western Michigan University of the personal library, letters, notes, and manuscripts of the pioneer American ecologist for whom the Center is named. The Kleinstuck Preserve, a 50-acre tract, provides instructional space near the campus.

The Department maintains the Clarence R. Hanes Herbarium which houses the Hanes collection of vascular plants from Kalamazoo County. The herbarium also contains an additional teaching collection of several thousand specimens and facilities for research. Collections of Dr. Leroy Harvey and Dr. Leslie A. Kenoyer are housed in the Department.
The Department has a radiation laboratory equipped for teaching and research with radioactive tracers and X-ray techniques.

A suggested sequence of course work for biology majors is given below. It incorporates additional academic requirements, such as general studies courses. For the special requirements that apply to your curriculum, locate them at the end of the sequence of courses.

**SUGGESTED SEQUENCE OF COURSE WORK FOR BIOLOGY MAJORS IN THE GENERAL CURRICULUM**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Winter</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>Freshman year</td>
<td>Biology 100</td>
<td>Biology 101</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>Chemistry 101 or 102</td>
<td>Chemistry 120</td>
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<td>4</td>
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<tr>
<td></td>
<td>General Studies Reading 140</td>
<td>Mathematics 120 or 122</td>
<td>2</td>
<td>4</td>
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<tr>
<td></td>
<td>Western Civilization 100 or 101</td>
<td>Gen. Stud. Elective</td>
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<td>Physical Education</td>
<td>Physical Education</td>
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<td>14</td>
<td>16</td>
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<tr>
<td>Sophomore year</td>
<td>Biology 102</td>
<td>Biology 317</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>Chemistry 360 or 365</td>
<td>Biology elective</td>
<td>4</td>
<td>4</td>
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<tr>
<td></td>
<td>Mathematics 121 or 123</td>
<td>Physics 110 or 210</td>
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<td>4</td>
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<td></td>
<td>General Studies 202 or 203 or 204 or 205</td>
<td>General Studies 222 or 224</td>
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<td>15</td>
<td>15</td>
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<tr>
<td>Junior year</td>
<td>Biology 306</td>
<td>Biology elective(s)</td>
<td>3</td>
<td>3</td>
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<td></td>
<td>Biology elective</td>
<td>General Studies: One of</td>
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<tr>
<td></td>
<td>Physics 111 or 211</td>
<td>400, 401, 402, 203, 404, 405, 408, or 497</td>
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<td>4</td>
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<tr>
<td></td>
<td>General Studies 304 (or approved alternatives)</td>
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<tr>
<td>Senior year</td>
<td>Biology 301—3 hrs.</td>
<td>Biology elective(s)</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>Biology elective(s) to complete 30 hrs.</td>
<td>General Studies: One of</td>
<td></td>
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<tr>
<td></td>
<td>General Studies elective(s) to complete 40 hrs. (including certain courses in the sciences which are acceptable for General Studies credit)</td>
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<tr>
<td></td>
<td>Complete minor or second major requirements</td>
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<tr>
<td></td>
<td>Completion of 122 credit hours</td>
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*Students contemplating majoring in Biology should contact the Biology Information Office (Room 100, Wood Hall) as early as possible so that they can locate their Departmental Advisor.*
Liberal Arts Curriculum students add the following requirements:

- Social sciences elective(s)—4 hrs.
- Elective(s) from one of literature, speech, philosophy, or religion—4 hrs.
- Elective(s) from fine arts—4 hrs.
- Electives in 300, 400, or 500 courses, other than General Studies, to make a total of 30 hrs.
- Intermediate work in a foreign language—4 hrs.

Transfer Students. Consult with your advisor at the Biology Department before registering for classes.

Students in Specialized Curricula. Your faculty advisor is:

- General Counseling .................................................. Biology Staff
- Elementary Education .................................................. Dr. Beth Schultz
  Room 159, Wood Hall
- Medical Technology .................................................. Dr. John J. Josten
  Room 126, Wood Hall
- Premedical or predental ............................................. Dr. Leonard J. Beuving
  Room 122, Wood Hall
- Secondary Education ................................................. Dr. William C. VanDeventer
  Room 157A, Wood Hall

Delays in fulfilling requirements for graduation are almost certain for students who do not plan their curriculum with the assistance of a Biology Department advisor.

DESCRIPTION OF COURSES

100 Principles of Biology 3 hrs. Fall, Winter

An introduction to the principles that apply to some of the essential processes common to most forms of life. The subunits of the cell are related to the activities of life that take place there. The elements and compounds that make up living systems are presented and followed through some of the main reactions of respiration and photosynthesis. The student is introduced to genetics, as well as to the relationships of organisms to their environment. The laboratory encourages the development of scientific thinking, as the student attempts to interpret his observations and experiments. A college course in general chemistry taken previously or concurrently is recommended.

101 Animal Biology 3 hrs. Fall, Winter

An animal survey emphasizing structure, function and behavior of different groups. The current frontiers of research with the animal groups will be used as the unifying theme. This course may be taken along with Biology 100 or 102.

102 Plant Biology 3 hrs. Fall, Winter

A survey of plants stressing the interactions of structure and function with the environmental stimuli. The current frontiers of research with the plant groups will be used as the unifying theme. This course may be taken along with Biology 100 or 101.
College of Arts and Sciences

107 Biological Science 4 hrs. Fall, Winter
Designed to present basic biological principles, and to give the student an understanding of the operation of the world of life. This course fulfills the general education requirement for biological science.

111 Healthful Living 2 hrs. Fall, Winter
A study of the principles involving sound health practices. Factors in the causation, prevention, and control of all departures from normalcy in health are considered.

205 The Human Body in Health and Disease 4 hrs. Fall
A study of the organs and organ systems and their functioning in health and disease. The nature of disease and disease processes, theories of disease causation and methods employed in healing are considered. Principles and practices of effective living are emphasized. Prerequisite: Biology 100 or 101 or Biological Science 107.

210 Mammalian Anatomy 4 hrs. Fall, Winter
A study of the gross and microscopic structure of the mammalian body with special reference to man. Prerequisite: Biology 101 or equivalent.

215 Microbiology for Nurses 3 hrs. Winter
A specialized course dealing with microorganisms, adapted to the needs of students in the Bronson Methodist Hospital School of Nursing. For Bronson students only.

219 Human Physiology 4 hrs. Fall, Winter
The functions of the organ systems of the human body, their regulation and control. Prerequisite: Biology 210 or equivalent.

220 Botany of Seed Plants 4 hrs. Fall, Winter
The study of the gross and microscopic structure, physiology, development, classification and ecology of seed plants. The greenhouse is used in experiments with living plants and their methods of propagation. Prerequisite: Biology 100 and 102 or consent of instructor.

221 The Plant Kingdom 4 hrs. Fall, Winter
A systematic study of representative plant groups with emphasis on classification, structure, reproduction and ecology. Field studies will occupy a major portion of the laboratory time. Prerequisites: Biology 100 and 102 or consent of instructor.

224 Trees and Shrubs 2 hrs. Fall
A field course in the identification of trees and shrubs. Structural characteristics, habit of growth, geographical distribution and economic importance are included.

225 Local Flora 2 hrs.
A field course designed for those who desire an acquaintance with the common plants occurring in the region.

234 Outdoor Science 4 hrs. Fall, Winter
The aspects of the living world with emphasis on the relationship of living things to their environment.
301 Ecology
An introduction to the relationships of organisms to their environment and to one another. Inter-relationships of individuals and the physical environment, dynamics of populations, and structure and function in the community and ecosystem are considered. Prerequisites: At least 9 hours of biology.

306 Genetics
A study of the mechanisms of heredity in individuals, families, and populations. Prerequisites: Biology 100, 101 or 102 or consent of instructor. Organic chemistry recommended.

317 General Physiology
A study of the fundamental principles which underline the physiological activities of organisms. Laboratory emphasizes the experimental approach to biological problems. Prerequisites: Organic Chemistry, Biology 101 or 102 or consent of instructor.

323 Plant Pathology
The common diseases of higher plants, caused by fungi, viruses and physiological factors, as well as those connected with the presence of animals such as nematodes and insect larvae. Prerequisite: Biology 220 or equivalent.

342 Comparative Chordate Anatomy
A brief study of the classification, morphology, and physiology of the pre-chordates followed by a detailed study of representative vertebrates, including an elasmobranch, urodele, and a choice of mammals. Dissected monkeys available for study. Class project required. Prerequisites: Biology 100, 101 and an additional laboratory course in biology.

343 Vertebrate Embryology
A study of the development of an individual from the origin of the germ cells to maturity, with special reference to man. Prerequisites: Biology 100, 101, 102.

403 Elementary School Science
A laboratory course focusing on ideas and subject matter commonly included in elementary school science curricula. Prerequisite: Completion of General Studies Science requirements.

404 Problems in the Teaching of Biology
Class discussions, laboratory experiences and field work concerned with the teaching of biology in high school. Required of all students who are following a secondary education curriculum and list biology as a major or minor. This course assumes a working knowledge of plants, animals, and body chemistry, and of ecology, physiology and genetics. Limited to majors and minors enrolled in a secondary education curriculum.

412 Microbiology
An introduction to the fundamental relationships among microbes with an emphasis on unifying principles. Laboratory work deals with techniques basic to bacteriology. Prerequisites: 2 semesters of biology or consent of instructor and a course in organic chemistry (may be taken concurrently).

500 Selected Experiences in Biology
Problems to be studied are selected under the guidance of the instructor.
Laboratory work consists of independent studies of living plants, animals and environmental problems. This is done outside of class time, utilizing procedures outlined by the instructor. Primarily for teachers. Prerequisite: Consent of instructor.

**502 Human Ecology** 3 hrs. Fall

A study of the man-dominated biotic community of civilization and its interrelationships. Lectures, assigned reading, group and individual field work. Prerequisite: At least a minor in biology.

**505 Advanced Genetics** 3 hrs. Winter

Special problems in genetics, including a study of the structure, function, change and transmission of the genetic material. Prerequisite: Biology 306.

**506 Microbial Genetics** 3 hrs. Winter

A molecular approach to microbial genetics dealing primarily with bacterial and viral systems. Prerequisites: Biology 412 and a knowledge of organic chemistry or biochemistry.

**508 Recent Advances in Biology** 3 hrs. Fall, Winter

Recent research findings at the frontiers of biology as reported in periodicals, symposia and biological meetings. Prerequisite: at least 12 hours in biology.

**509 Evolution** 3 hrs. Fall

A consideration of the evidence for and the principles involved in the evolution of plants and animals, including man. Prerequisite: Biology 306 or consent of instructor.

**510 Virology** 3 hrs.

A study of the structure and physiology of viruses. Relationship to host is stressed. Prerequisites: Biology 412 and a knowledge of organic chemistry or biochemistry.

**511 Physiology of Reproduction** 3 hrs. Winter

A comparative study of the reproductive physiology of domestic animals, laboratory animals and man. Prerequisites: Biology 317 and a working knowledge of biochemistry or consent of instructor.

**512 Health Problems** 2 hrs.

A course for students with special interest in the medical and public health areas. The pathology, treatment and control of the major causes of mortality and ill health are presented; broad background in biology and chemistry desirable.

**513 Pathogenic Microbiology** 3 hrs. Winter

This course deals with pathogenic microorganisms, infectious diseases, diagnostic tests and principles of immunology. Prerequisite: Biology 412 or equivalent.

**514 Bacterial Physiology** 3 hrs. Winter

Lectures on bacterial cytology, metabolism, physiology and genetics with emphasis on biochemical aspects. Prerequisites: Biology 412 and biochemistry (may be taken concurrently).

**516 Experimental Microbial Physiology** 3 hrs. Fall

An experimental approach to metabolism, physiology and genetics with emphasis on biochemical techniques. Prerequisite: Biology 514.
517 Cellular Physiology
Concerned with the details of structure and functioning of cells, both animal and plant. The current status of major problems in the field is considered. Prerequisite: Biology 317 or consent of instructor.

518 Endocrinology
A study of integrative physiology regulated by hormonal and neuro-endocrine products. Prerequisite: Core biology program, biochemistry and an advanced physiology course or consent of instructor.

519 Comparative Animal Physiology
A study of the basic physiological processes as they occur in various groups of animals. Prerequisite: Biology 317 or equivalent.

520 Systematic Botany
The classification and relationships of vascular plants by field and laboratory studies. Attention is given to family characteristics, evolutionary trends and geographical distribution. Prerequisite: consent of instructor.

521 Phycology
Studies in the classification, structure, physiology, ecology and economic importance of the fresh-water algae. Prerequisite: Biology 301.

522 Phytogeography
A study of the geographical distribution of plants based on physical and ecological factors. Prerequisite: A course in systematic botany or equivalent.

523 Paleobotany
A study of the characteristics, historical and evolutionary relationships of plants based upon the fossil record. At least two extended field trips are taken. Prerequisite: 221 or equivalent.

524 Economic Botany
A study of plants useful to man for food, flavoring, drugs, clothing and building. Field trips required.

525 Biological Constituents
The chemical elements in plants and animals, as well as the synthesis, characterization, and degradation products of the more important compounds. Prerequisites: 12 hours of biology, one year of chemistry.

526 Mycology
Studies in the classification, structure, physiology, development and economic importance of fungi. Prerequisites: Biology 301 and 306 or consent of instructor.

527 Plant Physiology
Advanced investigations into plant functions. Basic principles are examined more intensively. Advantage is taken of the discoveries and unifying principles of modern biochemistry. Prerequisite: Biology 317 or consent of instructor.

528 Biology of Non-Vascular Plants
The study of classification, ecology and reproductive cycles of algae, fungi and bryophytes. Culture methods of growing these plants for research occupies a part of laboratory work. Prerequisite: At least 12 hours of biology.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>529</td>
<td>Biology of Vascular Plants</td>
<td>3 hrs.</td>
<td>Winter</td>
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<tr>
<td></td>
<td>A detailed study of the morphology, life cycles, and evolution of vascular plants. Individual research required. Prerequisite: At least 12 hours of biology.</td>
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<td>530</td>
<td>Environmental Education</td>
<td>2 hrs.</td>
<td>Fall</td>
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<td></td>
<td>A review of ecological principles basic to understanding environmental problems. A survey of environmental problems through readings, discussions, and field experiences. The goal of the 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.</td>
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<tr>
<td>538</td>
<td>Field Natural History</td>
<td>3 hrs.</td>
<td>Fall</td>
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<td></td>
<td>A study of biological communities with particular emphasis on those accessible for use by public schools, e.g., school grounds, vacant lots, roadsides, parks and undeveloped areas. Primarily for teachers. Prerequisites: Biology 100 and 101 or 102 or consent of instructor.</td>
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<tr>
<td>539</td>
<td>Animal Behavior</td>
<td>3 hrs.</td>
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<td></td>
<td>Animal behavior with emphasis on evolution and ecology to include an introduction to the ethological point of view. Two student projects. Prerequisite: Biology 301 and consent of instructor.</td>
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<tr>
<td>540</td>
<td>Cell and Organ Culture Techniques</td>
<td>3 hrs.</td>
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<td>The various techniques of cell and organ culture will be utilized to establish in vitro cultures of animal cells and to study specific cell types, such as macrophages, lymphocytes, and liver parenchyma. Specific problems of special interest to the students will be assigned. Prerequisite: Consent of instructor.</td>
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<tr>
<td>541</td>
<td>Invertebrate Zoology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<td>A study of the anatomy, physiology, embryology, and life history of representatives of the major groups of invertebrate animals. Prerequisite: At least 12 hours of biology.</td>
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<td>542</td>
<td>Entomology</td>
<td>3 hrs.</td>
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<td></td>
<td>A general study of insects, their structure, classification, life histories, ecological relationships and economic importance. Collection and identification of local species is required. Prerequisite: 12 hours of biology.</td>
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<tr>
<td>543</td>
<td>Protozoology</td>
<td>3 hrs.</td>
<td>Winter</td>
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<td>Field and laboratory studies of both free-living and parasitic protozoans, including taxonomy, morphology, life histories, ecology, heredity, evolutionary development. Prerequisite: Biology 301 or consent of instructor.</td>
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<td>544</td>
<td>Developmental Biology</td>
<td>3 hrs.</td>
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<td>Theories and phenomena of differentiation, cytodifferentiation and morphogenesis; concepts of inducers, organizers, etc.; experimental studies of embryos of various animals or study of some specific organs during development, including tissue culture techniques. Prerequisite: Biology 343 or consent of instructor.</td>
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<td>545</td>
<td>Histology</td>
<td>3 hrs.</td>
<td>Winter</td>
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<td></td>
<td>A study of the microscopic structure of tissues and organs. Prerequisite: Biology 210 or equivalent.</td>
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546 General Cytology  
A study of the nuclear and cytoplasmic structures of the cell involving cytochemistry and histochemistry. Principles of classical and electron microscopy will be considered. Prerequisites: An introductory course in biology. A course in physics and organic chemistry are highly recommended.

547 Ornithology  
Populations, life histories, anatomy, social behavior and environmental relationships of the birds of Southwestern Michigan. Shore and marsh birds are given special attention. Individual studies, bird banding, and the preparation of bird skins. Early morning field trips are scheduled. Prerequisite: Consent of instructor.

551 Parasitology  
A study of parasites and host-parasite relationships illustrated by typical representatives of the principal animal groups. Special attention is given to the parasites of man. Prerequisite: At least 12 semester hours of biology.

552 Plant Ecology  
A consideration of the organization of vegetation and causal relationships between vegetation and environment. Prerequisites: Biology 301 and a course in systematic botany or equivalent.

553 Limnology  
Biological, chemical, and physical aspects of lakes and streams. Emphasis is on the ecological relationships of invertebrate animals and lower plants. Prerequisite: At least 12 hours of biology.

554 Animal Physiology  
A study of cell, tissue and organ functions in the living animal with special emphasis on vertebrates. Prerequisites: Organic Chemistry or consent of instructor.

555 Physiological Ecology  
A study of the physiological and behavioral adaptation and responses or organisms to external environmental factors. Prerequisites: Biology 301 and 317 and a year of chemistry or consent of instructor.

556 Immunology  
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens, and their interaction. Prerequisite: Biology 412 and a knowledge of biochemistry.

557 Tropical Marine Ecology  
A study of the complex interrelationships of marine life off the coast of British Honduras. Individual and group projects will be conducted on the cays and atolls of the second largest barrier reef in the world. Students must be experienced swimmers and capable of snorkel diving. Prerequisite: Biology 301 and consent of Consortium Screening Committee. (Available only at Tropical Research Center, Belize, British Honduras.)

558 Tropical Terrestrial Ecology  
A study of the terrestrial ecology in the various regions of British Honduras. Various locations will be selected to investigate the structure and dynamics of a variety of tropical ecosystems. Prerequisite: Biology 301 and consent of Consortium
Screening Committee. (Available only at Tropical Research Center, Belize, British Honduras.)

559 Radiation Biology
A study of the fundamentals of radiobiology including isotope technology, radiation measurements, radioactive decay, radiation and interaction in living matter, and health and safety regulations in the laboratory. Prerequisites: A minor in chemistry and consent of instructor.

561 Biology of Lower Vertebrates
The biology of lower vertebrates with special reference to adaptation, evolution, behavior and ecology of major groups. Classification, museum and field methods will be stressed in laboratory. Field trips required. Prerequisite: Biology 301 or equivalent.

562 Biology of Higher Vertebrates
Continuation of Biology 561.

598 Readings in Biology
1-3 hrs. Fall, Winter

599 Independent Studies in Biology
1-4 hrs. Fall, Winter
For students who wish to carry on advanced work in special fields. Prerequisite: Consent of instructor.
Chemistry

Don C. Iffland, Chairman
Robert H. Anderson
Donald C. Berndt
Donald J. Brown
Dean W. Cooke
J. Lindsley Foote
Robert E. Harmon
Paul E. Holkeboer
Thomas Houser
James A. Howell

Adli S. Kana’an
Joseph M. Kanamueller
George G. Lowry
Michael E. McCarville
Robert C. Nagler
Ralph K. Steinhaus
Jochanan Stenesh
George B. Trimitsis
H. Dale Warren

Students majoring in chemistry may prepare for a career in high school teaching, industrial laboratory work, or graduate work in departments of chemistry or medical colleges. The course offerings for the undergraduate attempt to give a broad but thorough grounding in the elements of chemistry. They should be fortified by a minor in physics, mathematics or biology. Most students who intend to do advanced work in chemistry should plan to obtain a reading knowledge of a European language. At the present time German is preferred but French or Russian might well be taken.

The Chemistry Department is accredited by the American Chemical Society. Students who follow the American Chemical Society certification course sequence below are considered professional chemists by the American Chemical Society. These students are eligible for membership senior grade in the American Chemical Society after two years experience in the field of chemistry rather than five years experience.

In order to complete an American Chemical Society Certified Chemistry Major, the following would be the expected minimum schedule of chemistry and prerequisite courses:

**Freshman year:**
- General Chemistry 101 or 102, Qualitative Analysis 120, Mathematics I 122, Mathematics II 123

**Sophomore year:**

**Junior year:**
- Quantitative Analysis 222, Physical Chemistry 430, Physical Chemistry 431

**Senior year:**
- Instrumental Methods 520, Inorganic Chemistry 510, Advanced Chemistry Elective 500 Level.

In addition the following are required for A.C.S. Certificates: reading knowledge of German or Russian and one advanced course in Mathematics or Physics or Chemistry.
The General Curriculum Chemistry Major requires 34 hours in chemistry including the basic sequence as in the A.C.S. Certificate program through Physical Chemistry except substituting Organic Chemistry 360 and 361 and electing 6 hours of chemistry at the 500 level.

Secondary Education and other chemistry majors require 30 hours of chemistry courses as in the General Curriculum including a minimum of 4 hours of Physical Chemistry.

A minimum chemistry minor will contain at least eighteen hours. Chemistry minors in Secondary Education are required to take twenty hours of chemistry and to complete one year of physics before student teaching. Transfer students completing a major or minor in Chemistry must complete a minimum of one chemistry course in residence.

All of the above courses are curricular requirements, not to be graded as credit-no credit, if a chemistry major or minor is used for graduation. Students who plan to attend graduate school in chemistry should take a minimum of courses under the credit-no credit option.

Students who fail to earn a “C” or better grade in Chemistry 120, 360 or 362, and 430 will not be permitted to enroll in courses requiring these classes as prerequisites.

### DESCRIPTION OF COURSES

**101 General Chemistry**

4 hrs. Fall, Winter

A course with emphasis on the fundamental principles, theories and problems of chemistry. This course is to prepare students who intend to enroll for more than two semesters of chemistry. Enrollment in this course is restricted to those who have had no high school chemistry or those who have had high school chemistry but do not pass the A.C.S. High School Chemistry examination.

**102 General Chemistry**

4 hrs. Fall, Winter

The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for more than two semesters of chemistry. Prerequisite: One unit of high school chemistry and one unit of algebra, pass A.C.S. High School Chemistry examination. Students well prepared may earn credit by taking final examination.

**103 General Chemistry**

4 hrs. Fall, Winter

A course primarily for students in Engineering and Technology curricula and others planning only a one or two semester terminal review of chemistry. This course surveys principles of chemistry with emphasis on calculations, descriptive and applied chemistry. It serves as a prerequisite for Chemistry 109 only. Prerequisite: One unit high school algebra.

**106 Chemistry for Nurses**

3 hrs. Fall

The fundamentals of chemistry are studied with a view to applying them to the field of nursing. Credit does not apply towards a major or minor in chemistry. Open only to Bronson Hospital Nursing students.

**109 General Chemistry**

4 hrs. Winter

This terminal course is not acceptable for chemistry major or minor or as prerequisite for advanced chemistry, but is designed to meet the needs of those who require one year of chemistry. Descriptive chemistry of metallic and non-metallic elements with emphasis on industrial and practical applications, chemical equilibrium and simple organic chemistry are studied. Prerequisite: Chem. 101 or 102 or 103.
120 Qualitative Analysis  
4 hrs. Fall, Winter
The properties of a number of the more representative elements and the compounds which they form are studied. The descriptive chemistry of some common cations and anions is studied using the hydrogen sulfide scheme of analysis. The chemical relationships in the periodic table, electrochemistry, and the equilibrium principle are also treated. Prerequisite: Chem. 101 or 102.

140 Introductory Environmental Chemistry  
4 hrs.
Purpose of course is to develop an appreciation of the chemical aspects of environmental problems and an acquaintance with the basic principles involved. This limited treatment considers elementary concepts of the nature of matter with applications of tools of chemists important in exploration of environmental problems. Laboratory may entail field trips as well as experiments which relate to environmental problems. Credit does not apply for graduation if 101, 102 or 103 are used, or for major or minor in chemistry.

222 Quantitative Analysis  
4 hrs. Fall, Winter
This course includes the theory, techniques and calculations of quantitative analysis. Instrumental techniques are used to supplement classical analytical procedures. Prerequisite: Chem. 120.

308 Teaching of Physical Science  
2 hrs. Winter
Problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of apparatus ordering, maintenance, and construction are also considered.

360 Organic Chemistry  
4 hrs. Fall, Winter
The preparation and chemical properties of aliphatic and aromatic compounds are studied. Emphasis is placed upon the nature of covalent bonds and molecules and the general reactions of functional groups. The course includes lecture, laboratory and quiz. Prerequisite: Chem. 120.

361 Organic Chemistry  
4 hrs. Fall, Winter
A continuation of course 360. Prerequisite: Chem. 360.

362 Organic Chemistry  
5 hrs. Fall
This course is similar to Chemistry 360. Additional laboratory instruction is provided including identification of organic compounds and more advanced organic synthesis. This course is required for Chemistry Majors completing American Chemical Society certification. Prerequisite: Chem. 120.

363 Organic Chemistry  
5 hrs. Winter
A continuation of course 362. Prerequisite: Chem. 362.

365 Introduction to Organic Chemistry  
4 hrs. Fall, Winter
A one semester course which surveys the chemistry of aliphatic and aromatic carbon compounds, designed for those needing a working knowledge of organic chemistry without the theoretical detail of a full year course. Credit may not be received for both 365 and 360 or 362. This course will not serve as prerequisite for 361 or 363. Prerequisite: Chem. 120.

430 Physical Chemistry  
4 hrs. Fall
Lectures and laboratory work in kinetic theories of gases, liquids, solids,
thermodynamics, phase rule, equilibrium, solutions, etc. Prerequisites: Chem. 120, Physics 210 and 211, Math. 222; corequisite: Chem. 222.

431 Physical Chemistry 4 hrs. Winter
Lecture and laboratory studies of kinetics, electrochemistry, quantum theory, spectroscopy, surface chemistry, macromolecules and crystal chemistry, etc. Prerequisite: Chem. 530.

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. Prerequisites: Chem. 365 or 361 or 363.

452 Introductory Biochemistry 5 hrs. Winter
This course consists of 450 plus laboratory. Not applicable to chemistry majors. Prerequisites: Chem. 365 or 361 or 363.

505 Chemical Literature 1 hr. Fall
An introduction to the use of the various types of chemical literature such as journals, handbooks, abstracts, monographs, government and institutional publications, and patents. Problems in the course require literature searches in analytical, inorganic, biological, organic and physical chemistry fields. Prerequisite: 24 hrs. of chemistry.

506 Chemical Laboratory Safety 1 hr. Winter
A study of toxic, corrosive, flammable, explosive, electrical, mechanical, thermal, and radiant energy hazards frequently encountered in chemical laboratory work. Emphasis is placed on precautionary methods to avoid damaging accidents and on emergency procedures to apply when accidents occur. Prerequisite: 24 hours of chemistry.

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.

535 Introduction to Physical Chemistry 4 hrs.
Theory and applications of chemical structure, energetics, and rates and mechanisms of processes as a basis for understanding the principles of chemistry. Laboratory experiments are designed to emphasize quantitative measurements and the use of instrumentation in chemical systems. This course may not be applied to a graduate curriculum in chemistry. Prerequisites: 16 hrs. chemistry, Math 123, Physics 111 or 211.

550 General Biochemistry 3 hrs. Fall
A thorough study of the chemistry and properties of carbohydrates, lipids, proteins and nucleic acids. Includes a discussion of enzymes, coenzymes and biochemical energetics. Prerequisites: Chem. 361 or 363 and 430.
554 General Biochemistry


555 Biochemistry Laboratory

A course designed to acquaint the student with current methods used in biochemical research. Experiments will include gas chromatography, thin layer chromatography, electrophoresis, enzyme purification and assay, and techniques using radioactive isotopes. Prerequisites: Chem. 550 or 450 and 222.

560 Qualitative Organic Analysis

A course in spectroscopic and chemical methods of identification of organic compounds in the pure state and in mixtures, which has as a secondary goal the development of deductive reasoning in the field of organic chemistry. Prerequisites: Chem. 361 or 363 and 24 hrs. of chemistry.

562 Advanced Organic Chemistry

Covers such topics as organometallic compounds, heterocyclic compounds, dyes, introduction to photochemistry, organo-silicon compounds, etc. Prerequisite: Chem. 361 or 363.

580 History of Chemical Theory

This course is taught from the point of view of the history of chemical theory in which the evidence for the theories is critically presented. Prerequisite: 16 hrs. of chemistry including at least one semester organic.

590 Special Problems in Chemistry

Research work on a problem in chemistry in association with a faculty member. May be repeated for credit. Prerequisites: 24 hours of chemistry, with approval of the Department Chairman and faculty director.
Communication Arts and Sciences

Charles T. Brown, Chairman

Roy Beck
William Buys
Loren Crane
June Cottrell
Richard Dicker
Daniel Fleischhacker
Albert Furbay
Russell Grandstaff
Ruth Heinig
Charles Helgesen
Deldee Herman
Jeanette L. Irvin
James Jaksa
David Karsten
Radford Kuykendall
William Livingston
James McIntyre
Leon Nobes
Thomas Pagel
Beatrice Prussion
Sharon Ratliffe
George Robeck
Jules Rossman
Thomas Sill
R. Franklin Smith
Robert L. Smith
Gayland Spaulding
Ernest Stech
Laverne Stillwell
Lyda Stillwell
Eleanor Walton
Earl Washington
Shirley Woodworth
Zack York

Oral communication is the principal mode for establishing and maintaining human relationships. Effective oral communication is an educational imperative for all human beings.

The Department of Communication Arts and Sciences offers the student not only the opportunity to educate himself in professional competencies, but also an opportunity to educate himself broadly in the liberal arts tradition.

Because the Department of Communication Arts and Sciences places a large share of responsibility on the student for designing his own curriculum, students planning to major or minor in CAS should discuss their curriculum needs and interests with the departmental adviser at the earliest possible date. The schedule of courses to be taught is available from the departmental adviser.

The Communication Arts and Sciences Department encourages a close relationship between academic classes and extra-curricular and co-curricular experiences. Students may become involved in a variety of activities including the All-University Forum, community service projects, readers theatre, oral interpretation festivals, the Speaker's Bureau, the Forensic Judging Service, theatre productions, the Touring Theatre for Children, discussion conferences, and consultant services for campus organizations. Academic credit may be earned by participating in many of these communication activities.

I. MAJORS *

Two majors are available.

Following the declaration of a major in Communication Arts and Sciences, majors are required to complete 18 hours in the department.

1. Communication Arts and Sciences Major

A Communication Arts and Sciences major requires 30 semester hours of CAS, including CAS 170 and 27 hours to be arranged in consultation with the student and the appropriate advisers of the Department.
2. Communication Arts and Sciences: Education Major

An Education Major in Communication Arts and Sciences requires 30 semester hours of CAS, including the following courses: CAS 170, 562 for the secondary education major, or 561 for the elementary education major and minor.

II. MINORS*

Two minors are available.
Following the declaration of a minor in Communication Arts and Sciences, minors are required to complete 11 hours in the department.

1. Communication Arts and Sciences Minor

A Communication Arts and Sciences Minor requires 20 semester hours, including CAS 170 and 17 additional elective hours to be chosen in consultation with the appropriate advisers of the Department.

2. Communication Arts and Sciences: Education Minor

An Education Minor in Communication Arts and Sciences requires 20 semester hours of CAS for teaching in secondary and elementary schools, including the following courses: CAS 170, and for the elementary teacher, CAS 561**

III. TRANSFER STUDENTS

Transfer students are permitted to transfer as many as 12 semester credit hours for a major and 9 hours for a minor in Communication Arts and Sciences.

IV. DEPARTMENTAL COURSES

102 Speech for Teachers***

A beginning course in speech for those who intend to teach in elementary or high schools. Deals with the basic elements of speech, with listening, and with the personality of the speaker as these are involved in the activities of a teacher. The focus is on the prospective teacher's speech rather than on the speech of his pupils. 3 hrs.

106 Voice and Diction

Individual improvement program emphasizing voice production and diction. 3 hrs.

130 Public Speaking I***

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. 3 hrs.

131 Parliamentary Procedure

Study and practice of the principles and rules which govern business meetings in voluntary organizations. 1 hr.

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*Petitions for exceptions to these policies should be submitted to the departmental chairman.

**To teach speech in a school accredited by the North Central Association, speech teachers are required to have either 24 semester hours in speech or 20 semester hours in speech and 4 semester hours in English. (Courses in Communication Arts and Sciences are counted as courses in speech.)

***Of courses CAS 102, 104 and 130, only one may be taken for credit.
College of Arts and Sciences

140 The Individual and the Mass Media 2 hrs.
Self discovery of the individual's relationship and response to contemporary mass media messages through an experimental approach.

170 Interpersonal Communication I 3 hrs.
An introductory course in communication theory and practice in which a student utilizes his powers of speech to increase his effectiveness in interpersonal relationships through understanding of himself and others.

210 Oral Interpretation 4 hrs.
Emphasis is placed on developing the student's appreciation of literature and his skill in analysis and oral reading of representative works in prose, poetry and drama.

211 Readers Theatre I 2 hrs.
Introduction to the basic theory of readers theatre and participation in group reading of prose, poetry, and drama.

220 Introduction to Theatre**** 3 hrs.
Considers theatre as a part of the individual's cultural heritage and liberal arts background. Includes attending theatre performances and participation in University Theatre.

222 Acting 3 hrs.
Study and practice of the basic principles and techniques of acting designed to help the student develop a basis for appreciation and criticism. Prerequisite: CAS 210 or instructor's consent.

224 Stagecraft 4 hrs.
A beginning course in technical production, including basic stage lighting, the planning and construction of stage scenery. Includes laboratory work on University Theatre productions.

228 Stage Make-up 1 hr.
Study and practice of the principles and techniques of stage make-up.

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.

****May be used as a partial substitute for Arts and Ideas 222. See page 000.
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.

247 Sound in Mass Communication 3 hrs.
Analysis of sound as a creative element in mass communication. Studio experience in radio production, and consideration of aural messages in other mass media, such as filmtracks and recording. Prerequisites: CAS 240

270 Interpersonal Communication II 3 hrs.
A continuation of CAS 170 with a more intensive analysis exploring further dimensions of interpersonal relationships, with particular emphasis on listening. Prerequisite: CAS 170 or instructor's consent.

302 Theoretical Bases of Communication 3 hrs.
An examination of theories of perception, cognition, motivation and social psychology which relate to the process of communication.

307 Psycho-Physical Bases of Communication 3 hrs.
Examination of the physiological patterns of the cognitive, affective and psychomotor aspects of communication. The course will include classroom and laboratory experience.

311 Readers Theatre II 2 hrs.
Selecting and arranging materials for readers theatre; directing and participating in performances. Prerequisite: Readers Theatre I.

320 Stage Direction 3 hrs.
Theory and application of basic principles of directing and staging plays with particular emphasis upon production problems of school and community. Prerequisite: CAS 222 or instructor's consent.

321 Play Production for High School Teachers 4 hrs.
A “How-to-do-it” course giving an introduction to the basic theory and skills needed to produce the high school play. Includes all aspects of play production, such as play selection, casting, rehearsal, planning scenery, costumes, make-up, etc.

325 Summer Theatre 5 hrs.
A Summer Theatre Program providing qualified students with opportunities to concentrate on the various activities of theatre production. Participation is integrated with seminars under faculty direction so that the practical facet of theatre work is constantly related to theory.

328 Stage Costume 3 hrs.
Study of historic costume as adapted for the stage. Practical laboratory experience in costume construction offered in conjunction with University Theatre productions.

331 Persuasive Speaking 3 hrs.
The study and application of logical, emotional and ethical principles of persuasion.
334 Logical Bases of Communication 3 hrs.
Logical methods of inquiry in the analysis and construction of messages related to contemporary problems in society.

335 Leadership 3 hrs.
A study of the characteristics and behaviors of leaders with emphasis on the development of leadership abilities in the individual for different group situations.

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 per student. Prerequisite: CAS 240.

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 per student. Prerequisite: CAS 240.

348 Broadcast Writing and Continuity 3 hrs.
Explores the problems and techniques of combining sound and visual elements in the creative preparation of broadcast formats, commercials, dramatic scripts, station continuity and documentaries.

370 Special Topics in Communication 3 hrs.
An investigation of topics of special interest related to the area of communication.

398 Independent Study 1-6 hrs.
Designed to allow outstanding students to work independently under staff supervision. Includes extensive study, research or special creative projects in any of the several areas of Communication Arts and Sciences. One to six hours credit may be accumulated. Prerequisite: Consent, Chairman of Department.

447 Advanced Television Production 3 hrs.
Individual and group projects in the development and production of television programs stressing experimental techniques. Prerequisite: CAS 347 or Permission of Instructor.

470 Communication, Social Issues and Change 3 hrs.
A study and practical application of communication and rhetorical methodology in contemporary social problems.

OPEN TO GRADUATES AND UPPERCLASSMEN

510 Studies in Oral Interpretation: Variable Topics 3 hrs.
Projects in reading and analysis of literature to intensify the student's application of the theory and principles of oral interpretation. Topics will vary each semester and students may repeat the course. Possible topics include the following:
  a. Oral Interpretation of Shakespeare
  b. Oral Interpretation of the Bible
  c. Oral Interpretation of Selected Long Literary Forms
520 Studies in Theatre: Variable Topics 3 hrs.
Selective study within a broad range of aspects of theatre. Emphasis is upon concepts, theory and advanced skills. Possible topics will include the following:
   a. Advanced Acting
   b. Advanced Directing
   c. Improvisational Theatre
   d. Stage Lighting
   e. Advanced Costuming
   f. Dramatic Theory and Criticism

526 History of Theatre 3 hrs.
From the beginning to the English Renaissance.

527 History of Theatre 3 hrs.
From the English Renaissance to the present day.

529 Stage Design 4 hrs.
A course for students in design, including stage lighting and stage settings. Includes laboratory practice in staging University Theatre productions.

530 Studies in Rhetoric: 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 530. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the course schedule.
   a. Conflict Resolution
   b. Ethics and Freedom of Speech
   c. Historical Bases of Rhetoric

Analysis in depth of current and continuing issues in mass communication. Topics vary from semester to semester and students may repeat the course for credit. Possible topics include the following:
   a. Mass Media Law and Regulation
   b. News, Politics and Mass Communication
   c. Mass Communication and Children
   d. International and Comparative Systems of Mass Communication

545 Television as a Creative Medium 3 hrs.
A study of the unique qualities of the television medium, through examination and analysis of television documentary, drama, visual essay and other forms from historical and contemporary periods. The observations of critics and theorists who have attempted to describe the aesthetic values of the medium will be explored.

547 Instructional Radio-Television 3 hrs.
Application of radio and television for the communication specialists. Utilization of electronic resources for instruction, observation, research, and training. Lab Fee $10.
560 Studies in Speech Education: Variable Topics

Selected studies in background, methods, materials and procedures in any one of the several speech areas. Possible topics include directing speech activities, communication behaviors of change agents, as well as others. Topics will vary from semester to semester and students may repeat the course.

561 Teaching Speech in the Elementary School

Examination of the linguistic development of pre-school and elementary school children, the functions of language, study of the nature of the emotional and physical development of children as related to symbol using behaviors, study of materials and methods for affecting desired behaviors in children’s thinking, communicating and enjoyment.

562 Teaching Speech in the Secondary School

This is a course in becoming a professional teacher of communication. The focus of the course is self-examination, openness, and individual initiative. Some of the major topics are an examination of self in relation to teaching, the evolving and changing philosophies of speech communication education, the world of high school teaching as it now exists, innovative procedures in teaching communication, and how to get and hold a job in speech communication.

The class is, for the most part, a laboratory-workshop, using a mixture of group work, guests, visitations, and special projects.

The student must have completed at least 15 hours of work in the CAS Department and, ideally, take the course immediately prior to student teaching.

564 Creative Dramatics for Children

Study of the principles, materials and techniques of dramatics with children as a classroom activity in elementary grades. Observation of demonstration groups. Emphasizes creative dramatics and includes the creative approach to formal dramatics.

570 Studies in Communication: Variable Topics

Selected areas of study within the total range of communication. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under 570. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the course schedule.

a. Interpersonal Theories of Communication
b. Personality and Communication
c. Non-Verbal Communication
d. Attitude Change and Social Influence
e. Theory and Research in Sensitivity Training
f. Semantics
g. Introduction to Communications Research

598 Independent Studies

A program for advanced students with an interest in pursuing independently a program of readings, research in areas of special interest. To be arranged in consultation with a member of the staff and the chairman of the department.
Courses are designed (1) to contribute to general education by providing basic understanding of the economy; (2) to fulfill the requirements for the training of teachers in certain professional groups, such as social sciences, business studies, and business administration; (3) to furnish courses and explore areas of economic thought which are prerequisite to graduate study in economics; and (4) to provide areas of study as pre-professional training for business administration, engineering, foreign service, journalism, law and social work.

A minor in Economics consists of a minimum of 15 hours in the Department.

A major in Economics consists of a minimum of 30 hours of work in the Department. The following are required courses for majors: Principles of Economics (201, 202), Income Analysis and Policy (306), Price Theory (303), and Statistics (502). In addition a major should choose the remainder of his courses in consultation with his advisor, with careful attention paid to achieving a proper spread.

A major in Economics who intends to do graduate work in Economics is advised to take Mathematics 122 and 123 at least, and Econometrics 509.

The Head of the Department will assist students in selecting courses suited to their needs in fulfilling the minor and major requirements.

The Honors Program of the Department of Economics is designed for the student who possesses special talents and abilities and who is particularly interested in exploiting them to the fullest extent. Students wishing to participate in this program should consult a member of the Economics Honors Committee.

PRINCIPLES AND GENERAL THEORY

150 (203) Economic Issues 3 hrs. Fall, Winter

A nontechnical study of the importance and application of economics to current issues. Credit is not applicable to a major or a minor in economics. Not open to B.B.A. students or students who have taken 201 or 202.

201 Principles of Economics 3 hrs. Fall, Winter

An introduction to microeconomics, the study of the price system and resource allocation, problems of monopoly, and the role of government in regulating and supplementing the price system. Prerequisite: Sophomore standing.
202 Principles of Economics
An introduction to macroeconomics, the study of total output and employment, inflation, economic growth, and introduction to international trade and development. Prerequisite: Econ 201.

303 (503) Price Theory
A basic course in economic theory, with emphasis on the theory of consumer behavior (the derivation of the demand curve), the theory of the firm and factor pricing. Prerequisites: Econ. 201 and 202.

306 (406) Income Analysis and Policy
An examination of macroeconomic theory with particular emphasis on business cycles, economic growth, and price level instability. The interplay between theory and policy is analyzed. Prerequisites: Econ. 201 and 202.

400 Managerial Economics
An introductory examination of the application of tools of economic analysis to management problems and decision making. The basic concepts include marginalism and cost analysis, demand pricing, capital budgeting, and selected optimality models. Prerequisites: Econ. 201 and 202.

405 (505) History of Economic Thought
A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mercantilism and the evolution of the philosophy of natural liberties special emphasis will be placed on the contributions of significant economic thinkers and the influence of various schools of economic thought on national policy and economic development. Prerequisites: Econ. 201 and 202.

501 Studies in Economic Theory
Study and research on various major economic theories, schools of thought, and theorists. Different topics will be considered from semester to semester and will be announced in advance. Students may repeat the course for additional credit. Prerequisite: Econ. 201 and 202.

502 Studies in Quantitative Economics
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
An introductory course to acquaint the student with the application of basic mathematical concepts to economic analysis including such topics as demand, revenue, costs, capital assets, growth models, multipliers, accelerators, maximum problems, differentials and difference equations and linear systems in economics. Prerequisites: Econ. 201 and 202, Math. 122 or consent of instructor.

506 Economic Methodology
A study of the methodological underpinning of extant economic theory. Special emphasis will be paid to the ways in which such concepts as causality, probability,
deduction, induction, prediction, and proof enter into the logic discovery and the logic of confirmation. Prerequisites: Econ. 201 and 202 or consent of instructor.

508 Institutional Economics 4 hrs. Winter
An intensive examination of heterodox economic theory, conceived in terms of the basic social concepts of institutions and technology, and utilizing developments in modern social science for the resolution of persistent economic problems. Prerequisites: Econ. 201 and 202.

509 Econometrics 3 hrs. Winter
An introductory course in analytical and quantitative methods in economics. Applied economic problems like linear programming, input-output analysis will be considered. Simple regression models and their uses in economics are also included. Prerequisites: Econ. 201 and 202, Math. 122, or consent of instructor.

539 Economic Anthropology 3 hrs. Winter
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: Anthro. 231, Econ. 201 and 202 and/or consent of instructor.

545 The Economics of Location 3 hrs. Winter
The application of economic analysis to the study of the location of economic activities as determined by transportation and the spatial distribution of resources and markets. Consideration is given to selected industry studies; problems in urban land usage, congestion, and the environmental affects of various economic activities. Prerequisites: Econ. 201 and 202.

LABOR ECONOMICS

410 (510) Labor Problems 3 hrs. Fall, Winter
An analysis of the nature and underlying causes of the problems facing the worker in modern economic society. Includes an examination of unions, collective bargaining, labor legislation, wages, unemployment and economic insecurity. Prerequisite: Econ. 201 and 202.

512 Collective Bargaining 3 hrs. Winter
An analysis of the major problems in present-day collective bargaining including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisite: Econ. 410 or consent of instructor.

513 Economic Security 3 hrs. Fall
An analysis of the problems of the individual workers and the efforts of the government to aid in the solution of these problems. It deals with unemployment, old age, benefits and medical care.

514 Labor and Government 3 hrs. Winter
The course deals with the government's role in the problems arising from labor-management relations and from labor's search for security. It covers the court's attitude toward labor organization from the rule of conspiracy through Taft-Hartley. It also includes protective legislation and the development of security legislation.
MONEY, CREDIT AND FINANCE

420 (320) Money and Credit 4 hrs. Fall, Winter
In this course an examination is made of the evolution and functions of money, credit, banking and of the financial institutions. Some attention is given to the history of currency in the United States, experiments with paper money, and price-level control, together with considerable factual material relative to credit and credit instruments. Prerequisites: Econ. 201 and 202.

424 (524) Federal Government Finance 3 hrs. Fall
Practices, effects, and policy issues in federal government budgeting, spending, taxation, borrowing and debt, with particular attention to individual and corporate income taxation. Prerequisites: Econ. 201 and 202.

507 Monetary Theory and Policy 3 hrs. Winter
This course concentrates on the main elements of monetary theory and policy having to do with such problems as promoting economic growth, maintaining full employment and price stability, influencing the flow of capital into the various economic sectors with different possible social goals in mind, and stabilizing international trade and financial relationships. Prerequisite: Econ. 420.

525 State and Local Government Finance 3 hrs. Winter
Practices, effects and issues in state and local expenditure, taxation, and borrowing, with particular attention to property and sales taxation, to the financing of education and highways, and to intergovernmental fiscal relations. Prerequisites: Econ. 201 and 202.

526 The Urban Economy 3 hrs. Winter
The course will examine the economic structure and development of the urban complex. Among the topics to be considered are: the process of suburbanization, urban sprawl and urban blight, the pricing and production of public utilities in the local economy, economies of scale the size of the urban area, the place of planning, the impact of public services and the tax structure on the location of economic activity, inter-governmental economic relationships. Prerequisites: Econ. 201 and 202.

INDUSTRIAL ORGANIZATION AND PUBLIC CONTROL

404 The Structure and Performance of Industry 3 hrs. Fall
This course deals with the ways in which the organization of sellers affects the performance of industrial markets and thus the nation's economic welfare. Particular American industries are examined and from time to time comparisons are made to industries in foreign countries. The role of government in the industrial sector is also dealt with. Prerequisites: Econ. 201 and 202.

445 Economic Organization 3 hrs. Fall
A study of the organization of economic enterprise, particularly large corporations. The history, financing, and control of these enterprises will be studied in an
effort to determine how the public interest is affected and how public control has protected and can protect the public interest. Prerequisites: Econ. 201 and 202.

447 Economics of Transportation and Public Utilities 4 hrs. Winter
An examination of the economics and regulation of the public utility industries with particular emphasis on transportation. Prerequisites: Econ. 201 and 202.

542 Business and Government 4 hrs. Fall
A study of the regulatory policies of government and their impact on private enterprise. The course seeks to explain the need for regulation, and to provide an analysis and evaluation of the various laws from the viewpoint of encouragement, subsidization, and control. Special attention will be directed to certain aspects of concentration of economic power, public ownership, and nationalization programs. Prerequisites: Econ. 201 and 202. Work in Political Science may be substituted in special cases by permission of the instructor.

INTERNATIONAL ECONOMICS

480 (380) International Economics 4 hrs. Fall
A study of the fundamentals of international trade and related problems, with special reference to the implications of the international economic policies of the United States both for the economy and for the firm. Prerequisites: Econ. 201 and 202.

484 (584) Comparative Economic Systems 4 hrs. Fall
The economic institutions and conditions of capitalism, socialism, communism, fascism, and the cooperative movement are critically examined as to ideology and actual operation. Prerequisites: Econ. 201, 202 or consent of instructor.

580 International Trade: Theory and Policy 3 hrs. Winter
This course is designed to study the pure theory of international trade and trade policy. The topics included will be: theory of international pricing and allocation, foreign trade multiplier and international monetary equilibrium; international trade and economic development. Prerequisites: Econ. 201, 202 and 480.

583 Studies in Economic Planning 3 hrs. Winter
An examination of the general methodological and theoretical foundations of planning including the planning of production, investment, labor, consumption, monetary flows, prices and macroeconomic balances. Different topics and systems of planning will be considered from semester to semester and will be announced in advance. Students may repeat the course for additional credit. Prerequisites: Econ. 201 and 202.

585 The Economics of Sub-Saharan Africa 3 hrs. Winter
A survey of the indigenous economic systems of Sub-Saharan Africa and how these systems have been modified over time by the intrusion of various foreign populations. The economic progress will be examined and a detailed investigation of economic, social, and political obstacles to further progress will be made. Not open to students who previously received credit in 585 Economics of North Africa and the Near East. Prerequisites: Econ. 201 and 202 or consent of instructor.
College of Arts and Sciences

586 Economics of the Soviet Union and Eastern Europe 2 hrs. Fall
A study of Soviet and East European planning practices including an examination of the development in commerce, agriculture, and industry in these areas. Trade among the several East bloc nations will also be covered. Prerequisites: Econ. 201 and 202.

587 Studies in Asian Economics 3 hrs. Fall
The course concentrates on the study of the Japanese, Chinese and Indian economic systems. These models are then applied as a basis of comparison to the other Asian economies. Prerequisites: Econ. 201 and 202.

588 Economic Development 4 hrs. Winter
An analysis of the economic factors such as population, resources, innovation and capital formation which affect economic growth. Selected underdeveloped areas will be studied to understand the cultural patterns and economic reasons for lack of development and the steps necessary to promote economic progress. Special attention will be paid to evaluating the effectiveness of the United States foreign aid program and examining the issues arising as a result of the conflict with the U.S.S.R. Prerequisites: Econ. 201 and 202.

589 The Economics of Latin America 3 hrs. Winter
A survey of the principal economic problems of the Latin American countries. A substantial portion of the course will be devoted to case studies of the development of particular countries. Prerequisites: Econ. 201 and 202.

590 Contemporary Communism—A Survey 2 hrs.
Designed to give the student an insight for the range of problems that resulted from the spread of Communism in the wake of World War II. The philosophy, economic doctrines, and government of Communism will be covered.

SPECIAL STUDIES

490, 491, 492 Economics Honors Seminar 2 hrs. Fall, Winter
Designed for honors students, the Seminar deals with issues of current importance in economic theory and policy. Permission to register must be obtained from the Departmental Honors Committee.

495 Independent Study for Honors Students 2 hrs. Fall, Winter
A program of independent study, tailored to fit the needs and interests of economics honors students, under the direction of one of the members of the Department. Permission to register must be obtained from the Departmental Honors Committee.

598 Readings in Economics 1-3 hrs. Fall, Winter
An independent program of study for qualified advanced students to be arranged in consultation with the instructor. Prerequisite: Consent of Head of Department.
REQUIREMENTS FOR ENGLISH MAJORS AND MINORS

Major and minor slips are not required except for students electing a major or minor with creative writing emphasis. However, all majors should, as soon as they decide to become majors, confer with the Associate Chairman for Undergraduate Studies or one of the other departmental undergraduate advisors.

English majors are required to have, as a minimum, one college year of a foreign language or its equivalent (at least two years of a language in high school). The department recommends as much beyond the minimum as a student can manage. Students planning to do graduate work beyond the M.A. ought to study at least two languages. French and German are most frequently required in graduate school.

Thirty hours is the minimum requirement for an English major. However, students are urged to take as many additional hours as they can. This recommendation pertains especially to students planning to teach or attend graduate school.

The required courses for English majors and minors are listed below. In addition, all majors will find useful the Department’s “Handbook for English Majors,”
which includes discussion of possible careers for the English major, suggestions for electives in other departments, a list of sources for advice and counseling, and other aids to selecting a major or minor and to planning programs. Copies are available on the sixth floor of Sprau Tower. Other materials useful to the student are available in the English Center, 3324 Brown Hall.

Departmental advisors are on the sixth floor of Sprau Tower. Call 383-1684 for the advisors' hours. Appointments are usually not necessary.

As a supplement to the general course descriptions provided in the catalog, instructors' descriptions of each individual section are posted outside 3321 Brown Hall approximately two weeks before preregistration for each term.

SPECIAL NOTE TO NON-MAJORS

The English Department offers a number of courses suitable for the general student (including various kinds and levels of writing courses): 105 Thought and Language, 107 Good Books, 110 Literary Interpretation, 111 Contemporary Topics in Literature, 150 Literature and Other Arts, 210 Film Interpretation, 212 European Literature, 264 Journalism, 266 The Art of Fiction and Poetry, 362 Advanced Writing, and other more advanced courses, as appropriate to the interests and background of the student. English advisors will assist any student, English major or not, in selecting courses in writing, English language, or literature which will be helpful in his general education or career.

SPECIAL NOTE TO TRANSFER STUDENTS

All transfer students majoring or minoring in English should consult with the appropriate Associate Chairman, either undergraduate or graduate, or with one of the Department's undergraduate advisors, about transferring English course credit from other colleges to Western Michigan University. An early conference will enable the student to avoid duplication of courses and possible loss of transfer credit.

ENGLISH MAJORS 30 hours required

General Curriculum and Liberal Arts

Required: 110 Literary Interpretation; either 270 English Language or 372 Development of Modern English; either 310 Literary History and Criticism or 340 Development of English Verse; 499 Senior Seminar; plus electives to make 30 hours. Sixteen hours, including 499 and either 310 or 340, must be in 300, 400, or 500 level courses. One of the 300, 400, or 500 level courses must be chosen from among those courses indicated (*) on pages 252, 253, 254. These courses emphasize literature written before 1900.

Choice of electives is important. Students should confer frequently with departmental advisors about planning their programs.

Secondary Education

Required: 110 Literary Interpretation; 270 English Language; an American Literature course; either 310 Literary History and Criticism or 340 Development of English Verse; 499 Senior Seminar; plus electives to make 30 hours. Sixteen hours, including 499 and either 310 or 340, must be in 300, 400, or 500 level courses. One of the 300, 400, or 500 level courses must be chosen from among those courses indicated (*) on pages 252, 253, 254. These courses emphasize literature written before 1900.

The courses in the teaching of English (English 381, 382, 383, and 385) do not count toward the English major. However, since a methods course is required for
certification, at least one of these courses should be taken by all wishing to be certified to teach English in the secondary schools.

Choice of electives is important. Students should confer frequently with departmental advisors about planning their programs.

**Elementary Education**

Required: 110 Literary Interpretation; 270 English Language; 282 Children's Literature; either 310 Literary History and Criticism or 340 Development of English Verse; 499 Senior Seminar; plus electives to make 30 hours. One of these elective courses must be chosen from among those courses indicated (*) on pages 252, 253, 254. These courses emphasize literature written before 1900.

Choice of electives is important. Students should confer frequently with the departmental advisors about planning their programs.

Students who count 282 Children's Literature toward the Elementary Education minor must substitute another English course for it in the English major. Students may not count both 282 Children's Literature and 283 Literature for Adolescents toward the English major.

Elementary Education majors should consult with a departmental advisor before registering for courses in the teaching of English (English 381, 382, 383, 385).

**English major (any curriculum) with Creative Writing Emphasis**

Students in any curriculum may elect to take an English major with creative writing emphasis. Required: twelve hours of advanced writing courses (to be selected, in consultation with an English Department advisor, from English 266, 362, 366, 367, and 566), in addition to the requirements listed above for the student's curriculum (except that 266 may substitute for 110 for the major with creative writing emphasis). For further information, see an English Department advisor.

**ENGLISH MINORS 20 hours required**

**General Curriculum and Liberal Arts**

Required: 110 Literary Interpretation; either 270 English Language or 372 Development of Modern English; plus electives to make 20 hours.

For recommendations on desirable electives, students should consult a departmental advisor.

**Secondary Education**

Required: 110 Literary Interpretation; 270 English Language; an American literature course; plus electives to make 20 hours.

For recommendations on desirable electives, students should consult a departmental advisor.

The courses in the teaching of English (English 381, 382, 383, and 385) do not count toward the English minor. English minors desiring to take one of these courses should consult a departmental advisor.

**Elementary Education**

Required: 110 Literary Interpretation; 270 English Language; 282 Children's Literature; plus electives to make 20 hours.

For recommendations on desirable electives, students should consult a departmental advisor.

Students who count 282 Children's Literature toward the Elementary Education minor must substitute another English course for it in the English minor. Students
may not count both 282 Children’s Literature and 283 Literature for Adolescents toward the English minor.

Elementary Education minors should consult with a departmental advisor before registering for courses in the teaching of English (381, 382, 383, and 385).

English Minor with Creative Writing Emphasis

Students in the General or Liberal Arts curriculum may elect to take an English minor with creative writing emphasis. Required: twelve hours of advanced writing courses (to be selected, in consultation with an English Department advisor, from English 266, 362, 366, 367, and 566); eight hours of course work in English language and literature, also to be selected in consultation with an English Department advisor.

DEPARTMENTAL COURSES

105 Thought and Language: Variable Topics 4 hrs.

A writing course in which the student will work closely with the instructor through conferences and group discussions to develop his sense of language as a means for shaping and ordering his experience and ideas, and to develop imagination, thought, organization, and clarity in his written work. The student has a choice of several options which vary in emphasis and approach. (For full listing of options and sections, see English Department Bulletin on Writing Courses.) May be repeated for credit. Does not count as credit toward English major or minor.

107 Good Books 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 (210) Literary Interpretation 4 hrs.

An introduction to the study of literature, aimed at developing sensitivity and skill in the critical interpretation of poetry, drama, and prose fiction.

111 Contemporary Topics in Literature 4 hrs.

Exploration of fiction, poetry, drama, and film related to current concerns. Topics vary from semester to semester. Typical examples are: literature and ecology; the individual and the city in American novel and film; literature and the search for identity and “life style;” myth and folklore as response to realities of human experience.

An exploratory course for the general student rather than the student who plans to specialize in the study of literature. Credit 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.
212 (112) European Literature
Readings in European literature, in English translation, from the Greek period to the present, with emphasis on the comparative study of selected periods and authors.

222 American Literature: Recurrent Themes
A study of some of the recurrent themes in American life as seen in American literature. Prerequisite: 110.

223 Black American Literature
A survey of important black American writers and the historical development of the black image and experience in American literature and culture. Prerequisite: 110 or the equivalent.

238 20th Century Literature, 1900 to World War II
Readings in the literature of the English speaking world either written between 1900 and World War II or by authors whose major work belongs to this period. Prerequisite: 110.

239 Contemporary Literature
Readings in the literature of the English speaking world either written between World War II and the present or by authors whose major work belongs to this period. Prerequisite: 110.

242 Development of the Drama
Studies in the development of the drama from the Classical Period to the present with emphasis on selected periods. Prerequisite: 110.

244 Development of the Novel
A study of the development and diversity of the novel as a literary form. Prerequisite: 110.

252 Shakespeare
A study of Shakespeare's art through the application of several critical methods to selected tragedies, histories, and comedies. Prerequisite: 110.

264 Journalism
Theory and practice of news gathering and news writing, copy editing, headline writing, news evaluation, page layout, and editorial writing.

265 Journalism Laboratory
Regular practice in newspaper editorial department work on the staff of a university newspaper at Western Michigan University. May be repeated for credit. Prerequisite: 264 Journalism, or 264 may be taken concurrently.

266 The Art of Fiction and Poetry
The study of fiction and poetry as art, intended to develop an understanding of the formal techniques employed in writing fiction and poetry and basic skills in the use of these techniques.

270 English Language
Introduction to the principles which govern language study, with particular reference to their use in understanding English.
282 Children's Literature 4 hrs.
A survey and analysis of the best that has been written for children or appropriated by them.
If this course is counted toward the English major or minor, 283 Literature for Adolescents may not be counted toward the English major or minor.

283 Literature for Adolescents 4 hrs.
Critical analysis of those genres read by youth from twelve to sixteen: fiction (especially that of maturation, adventure, history, and fantasy)—drama, poetry, myth and legend, biography, and other non-fiction.
If this course is counted toward the English major or minor, 282 Children's Literature may not be counted toward the English major or minor.

310 Literary History and Criticism 4 hrs.
Discussion of important topics and problems, both historical and critical, involved in the systematic study of literature. Emphasis includes study in the chronology of English literature, its development and continuity, and an introduction to the nature and uses of formal literary criticism. Prerequisite: 110.

322 American Literature: Major Writers 4 hrs.
Intensive reading of representative works of major American writers. Prerequisite: 110.

332 English Renaissance Literature* 4 hrs.
Representative selections from the major writers of the period 1500-1660, by such writers as More, Spenser, Bacon, Donne, and Milton. Prerequisite: 110.

An historical study of English poetry, from its beginning to the present, emphasizing the development of poetic techniques, major verse forms and styles, and their relation to theories of poetry. Prerequisite: 110.

362 Advanced Writing 4 hrs.
Practice in writing articles, essays, biographical and critical prose with emphasis on development of the student's individual style and elimination of obstacles to clear and vital expression.

366 Advanced Fiction Writing 4 hrs.
An advanced course in the writing of fiction, with emphasis on class discussion and criticism of each student's writing. Prerequisite: 266 or permission of the department.

367 Advanced Poetry Writing 4 hrs.
An advanced course in the writing of poetry, with emphasis on class discussion and criticism of each student's writing. Prerequisite: 266 or permission of the department.

372 Development of Modern English 4 hrs.
A course in the history of the language treating the historic and linguistic forces which have affected pronunciation, grammar, and vocabulary.

381 Teaching of Literature 2 hrs.
Techniques and theories of teaching literature in the secondary schools.
382 Teaching of English Language 2 hrs.
Techniques and theories of teaching the English language to native speakers in the secondary schools. Prerequisite: 270.

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.

396 English Honors 4 hrs.
Intensive study of selected literary topics. Open only to students in the English Honors Program.

397 English Honors 4 hrs.
Continuation of 396.

410 Special Topics in Literature 4 hrs.
A study in historical perspective of selected literary works of the English speaking world or international literature in translation. Prerequisite: 110.

411 Contemporary Issues in Literature 4 hrs.
Study of a topic relevant to contemporary life (revolution; colonialism; etc.) pursued through an examination of selected literary works which embody the topic in its present and also perhaps its past forms.
A general course for students who are not English majors or minors. Credit towards English major or minor by permission of the department only. Prerequisite: limited to juniors and seniors.

496 English Honors 4 hrs.
Continuation of 397: the writing of an Honors Essay on a topic selected by the student in consultation with the instructor.

499 Senior Seminar in English 4 hrs.
Special studies in language and literature for senior English majors. Students must reserve a place in a Senior Seminar section by getting a Control ("C") Card from the English office well in advance of preregistration.

519 Non-Western Literature in Translation 4 hrs.
Studies of significant literary forms and works in Chinese, Indian, and other non-western literatures and of their relation to the values and patterns of the societies which produced them.

522 Topics in American Literary History* 4 hrs.
Study of a movement or a recurrent theme in American literature, such as romanticism, realism, naturalism, humor, racial issues. Prerequisite: 110.

529 Medieval English Literature* 4 hrs.
Studies in Old and Middle English literature, excluding Chaucer, read either in the original or in modernized versions. Prerequisite: 110.
530 Medieval Continental Literature in English Translation* 4 hrs.
Readings in medieval European literature (in English translation), excluding that of England. Prerequisite: 110.

531 Chaucer* 4 hrs.
Readings in Chaucer, with emphasis on *Troilus and Criseyde* and *The Canterbury Tales*. Prerequisite: 110.

532 16th Century Literature* 4 hrs.
Selections from the major works in both prose and verse, by such writers as Wyatt, More, Sidney, and Spenser. Prerequisite: 110.

533 17th Century Literature* 4 hrs.
Selections from the major works in both prose and verse from 1600 to the Restoration, by such writers as Bacon, Browne, the metaphysical poets, and Milton. Prerequisite: 110.

534 Neo-Classical Literature* 4 hrs.
English literature from the Restoration through Pope and Swift. Prerequisite: 110.

535 18th Century Literature* 4 hrs.
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 precursors of the 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, British, 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.

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, or an Introduction to Linguistics course, or permission of the department.

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

Oscar H. Horst, Chairman
Gary Burkle
David G. Dickason
Val L. Eichenlaub
Rainer R. Erhart
Charles F. Heller
Albert H. Jackman
Eugene C. Kirchherr
Philip P. Micklin
Henry A. Raup
Hans J. Stolle
Joseph P. Stoltman
Eldor C. Quandt
George Vuicich

CURRICULA FOR MAJORS AND MINORS

Students who plan to major or minor in geography should consult the departmental undergraduate adviser as early as possible in their college careers.
A special Honors Program in Geography is open to students with excellent academic records. Information on this program is available in the departmental office in Wood Hall.

NON-TEACHING MAJOR
30 HOURS

225 Introduction to Meteorology and Climatology 4 hrs.
244 Economic Geography 3
380 Geography of Anglo-America 3
560 Principles of Cartography 4
566 Field Geography 4
Electives in geography chosen with consent of Counselor 12 hrs.
Required supporting course: Geology 230.

NON-TEACHING MINOR
20 HOURS

225 Introduction to Meteorology and Climatology 4 hrs.
244 Economic Geography 3
380 Geography of Anglo-America 3
Electives in geography chosen with consent of Counselor 10
College of Arts and Sciences

ELEMENTARY EDUCATION MAJOR
30 HOURS

<table>
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<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>105 Physical Geography</td>
<td>4 hrs.</td>
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<tr>
<td>205 Introduction to Human Geography</td>
<td>3</td>
</tr>
<tr>
<td>350 Principles of Conservation and Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>380 Geography of Anglo-America</td>
<td>3</td>
</tr>
<tr>
<td>460 Instructional Methods in Geography</td>
<td>3</td>
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</tbody>
</table>

(Geography 460 may be waived and another geography course substituted if 507, Teaching of Social Studies in the Elementary Schools . . . 2 hrs., is required in another sequence.) Electives in geography chosen with the consent of the counselor will complete the total of 30 hours for the major.

One regional course from Group A and one from Group B will be included. (see page 323)

Required supporting course: Geology 112.

ELEMENTARY EDUCATION MINORS
20 HOURS

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<th>Course</th>
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<tr>
<td>105 Physical Geography</td>
<td>4 hrs.</td>
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Electives to a total of at least 16 semester hours will be chosen with the approval of the departmental counselor. One of the electives should be Geography 460, Instructional Methods in Geography.

SECONDARY EDUCATION MAJOR
30 HOURS

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<th>Course</th>
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<tr>
<td>105 Physical Geography</td>
<td>4 hrs.</td>
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<tr>
<td>225 Introduction to Meteorology and Climatology</td>
<td>4</td>
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<tr>
<td>244 Economic Geography</td>
<td>3</td>
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<tr>
<td>380 Geography of Anglo-America</td>
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<td>350 Principles of Conservation and Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>460 Instructional Methods in Geography</td>
<td>3</td>
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</tbody>
</table>

(Geography 460 may be waived and another geography course substituted if 300, Teaching and Learning in the Secondary Schools . . . 3 hrs., is required in another sequence.)

Electives in geography chosen with consent of the counselor will complete the total of 30 hours for the Major.

Required supporting course: Geology 112.

SECONDARY EDUCATION MINOR
20 HOURS

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<tr>
<th>Course</th>
<th>Credit</th>
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<tr>
<td>105 Physical Geography</td>
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<td>225 Introduction to Meteorology and Climatology</td>
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<tr>
<td>244 Economic Geography</td>
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<td>380 Geography of Anglo-America</td>
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<td>or</td>
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<tr>
<td>350 Principles of Conservation and Resource Management</td>
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</tr>
<tr>
<td>460 Instructional Methods in Geography</td>
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</table>

(Geography 460 may be waived and another geography course substituted if 300, Teaching of Social Studies in the Secondary Schools . . . 3 hrs., is required in another sequence.)

Elective in geography chosen with consent of Counselor . . . 3 hrs.

Science Credit

The Geography courses 100, 105, 225, 226, 350, 555, 560, 567, 568, 580, and 582 are acceptable for science credit in appropriate science sequences.
# COURSES IN SYSTEMATIC GEOGRAPHY

## 100 World Ecological Problems and Man

(Science credit) Geographers have long been concerned with studying the interactions between man and the environment. The major focus of these investigations today is concerned with man's misuse of the environment, which has led to the present day man-made environmental crisis. This introductory course combines scientific and non-technical appraisals of processes and problems dealing with the question of environmental quality. Therefore, man will be studied in his physical as well as his social setting. Though major issues may vary for developing and developed nations, topics concerned with population pressure, pollution and urbanization will be among those considered.

### 105 Physical Geography

(Sci. Credit) The study of several earth sciences which give an understanding of man's environment: the form of the earth, earth-sun relationships, maps, weather and climate, soils, vegetation, the oceans, landforms and earth materials. The significance of environmental factors in the life of man is stressed.

### 205 Introduction to Human Geography

An introduction to those aspects of geography concerned with man and his efforts to cope with his environment. Included are population and settlement forms, the utilization of resources, the impact of technology on human occupancy of the earth, and the origin and dispersal of cultural elements among the various world realms.

### 215 Introduction to Geography

An introduction to systems and structures in the organization of earthspace. Man in his increasingly significant role as an agent in environmental systems is considered.

### 225 Introduction to Meteorology and Climatology

(Sci. Credit) A non-mathematical analysis of systematic and regional atmospheric behavior. First part of course deals with fundamental physical laws affecting the elements of weather—temperature, moisture and humidity, pressure, and winds. Second part of course examines the distribution of various types of climates over the earth's surface, with particular emphasis on the interaction of geographic factors with the major atmospheric climatic controls, and upon the effects of various climates on the economic activities of man. Prerequisite: Geography 105 or consent.

### 226 Advanced Physical Geography

(Sci. Credit) This study of the elements of the physical environment treats the terrain, soil, vegetation, and climatic relationships in some depth. Lecture and laboratory work will be supplemented by field investigations. Three one hour lectures and one two hour laboratory. Prerequisite: Geography 105 or 225.

### 244 Economic Geography

A survey of locational economic patterns and their interrelationships, including the study of spatial variation in economic development, primary production, energy generation, manufacturing, transportation, service occupations, and trade.

### 350 Principles of Conservation and Resource Management

(Sci. Credit) Critical evaluation of the major natural resources of the United States, particularly soils, water, forests, wildlife, and minerals; examination of the utilization of these resources so as to yield the maximum benefit to man.
Emphasis is placed on principles, policies and issues in the management of natural resources.

540 Political Geography 3 hrs. Fall

This course introduces the principles and concepts of political geography as they interact in the evolution of the modern political state. Geopolitical concepts such as boundaries and frontiers, the "organic" State, Geopolitik, and theories of global relationships are treated in some detail.

541 Geographic Foundations of National Power 3 hrs.

In contrast to the principles and concepts treated in Geography 540, this course applies political geography to world power relationships and analyzes the components of national power in their physical and cultural relationships. Concepts of autarky, national determinism, possibilism, and supranationalism will be studied.

543 Cultural Geography 3 hrs.

Techniques of spatial analysis applicable to the study of man and his adjustment to different environments. The place of origin, diffusion, and present distribution of selected cultural patterns will be traced with emphasis given to cultural traits which strongly influence human occupancy of the earth's surface.

544 Agricultural Geography 3 hrs.

A course designed to acquaint the student with world patterns of farming activity. The first part of the course is concerned with the description and analysis of: (a) the distribution of major world crops and domestic animals, and (b) the most common combinations of crops and livestock on farm units. The second part of the course deals with the spatial organization of agriculture in certain selected areas.

545 Manufacturing Geography 3 hrs.

Studies in the specific location and general distribution of selected industries with particular consideration being given to the interplay of technological, economic, and political elements affecting spatial patterns of industry. Both the traditional and current theoretical approaches to geographic investigation of industries will be critically examined. Prerequisite: Geography 244 or consent.

546 Transportation Geography 3 hrs.

Study of the space-adjusting industries which link global production and consumption. Emphasis is placed upon (1) historical evolution of transport systems in developed nations, (2) problems focusing upon the creation of effective transport systems in the underdeveloped world, (3) the role of transportation in location theory, (4) theory and technique in transport analysis, (5) the urban transportation problem—structure and alternatives, and (6) competitive and complementary characteristics of transport modes under differing political systems. Prerequisite: Geography 244 or consent.

555 Contemporary Issues in Resources Management 3 hrs.

(Sci. Credit) Geographic analysis of selected contemporary natural resource and environmental problems, such as questions of natural resource adequacy, environmental pollution, political and economic problems related to resource management, and individual studies of local environmental problems. Prerequisite: Geog. 350 or consent.

556 Land Use Planning 3 hrs.

An examination of the philosophy and role of land-use planning at the national,
regional, and local levels; study of those decisions involved in the establishment and
design of long-range plans for land utilization, and methods of implementation.

570 Urban Geography 4 hrs. Winter

The study of urban settlements as distinctive geographical units. Among the
topics considered are (1) the historical geography of urbanization, (2) characteristics
of urban forms in selected world regions, (3) approaches to the functional classi-
fication of cities, and (4) the analysis of land use patterns and transportation in the
modern city and metropolitan region. Special assignments are designed to acquaint
the student with source materials and field techniques utilized in urban research.
Geography 244 or a background in geography or the social sciences is recommended
as preparation for this course.

COURSES IN REGIONAL GEOGRAPHY

Group A Courses: 381, 382, 383, 384, 385
Group B Courses: 386, 387, 388, 389, 390

The following regional courses which are listed in the graduate catalog may,
by special permission, be taken for undergraduate credit: 510, 511, 512, 513,
514, 515, 516, 517, 518, 519, 520.

206 World Regional Geography 5 hrs.

A survey of world geography utilizing the tools of regional analysis in the study
of major geographic realms.

311 Geography of Michigan 3 hrs.

This course is primarily designed to provide teachers in geography with a full
understanding of the distribution of population, resources, forms of economic ac-
tivity, and recreational land use in the home state.

380 Geography of Anglo-America 3 hrs. Fall, Winter

An introduction to the physical and cultural patterns of the United States and
Canada.

381 Geography of South America 3 hrs. Fall

Regional study of the nations of South America with attention to the inter-
relationships of the physical and cultural environments. Historical background
necessary for the interpretation of the present political, social and economic
conditions is included.

382 Geography of Middle America 3 hrs. Winter

Systematic consideration of the physical environment of Mexico, Central America
and the West Indies. A problems approach is utilized to reckon with the economic,
social and political trends of the region.

383 Geography of Western and Southern Europe 3 hrs.

Intensive regional study of those Western European nations situated west of the
Iron Curtain. The physical elements (climate, landforms, resources, etc.) are ex-
amined and the derivative cultural elements are identified. Emphasis is placed upon
the social and economic activities of contemporary Western Europe.
College of Arts and Sciences

Introduction to the physical, cultural and economic geography of the U.S.S.R. and Eastern Europe. The primary focus is the Soviet Union with an emphasis on the characteristic spatial patterns and relationships found within the country.

385 Geography of the Pacific Realm 3 hrs.
The human and physical geography of the South and Central Pacific with concentration on Australia, New Zealand, Fiji, and Polynesia.

386 Geography of Middle and South Africa 3 hrs.
General survey of the broad physical realms and the background of contemporary political geography in Africa south of the Sahara, followed by interpretive studies of the major regions and states based on an examination of population distribution, the systems of subsistence and commercial agriculture, the availability of power and mineral resources, patterns of transportation, and current programs for regional development.

387 Geography of Middle East and North Africa 3 hrs.
Study of the diversity and uniformity—both physical and cultural—of the Middle East and Africa north of (and including) the Sahara. Special attention is given to aridity problem, economic development, petroleum, Arab re-unification movements, and the impact of the Muslim World on the current political scene.

388 Geography of East Asia 3 hrs.
Study of selected physical and cultural environments of the Far East (China, Korea, Mongolia, and Japan). Characteristics and inter-relationships of population growth, the development of the agrarian base and the utilization of industrial resources are examined in view of evolving political and cultural patterns.

389 Geography of Southeast Asia 3 hrs.
Study of selected physical and cultural environments of mainland and island Southeast Asia. Characteristics and inter-relationships of population growth, the development of the agrarian base and the utilization of industrial resources are examined in view of evolving political and cultural patterns.

390 Geography of South Asia 3 hrs.
Study of selected physical and cultural environments of South Asia (India, Pakistan, Ceylon and the Himalayan countries). Characteristics and inter-relationships of population growth, the development of agrarian base and the utilization of industrial resources are examined in view of evolving political and cultural patterns.

542 Historical Geography of North America 3 hrs.
A study of environmental, economic, and cultural factors as they combined to influence routes of exploration and trade, settlement patterns, regional economies, and sectional identities in North America.

550 Studies in Historical Geography 3 hrs.
Studies of geographic and related features which have combined to influence the course of historical development. This course will concentrate on a particular region and/or period of time during each semester in which it is offered. Each specialization will be designated in the class schedule.
COURSES IN GEOGRAPHIC METHODOLOGY AND RESEARCH

460 Instructional Methods in Geography 3 hrs. Fall, Winter

Study of objectives, tools, organization and presentation of material, methods of evaluation, and scrutiny of textual material in the field of geography.

560 Principles of Cartography 4 hrs. Fall, Winter

(Sci. Credit) Introduction to map construction with primary emphasis on the conceptual planning and designing of maps as a medium for communication and research. Lectures are supplemented by laboratory assignments to familiarize students with drafting techniques, lettering and symbolization, the concept of scale and scale transformations, map layout and design, processes of map reproduction, the employment and construction of projections, and the compilation procedures and execution of thematic maps. Two one-hour lectures and two two-hour laboratory periods.

566 Field Geography 4 hrs. Fall

The theory and application of geographic techniques in field investigations; collection and analysis of field data; preparation and presentation of materials. The course is based primarily upon field observations. Desirable prerequisite: Geography 560 or consent.

567 Field Mapping and Mensuration Techniques 3 hrs.

(Sci. Credit) An introduction to the practical methods by which accurate, large-scale maps are constructed. Students are taught to determine the location of points in terms of distance and direction from other points by use of: the pace-and-compass method, chaining and plane tabling with open-sight and telescopic alidades. Additional environmental information is added to the map, at points, by determining altitude, slope of the land surface and hydrographic characteristics. Methods of sampling other continuous phenomena such as soils and vegetation are introduced.

568 Quantitative Methodology in Geography 3 hrs. Fall

(Sci. Credit) The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography ranging from the use of common statistical techniques to method of model formulation in the analysis of spatial interaction. A course in statistics is a desirable preparation for this course.

580 Advanced Cartography 3 hrs. Winter

(Sci Credit) Study of the more complex map projections, the compilation of data and the design of maps and graphs for research papers and the application of statistical techniques in mapping geographic phenomena. Students are assigned special problems to develop their proficiency in the use of cartography as a tool in research. One hour lecture and 2 two-hour labs. Prerequisite: Geography 560 or consent.

582 Aerial Photographic Interpretation 3 hrs.

(Sci. Credit) The student will acquire proficiency in the fundamental techniques and skills of photogrammetry and photo-interpretation during the first part of the course. The remainder of the semester will be spent in interpreting photos dealing with such topics as geomorphology, archaeology, vegetation and soils, water resource, rural and urban land use as well as topics adapted to the interest and anticipated future work of the student.
598 Readings in Geography

1-3 hrs. Fall, Winter

Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Consent of department adviser and instructor.

Geology

W. Thomas Straw, Acting Chairman
Richard A. Davis, Jr.
John D. Grace
W. David Kuenzi
Philip Mariotti

GEOLGY MAJOR (MINIMUM 31 HOURS)

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<tr>
<th>Required Courses</th>
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<tr>
<td>Physical Geology 130</td>
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<tr>
<td>Earth History and Evolution 131</td>
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<tr>
<td>Mineralogy 335</td>
<td>4</td>
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<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
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<tr>
<td>Structural Geology 430</td>
<td>3</td>
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<tr>
<td>Petrology and Petrography 440</td>
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<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
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<tr>
<td>Senior Seminar in Geology 460</td>
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<tr>
<td>Stratigraphy &amp; Sedimentation 535</td>
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A minimum of a “C” is required in each of the required courses.

Supporting required courses: Chemistry 101 or 102 (for students with a high school chemistry background), and 120 or 103 and 109; Physics 110 and 111, or 210 and 211; Biology 100 and 101 or as arranged by counselor; and Mathematics 122 and 123. Some modification of these requirements may be made in consultation with the student's departmental counselor. In addition, at least one year of foreign language (German, French, or Russian), and a summer field course in geology are recommended. Students electing chemistry as a supporting minor should take Chemistry 101 or 102, 120, 222 and 430.

GEOLGY 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.
Geology

Required Courses

Physical Geology 130        4
Earth History and Evolution 131  4

One of the following options is recommended:

Mineralogy 335 4
Optical Mineralogy 336 3
Petrology and Petrography 440 3
Invertebrate Paleontology 533 4

or

Minerals and Rocks 301 3
Invertebrate Paleontology 533 4
3 additional hours in geology 3

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MAJOR OR MINOR IN EARTH SCIENCE

The earth science curriculum is designed for those students preparing to teach in elementary and secondary schools and as a broad flexible curriculum for those who plan to work in conservation, state and federal parks and planning agencies.

Major (30 hours)

Required Courses S.H.
Astronomy 105 4
Introduction to Meteorology 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

Students electing a non-teaching major or minor in earth science must substitute an additional 2 hours of earth science electives for geology 307. Additional substitutions may be elected with the consent of counselor.

Minor (21 hours)

Required Courses S.H.
Astronomy 105 4
Introduction to Meteorology and Climatology 225 4
Physical Geology 130 4
Earth History and Evolution 131 4
Oceanography 300 3
Teaching of Earth Science 307 2

GROUP SCIENCE MINOR (Minimum 24 hours)

The group science minor is designed for students preparing to do professional work in geology. All such students must complete this minor or they may elect to substitute a biology, chemistry, or mathematics minor. If such substitution is made all other courses in the group minor must be taken as supporting required courses. Some modification of these requirements may be made in consultation with the student's departmental advisor.
Required Courses

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<th>Course</th>
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<td>Chemistry</td>
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<td>General Chemistry 101 or 102</td>
<td>4</td>
<td>Principles of Biology 100</td>
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<td>Qualitative Analysis 120</td>
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<td>Electives</td>
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<tr>
<td>General Chemistry 103</td>
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<td>At least 5 credit hours selected from the</td>
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<td>General Chemistry 109</td>
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<td>physical or biological sciences with</td>
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<td>approval of student's advisor.</td>
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<td>Physics</td>
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<td>General Physics 110</td>
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<td>General Physics 111</td>
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<tr>
<td>Mechanics and Heat 210</td>
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<td>Electricity and Light 211</td>
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COURSE DESCRIPTIONS

112 Geological Science (See General Studies) 4 hrs. Fall, Winter
An introduction to physical and historical geology for students who do not plan to major or minor in geology or earth science. The importance to man of minerals and rocks, geologic processes, and the history of the earth including the evolution of past life are emphasized. Three lectures and a two-hour laboratory period. A discussion session may replace one lecture.

130 Physical Geology 4 hrs. Fall, Winter
A study of the common rocks and minerals and the geologic processes acting upon these materials that form the structure and surface features of the earth. Three lectures and a two-hour laboratory period.

131 Earth History and Evolution 4 hrs. Fall, Winter
Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: Geology 130 or consent.

300 Oceanography 3 hrs. Fall, Winter
Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography. Lecture 3 hours a week. Prerequisite: 8 hours of science.

301 Minerals and Rocks 3 hrs. Winter
A one semester course covering hand specimen mineralogy and petrology; includes introduction to crystallography, physical and chemical properties of minerals, and rock description and genesis. Will not count toward a major in geology. Prerequisite: Geology 130 or 112.

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 130 or 112) or consent.
335 Mineralogy
Introduction to crystallography, crystal chemistry, and determinative mineralogy. Physical and chemical properties, occurrence, uses and determination of about 80 minerals. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisites: Geology 112 or 130 and General Chemistry or consent of instructor.

336 Optical Mineralogy
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 335.

339 Elementary Field Geology
Field studies of rocks, structures, and land forms. Areas of geologic interest in the Great Lakes region are studied. Prerequisite: Geology 335 or 301.

430 Structural Geology
Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Lecture 2 hours a week. Laboratory 2 hours a week. Prerequisites: Geology 131 and 440, or consent of instructor.

434 Problems in Geology
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
Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 336.

460 Senior Seminar in Geology
A seminar designed to provide senior students with the opportunity to examine and discuss important topics in geology. Senior geology majors are required to elect this course for one semester for 2 credit hours. Prerequisite: Senior standing in geology.

502 Special Problems in Earth Science
Individual problems involving topical reading and/or research problems in earth sciences. May be repeated for credit. Prerequisite: Consent of instructor.

520 Economic Geology
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, mineral fuels, and water. Lecture 3 hours a week. Prerequisite: Geology 335, or consent of instructor.

532 Geomorphology
A systematic study of the development of land forms as created by the processes of vulcanism, gradation, and disastrophism with interpretation of topographic and geologic maps, and aerial photographs. Prerequisite: Geology 112 and consent or 131.
College of Arts and Sciences

533 Invertebrate Paleontology 4 hrs. Fall
Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Three lectures and a three-hour laboratory. Prerequisite: Geology 131 or consent.

534 Vertebrate Paleontology 4 hrs.
Comparative morphology, classification, stratigraphic distribution, and evolution of fossil fish, amphibians, reptiles, mammals, and birds. Three lectures and a three-hour laboratory per week. Prerequisite: Geology 131 or consent.

535 Stratigraphy and Sedimentation 4 hrs. Winter
Principles of stratigraphy and sedimentation including correlation, facies, stratigraphic nomenclature, and sedimentary petrology, processes and environments. Three lectures and three-hour laboratory. Prerequisite: Geology 131 and consent.

536 Glacial Geology 3 hrs. Spring
A study of the mechanics of glacier movement, processes of glacial erosion and deposition, and the distribution of glacial features in space and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Prerequisite: Geology 131 and consent of instructor.

History

Ernst A. Breisach, Chairman
R. Douglas Averitt
George T. Beech
Alan S. Brown
Walter J. Brunhumer
Richard T. Burke
Lewis H. Carlson
Albert E. Castel
Chen-Kuan Chuang
Sherwood S. Cordier
Ronald W. Davis
Howard J. Dooley
E. Rozanne Elder
Edward O. Elsasser
Scott L. Gibson
Robert W. Gordon
Ross Gregory
Robert J. Hahn
H. Nicholas Hamner
Graham P. Hawks
Sylvia Hoffert
John T. Houdek
Clifford M. House
Susan Huston
Chafic Khaled
John Kyriazis
Paul L. Maier
A. Edythe Mange
Helen M. McCauslin
Gilbert W. Morell
Howard A. Mowen
Andrew C. Nahm
Emanuel Nodel
Marvin T. Owinga
Dale P. Pattison
Charles A. Pratt
Judith Pruitt
David L. Rozelle
Peter Schmitt
John R. Sommerfeldt
John Yzenbaard

MAJORS AND MINORS IN HISTORY

Major and minor slips are not required, except for those who wish to transfer History course credit from another college. However, all majors and minors should register at the History Department office, complete a personal data form, and arrange for an interview with the Department's Administrative Assistant.

There are no required cognate courses. However, since the academic discipline of History is closely allied with the social sciences and humanities, majors and minors
are advised to elect courses in the following areas: Anthropology, Art history, Economics, English, Geography, Philosophy, Political Science, Religion, and Sociology. Students planning to do graduate work beyond the M.A. are advised to study two languages. French and German are most frequently required in graduate school. Students planning to teach History in the secondary school should elect Social Science 300, Teaching of Social Studies in Secondary Schools, and those planning to teach in the Elementary school should take Social Science 507, Teaching of Social Studies in Elementary Schools. Credit earned in these courses cannot be counted towards a History major or minor.

Courses taken on a Credit/No Credit basis may not be counted towards the major, except with the approval of the Department Chairman or Administrative Assistant. While many graduate schools will accept students who have elected a significant amount of work on a Credit/No Credit basis, admission may then depend on the results of the Graduate Record Examination or some comparable test. Graduate schools and school employers generally favor those applicants who have good letter-grades on their transcripts.

The following History substitutes for GS-304, Introduction to the Non-Western World, also will count towards the major or minor; History 381, 386, 581, 583, 585.

**REQUIREMENTS FOR THE MAJOR**

1. Basic courses: The following four courses or their equivalents:
   a. Western Civilization 100 and 101. For transfer students two semesters of European history will be accepted as equivalent.
   b. United States History 210 and 211.

2. Advanced courses: A minimum of five courses numbered 299 or above. At least two of the five must be in the 500 series. One course must be selected from each of the following fields:
   a. Advanced United States, British, Canadian, or Michigan History: (310, 312, 314, 316, 342, 343, 375, 508, 509, 514, 515, 516, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 535, 536, 537, 538, 539.)

3. Earn an average of “C” or better for all courses counted towards the major and a grade of “C” or better for all courses numbered 299 and above counted towards the major.

Students in education curricula are reminded that they must have a 30 hour major in order to fulfill teacher certification requirements.

**REQUIREMENTS FOR THE MINOR**

1. The same four basic courses required for the major.
2. A minimum of three advanced courses numbered 299 or above.
3. Earn an average of “C” or better for all courses counted towards the minor and a grade of “C” or better for all courses numbered 299 and above counted towards the minor.
TRANSFER CREDIT

The History Department will accept towards the major and minor transfer credit from a junior or community college for courses which correspond to 100-, 200-, and 300-level courses offered by this Department.

A major in History must complete at this University a minimum of four History courses counted towards the major, including the two required 500-level courses. This requirement might be waived with the permission of the Department, provided acceptable courses were taken at an accredited four-year-institution.

Questions about transferring History course credit from other colleges or about the equivalency of History courses elsewhere to those at this University should be addressed to the Administrative Assistant.

HONORS PROGRAM

The Honors Program in History provides an opportunity for qualified students to earn the Bachelor’s degree with Honors in History. To be eligible for the program, a student must have completed at least three semesters, attained a 3.3 grade point average for all History courses taken at the college level, and declared himself a History major.

Each honors student in History is expected to earn a 3.5 grade point average for all courses counted towards the major. The major will include completion of one of the alternatives in these two categories: a) History 390 or History 593, and b) History 490 or the combination of History 470 and History 598. Finally, the honors student must pass a comprehensive oral examination. The honors program within a History major is arranged in consultation with the Departmental Honors Chairman.

BASIC COURSES

100 Early Western Civilization (to 1648) 4 hrs.
For description, see College of General Studies.

101 Modern Western Civilization (since 1648) 4 hrs.
For description see College of General Studies.

210 The United States to 1877 3 hrs.
A survey of American history from colonial beginnings to the end of Reconstruction.

211 The United States Since 1877 3 hrs.
A survey of American history since Reconstruction.

SURVEY COURSES

(Courses dealing with major chronological periods or extensive areas).

310 History of Michigan 3 hrs.
The development of Michigan from a primitive wilderness to an industrial state, with emphasis on the relation of the history of the state to that of the nation.

312 (299) Representative Americans 3 hrs.
An examination of important themes and movements in American history through
the reading and discussion of the biographies of representative figures. The pattern of topics may vary from year to year, but the staples are Puritanism, the Founding Fathers, Jacksonian democracy, the Civil War, industrialization, Progressivism, the New Deal, and the Negro revolution.

314 History of the American Negro

A survey of the black man's experience from African origins to the contemporary American scene. Although the changing cultural and historical framework will not be ignored, attention will center on what the black man did, said, and thought. Individual reading assignments on the lives of outstanding figures from Phillis Wheatley to Eldridge Cleaver will be utilized.

315 (515) Popular Art and Architecture in America

Introduction to popular themes in American history as shown in paintings, buildings, cartoons and commercial art. While issues will vary, the topics will include the Middle-Americans, the Environment, the Frontier, the City, and Industrialization. Extensive use will be made of local illustrations which could be adapted to elementary and secondary teaching.

316 Economic History of the United States

A study of American economic growth and change from colonial beginnings to the present designed to enhance the student's grasp of the dynamics of the economic process through time. Important topics or themes examined include: the changing fortunes and significance of various socio-economic groups, the impact of technology and research, the methods and devices of capital accumulation, the economic role of government, particularly in times of war and depression, the rise of large-scale, heavy industry and its consequences, and the impact of non-economic forces.

340 Tsarist Russia

Rise and Fall of Novgorod-Kiev, the Emergence of Muscovy, and the Rise of Imperial Russia through the reign of Alexander III, with special emphasis upon the social evolution of the Russian peasants, the rise and decline of the nobility, the symbiotic nature of Church and State, and the emergence of a unique Russian Civilization.

341 The Soviet Union

This course survey is designed to give the student a knowledge and appreciation of the various facets of the history of the Union of Soviet Socialist Republics from 1917 to the present. Aspects of the U.S.S.R. that are studied include Marxism-Leninism, the Communist Party, the government, foreign policy, planned economy, the systems of health and education; and contemporary art, literature, and music.

342 Great Britain and the British Empire

A general survey of British history beginning with the building of modern Britain in the 16th Century and including the emergence of the empire, the birth pangs of representative government, the civil war, restoration and revolution during the 17th Century; the establishment of political stability, the economic revolution, and the loss of an empire in the 18th Century; and the problems created by the French Revolution and Napoleon in the early 19th Century.

343 Great Britain and the British Commonwealth

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 Eastern Europe

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

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

German history since the 18th Century raises questions of wide human concern. What is a man's country? What is treason? What makes for a good life? Why work hard at anything? How free is any man to think or to act? The search for answers has evoked further questions as to the nature of freedom, bigotry, conditioned behavior, dissent, defeat, genius, creativity, Fascism, Socialism, Communism, Democracy, militarism, and much more.

349 The Ancient Near East

The cradles of civilization in ancient Mesopotamia and Egypt are explored in this course. An introduction to archaeology and early man is followed by a survey of the ancient Sumerian, Babylonian, Egyptian, Hittite, Phoenician, and Hebrew cultures, as well as the Assyrian and Persian imperialism that replaced them.

350 Ancient Greece

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

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

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

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.

370 Colonial Latin America: Conquistadores and Colonists 3 hrs.
An effort is made here to recapture the high drama, the profound tragedy, and the more mundane realities of the pre-Spanish and Spanish colonial New World experience which would shape that Latin America which was to be.

371 Modern Latin America: The Agony of Nation-Building 3 hrs.
There is traced here the tremendous challenges facing the new, early 19th century Latin American Republics, as well as the difficult path they subsequently followed in their efforts to reach a satisfying maturity as national societies.

375 Canadian History 3 hrs.
Canadian History is a survey of that country's past from the first explorations and the beginnings of the fur trade in the 16th century to the new nationalism of the 1970's. Special attention is given to the sources of Anglo-French division and Canada's changing relationship with the United States.

380 Traditional Civilization of East Asia 3 hrs.
Introduction to traditional cultures of China, Japan, and Korea with emphasis on the developmental and changing patterns and systems in East Asia from pre-historic times to the arrival of Western influence.

381 The Modern Far East 3 hrs.
A survey of international relations of China, Japan, and Korea; reform and revolutionary movements in East Asia; aims and techniques of modernization and Westernization; the rise and fall of militaristic Japan; political and social upheavals, and the emergence of communism in China; and the rise of two Koreas.

386 Introduction to African History and Civilization 3 hrs.
An overview of the major aspects of African civilization in the context of their development from pre-colonial times to the present. Emphasis upon those elements which contribute to the cultural and historical unity and uniqueness of the African experience.

HONORS AND INDEPENDENT STUDY

390 Introduction to the Study of History 2 hrs.
Human life changes constantly. The historian analyzes these changes when he studies the life expressions of past generations. How the historian works at his task of "reconstructing" the past, the problems he encounters, and the various results he produces is the topic of the course.

470 Independent Research in History 2-3 hrs.
For gifted students with special interests. The usual requirement is a 3.0 minimum overall grade point average and a 3.2 minimum grade point average in all History courses. Research and writing on some selected period or topic under the supervision of a member of the History faculty, with the approval, prior to registration, of the supervising instructor and the chairman of the Department's individualized courses.
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490 Honors Seminar

Presentation of an Honors Essay by students enrolled in the Department Honors Program. Such students apply to the Department Honors chairman for admission to this course prior to registration time.

598 Independent Reading in History 2-3 hrs.

For the gifted student with special interests. The usual requirements are: a 2.7 minimum overall grade point average and a 3.0 minimum grade point average in all History courses. Reading on some selected period or topic under the supervision of a member of the History faculty, with the approval of the supervising instructor and the chairman of the Department's individualized courses prior to registration.

SPECIAL COURSES

These courses are designed to show the usefulness of the historical approach for the understanding of the great and relevant issues confronting modern man. These courses will offer multiple sections, each of which may deal with a different topic as listed in the Schedule of Classes. The course may be repeated for separate credit as long as the topic varies. Representative topics which may be treated include the Palestinian problem, contemporary British thought, the military in modern German society, and European social revolutions.

300 Issues in History 2-3 hrs.

500 Problems in History 2-3 hrs.

ADVANCED COURSES

I. Intellectual History

506 Main Currents of Early Western Thought 3 hrs.

In this course we will consider the ideas and values which are the legacy of the early West to modern man. We will study ancient Near Eastern myth; the Jewish concepts of God, man, and time; the Greek philosophical mind; and the early Christian religion. We will also see how these elements were combined in the Middle Ages to form something new, the "West," with its ideas of progress and order, science and faith, rationalism and mysticism.

507 Main Currents of Modern Western Thought 3 hrs.

The nature and prospects of intellectual history; the Renaissance and Reformation and the transition from medieval values; the scientific revolution of the 17th century; the baroque; the 18th century Enlightenment; 19th century romanticism, liberalism, nationalism, materialism and socialism; formation and leading features of the contemporary world view.

508 Myth and Reality in the American Past - I 3 hrs.

Americans have often portrayed their past in light of their ideals rather than historical realities. This course will explore the ideas and fancies of ordinary people, as well as of writers, politicians, preachers, and scholars as they defined the American Dream. Students in History 508 will examine the relationship between the earliest American Dreams and contemporary problems. History 509 will carry the story forward from 1890.
History

509 Myth and Reality in the American Past - II
Continuation of 508. 3 hrs.

II. United States History

510 Field Experience in History 3 hrs.

511 Historical Museums Workshop 3 hrs.
Lectures, demonstrations, field trips, readings, discussion, and work experiences in museum theory and technique introduce the student to the types of work curators of historical museums do. Not offered on a regular basis.

514 Black History: The Impact of Black People on American Thought and Life 3 hrs.
Intellectuals and politicians have defined the place of Black people in American history in ways that affect our understanding of the present. American writers, theologians, social scientists, and politicians have also contributed to current stereotypes. In this course, students will have an opportunity to explore "popular" interpretations of slavery, abolition, race-thinking, etc., as each has been used to explain recent events. The writings of men like Martin Delany, W.E.B. DuBois, Marcus Garvey and Malcolm X challenge widely-held beliefs about the past and provide fresh perspectives on contemporary America.

516 The History of the United States Constitution 3 hrs.
The Constitution is the Supreme Law of the Land. But judges apply that law. Consequently judges exercise far more power in the United States than in any other nation. How and why did this occur? And with what results, good and bad?

518 History of United States Foreign Relations 3 hrs.
While this course traces the full scope of American foreign relations, from the American Revolution to the present, it emphasizes diplomacy of the twentieth century. The course gives attention to major diplomatic problems, but it also considers such themes as the effect of personality and politics on foreign policy, and the various "schools" of diplomatic thought.

519 America and War 3 hrs.
The United States regards itself as a "peace-loving" nation. Yet it was born of war, has survived by war, and in modern times has been almost constantly at war. A knowledge of the military history of the United States is a key to understanding all of its history, both as it has unfolded and as it is unfolding.

520 Colonial America 3 hrs.
The American colonies as part of the British empire; their founding, their political, social, and economic growth to the eve of the American Revolution.

521 The Era of the American Revolution 1763-1789 3 hrs.
The causes, development, nature, and consequences of the American Revolution. Emphasis is given to the factors which induced the British to alter existing relationships with the American colonies; and the reasons for, and the variety of American responses are examined. Efforts made by both British and American leaders to preserve the imperial connection are studied along with the gradual development of the American movement to independence. Military and diplomatic aspects of the Revolution are examined; and an attempt is made to evaluate societal changes brought by American independence.
522 The Age of Democracy and Expansion, 1789-1848 3 hrs.

The United States is a democracy. Or is it? This course attempts to answer that question by examining the origin and development of American political institutions during a time that is much like our own—that is, a time of rapid changes and intense ideological, racial, international, sectional and personal conflict.

523 The American West 3 hrs.

A study of the exploration, conquest, and occupation of the North American continent. Among the topics included are Indian relations, the fur trade, land disposition, the cattle frontier, the mining frontier, and problems of law and order.

524 The Civil War and Reconstruction 3 hrs.

Between 1861 and 1865 over 600,000 Americans died fighting each other. Why? And with what results? The answers to these questions do not simply illuminate the past: They also tell us much about the present—a present in which many of the basic factors which produced the Civil War are still operating.

525 The Emergence of Modern America, 1877-1914 3 hrs.

This course will focus on the causes and consequences of industrialization, urbanization, progressivism, and the concurrent revolutions in agriculture, transportation, and communications. Attention will also be given to changing attitudes and values, the problems of generalization, and to the anonymous American.

526 The U.S. between World Wars (1914-40) 3 hrs.

For most Americans the twentieth century began with World War I; an examination of our response to the historical realities of the ensuing era can serve to clarify the dimensions and complexities of contemporary America. This course will emphasize the anonymous American through his political leaders, social and economic aspirations, religious devotions, international hopes and fears, and popular entertainments.

527 Contemporary America: 1940 to the Present 3 hrs.

Beginning with the background to the Second World War, this course brings American history as close to the present as possible. It follows the nation's change from detachment before the war to entanglement in the 1960's in problems all over the world. It deals with the efforts of the nation and groups within the nation—to cope with the enormous political, economic, and social problems of the decades after the war. The course considers conflicting opinion on various issues, seeks to view events from both the perspective of the present and the time of their occurrence.

III. History of European Nations

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 a national language and literature.

536 Tudor-Stuart England: The Era of the Monarchy

A study of the period when Great Britain breaks with her medieval past and becomes one of the most modern states in Western Europe after having progressed under the strong Tudor rulers, suffered under the obstinate early Stuarts, begun an empire, survived civil war and the Cromwellian republic, restored the monarchy under the later Stuarts, and plunged into the revolution which produced the Bill of Rights and representative government under a constitutional monarchy.

537 Hanoverian England: The Era of the Aristocracy

The study of Great Britain during the years when, guided by the aristocratic classes in cooperation with a limited monarchy, internal stability was established; the economic revolution and the unforeseen problems which it created were begun; her place as a major European power was guaranteed; her North American empire was lost; and the threat to her position by the French Revolution and Napoleon was met successfully.

538 Victorian England: The Era of the Middle Class

A look at the years of Victoria’s long reign as Great Britain attempted to solve the problems caused by the French and Economic Revolutions through parliamentary reform and additional democracy, resulting in the transition from a rural to an urban society; the rise of the middle class to a position of dominance; and the emergence of Britain as the greatest industrial nation and the most powerful empire in the world.

539 Contemporary Britain: The Era of the Common Man

An exploration of the history of Great Britain during the crucial years of challenge to her position as a world power, to her position as mother country, to her democratic monarchy; and consideration of the ways in which these challenges were met, two world wars successfully fought, a Commonwealth organized with all members equal among equals, and a state responsible for the welfare of all subjects of the Crown from the cradle to the grave established in the socialist revolution after World War II.

540 Tsarist Russia: Society and Culture

Westernization, emancipation of the peasants, revolutionary movements, and the spiritual evolution of the Russian people during the eighteenth and nineteenth centuries.

541 The Soviet Union in World Affairs

Consideration is given to the various factors constituting the background necessary for the appreciation of the role of the Union of Soviet Socialist Republics in world affairs from 1917 to the present time. This includes a study of the geographical, ideological, political, economic, military, social, and human aspects of Soviet foreign policy. The nature of Soviet foreign policy as affected by the national and international events during the leadership of Lenin, Stalin, Khrushchev, and Brezhnev-Kosygin is studied.

542 Nationalities in the Soviet Union

This course constitutes a study of the historical background and contemporary status of the principal ethnic groups in the Union of Soviet Socialist Republics. It deals with the implementation of the Communist Party credo of "national in form,
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socialist in content." Emphasis is placed on group social and cultural identity. Consideration is given to the implementation of the official amalgamated nationality concept.

544 Modern France (France Since Napoleon) 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.

IV. European History

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 300 B.C. to 70 A.D.

Christianity is the most obvious and perhaps, the most important element in early Western culture. In this course we are not so much interested in the Church as an institution as in the growth of Western culture in the age—from the time of Jesus to that of Luther—in which Christian values were so important in everyday life. Among the topics we will consider are the impact of the classical and Germanic cultures on the Church, the church and feudalism, church-state relations, the rise and fall of papal theocracy, scholasticism, and mysticism. The emphasis throughout will be on topics most important for the understanding of our own values and society.

553 Medieval Economy and Society 3 hrs.

In the 5th century A.D. Germanic invaders inherited a Roman Empire which was gradually falling into ruin. A thousand years later Western Europe boasted a greatly increased population and a thriving economy based on a vigorous agriculture and a dynamic trade and urban life. This course studies the factors underlying this growth; the development of an aristocratically dominated society, the expansion of agriculture depending on an improving technology and manorial exploitation of the land, and the formation of an aggressive urban class of merchants and artisans.

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 man, God, and the universe and by the geniuses of the brilliant Italian Renaissance (Petrarch, Giotto, Michelangelo, Leonardo da Vinci, and others).

555 The Reformation 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.

557 Seventeenth Century: Age of Grandeur and Violence 3 hrs.

An investigation into the tensions, conflicts, and paradoxes of an age in which the shock of new forces is undermining a traditional order.
558 Eighteenth-Century Europe

A wide-ranging study of a creative period during which many modern institutions and values took form: social structure and economic development in the century; domestic politics and international relations; currents in religion and the arts; the Enlightenment.

3 hrs.

559 The French Revolution and Napoleon

Theories respecting the French and related revolutions, and the nature of revolution and of the revolutionary psychology; the 18th-century background; the moderate and radical phases of the Revolution proper; the rise and fall of the Napoleonic Empire.

3 hrs.

560 Nineteenth Century Europe

A study of the revolutionary currents pulsating through Europe in the 19th century, of the conflicts they engendered, and the profound changes they wrought.

4 hrs.

562 Hitler's Europe: 1914-1945

The first modern generation of Europe is associated with an era of unprecedented violence. The course is concerned with the experiences of people and the events of states that raise questions as to the dynamics of revolution, hate, idealism, propaganda, optimism, wars, economic ambitions, progress, and murder.

3 hrs.

563 Europe Since 1945

The recovery of Europe from World War II; the movement toward European unity; the defense of Europe; and the role of Europe in the international community.

3 hrs.

V. Latin America

571 Mexico: The Building of a Nation

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.

3 hrs.

572 The Plata Region: Argentina, Paraguay, Uruguay

The three nations herein explored offer an intriguing spectrum of the varieties of national experience to be found in the Latin American area. The range is from relatively static life and institutions throughout the period of nationhood to dynamic modernism in the same contexts. An effort is made to comprehend those factors which have contributed to and resulted in these differences.

3 hrs.

VI. The Far East and Africa

580 Traditional China

A study of the highlights of the history and culture of pre-modern China with particular attention to her international relations, reform and rebellions as well as to social, intellectual, and institutional change.

3 hrs.

581 Modern China

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.

3 hrs.
582 Japan's Transition from a Feudal State to a Modern Nation 3 hrs.
A study of political, economic, social, and cultural patterns and institutions of feudal Japan; the opening of Japan to the West; and the reformistic and revolutionary changes which transformed her into a modern nation.

583 Modern Japan (Japan: The Rise and Fall of a Militaristic Empire) 3 hrs.
A study of the growth of nationalism, colonialism, militarism, and imperialism in Japan; international relations of Japan; the fall and the Allied Occupation and reconstruction; Japan's new role in the world.

584 Modern Korea 3 hrs.
A study of the decline of the Yi dynasty; Korea's struggle against foreign encroachment; the era of Japanese colonial rule; the liberation of Korea; and the establishment of two Koreas.

585 Southeast Asia in the Twentieth Century 3 hrs.
Nationalism in southeast Asia and the struggle against Western colonialism; the rise of social and economic revolutions; problems of independence and modernization in the newly emerging nations of the region.

587 Ancient and Medieval Africa 3 hrs.
History of Africa from earliest times until the emergence of the slave trade as the dominant factor in African relations with the rest of the world. Examination of the question of the origin of man in Africa, the role of ancient Egypt in African civilization, the Bantu expansion, Punic and Roman Africa, the rise of Islam, the Golden Age of the Sudanic empires, and the states of the West African forest, Congo Basin, and East Africa.

588 Modern Africa 3 hrs.
Historical background of the major issues of contemporary Africa, including colonialism and neo-colonialism, Pan-Africanism, and nationalism. Examination of major problems including the Congo, Nigerian civil war, Algerian revolution, minority rule in southern Africa, etc.

VII. General Courses

592 Historical Literature 3 hrs.
Historical writings arise from a curiosity about the human condition. Can man do good? What is the source of evil in his life? What happens to man in social situations? Does man make his own fate and does he deserve it? 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.

593 Philosophy of History 2 hrs.
What do all the rulers, battles, catastrophes, cultures, glories, and defeats add up to? Is there a goal toward which all of history marches or is there no rhyme and reason to the collective human experience? Thinkers such as Thucydides, St. Augustine, Vico, Hegel, Marx, Spengler, Toynbee, and the existentialists gave different answers to these questions.
594 War in the Modern World  
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.

595 History of War  
The history of war from the age of Louis XIV to the era of the World Wars. An examination of the evolution of war and the role of conflict in international relations.

Modern and Classical Languages

Roger L. Cole, Chairman  
Elsa Alvarez  
Mercedes Cardenas  
Victor Coutant  
Monique Y. Coyne  
Robert Felkel  
Robert Griffin  
Benjamin Ebling  
Jeffrey Gardiner  
Donald Gardner  
Elizabeth Giedeman  
Paule M. Hammack  
Arturo Jasso  
Herb B. Jones  
Johannes Kissel  
Peter W. Krawutschke  
Manuel Mantero  
William McGranahan  
Frances E. Noble  
Genevieve Orr  
George F. Osmum  
Joseph Reish  
James D. Semelroth  
Irene V. Storoshenko  
Herman Teichert  
James R. Underwood  
Lindsey Wilhite

GENERAL

For students majoring or minorin in a modern foreign language a course in modern European history is desirable. For Latin majors and minors a course in Roman history is recommended. A student may apply up to ten credits toward a Latin major from any three of the following courses: Classical Drama in Translation, Mythology, Greek 100-101. Both Greek 100 and 101 must be taken in order to apply four credits toward a Latin major. A student may apply both Classical Drama in Translation and Mythology toward a Latin minor. English majors are encouraged to take as much beyond the minimum in a foreign language as they can handle.

All in-coming students (freshmen or upper classmen) who wish to continue in a language they have studied in high school must take a placement examination. It may be used as a qualifying examination to exempt students from specific language requirements in Liberal Arts and General Studies. The examination is given prior to each registration period and scores are posted in time for registration. Students must register according to their placement score, otherwise their course work may be recorded as credit/no credit.

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 but no credit towards a major or a minor until he reaches the level where he should have been.
2. A student may overplace by one or two courses. This student is allowed to decide on whether or not he wants to omit the course for which he has overplaced. If he chooses to omit the course, he is eligible to receive credit. In order to qualify for this, he must check with the Departmental Advisor for his language.

Native speakers of a given language must consult with 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 to follow the course patterns listed below:

**French Major**
Thirty hours beyond 100 level to include 328, 329; a selection of 6 hours from this group: 316-317-320-322; and two 500 level courses (one of them must be 560). Students in the Secondary Education Curriculum who are required to take Modern Language Instruction 558 may count this course as one of the 500 courses.

**French Minor**
Twenty hours beyond 100 level to include a selection of 3 hours from this group: 316-317-320-322. Modern Language Instructions 558 may not be counted toward a minor.

**German Major**
Thirty hours beyond the 100-level to include 316, 317, 326, 327 and two 500-level courses.

**German Minor**
Twenty hours beyond the 100-level to include 316 and 317. Modern Language Instruction 558 may not be counted toward a minor.

**Latin Major**
Thirty hours beyond the 100-level with courses selected from the 200-500-series. Teaching majors must include 552 and 557.

**Latin Minor**
Twenty hours beyond the 100-level with courses selected from the 200-500-series. Teaching minors may include 552 and/or 557.

**Russian Major**
Thirty hours beyond the 100-level to include 310, 316, 317, 328, 375, and at least two 500-level courses.

**Russian Minor**
Twenty hours beyond the 100-level to include 310, 316, 317 and 328.

**Spanish Major**
Thirty hours beyond the 100-level to include 328 or 329, and two 500-level courses other than 558. Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558.

**Spanish Minor**
Twenty hours beyond 100-level to include 328 or 329. Modern Language Instructions 558 may not be counted toward a minor.

Teaching certification is approved for majors or minors in both secondary and elementary education for the following languages: French, German, Latin (secondary only), Russian, and Spanish.

A language methods course is required for all teaching majors in the modern languages and Latin (557 is required for Latin Majors.) Exceptions to the patterns may be granted only by Departmental permission.
Languages

For details concerning additional graduate offerings and the Master’s Degree in Language (in French, German, Latin or Spanish) consult the current Bulletin of the Graduate College.
For courses in Independent Study, consult listings under the individual language concerned.

FOREIGN CREDITS

Credit for language study at a foreign university may be granted on official proof that the student has completed his course work successfully. For courses where no examinations or grades are given, the student may be recommended for appropriate credit upon his return to Western on the basis of papers, colloquies, or comparable work to be determined by the department.

HONORS COURSES

400-401 Language Honors 4 hrs. each.

A special program designed for selected students of Language. Departmental permission required for admission. Each course carries four hours credit; although both semesters, totaling eight hours are required to complete the program, the courses need not be taken in sequence.

CRITICAL LANGUAGES—SEE LINGUISTICS

FOREIGN LITERATURE IN ENGLISH TRANSLATION

These courses will survey literary masterpieces of other countries in English translation. They are open to any student and there is no foreign language prerequisite. The courses will be taught entirely in English by specialists in the areas.

French 375 (575) French Literature in English Translation 3 hrs.

A thematic and stylistic analysis of major French writers from 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 (575) German Literature in English Translation 3 hrs.

A comparative study of literary themes and techniques of major German writers from Hauptmann to the present, including Mann, Brecht, Kafka, and Borchert. This course does not apply toward a major or minor in German. 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 (575) Spanish-American Literature in English Translation 3 hrs.

Selected prose and poetry from late 19th century (Ruben Dario and Modernismo) to the contemporary writers of Hispanoamerica. This course does not apply toward a major or minor in Spanish. No prerequisite.
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LANGUAGE TEACHING COURSES

Language 558 (French), or (German), or (Spanish), or (other language) Modern Language Instruction 3 hrs.

Required for modern language teaching majors; recommended for teaching minors.* The principles underlying language learning and teaching methodology are treated, with particular attention to the audiolingual method of instruction. Emphasis is placed on practical problems encountered by the language teacher. Preferably, students should complete this course before beginning directed teaching.

Courses for French and Spanish are in the Fall and Winter Semesters and for German in the Winter Semester.

The comparable methods course for Latin, 557 Teaching of Latin, is described under Latin offerings.

FRENCH

100 Basic French 4 hrs.
Fundamentals of French with audiolingual emphasis. French cultural readings.

101 Basic French 4 hrs.
Continuation of 100. Prerequisite: French 100 or equivalent.

200 Intermediate French 4 hrs.
Level two French. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: 101, two years of high school French, or equivalent.

201 Intermediate French 4 hrs.
Continuation of 200. Prerequisite: French 200 or equivalent.

316 French Composition 4 hrs.
Emphasis upon increasing the student's command of written French. Prerequisite: French 201 or equivalent.

317 French Conversation 4 hrs.
Exercises to develop ease and accuracy in the use of everyday French. Emphasis on oral aspects of the language. Prerequisite: French 201 or equivalent.

320 French Phonetics 3 hrs.
Study and practice to correct typical difficulties encountered by students of French with Anglo-American patterns of pronunciation; also to study the teaching of French patterns. Prerequisite: French 201 or equivalent.

322 French Civilization 3 hrs.
A study of selected aspects of French life and culture and their historical settings. Prerequisite: French 201 or equivalent.

*May not be counted in the minor.
### Languages

**328 Survey of French Literature**
Readings in French Literature from its beginnings to the French Revolution. Prerequisite: French 201 or equivalent.

**329 Survey of French Literature**
Continuation of French 328. Readings in nineteenth and twentieth century literature. Prerequisite: French 201 or equivalent.

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**OPEN TO UPPERCLASSMEN AND GRADUATE STUDENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>400</td>
<td>Elementary Reading for Graduate Proficiency</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Basic grammar and elementary reading for translation and research purposes. The course is for the graduate who has had little or no study in the language. Course open to advanced undergraduates upon recommendation of department chairman and by &quot;C&quot; card. No oral work.</td>
<td></td>
</tr>
<tr>
<td>401</td>
<td>Intermediate Reading for Graduate Proficiency</td>
<td>4 hrs.</td>
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<tr>
<td></td>
<td>Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student's major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Open to advanced undergraduates upon recommendation of department chairman and by &quot;C&quot; card.</td>
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</tr>
<tr>
<td>544</td>
<td>Seminar in France</td>
<td>4 hrs.</td>
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<tr>
<td></td>
<td>A summer study of French language, literature, and culture concentrated at Grenoble and Paris. Designed especially for teachers and advanced college students of French, the course consists of four weeks of formal classes at the University of Grenoble with regularly scheduled lectures and discussions in the French language on questions relating to French history, institutions, social problems, linguistics, and teaching methods. The session at Grenoble is supplemented by twelve days of organized inspection of cultural monuments in Paris with full explanations by an instructor for all points visited. Each student submits a term paper investigating one phase of his studies of particular interest to him. Graduate or undergraduate credit.</td>
<td></td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in French</td>
<td>1-3 hrs.</td>
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<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>551</td>
<td>Advanced French Grammar and Composition</td>
<td>3 hrs.</td>
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<tr>
<td></td>
<td>Intensive review of French structure and practice in composition. Prerequisite: six hours of French 316-317 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>552</td>
<td>Advanced French Conversation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Intensive practice with spoken French. Prerequisite: six hours of French 316-317 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>560</td>
<td>Studies in French Literature</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>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 stu-</td>
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</tbody>
</table>
College of Arts and Sciences

Student may take any or all of the offerings at various times. Prerequisite: 316 and 317 or equivalent, and six hours selected from French 322-328-329. Representative topics which may be treated in this area include:

Medieval Literature—Outstanding works from various genres of the medieval period.

Renaissance Literature—Outstanding works from the period, to include Montaigne, Rabelais and the Pleiades.

Seventeenth Century Literature—Preclassic period: Reforms of Malherbe, Preciosité, Descartes, beginnings of classical drama, and Corneille. Also, Classic period: significant works from the beginning of the reign of Louis XIV to his death.

Eighteenth Century Literature—Analysis of outstanding works of the period.

Nineteenth Century Literature—Studies in romanticism.

Nineteenth Century Literature—Studies in realism and naturalism.

Twentieth Century Literature—Studies in the contemporary novel.

Twentieth Century Literature—Studies in the modern French theatre.

GERMAN

100 Basic German 4 hrs.
Fundamentals of German with audiolingual emphasis. German cultural readings. Does not count toward a major or a minor.

101 Basic German 4 hrs.
Continuation of 100. Prerequisite: German 100 or equivalent. Does not count toward a major or a minor.

200 Intermediate German 4 hrs.
Level two German. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: German 101, two years of high school German or equivalent.

201 Intermediate German 4 hrs.
Continuation of 200. Prerequisite: German 200 or equivalent.

316 German Composition 3 hrs.
Emphasis upon increasing the student's command of written German. Prerequisite: German 201 or equivalent.

317 German Conversation 3 hrs.
Emphasis upon increasing the student's command of spoken German. Prerequisite: German 201 or equivalent.

326 Readings in German Literature 4 hrs.
Masterworks of German Literature from the 18th and 19th centuries, including such authors as Lessing, Schiller, Kleist. Prerequisite: German 201 or equivalent.

327 Readings in German Literature 4 hrs.
Selected dramas and prose from the 19th and 20th centuries, including such writers as Brecht, Durrenmatt, Boll, Bergengruen. Prerequisite: 201 or equivalent; 326 is not a prerequisite for 327.
OPEN TO UPPERCLASSMEN AND GRADUATE STUDENTS

400 Elementary Reading for Graduate Proficiency 4 hrs.
Basic Grammar and elementary reading for translation and research purposes. The course is for the graduate student who has had little or no study in the language. Course open to advanced undergraduates upon recommendation of department chairman and by "C" card. No oral work.

401 Intermediate Reading for Graduate Proficiency 4 hrs.
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student's major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Open to advanced undergraduates upon recommendation of department chairman and by "C" card.

510 German Life and Culture 3 hrs.
Investigates cultural aspects necessary for an understanding of Germany. Historic, geographic, social and religious factors are treated. Prerequisites: 316, 317, 326, and 327 or equivalent.

528 Survey of German Literature 3 hrs.
A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: 316 or 317, and 326 or 327.

529 Survey of German Literature 3 hrs.
A comprehensive study of German literature from German Realism to the present. Prerequisites: 316, 317, 326, and 327 or equivalent.

550 Independent Study in German 1-3 hrs.
Directed individual study of a specific topic in a German literary or linguistic area. Departmental approval is required for admission. Prerequisite: one 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, 326, and 327, or equivalent. Representative topics which may be treated in this area include:
   The Novelle—Survey of the development with representative selections.
   Lyric Poetry—Survey of the development with significant selections.
College of Arts and Sciences

Nineteenth Century Drama—Primarily Kleist, Gillparzer, Hebbel, and Hauptmann.

Twentieth Century Drama—Representative selections.

**GREEK**

100 Basic Greek 4 hrs.

Introduction to the fundamentals of classical Greek emphasizing essential grammar, syntax, and vocabulary required for the reading of simple texts.

101 Basic Greek 4 hrs.

Continuation of 100. Simple selections from Greek literature as well as from New Testament literature. Prerequisite: Greek 100 or equivalent.

200 Intermediate Greek 3 hrs.

Review of basic grammar and syntax. Selections from Xenophon and Plato. Prerequisite: Greek 101 or equivalent.

201 Intermediate Greek 3 hrs.

Continuation of 200. Prerequisite: Greek 200 or equivalent.

**ITALIAN**

100 Basic Italian 4 hrs.

Fundamentals of Italian with audiolingual emphasis. Italian cultural readings.

101 Basic Italian 4 hrs.

Continuation of 100. Prerequisite: Italian 100 or equivalent.

**LATIN**

100 Basic Latin 4 hrs.

Fundamentals of Latin designed for students needing two years of Latin for admission to the AB curriculum or to a medical, law, or other professional program, and for those planning a Latin teaching major or minor. With Latin 101 it covers the work of two years of high school language requirement.

101 Basic Latin 4 hrs.

Continuation of 100. Prerequisite: Latin 100 or equivalent (a student presenting one year of high school Latin may enter the course at this point).

200 Cicero 4 hrs.

Intermediate Latin. Before reading orations and letters of Cicero, basic vocabulary, grammatical usage, and special constructions are reviewed. One hour weekly is devoted to Latin composition. Prerequisite: Latin 101 or two years of high school Latin. (Courses 200-201 alternate with 204-205).

201 Ovid 4 hrs.

Reading from the *Metamorphoses* with special attention to grammar, prosody, and myth. Prerequisite: Latin 101 or two years of high school Latin.
204 Vergil

Intermediate Latin. Before reading the first books of the *Aeneid*, basic vocabulary, grammatical usage, and special constructions are reviewed. Prerequisite: Latin 101 or two years of high school Latin or equivalent. (Courses 204-205 alternate with 200-201).

205 Vergil

Continuation of 204. Prerequisite: Latin 204 or equivalent.

324 Latin Literature

A survey of Latin Literature with reading of representative Latin authors from early times to the Golden Age. Prerequisite: one of Latin 201, 204, 205 or equivalent.

325 Latin Literature

Continuation of 324, with reading of representative authors from the Golden Age through the late Silver Age. Prerequisite: one of Latin 201, 204, 205 or equivalent.

326 Horace

Selected *Odes* and *Epodes* of Horace as poetry. Special study of structure, meter, symbolism and aesthetic and philosophic meanings. Prerequisite: one of Latin 201, 204, 205 or equivalent.

327 Latin Comedy

A study of the rise and development of Latin comedy represented by selected plays of Plautus and Terence. Prerequisite: one of Latin 201, 204, 205 or equivalent.

OPEN TO UPPERCLASSMEN AND GRADUATE STUDENTS

AND OTHERS BY PERMISSION OF THE INSTRUCTOR

550 Independent Study in Latin

Directed, individual study of a specific topic in a Latin 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 Latin Writing

Practice in the fundamentals of correct expression. Required for Latin majors. Prerequisite: One of Latin 324, 325, 326, 327 or equivalent.

557 Teaching of Latin

For prospective teachers of Latin in the elementary or secondary school. Principles, problems, and current practice. Required for Latin teaching majors. Prerequisite: One of Latin 324, 325, 326, 327 or equivalent.

560 Studies in Latin Literature

Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus a student may take any or all of the offerings at various times. Prerequisite: One of Latin 324, 325, 326, 327 or equivalent. Representative topics which may be treated in this area include:
Satire—Rome as pictured in the conversations of Horace and the invectives of Juvenal. Readings on the origins and development of satire as a genre.

History—Reading and appraisal of Livy and of Tacitus as historians and literary artists.

Bucolic Poetry—Readings from Vergil's *Eclogues* and *Georgics* plus selections from later writers of bucolic poetry and discussion of its development as a literary form.

Lyric and Elegiac—Broad readings in Roman poetry, centering around Catullus, Ovid, Martial, and the other poets of love. Discussion of the origin and influence of elegy as a poetic form.

Medieval Latin—A study of the period 500-1500 A.D. when Classical Latin was blending into the new vernaculars to form eventual Romance Languages. Prose and poetic readings include a variety of themes reflecting the intellectual, cultural, and religious thinking of the times.

568 Mythology

Investigates the origins, elements, and interpretations of the principal myths and legends of Greece and Rome and their preservation not only in literature, but also in painting, music, and sculpture.

575 Classical Drama in Translation

Reading and analysis of selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes as dramas and as expression of the Greek view of life. Some attention to Roman drama.

**RUSSIAN**

100 Basic Russian

Fundamentals of Russian with audiolingual emphasis.

101 Basic Russian

Continuation of Russian 100. Prerequisite: Russian 100 or equivalent.

104 Scientific Russian

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

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

Continuation of 200. Prerequisite: Russian 200 or equivalent.

310 Russian Civilization

A study of selected aspects of Russian life and culture and their historical settings. Prerequisite: Russian 201 or its equivalent.
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 representing 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 UPPERCLASSMEN AND GRADUATE STUDENTS

550 Independent Study in Russian 1-3 hrs.
Directed individual study of a specific topic in a Russian literary or linguistic area. Departmental approval required for admission. 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, 328, 375. Topics treated in this area include but are not restricted to:

The Poetry of Pushkin: Emphasis on the tales and Byronic narratives.


Classic Russian Short Stories: Emphasis on the works of Turgenev, Gogol, Tolstoy, and Leskov.


Modern Russian Short Story: Emphasis on Bunin, Paustkovsky, Solzhenitsyn and Fedin.
SPANISH

100 Basic Spanish  
Fundamentals of Spanish with audiolingual emphasis.  

101 Basic Spanish  
Continuation of 100. Prerequisite: Spanish 100 or equivalent.  

200 Intermediate Spanish  
Level two Spanish. Review and furthering of oral and reading skills based upon cultural and literary materials. Prerequisite: Spanish 101, two years of high school Spanish, or equivalent.  

201 Intermediate Spanish  
Continuation of 200. Prerequisite: Spanish 200 or equivalent.  

316 Spanish Composition  
Emphasis upon increasing the student's command of written Spanish. Prerequisite: Spanish 201 or equivalent.  

317 Spanish Conversation  
Emphasis upon increasing the student's command of spoken Spanish. Prerequisite: Spanish 316 or equivalent (316 may be taken concurrently).  

322 Life and Culture of Spain  
A study of the ethnic, sociological development, music, art and folklore of Spain as a basis for comprehension of the Spanish peoples with emphasis on individualism. A background for study of Hispanic literature, history, or culture. Prerequisite: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).  

323 Life and Culture of Latin America  
A study of Latin-American life and culture based on ethnic, historical, social, religious, and literary considerations. Prerequisites: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).  

328 Introduction to Spanish Literature  
Synoptic literary selections with cultural and historical background. Prerequisite: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).  

329 Introduction to Spanish-American Literature  
Synoptic literary selections with cultural and historical background. Prerequisite: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).  

OPEN TO UPPERCLASSMEN AND GRADUATE STUDENTS

550 Independent Study in Spanish  
1-3 hrs.  
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission. Prerequisite: one 500-level 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 328 or 329 or equivalent.

560 Studies in Spanish Literatures 3 hrs.

Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: Spanish 328 or 329 or equivalent. Representative topics which may be treated in this area include:

Cervantes—*Don Quixote* and other works of Cervantes together with his life and thought.

Seventeenth Century Theater—Main works of Lope de Vega through Calderon de la Barca.

Nineteenth Century—The Romantic Movement.

Nineteenth Century Novel—Development of the regional novel from Fernan Caballero through Blasco Ibanez.

Generation of '98—Thought and works of typical representatives such as Unamuno, Ortega y Gasset, and Azorin.

Contemporary Theater—Evolution and analysis of the characteristics.

Spanish-American Short Story—Significant short stories along with the cultural and social background.

Contemporary Spanish-American Novel—The twentieth century novel along with the cultural and social background.
Linguistics

Robert A. Palmatier, Chairman
D.P.S. Dwarikesh

Linguistics is the scientific study of language—its nature and development, its universal properties, its diversified structures and their dialectal variants, its acquisition by children and non-native speakers, its systems of writing and transcription, its cultural role in the speech community, and its application to other areas of human knowledge.

The interdisciplinary aspects of this study are reflected in the unique organization of the Department of Linguistics, which functions as a combined department-institute. The Department not only offers its own core of general linguistics courses for Linguistics credit but recognizes linguistically-related courses in six other departments of the University.

The Linguistics major is intended either as a “second” major for undergraduates with a major in another department or as a “first” major for undergraduates who expect to pursue a master’s degree in linguistics. The program for majors requires a minimum of thirty hours of credit, of which twenty hours must be taken for Linguistics credit and ten hours may be taken in approved courses in other specified departments. One college year of a foreign language, or its equivalent, is required for majors.

The Linguistics minor is intended as a supporting minor for undergraduates with a major in another department. The program for Linguistics minors requires a minimum of twenty hours of credit, of which twelve hours must be taken in the Department of Linguistics and eight hours may be taken in approved courses in other specified departments. Both majors and minors are required to consult with the Department Chairman and to receive a signed recommendation for their program.

Linguistics is suggested as a supporting major or minor for majors in Anthropology, Communication Arts and Sciences, English, French, German, Latin, Philosophy, Psychology, Russian, Sociology, Spanish, and Speech Pathology and Audiology. General Studies 400, Human Communication, is recommended for both majors and minors, although it does not count in the Linguistics programs.

Linguistics has been approved by the State Board of Education as a minor or second major in the Secondary Education Curriculum, as a second major in the Junior High School Curriculum, and as a minor in the Elementary Curriculum.

The Critical Language Minor is a non-teaching program for those undergraduates who wish to specialize in one of a limited number of uncommon languages. Interested students must consult with the Critical Languages Supervisor in the Department of Linguistics to determine which languages are eligible for this minor and to receive a signed recommendation for their program.
PROGRAMS
LINGUISTICS MAJOR AND MINOR

I. INTRODUCTORY COURSES
(all majors and minors—4 hrs.)

Undergraduates Only

Linguistics
200 Linguistic Analysis ......................................................... 4 hrs.
Anthropology
270 Linguistic Analysis ........................................................ 4 hrs.

S.H. ....................................................................................... 4 hrs.

Graduates/Undergraduates

Linguistics
500 Introduction to Linguistics .................................................. 4 hrs.

II. PHONOLOGY COURSES
(majors—4 hrs.; minors—2-4 hrs.)

Undergraduates Only

Linguistics
320 (520) Phonological Analysis ................................................ 4 hrs.
Speech Pathology
202 Anatomy and Physiology of Speech ....................................... 3 hrs.
204 Phonemics ....................................................................... 2 hrs.
French
320 French Phonetics ................................................................ 3 hrs.

III. STRUCTURE COURSES
(all majors and minors—4 hrs.)

Undergraduates Only

Linguistics
330 (530) Grammatical Analysis ................................................ 4 hrs.
English
270 English Language ............................................................. 4 hrs.

Graduates/Undergraduates

Linguistics
570 Studies in Linguistic Structures .......................................... 4 hrs.

IV. HISTORY COURSES
(all majors and minors—3-4 hrs.)

Undergraduates Only

English
372 Development of Modern English ......................................... 4 hrs.
Linguistics
420 (300) Historical Linguistics ................................................ 4 hrs.
College of Arts and Sciences

Graduates/Undergraduates

Linguistics
560 Comparative Linguistics ........................................... 4 hrs.

German
559 History of the German Language .................................... 3 hrs.

V. VARIATION COURSES
(all majors and minors—3-4 hrs.)

Undergraduates Only

Linguistics
430 (310) Dialectology .................................................. 4 hrs.

Anthropology
370 Language in Culture .................................................. 3 hrs.

Graduates/Undergraduates

Linguistics
575 (548) Studies in Languages of the World .......................... 3 hrs.

VI. INTERDISCIPLINARY COURSES
(majors—2-4 hrs.; minors—0-4* hrs.)

Undergraduates Only

Speech Pathology
203 Speech and Language Development .................................. 2 hrs.

Philosophy
330 Philosophy and Language ............................................ 4 hrs.

Psychology
260 Behavior Modification II: Normal Behavior ....................... 3 hrs.

Graduates/Undergraduates

Linguistics
550 Studies in Linguistics and Related Disciplines .................. 3 hrs.

VII. METHODS COURSES
(majors—3-4 hrs.; minors—0-4* hrs.)

Graduates/Undergraduates

Linguistics
510 (400) Teaching English as a Foreign Language .................. 4 hrs.
580 Linguistic Field Techniques ......................................... 3 hrs.

Language
558 Modern Language Instruction ......................................... 3 hrs.

English
574 Linguistics for Teachers ............................................. 4 hrs.

*Minors are not required to take credits in the starred areas but may elect up to 4 hours.
VIII. ELECTIVE COURSES
(majors—2-7 hrs.; minors—0-4* hrs.)

Graduates/Undergraduates

Linguistics

505  Basic Critical Languages (500) ........................................ 4 hrs.

Or one or more courses in areas II-VII

CRITICAL LANGUAGE MINOR

20 semester hours, as described below

16 hrs. in the language of interest

12 hrs. in

Ling. 505 Basic Critical Languages: Basic X
Ling. 506 Intermed. Critical Languages: Intermed. X (prereq. 505)
Ling. 507 Advanced Critical Languages: Advanced X (prereq. 506)

4 hrs. in either

Ling. 508 Reading Critical Languages: Reading X (prereq. 505) or
Ling. 509 Writing Critical Languages: Writing X (prereq. 505)

4 additional hours in an introductory course in linguistics, to be taken during the
first year of work on the minor

Ling. 200 Linguistic Analysis or
Ling. 500 Introduction to Linguistics
Linguistics majors may substitute Ling. 508/509 Reading/Writing X;
Ling. 505 Basic Y; or Ling. or Anthro. 575 (3 sem hrs.) plus
Ling. 598 (1 sem. hr.)

Total 20 hrs.

COURSES

GENERAL LINGUISTICS COURSES

110 Introduction to American English 4 hrs.

Instruction in oral and written English for non-native speakers by means of
individual tutoring, laboratory work, and classroom orientation. Permission of
instructor.

200 Linguistic Analysis 4 hrs.

An introduction to the linguistic principles underlying the phonological, morpho-
logical, syntactic, and semantic analysis and description of languages. Cannot be
taken for credit together with Anthro. 270.

320 (520) Phonological Analysis 4 hrs.

An introduction to phonological theory and to the principles and methods of
phonetic and phonemic analysis and description. Prerequisite: Ling. 200 or Anthro.
270.

*Minors are not required to take credits in the starred areas but may elect up to 4 hours.
College of Arts and Sciences

330 (530) Grammatical Analysis 4 hrs.
An introduction to grammatical theory and to the principles and methods of morphological and syntactic analysis and description. Prerequisite: Ling. 200 or Anthro. 270.

420 (300) Historical Linguistics 4 hrs.
An examination of the processes of language change and the principles which govern the historical and comparative study of languages. Prerequisite: Ling. 200 or Anthro. 270.

430 (310) Dialectology 4 hrs.
An examination of the linguistic principles and methods involved in the study of geographical, social, and stylistic variation within languages. Prerequisite: Ling. 200 or Anthro. 270.

500 Introduction to Linguistics 4 hrs.
An introduction to the principles and practices in the major schools (e.g. structural, transformational), fields (e.g. historical, comparative), and applications (e.g. dialectology, lexicography) of modern linguistic study.

505, 506, 507, 508, 509 (See Critical Languages Courses below.)

510 (400) Teaching English as a Foreign Language 4 hrs.
Study of the application of linguistics to the teaching of English to non-native speakers, with emphasis on current methods and materials for instruction and testing.

550 Studies in Linguistics and Related Disciplines 3 hrs.
An examination of the interrelationships between linguistics and another related discipline: e.g. between linguistics and psychology ("Psycholinguistics") or between linguistics and sociology ("Sociolinguistics"). May be repeated for credit.

560 Comparative Linguistics 4 hrs.
An introduction to the branch of linguistics which deals with the similarities and differences between related languages and the methodology through which the linguist is able to make statements about their correspondences and divergences.

570 Studies in Linguistic Structures 4 hrs.
A detailed examination of the phonological, morphological, and syntactic structure of a given language. Various models for describing the structure of the language will be considered. May be repeated for credit.

575 (548) Studies in Languages of the World 3 hrs.
Intensive study of a group of languages (varying from semester to semester) that are either genetically related (e.g. Slavic Languages), typologically similar (e.g. "tone" languages), or geographically proximate (e.g. African languages). May be repeated for credit.

580 Linguistic Field Techniques 3 hrs.
Interview techniques for the elicitation of oral language data, and methods of analysis of the data into significant linguistic units for their eventual arrangement in the form of a grammar and dictionary. Prerequisite: consent of instructor.
598 Readings in Linguistics

An opportunity for advanced students with good scholastic records to pursue the independent study of a linguistic subject not specifically covered by any of the courses in the Linguistics Department. Prerequisite: Permission of instructor and chairman.

CRITICAL LANGUAGES COURSES

(A "critical" language is one which is not described in the Undergraduate Catalog as a regular offering of the Department of Modern and Classical Languages. Critical language credit can be used to satisfy certain undergraduate foreign language requirements.)

505 (500) Basic Critical Languages

Independent learning, at the basic stage, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist. Prerequisite: Permission of instructor.

506 Intermediate Critical Languages

Independent learning, at the intermediate stage, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist. Prerequisite: Ling. 505 and permission of instructor.

507 Advanced Critical Languages

Independent learning, at the advanced stage, of a spoken "critical" language by utilizing programmed laboratory resources under the supervision of a linguist. Prerequisite: Ling. 506 and permission of instructor.

508 Reading Critical Languages

Independent reading of "critical" language materials in the standard script by utilizing programmed materials under the supervision of a linguist. Prerequisite: Ling. 505 and permission of instructor.

509 Writing Critical Languages

Independent study of writing a "critical" language in the standard script by utilizing programmed materials under the supervision of a linguist. Prerequisite: Ling. 505 and permission of instructor.

CRITICAL LANGUAGES

Arabic
Chinese
Hindi-Urdu
Japanese

Latvian
Serbo-Croatian
Swahili
## Mathematics

A. Bruce Clarke, Chairman

Yousef Alavi
Robert Blefko
William Boyd, Jr.
Joseph T. Buckley
Gary Chartrand
Paul Eenigenburg
Daniel Giesy
Anthony Gioia
Donald Goldsmith
Clarence Hackney
Herbert Hannon
Philip Hsieh

S. F. Kapoor
Robert Laing
Stanislaw Leja
Don R. Lick
Joseph McCully
Jack Meagher
Donald Nelson
Jack Northam
J. K. Peterson
John W. Petro
James Powell

James Riley
Erik A. Schreiner
Robert Seber
Robert Sechler
Gerald Sievers
Arthur Stoddard
Michael Stoline
Walter Turner
Arthur White
Gertrude Wolinski
Alden Wright
Kung-Wei Yang

Major and Minor requirements in Mathematics are summarized in the following tables. Students considering a Mathematics Major or Minor should contact a Mathematics adviser by the first semester of the sophomore year. Major programs must be prepared by a departmental adviser.

### Non-teaching Major

<table>
<thead>
<tr>
<th>Requirement</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Calculus through Math 223</td>
<td></td>
</tr>
<tr>
<td>Math 332</td>
<td>3</td>
</tr>
<tr>
<td>Math 333</td>
<td>3</td>
</tr>
<tr>
<td>Math 570 or 571</td>
<td>3</td>
</tr>
<tr>
<td>Two approved electives at 300-level</td>
<td>6</td>
</tr>
<tr>
<td>or above</td>
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<tr>
<td>One approved elective at 500-level</td>
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### Non-teaching Minor

<table>
<thead>
<tr>
<th>Requirement</th>
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<tr>
<td>16 hours required</td>
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<tr>
<td>Calculus through Math 222</td>
<td>12</td>
</tr>
<tr>
<td>Math 223 or 332</td>
<td>4 or 3</td>
</tr>
<tr>
<td>Mathematics elective</td>
<td>1</td>
</tr>
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</table>

### Teaching Major

<table>
<thead>
<tr>
<th>Requirement</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Calculus through Math 222</td>
<td></td>
</tr>
<tr>
<td>Math 332</td>
<td>3</td>
</tr>
<tr>
<td>Math 333</td>
<td>3</td>
</tr>
<tr>
<td>One of: Math 340, 342, 540, 542</td>
<td>3</td>
</tr>
<tr>
<td>Math 550</td>
<td>3</td>
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<tr>
<td>Math 223 or approved elective</td>
<td>4 or 3</td>
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<tr>
<td>One approved elective at 300-level</td>
<td></td>
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<tr>
<td>or above</td>
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<tr>
<td>One approved elective at 500-level</td>
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</tbody>
</table>

### Teaching Minor

<table>
<thead>
<tr>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>20 hours required</td>
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<tr>
<td>Calculus through Math 222</td>
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<td>Math 223 or 333</td>
<td>4 or 3</td>
</tr>
<tr>
<td>Mathematics elective</td>
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</tbody>
</table>

Minor electives can be any mathematics courses, including Math 100 or 106, if approved by mathematics advisor.

### Minor in Mathematics: Elementary

(for students in elementary education curricula only)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 150</td>
<td>4</td>
</tr>
<tr>
<td>Math 151</td>
<td>4</td>
</tr>
<tr>
<td>Math 122 (or 120, 121)</td>
<td>4 or 8</td>
</tr>
<tr>
<td>Math 260</td>
<td>4</td>
</tr>
<tr>
<td>Math 552</td>
<td>2</td>
</tr>
<tr>
<td>Math 595</td>
<td>2</td>
</tr>
</tbody>
</table>
Selected students may qualify for a major with Honors in Mathematics. The purpose of this Honors Program in Mathematics is to give to the conscientious, industrious student the special attention that his superior performance and interest in mathematics warrants. Students who are enrolled in, or have completed, Mathematics 332 may be recommended by a member of the mathematics faculty for consideration as honors students. For further information, see the Chairman of the Departmental Honors Program.

Students who fail to earn a “C” or better grade in Mathematics 100 or in Mathematics IA-III will not be permitted to enroll in the next sequence course.

090 Mathematical Skills
A remedial course dealing with those topics from elementary algebra and geometry necessary for further work in mathematics. This course carries no credit in any degree program. Entering students may be advised to take this course on the basis of the A.C.T. Mathematics Proficiency test.

100 Algebra
A course dealing with algebra at the level usually covered in senior high school. Review and practice with basic algebraic skills. Graphical properties and manipulation with polynomial, exponential and logarithmic functions. No credit for students presenting three years or more of high school mathematics including a course in trigonometry. Prerequisite: One year of high school algebra and one year of high school geometry.

106 Introduction to Computers
Flow charts and computer programs will be prepared in the BASIC LANGUAGE and FORTRAN IV to be run on a digital computer. Prerequisite: 1½ years high school algebra or Math 100.

116 Finite Mathematics with Applications
This course is designed to give the business student a background in the elements of finite mathematics. Included will be a discussion of: sets, relations and functions; systems of linear equations and inequalities; vectors and matrices; concepts of probability; random variables and distribution functions; applications of linear algebra and probability. Prerequisite: 3 years of college preparatory mathematics or Math 100.

120 Mathematics IA
Substantial review of algebra with discussion of sets, relations, functions, absolute value, and inequalities. Introduction to calculus: limits, continuity, derivatives, and applications. Followed by Math 121. The sequence 120, 121 is recommended for students whose high school background is insufficient to permit them to start with the regular beginning calculus course (Math 122) or who have had no trigonometry. Prerequisite: Three years of college preparatory mathematics or Math 100.

121 Mathematics IB
Trigonometry, induction, and a continuation of the calculus in Math 120. Further discussion of derivatives and an introduction to integration. Math 120 and 121 together contain the calculus content of Math 122. Prerequisite: Math 120.

122 Mathematics I
The first of a four-semester sequence of courses dealing with differential and integral calculus and selected topics from analytic geometry. This course devotes
special attention to functions, limits, derivatives, applications of derivatives, and integrals. Prerequisite: At least 3½ years of college preparatory mathematics including trigonometry.

(Honors sections of Math I-IV are offered, with some changes in content and emphasis. Interested students should contact a departmental advisor.)

123 Mathematics II 4 hrs.
A continuation of Mathematics I. Topics include: the definite integral, differentiation and integration of elementary transcendental functions, techniques of integration, analytic geometry. Prerequisite: Math 122 or 121.

150 Structure of Arithmetic 4 hrs.
This course is designed to provide the elementary teacher with a minimal foundation in the structure of arithmetic. Included will be a discussion of sets, relations, the properties of natural numbers, integers, rational and real numbers, as well as selected topics from number theory, algebra and geometry. The nature of proof will be demonstrated through selected exercises. This course is restricted to students in Elementary Education, Elementary Music, Librarianship, and Special Education curricula.

151 Elementary Mathematical Structures 4 hrs.
This course is a continuation of 150. Topics will include a further discussion of the real numbers, the complex numbers, finite mathematical structures, and intuitive geometry. Geometric construction using compass and straight edge will be emphasized. Prerequisite: Math 150 and approval of instructor.

190 Survey of Mathematical Ideas 4 hrs.
A survey of significant, active areas of mathematics with the emphasis on concepts rather than calculations. The historical origin and development of certain mathematical ideas will be included. The areas of mathematics investigated will include topics from set theory, probability theory, number theory, and graph theory. This course will not satisfy any program requirements in mathematics.

200 Analysis and Applications 4 hrs.
Topics include: sets, functions, trigonometry, rates, limits, differentiation, integration, applications. The course should not be elected by those students who wish to take courses in the Mathematics 120, 121, or 122, 123 sequences. Prerequisite: Math 100 or 1½ years high school algebra and 1 year high school geometry.

222 Mathematics III 4 hrs.
A continuation of Mathematics I and II. Vector calculus, functions of several variables, multiple integration. Prerequisite: Math 123.

223 Mathematics IV 4 hrs.
A continuation of Mathematics I, II and III. Sequences, series, indeterminate forms, improper integrals and differential equations. Prerequisite: Math 222.

260 Elementary Statistics 4 hrs.
The purpose of this course is to introduce students to the rudiments of statistics. Basic concepts, rather than detailed derivation, are stressed. Topics include: probability; discrete random variables; means and variances; binomial, hypergeometric, normal, chi-square, Student-t and F distributions; interval estimates; tests of hypotheses. Students can receive credit for only one of 260, 360, 366. Prerequisite: Math 200 or 122.
306 Introduction to Computer Languages

Different class sections of this course will discuss languages such as FORTRAN, COBOL, and Assembler. Flow charts and computer programs will be prepared in these languages to be run on a digital computer. Students wishing to study more than one language may repeat this course for no more than 6 hours of credit (2 in each language). This course will not be counted toward a major in mathematics. Prerequisite: Math 106 or equivalent workshop.

332 Algebraic Structures

An introduction to proof techniques in abstract algebra. Topics covered include: sets, mappings, equivalence relations, elementary ring theory, elementary number theory and an introduction to integral domains and fields. Followed by Math 333. Prerequisite: Math 222.

333 Modern Algebra

A continuation of Math 332. Topics include: complex numbers, elementary group theory, polynomial rings, ideals and quotient rings. Prerequisite: Math 332.

340 Fundamental Concepts of Geometry

A critical re-examination of plane and solid euclidean geometry followed by euclidean geometry of four dimensions and noneuclidean geometry. Prerequisite: Math 222.

342 Introduction to Projective Geometry

A survey of analytic geometry using vector methods followed by an axiomatic development of projective geometry. Prerequisite: Math 222.

360 Statistical Methods

This course treats both the theory and applications of statistics. The study of histograms and empirical distributions; random variables and probability distributions; normal, chi-square, t, F, binomial, Poisson distributions; central limit theorem; significance tests, both one- and two-sided; point and interval estimation; correlation; analysis of variance; control charts; sampling inspection both by attributes and variables. Students can receive credit for only one of 260, 360, 366. Prerequisite: Math 223.

366 Introduction to Statistics

An introductory course in statistics for upper level or graduate students possessing a limited mathematics background. The emphasis is on the use of statistical tools rather than on their theoretical development. Topics will include probability distributions, means and variances, interval estimates, test of hypotheses, correlation and regression. This course will not count toward a mathematics major or minor. Students can receive credit for only one of 260, 360, 366. Prerequisite: Math 200 or 122.

390 Undergraduate Seminar

This seminar features student participation covering mathematical topics not normally included in regular major programs. May be repeated for credit. Prerequisite: Permission of Department.

490 Topics in Mathematics

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.
College of Arts and Sciences

May be taken more than once with the approval of the student's advisor. Prerequisite: Approval of Department.

506 Programming for Computers 3 hrs.

Designed to give preparation in the organization and general use of high speed computing machines used in scientific and engineering computations. Two computer languages will be discussed and used to prepare programs. Problems such as exponential, multiplication and inversion of matrices, numerical integration, and solution of differential equations will be prepared for the computer. Prerequisite: Math 222 (223 recommended).

507 Numerical Analysis 3 hrs.

Numerical methods involving polynomial evaluation, series approximations, numerical integration, interpolation, solution of linear and differential equations, linear programming, least squares and minimax approximations. Topics include: Chebyshev polynomials, Legendre polynomials, Weierstrass Theorem, Bernstein polynomials, Runge-Kutta methods, Generalized Rolle's Theorem, Taylor's Theorem, Newton's method, False Position method, economization of power series, Minimax Theorem, forward differences, central differences, Simpson's rule, Boole's rule, and predictor-corrector methods. Prerequisite: Math 223 and 506.

508 Automatic Programming Systems 3 hrs.

A thorough study of the internal organization of the Fortran Compiler. Each student will be required to construct a compiler. Prerequisite: Math 506.

520 General Topology I 3 hrs.

Topics include: separation axioms, continuity, compactness, connectedness, product and quotient spaces, metric spaces. Prerequisite: Math 570 or permission of instructor.

530 Linear Algebra 3 hrs.

Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: Math 333.

540 Introduction to Algebraic Geometry 3 hrs.

A study of the basic properties of projective space of n-dimensions utilizing both the algebraic and synthetic definitions, representation of projective geometry as the geometry of subspaces of a vector space, and the algebraic approach to affine geometry. Prerequisite: Math 332 (Math 333 recommended.)

542 Differential Geometry 3 hrs.

Topics include: directional derivatives, differential forms, curvature and torsion of curves, transformations and tensor calculus geodesics and other curves on surfaces, conformal and isometric mappings, minimal surfaces. Prerequisite: Math 570.

550 Teaching of Secondary Mathematics 3 hrs.

In this course consideration is given to curriculum problems and trends in secondary school mathematics and to specific problems of teaching mathematics effectively to secondary school students. Prerequisite: Math 332.

552 Teaching of Elementary Mathematics 2 hrs.

Consideration is given to curriculum problems and trends in elementary school mathematics and to specific problems of teaching mathematics effectively to elementary school children. Prerequisite: Math 150 or equivalent.
560 Probability
A first course in mathematical probability intended for upper class students and first-year graduate students. This course considers probability spaces, mathematical expectation, moment-generating functions, special discrete and continuous distributions, independence, transformations of variables, sampling distributions, asymptotic theory. Prerequisite: Math 223 and 332.

561 Mathematical Statistics
A continuation of Math 560. This course is a basic introduction to mathematical statistics. The emphasis is on theory and concepts, although some applications are considered. Topics include: point estimation; maximum likelihood estimates; sufficiency and completeness; limiting distributions; order statistics; statistical hypotheses; likelihood ratio tests; correlation and regression. Prerequisite: Math 560.

562 Statistical Analysis I
A first course in statistics for upper class students and first-year graduate students with primary emphasis on applications. Topics include: elementary probability; combinatorial probability; binomial, Poisson and hypergeometric distributions with applications; normal, chi-square, F, and t distributions with applications to estimation, hypothesis testing, and confidence intervals; curve fitting; linear regression; non-parametric techniques. Followed by Mathematics 662. Prerequisite: Math 222 (Math 223 recommended).

570 Advanced Calculus
Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisite: Math 223 and 332.

571 Analysis I
Fundamental concepts of real analysis, functions of one variable, topology of $\mathbb{R}^n$, Riemann-Stieltjes integral. Prerequisite: Approval of advisor.

572 Analysis II
Continuation of Math 571. Uniform convergence of sequences and series of functions. Fourier series, functions of several variables, Lebesgue measure, measurable functions, Lebesgue integration on the real line. Prerequisite: Math 571 or consent of advisor.

574 Introduction to Ordinary Differential Equations
Methods of solution, linear differential equations, ordinary and singular points, series solutions, Bessel and Legendre functions, boundary value problems, systems of equations, non-linear equations. Prerequisite: Math 223.

575 Introduction to Partial Differential Equations
Quasi-linear equations of the first order, linear and quasi-linear equations of the second order, separation of variables and Fourier series; solutions of Laplace equations, heat equations and wave equations, as examples of elliptic, parabolic and hyperbolic equations. Prerequisite: Math 574 or consent of instructor.

576 Introduction to Complex Analysis
Complex numbers, elementary functions, differentiation of complex functions, integration, series, residue theory, conformal mappings. Prerequisite: Math 223.
College of Arts and Sciences

580 Number Theory 3 hrs.
Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: Math 332.

595 Seminar in Elementary Mathematics Education 1-3 hrs.
Current curriculum problems in the area of elementary mathematics education are identified and discussed. Students are required to identify a problem and give both an oral and written report on research in that area. Prerequisite: Math 552.

599 Independent Study in Mathematics 1-3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Approval of chairman of department.

Philosophy

Joseph Ellin, Chairman
Michael Pritchard
John Dilworth
Richard Pulaski
Arthur Falk
Gregory Sheridan
Ruth Millikan
Dale Westphal
Donald Milton

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.

The Philosophy Department offices are located in Friedmann Hall. Students are invited to visit professors during posted office hours.

Before preregistration each term, the faculty prepares brief written descriptions of the courses to be offered. These course descriptions may be obtained in the department office. The department also announces its tentative course-offerings a year in advance. Hence before preregistration for the Fall semester, the student can know which courses will probably be offered in the following Fall, Winter, Spring, and Summer.
ROBERT FRIEDMANN PHILOSOPHY PRIZE

A prize, normally $50, named in honor of Dr. Friedmann, the first person to teach philosophy at Western, awarded annually to an outstanding senior philosophy student.

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 a close association with a professor of his choice, and submits a paper (or other project of philosophic merit) to the department. To achieve honors in philosophy the candidate's academic record must be of high quality and his project must be outstanding.

Inter-disciplinary work, involving faculty from other departments is encouraged.

Normally, but not necessarily, the honors student is a senior major; in exceptional cases non-seniors or non-majors may be considered.

MAJOR AND MINOR REQUIREMENTS

A major in philosophy consists of not less than 28 hours of course work. Prospective majors are urged to elect Phil. 200 as soon as possible, preferably not later than their third semester. Either Phil. 100 or Phil. 200 but not both, may be taken for credit towards a Philosophy major. However, neither course will be accepted for credit towards the major if completed later than the term in which the student enrolls for his first course at the 300 level.

Course requirements for the major are: Phil. 300-301 (History of Philosophy), one seminar, and a distribution requirement of one course each chosen from three of the four categories: History of Philosophy, Value Theory, Logic and Philosophy of Science, Theory of Knowledge and Reality. Phil. 300-301 do not count toward the history distribution option.

Students planning to do graduate work in philosophy must elect Phil. 220 (Elementary Logic) as soon as possible.

A minor in philosophy consists of 16 hours. There are no required courses, but prospective minors are advised to take Phil. 100 or 200 in their Freshman or Sophomore year.

INTRODUCTORY COURSES

100 Philosophizing 4 hrs.

A seminar for students who wish to improve their ability to think analytically, argue logically, and express a train of thought carefully and cogently in writing. There will be frequent writing assignments which will focus on issues raised by readings of broad philosophical interest. Class time will be about equally divided between discussion of the readings and critical analysis of the student's own writings.

200 Introduction to Philosophy 4 hrs.

An introduction to the nature of philosophy by a consideration of major types of philosophical questions, such as the principles of rational belief, the existence of God, what is the good life, the nature of knowledge, the problem of truth and verification. Selected texts from representative philosophers are used to define the questions and to present typical answers.
201 Introduction to Ethics
4 hrs.
An introduction to the philosophic study of morality. Deals with questions such as: What is the good life? Why should I be moral? What is the meaning of right and wrong?

HISTORY OF PHILOSOPHY

300 History of Ancient Philosophy
4 hrs.
A study of Greek philosophical thought from Thales to Plotinus with an emphasis on Plato and Aristotle.

301 History of Modern Philosophy
4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with emphasis upon Descartes, Liebniz, Locke, Berkeley, Hume, and Kant.

302 American Philosophy
4 hrs.
Philosophical thought in America from colonial times to the present, studied through the works of such thinkers as Jonathan Edwards, Jefferson, Emerson, Thoreau, James, Dewey, Niebuhr, Lippmann, and others. The course will sketch the broad movement of American thought and focus on the five major attitudes of the American mind: Puritan fundamentalism, revolutionary rationalism, Transcendentalism, pragmatic naturalism, and neo-conservativism.

303 Existentialist Philosophies
4 hrs.
A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

304 Analytic Philosophy
4 hrs.
Contemporary philosophical analysis: an evaluative examination of Russell's Logical Atomism, and a study of the rise of ordinary language philosophy as represented by the later Wittgenstein, Ryle, Strawson, Austin, and others.

306 Asian Thought: China
4 hrs.
A study of the major trends of Chinese thought, notably Confucianism and Taoism, with particular emphasis on their relevance to recent developments in China.

307 Phenomenology
4 hrs.
A systematic study of the origins and developments of the phenomenological movement. The writings of several major phenomenologists will be considered, e.g. Husserl, Heidegger, Merleau-Ponty, etc. Prerequisite: Phil. 200.

308 History of Medieval Philosophy
4 hrs.
Medieval philosophical thought from Augustine through the Renaissance.

501 Seminar in History of Philosophy
4 hrs.
Topic to be announced. The topic selected may be either the concentrated study of an individual philosopher, or an identifiable philosophical school, or the historical examination of a philosophical problem or concept. Prerequisite: Permission of the instructor.
VALUE THEORY

310 Moral Philosophy 4 hrs.
A study of some basic problems in moral philosophy. Special attention is given to the question of the relationship between the justification of actions, and motives, excuses, intentions, consequences. Contemporary works are emphasized. Pre-requisite: 200 or 201.

311 Political Philosophy 4 hrs.
An examination of fundamental problems arising from political and social relationships. The main emphasis is on such political value concepts as liberty, equality, human rights and justice. The course also deals with topics such as the nature and basis of political authority and obligation; civil disobedience; tolerance and dissent; the aims of political institutions; law and morality.

312 Philosophy of Art 4 hrs.
An analysis of the nature of art and esthetic experience, and its significance in human life. The course may cover all forms of art, or concentrate on a few, for instance, literature, drama and music.

313 Philosophy of Law 4 hrs.
This course considers the nature of law and the goals, policies and limitations of a legal system. The connections between law and justice, law and freedom, and law and morality will be examined.

314 Philosophical Themes in Contemporary Social Movements 4 hrs.
Social movements commit themselves to certain views about man and nature which are broadly philosophical, though only one contemporary movement, Marxism, purports to present an entire philosophy. This course attempts to uncover and evaluate some of these philosophical themes, for example, freedom, repression and liberation; human nature and culture; the uses of violence; goals and methods of social change. Emphasis will be placed on recent social movements, but exploration of earlier movements (such as 19th and early 20th century Marxism) is not precluded.

510 Seminar in Theory of Value 4 hrs.
An analysis of the value concepts as employed in the general theory of value, or in the value disciplines, ethics, political philosophy, and aesthetics.

LOGIC AND THE PHILOSOPHY OF SCIENCE

220 Elementary Logic 4 hrs.
A study of the rules and techniques of deductive reasoning and the sources of some common fallacies. Topics included are syllogisms and the logic propositions. Open to freshmen. Students with a background in college mathematics should take Intermediate Logic instead.

320 Intermediate Logic 4 hrs.
Symbolic logic: the logic of propositions, the predicate logic, and an introduction to the theory of identity and definite descriptions. Prerequisite: Phil. 220 or some college mathematics or permission of the instructor. Open to qualified freshmen.
308

College of Arts and Sciences

321 Advanced Logic  4 hrs.
Continuation of 320. Topics included are identity, definite descriptions, elementary set theory and relations; introduction to axiomatic systems of logic and metatheorems. Prerequisite: Phil. 320 or permission of the instructor.

322 Philosophy of the Social Sciences  4 hrs.
A critical examination of the concepts, methods, presuppositions, and conclusions of the social and behavioral sciences. Prerequisite: one course from among the following: Phil. 200, General Studies 202, 203, 204, or any course in the social sciences.

323 Philosophy of Science  4 hrs.
An examination of the nature of scientific explanation, inductive reasoning, and probability. Particular problems arising in the physical and natural sciences which may be included are the nature of scientific laws and theories, an analysis of the concepts of space, time, and causality, the existence of unobservable entities, and the requirement of simplicity. Prerequisite: One course in logic or its equivalent or permission of the instructor.

520 Seminar in Logic  4 hrs.
Selected topics in one or more of the following areas: foundations of logic and mathematics, meta-mathematics, set theory, modal and many-valued logics, inductive logic, formal semantics and linguistics, the history of logic. Prerequisite: Math 332 or two courses in logic (or their equivalent) or permission of the instructor.

THEORY OF KNOWLEDGE AND REALITY

330 Philosophy and Language  4 hrs.
A study of the nature and criteria of meaning and truth in the context of different types of discourse such as ethical, religious, or scientific. Prerequisite: Phil. 220 or permission of the instructor.

331 Philosophy of Religion  4 hrs.
An examination of the place of religion in human experience with special attention to the problem of whether there is rational ground for validating religious beliefs. This is done through an examination of the nature of religious language and the problem of religious knowledge.

332 Theory of Knowledge  4 hrs.
An examination of basic problems concerning knowledge and belief, discussing traditional approaches but stressing recent analyses. Possible topics: skepticism and certainty, knowing and believing, perception, memory, ‘a priori’ vs. ‘a posteriori’ knowledge, self-knowledge, knowledge of others.

333 Metaphysics  4 hrs.
A study of basic metaphysical questions, discussing traditional solutions but emphasizing recent approaches. Questions will be selected from such topics as: substances, qualities and relations, universals and particulars, identity, space and time, causation, mind and body, persons, free will.
530 Seminar in Theory of Knowledge
A detailed study of one or more selected problems in the theory of knowledge. Prerequisite: Phil. 332 or permission of instructor.

531 Seminar in Metaphysics
A detailed study of one or more selected metaphysical questions. Prerequisite: Phil. 333 or permission of instructor.

498 Independent Study
Independent study is for those students who have attained a degree of competence in philosophy and wish to embark upon a project to be carried out without the usual close guidance of the instructor in the classroom. Independent study may not be elected as a substitute for a regularly scheduled course. Prerequisite: Permission of the instructor with whom the student wishes to work.

Physics

Allen Dotson, Chairman
Eugene Bernstein
George Bradley
David Carley
Stanley Derby
Roger Hagengrubner
Gerald Hardie

John Herman
Dean Kaul
Haym Kruglak
John Kusmiss
Robert Miller

Nathan Nichols
Larry Oppliger
Robert Shamu
Michitoshi Soga
James Zietlow

The Department of Physics offers two programs of study leading to a major in physics. One program is the physics major for those preparing for graduate study or professional employment in physics. The second program is designed for those in Secondary Education who desire to major in physics. Both programs require 30 credit hours in physics but differ according to the goals of the representative programs. The Physics Department strongly recommends that students planning to enter graduate school take a minimum of 39 hours, and in addition to the required courses listed below, the student take, 330 Thermodynamics and Kinetic Theory, 541 Electricity and Magnetism II, 566 Advanced Lab.

The requirements for the physics major in each program are:

<table>
<thead>
<tr>
<th>Physics Major S.H.</th>
<th>Secondary Education S.H.</th>
</tr>
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<tbody>
<tr>
<td>210 Mechanics and Heat 4</td>
<td>210 Mechanics and Heat 4</td>
</tr>
<tr>
<td>211 Electricity and Light 4</td>
<td>211 Electricity and Light 4</td>
</tr>
<tr>
<td>212 Atomic and Nuclear 4</td>
<td>212 Atomic and Nuclear 4</td>
</tr>
<tr>
<td>Physics 4</td>
<td>Physics 4</td>
</tr>
<tr>
<td>342 Electronics 5</td>
<td>342 Electronics 5</td>
</tr>
<tr>
<td>520 Analytical Mechanics 3</td>
<td>360 Introduction to Theoretical Physics 4</td>
</tr>
<tr>
<td>540 Electricity and Magnetism I 3</td>
<td>470 Historical Development of Concepts of Physical Science 3</td>
</tr>
<tr>
<td>560 Modern Physics I 4</td>
<td></td>
</tr>
</tbody>
</table>

The remaining credit hours necessary to complete the major must be elected from the following list for each program.
Suggested courses of study for a student majoring in physics under either program are:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>S.H.</th>
<th>Second Semester</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 122</td>
<td>4</td>
<td>Math 123</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 102</td>
<td>4</td>
<td>Physics 210</td>
<td>4</td>
</tr>
<tr>
<td>General Studies Reading 140</td>
<td>2</td>
<td>General Studies (elective)</td>
<td>4</td>
</tr>
<tr>
<td>General Astronomy Physics 105</td>
<td>4</td>
<td>Western Civilization 100 or 101</td>
<td>4</td>
</tr>
<tr>
<td>(3 hours toward secondary education major or minor)</td>
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</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>17</td>
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<td></td>
<td>15</td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>Math 222</td>
<td>4</td>
</tr>
<tr>
<td>Physics 211</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120</td>
<td>4</td>
</tr>
<tr>
<td>General Studies (Soc. Science)</td>
<td>3</td>
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<tr>
<td></td>
<td>15</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>S.H.</th>
<th>Secondary Education</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics Major</td>
<td>S.H.</td>
<td>Secondary Education</td>
<td>S.H.</td>
</tr>
<tr>
<td>Math 223</td>
<td>4</td>
<td>Math 223</td>
<td>4</td>
</tr>
<tr>
<td>Physics 212</td>
<td>4</td>
<td>Physics 212</td>
<td>4</td>
</tr>
<tr>
<td>General Studies (Arts &amp; Ideas)</td>
<td>4</td>
<td>General Studies (Elective)</td>
<td>4</td>
</tr>
<tr>
<td>Physics 330</td>
<td>3</td>
<td>Education 250</td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td></td>
<td>16</td>
</tr>
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<td></td>
<td>16</td>
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</table>
Any student contemplating majoring in physics should contact the Physics Department as early as possible. This is especially true for the transfer students from community colleges in regard to transfer credit and course of study. Students will want to take advantage of the advisor system in the department for direction regarding courses, employment opportunities, and continuing education in graduate school.

Any physics major may qualify for departmental Honors in Physics by fulfilling the following requirements:

1. Complete the courses recommended for students planning to enter graduate school.
2. Attain by the end of the semester preceding graduation an accumulated honor point ratio of at least 3.5 (B+) in his physics courses, and an accumulated honor point ratio of 3.0 or more in his other courses.

A Physics Minor consists of 20 credit hours including courses 210, 211, 212. With the consent of the Department, General Physics 110, 111, may be substituted for 210, 211. Those in Secondary Education who minor in physics must also take Physics 360 and either 342 or 352. The remaining hours for others who minor in physics may be selected from any of the courses listed above under Physics Major.

The Physics Department offers public lectures and colloquium programs for undergraduate and graduate students. The Physics Lecture is a series of talks given monthly, usually by visitors from other institutions, on topics of general interest. Attendance is expected of all physics majors. The Graduate Colloquium is a weekly program for graduate students and physics staff presented usually by WMU physics staff members or visitors from other universities on topics related to their research specialties.

**PHYSICS COURSES**

**108 Physical Science (see General Studies)**

**100 Acoustics**

In this course are studied the nature and transmission of sound, how sounds are produced with special emphasis on pipes and strings, interference of waves, the physics of speaking and hearing, pitch, quality, and loudness of sounds, overtones and harmonic series. This course may not be applied toward either a major or minor in physics.

**102 Physics and the Environment**

The objective of this course is to provide the student with an understanding of some of the physical principles and underlying environmental problems. Topics covered include the physical aspects of air pollution, the energy problem, and radioactivity. Course consists of three lectures per week. No previous training in physics is required. Course may not be applied towards either a major or minor in physics.

**104 Descriptive Astronomy***

The aim of the course is to present the development of man's knowledge about the solar system, the stars, and the galaxies. Emphasis will be placed on the methods and tools of the astronomer, on the major principles and their applications, and on the challenging problems of the space age. Mathematics will be used sparingly and will be restricted to the simplest aspects of arithmetic and high school algebra. Three lecture-recitations and two hours of evening observation and laboratory per week are required. Not recommended for science majors.

**105 General Astronomy***

A more intensive study of the topics covered in Physics 104. The course will emphasize applications of physics principles to planetary and satellite motions; space research; stellar motions, properties, and evolution; galaxies; cosmogonies. Three lecture-recitations and two hours of evening observation and laboratory per week are required. Recommended for science majors. Prerequisite: Knowledge of physics and trigonometry at the high school level.

* A student cannot receive credit for both 104 and 105.
106 Elementary Physics
This course surveys physics from mechanics to modern physics in one semester. It is designed for students in curricula requiring four credit hours at the level of general college physics. The course consists of four lectures and one two-hour laboratory per week.

110 General Physics
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
This course follows 110 and consists of studies in electricity, magnetism, light, and atomic and nuclear physics. Prerequisite: Physics 110.

202 Photography
This is an elementary course in the theory and use of photographic materials. It is open to all students but is applicable toward a major or minor in physics only for those in the Secondary Education Curriculum. This course consists of one two-hour lecture-recitation and one two-hour laboratory per week.

210 Mechanics and Heat
This first course of a sequence of three in general college physics employing calculus deals with mechanics and heat. It is required of physics majors and strongly recommended for pre-engineering students, majors in other sciences, and future physics teachers. The course consists of 3 lectures, 1 recitation and a two-hour laboratory per week. Prerequisite: Math 123 concurrently or consent of instructor. Open to qualified freshmen.

211 Electricity and Light
This course follows 210 and consists of studies in electricity, magnetism, and light. Prerequisite: Physics 210 or consent of instructor.

212 Atomic and Nuclear Physics
This course, with 210 and 211, completes the sequence making up the introductory course in physics with calculus. Students transferring from community colleges with one year of physics will normally be expected to take this course. The course consists of four lecture-recitations per week and 10-12 three-hour laboratory periods per semester. Prerequisite: Physics 211 or consent of instructor.

308 Teaching of Physical Science
This course deals with problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of selection, maintenance, and construction of apparatus are also considered. Prerequisites: One year of college chemistry and one year of college physics.

330 Thermodynamics and Kinetic Theory
Thermodynamics is the study of equilibrium bulk properties of large scale systems in which temperature is an important variable. Classical equilibrium thermodynamics is developed from the macroscopic view-point. Postulates, empirically founded, are put forth and the consequences are developed and applied to systems of
interest in physics and chemistry. Introductory kinetic theory with selected topics is also included. Prerequisite: Physics 211.

342 Electronics 5 hrs. Fall, Winter
This course deals with analysis of the more important transistor and vacuum tube circuits and includes practical experience in the laboratory. There are three lectures and two 2-hour laboratories per week. Prerequisite: Physics 211.

352 Optics 4 hrs. Fall
This is a course in geometrical and physical optics in which the main topics discussed are: reflection, refraction (aberrations and optical instruments), wave motion, interference, diffraction, polarization, double refraction, lasers. Three lectures and one 3-hour laboratory per week. Prerequisite: Physics 211.

360 Introduction to Theoretical Physics 4 hrs. Winter
The basic theories of classical mechanics, electromagnetism, special relativity, and non-relativistic quantum mechanics will be developed. Applications will be selected to illustrate the theory. The topics are condensations of the basic principles covered more extensively in Physics 520, 540, and 560. Therefore, this course is not recommended for physics majors planning to take the 500 level courses. Prerequisites: Physics 212, Math 222.

470 Historical Developments of Concepts of Physical Science 3 hrs. Winter
This course, which is designed for the science major at the junior-senior level, considers the logic and interpretation of contemporary physical problems through a study of their historical development. Representative of discussed topics are: physical characteristics of matter, conservation and symmetry, causality, field representation versus particle representation, relativity and role of mathematics in explanation. (Although oriented toward philosophy and history this course is primarily a course in physics and it will emphasize care and depth in its analyses.) Prerequisite: Physics 212, one year of College Chemistry and junior status as a science major.

498 Special Problems 1-3 hrs. Fall, Winter
In this course a student works on a laboratory project or a reading project under the direction of a staff member. Prerequisite: Consent of instructor.

520 Analytical Mechanics 3 hrs. Fall
The topics studied include the dynamics of a single particle and the motion of a system of interacting particles. Techniques of vector analysis are used frequently, and conservation laws are developed and applied. The Lagrangian formulation of mechanics is introduced. Prerequisite: Physics 211, Math 223. (The latter may be taken concurrently.)

540 Electricity and Magnetism I 3 hrs. Winter
This is a theoretical course providing a thorough investigation of electric and magnetic fields. The applications of the theorems of Stokes and Gauss are emphasized, and Maxwell's equations are developed. Prerequisites: Physics 212, Math 223.

541 Electricity and Magnetism II 3 hrs. Spring, Summer
This course is a continuation of 540 and is an elective for majors wishing advanced work in field theory. Maxwell's equations and their applications to topics such as time-dependent fields, wave guides, and radiation will form the principal topics of the course. Prerequisite: Physics 540.
552 Applied Spectroscopy 3 hrs. Winter

This is a combined class and laboratory course on methods of emission spectroscopic analysis. The topics studied include the history of spectroscopy, the origin of line spectra, spectrographic instruments, and modern techniques of qualitative and quantitative analysis. Prerequisite: Physics 111 or 211 or consent of instructor.

560 Modern Physics I 4 hrs. Fall

This course includes an introduction to quantum mechanics with selected applications, including one-dimensional potentials, the harmonic oscillator, one-electron atoms, and the helium atom. A knowledge of elementary differential equations is assumed. Recommended for seniors. Prerequisites: Physics 212 and 520 or consent of instructor.

561 Modern Physics II 4 hrs. Winter

Here the quantum theory covered in Physics 560 is applied to several areas of atomic and nuclear physics. The topics covered include atomic shell structure, atomic spectroscopy, X-rays, collision theory, general properties of nuclei, the nuclear two-body problem, nuclear reactions and nuclear models. Prerequisite: Physics 560.

563 Introduction to Solid State Physics 3 hrs. Winter

This course is designed to acquaint the student with the basic techniques for describing the structure and properties of solids. After an initial study of symmetry and crystal structure the following topics are treated: the cohesion of solids; X-ray and neutron diffraction; the elasticity of solids; lattice vibrations; the thermal and electrical properties of solids, with particular emphasis on metals. Prerequisite: Physics 560, or consent of instructor.

566 Advanced Laboratory 2-3 hrs. Fall, Winter

The objectives of this course are to provide the student with experience in the use of modern laboratory equipment and with a better understanding of several important physical phenomena. The student will select experiments from a list covering three areas: atomic, solid-state, and nuclear physics. A portion of the semester may be devoted to studying a problem in depth. The course consists of two or three three-hour laboratory periods each week. The course may be repeated for credit. Prerequisites: Physics 342 and either Physics 560 or Physics 360 (560 or 360 may be elected concurrently with 566).

572 Techniques in the Use of Radiation and Radioisotopes 2 hrs. Winter

Increasing use of radioisotopes and radiation in research in biology, chemistry and physics make it necessary to provide formal training for graduate students and advanced undergraduates in the principles and practices of safe radioisotope use. The course is interdisciplinary in content and consists of one lecture and one laboratory per week. It does not count toward a physics major or minor. Prerequisites: one year of college chemistry and one year of college physics.

598 Selected Topics 1-4 hrs. Fall, Winter

This course affords an opportunity for advanced students with good scholastic records in Physics to pursue independently the study of some subject of interest to them. Prerequisite: Consent of the instructor.
Political Science

Courses in the Department are designed to prepare a student to: (1) become a functioning citizen; (2) become a teacher of government or civics; (3) become a governmental employee or officer; (4) understand the part government plays in every day business or other activities; (5) develop sound methods of investigation and reflection as well as the ability to evaluate political information critically; (6) understand the role which individuals and organized groups can play in the political process; and (7) appreciate the relationship of the study of government and public affairs to other social sciences.

A major in Political Science consists of a minimum of 30 semester hours of work in the Department. A minor consists of 20 semester hours in the Department. The following are required courses for majors and minors:

The major core requirements are:

200 National Government
250 International Relations
340, 341, 342, 343, or 344 (choose one) Foreign and Comparative Political Systems
One course in Theory and Methodology (except 590 and 591)

Students who may become majors are encouraged to take 100, Introduction to Political Science, as their first course in the Department.

The courses taken by the student to complete his 30 hour major may not include more than 16 hours in any one field including the core requirement in that field.

A minor shall take a minimum of one course in two of the following fields:

American Political System
International Relations
Foreign and Comparative Political Systems
Political Theory and Methodology

Requirements may be waived with the written permission of the Chairman of the Department.

Students planning to use this major to meet teacher certification requirements are required to take SSCI 300-Teaching of Social Studies in the Secondary Schools (See Social Science p. 211).
The Department of Political Science cooperates with the College of Business in offering a curriculum in Public Administration designed for students planning careers in the public service or in other employment where their work will bring them into continuing contact with governmental agencies and activities. The student may take a Bachelor of Arts or Science Degree with a Major in Political Science and a Minor in Business, or a Bachelor of Business Administration Degree consisting of a Business Administration Major plus a Minor in Political Science. For further details see Business Administration: Related Majors.

A program of graduate study leading to the Degree of Master of Arts is offered by the Political Science Department. For information on courses offered, see the Graduate Bulletin.

The Honors Program in Political Science provides an opportunity for students to earn the Bachelor's degree with Honors in Political Science. To be eligible, a student must have sophomore standing, a better than “B” average, and a willingness to do original and independent work. Students interested in the program should consult the departmental Honors Advisor.

The Institute of Public Affairs is involved in a number of activities designed to promote research and develop interest in public affairs. In this connection it strives to (1) contribute to the knowledge of political science; (2) encourage faculty members to participate in research and discussion; (3) train graduate and undergraduate students through participation and research; (4) communicate to interested public officials and citizens the knowledge of the academic community; and (5) make available data processing equipment for training and research. For further information see Robert W. Kaufman, Director, Institute of Public Affairs.

100 Introduction to Political Science 3 hrs.

An introduction to those concepts useful for an understanding of politics. These concepts and their interrelationships will be examined in the context of contemporary political systems.

AMERICAN POLITICAL SYSTEM

200 National Government 3 hrs.

An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions.

202 State and Local Government 4 hrs.

A study of the institutions, the problems and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

204 Politics of Race 3 hrs.

Examines the sources of racial conflict and the dominant and alternative models of American social organization. Special emphasis is placed on the psychology of racial conflict in the American political system.

300 Urban Politics in the United States 3 hrs.

A study of those factors having an impact on the governing of American cities, including social and economic conditions in the cities, the organization of local political systems, and the actions of the state and federal governments. The city will
be viewed as a center of economic and social problems that necessitate political activity and as a laboratory for the advancement of general knowledge of politics. (Note: Not to be taken by students who have had the discontinued course Local Government 304).

304 Political Perspectives of Black America

3 hrs.
Analyzes the development of black political perspectives and activities in the United States, with particular reference to the contemporary period. Prerequisite: 204.

310 Political Parties and Pressure Groups

4 hrs.
An introduction to the theories and practice of politics. The course considers the nature of politics, organization and functions of political parties, and the role of pressure groups on policy development. Parties and groups are related to the legislative process and to the operation of the political system.

311 Legislative Process

3 hrs.
A study of the politics of legislative bodies. Attention is given to theories and practice of legislative behavior, representative systems and democratic procedures in law making. The role of political parties and interest groups is emphasized. The executive, the bureaucracy and the courts are studied as influences on the development of public policy.

312 Public Opinion and Voting Behavior

3 hrs.
Introduction to the theory of public opinion and techniques for its measurement. The role of mass communication and propaganda in influencing public opinion and public policy. A study of public opinion and other factors entering into the voting behavior of citizens.

320 The American Judicial Process

4 hrs.
An introduction to the politics of the American judicial process. The course will examine the judicial function generally with particular attention on the decisional processes, process participants, state and federal court structures, recruitment and selection of judges, bases of judicial behavior, policy making, and impact of judicial decisions.

330 Introduction to Public Administration

3 hrs.
An introductory course in the administrative process in the public service. Special attention given to the environment and politics of administration, the role of the chief executive and the legislature. Detailed consideration of personnel and financial problems of administration.

332 The Chief Executive

3 hrs.
A study of the increasing importance of the chief executive in American governments at all levels. The roles, responsibilities, and powers of the chief executives are analyzed and the centrality of the executive in the political process is stressed.

504 Making of Public Policy in the U.S.

3 hrs.
A study of the formation of public policy at the local, state, and national levels with emphasis on the impact of decision processes upon policy outcomes.

506 Problems of American Government

3-4 hrs.
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. Topics will vary from semester to semester and students may repeat the course.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>520</td>
<td>Constitutional Law</td>
<td>3 hrs.</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>522</td>
<td>Civil Liberties and Civil Rights</td>
<td>3 hrs.</td>
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<td></td>
<td>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.</td>
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<tr>
<td>524</td>
<td>Judicial Behavior</td>
<td>3 hrs.</td>
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<td></td>
<td>Role of the judiciary as policy maker. Study of judicial behavior and decision making processes utilizing modern research tools for analysis.</td>
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<tr>
<td>526</td>
<td>Administrative Law and Public Regulation</td>
<td>3 hrs.</td>
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<td></td>
<td>A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant aspects of the social and economic life of the nation. Special attention is paid to the extent of governmental regulation and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: 200 or a course in Economics.</td>
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<tr>
<td>530</td>
<td>Problems in Public Administration</td>
<td>2-4 hrs.</td>
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<td></td>
<td>Consideration of issues and problems of current interest in the field of public administration. The course is intended to provide advanced work for undergraduates and to serve as an introduction to the field for graduate students without previous training in public administration.</td>
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<tr>
<td>532</td>
<td>The Bureaucracy</td>
<td>3 hrs.</td>
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<td></td>
<td>An analysis of the role of public bureaucracies in the decision process of government.</td>
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<tr>
<td>534</td>
<td>Administrative Theory</td>
<td>3 hrs.</td>
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<td></td>
<td>A study of descriptive theories of organizational and administrative behavior relevant to governmental administrative agencies. Theories of complex formal organizations, decisional theories and systems theories will be analyzed.</td>
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**FOREIGN AND COMPARATIVE POLITICAL SYSTEMS**

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<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>340</td>
<td>West European Political Systems</td>
<td>4 hrs.</td>
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<tr>
<td></td>
<td>Considers the organization, political behavior and decision-making process of the major countries of West Europe, including Britain, France and Europe. Political trends and forces challenging and reshaping democratic institutions are examined.</td>
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<tr>
<td>341</td>
<td>African Political Systems</td>
<td>4 hrs.</td>
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<td></td>
<td>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.</td>
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</tbody>
</table>
Asian Political Systems
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.

Latin American Political Systems
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.

Soviet and East European Political Systems
The governmental organization and political structure of the Soviet Union and the states of Eastern Europe. Special attention is directed to the Communist Party and its relationship to the organization of the state. The social and economic bases of the current system are stressed.

Western Democratic Systems
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.

Administration in Developing Countries
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.

Politics and Institutions of South Asia
Twentieth century experiments in Asian democracy are analyzed in India and Pakistan. Consideration is given to historical origins and contemporary problems. Particular emphasis is on the dynamics of the political process, the place and nature of ideologies, patterns of leadership, the quest and adaptability of political parties, the quantitative and qualitative aspects of articulate interests, the limits of political communication, methods of decision-making the implementation of rules and the available devices for conflict resolution.

The Military and Political Systems
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.

Theories of Political Development
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.

Political Modernization of Japan and Korea
Intensive analysis of the political systems of Japan and Korea with developmental
Political Science

perspective. Their different political styles will be compared. Their different rates of
development will be compared in terms or performance of the various political func-
tions.

548 Asian Communism

Comparing several communist states and communist parties in non-communist
states of Asia in terms of their ideologies, revolutionary tactics, goals and achieve-
ments. Organized as a pro-seminar.

549 Problems of Foreign Political Systems

Course will consider selected problems of the governments and political systems
of Western and Eastern Europe, Asia, Africa, and Latin America. The specific prob-
lems, topics, and countries to be studied will be announced each semester. May be
repeated.

INTERNATIONAL RELATIONS

250 International Relations

A study of the nature of the international community and the forces which pro-
duce cooperation and conflict. Particular attention is given to analyzing power in
terms of its acquisition and uses.

350 American Foreign Policy

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

Explores systems, methods, and agencies developed by states for meeting their
common problems. Examines also the legal relations of nations in war and peace,
international legal theory and institutions. Emphasis is placed on the United Nations
and regional political, military, and economic agencies.

552 Studies in International Relations

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

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 reso-
lution and UN peace-keeping efforts; specific UN accomplishments in maintaining
a dynamic international equilibrium; UN weakness and the future of world organi-
zation.

555 International Law

The theory, sources, development, and general principles of international law,
and the relationship of law to the dynamics of international politics. Decisions of
international and municipal tribunals and the practices of states will be used to
demonstrate the basic rights and obligations of states in time of peace and war. Such
topics as recognition of states, diplomatic practice, treaties and neutrality will also
be discussed.
556 Comparative Foreign Policy 3 hrs.
Analysis of foreign policy theories and practices in selected nations. Particular emphasis is given to the interactive process of conflict and competition, cooperation and compromise in the pursuit of national interests.

557 Studies in American Foreign Policy 3-4 hrs.
The course treats American foreign policy as a process and emphasizes both policy formation and policy execution through the vehicle of specific case problems, such as: the nature and role of foreign policy, Congress and foreign policy, the role of the military, the United Nations and American foreign policy, and changing American attitudes on the objectives of foreign policy.

POLITICAL THEORY AND METHODOLOGY

360 Introduction to the History of Political Theory I 3 hrs.
A survey of significant political theories and ideologies. Emphasis is placed on post-Socratic Greek theories, and the characteristic theories of the Medieval, Renaissance, and Reformation periods.

361 Introduction to the History of Political Theory II 3 hrs.
A survey of significant political theories and ideologies. Emphasis is placed on the Enlightenment, the Nineteenth and early Twentieth Centuries.

366 Introduction to the Scope and Methods of Political Science 3 hrs.
A consideration of the nature and scope of political science and various approaches to the study of politics and their methods, primarily the application of scientific methodology to political inquiry.

560 Comparative Political Ideology 4 hrs.
A consideration of the concept of ideology and significant classical and contemporary ideologies, including their nature, causes and functions in various political systems.

561 Contemporary Political Theory 4 hrs.
An examination of contemporary theories of politics. An attempt will be made to delineate the most important recent developments in the construction of theories of political systems.

562 Modern Democratic Theory 3 hrs.
The course consists of two parts. First, a consideration of 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.
390 Research Methods

Study of the formulation of research questions, the design of research, the methods of data collection, and the procedures for analyzing data concerning political institutions and behavior. The course is primarily designed for graduate students in political science, but it will open to undergraduates planning to pursue graduate studies. Undergraduates should obtain the permission of the instructor to enter the course.

391 Statistics for Political Scientists

An introduction to statistical reasoning with particular reference to research on political institutions and behavior. This course will emphasize bivariate statistics, but will include a brief introduction to multivariate analysis. No mathematical prerequisite is required.

SPECIAL STUDIES

370 Issues in Contemporary Politics

This course is designed for the study of contemporary political problems. It is intended to provide opportunity for the study of political phenomena normally beyond the scope of regular departmental offerings. Essentially the course relates the theory and principles of political science to practical politics.

The course may be applied to the appropriate field distribution requirement. Topics will vary from semester to semester. Students may repeat the course for credit.

490 Political Science Honors Seminar

An undergraduate seminar for honor students and others admitted by consent of the Department Honors Committee. The content of the seminar varies and will be announced in advance. May be repeated. Prerequisite: Admission by invitation by Departmental Honors committee.

492 Political Science Honors Research 2-3 hrs.

Honor students, with the guidance of a faculty advisor, conduct research and write the Honors Paper on a topic of individual interest. Prerequisite: Membership in the Political Science Department Honors Program.

598 Studies in Political Science

An opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Prerequisite: Approval of Chairman of Department or instructor.
Psychology

Fred Gault, Chairman
Eston J. Asher
Howard Farris
Frank A. Fatzinger
Robert Hawkins
Wade Hitzing
Bradley Huitema
Ronald Hutchinson
Fred Keller

Louise R. Kent
Neil D. Kent
Chris Koronakos
David O. Lyon
Richard Malott
Jack Michael
Paul Mountjoy

John Nangle
Hermann Peine
Malcolm Robertson
Richard Schmidt
Arthur Snapper
Robert M. W. Travers
Roger Ulrich

All majors are required to complete the departmental core curriculum which consists of (a) a minimum of 28 hours in psychology including 150, 160, 250, 260, 350, 360, 450, 460, and (b) a minimum of 8 hours of mathematics or 4 hours of mathematics and Philosophy 320 and Philosophy 321.

We recommend that psychology majors elect one of the following minors: Philosophy (including four of the following courses—Philosophy 220, 320, 321, 322, 323, and 330), Biology (including four of the following courses—Biology 100, 210, 219, 306, 317, 342, 343, 502, 505, and 511), Mathematics, Physics, or Chemistry.

The secondary school teaching major is designed to train secondary school teachers of psychology as behavioral scientists. Students who elect this program are required to complete, in addition to the departmental core curriculum, (a) Psychology 505 or Psychology 517 and (b) a secondary school teaching minor in biology, chemistry, mathematics, or physics.

A minor in psychology (for other than business or education students) consists of Psychology 150, 160, 250, 260, and 350. A minor for business students consists of fifteen hours including Psychology 150, 160, 250, and 260.

A secondary school teaching minor in Psychology consists of Psychology 150, 160, 250, 260, 350, and 505 or 517. Note: Psychology 380 may be substituted for either 250 or 260. Students with a teaching minor in Psychology are recommended to complete a secondary school teaching major in biology, chemistry, mathematics or physics.

ALL PSYCHOLOGY CREDIT TRANSFERRED FROM OTHER SCHOOLS WILL COUNT TOWARD FULFILLING THE REQUIREMENTS FOR A PSYCHOLOGY MAJOR OR MINOR: HOWEVER TRANSFER STUDENTS SHOULD CONSULT WITH A DEPARTMENTAL ADVISOR BEFORE TAKING ANY PSYCHOLOGY COURSES AT WESTERN MICHIGAN UNIVERSITY. Psychology students unable to sequence properly the required courses into their schedule should obtain permission from the departmental advisor to take some courses concurrently. The departmental advisors are Neil D. Kent and Richard W. Malott.

CORE COURSES

150 Psychology I: An Introduction to the Science of Behavior 3 hrs. Fall, Winter

An introduction to humanistic behaviorism: the use of the science of behavior to help people achieve their full potential as human beings. It is shown how the environment has a major influence on the way we are and how the environment can be changed so that we can become the kind of people we wish. Open to freshmen.
160 Personality and Developmental Psychology 3 hrs. Fall, Winter

The application of the principles of behavior in the analysis of complex behavior. An emphasis is placed on the topics of personality and developmental psychology. Elementary quantitative concepts needed to understand psychological literature will also be presented. Prerequisite: Psychology 150 (or 200 or 201) or permission of the instructor.

250 Behavior Modification I: Abnormal Behavior 3 hrs. Fall, Winter

An introduction to the modification of behavior. Particular attention is paid to variables related to the development, physiological bases, maintenance and modification of abnormal behavior. In addition an introduction to research methodology and selected basic research areas will be considered. Prerequisite: Psychology 160 (or 205, 220, or 270) or permission of the instructor.

260 Behavior Modification II: Normal Behavior 3 hrs. Fall, Winter

An analysis of complex human behavior with an emphasis on language and verbal behavior. Prerequisite: Psychology 250 and satisfactory performance on a placement examination.

350 Analysis of Behavior I: Stimulus Control of Behavior 5 hrs. Fall, Winter

An analysis of the stimulus control of both operant and respondent behavior. Areas covered are sensory processes, verbal behavior, limitation, concept formation, sensory scaling, perception, generalization, discrimination and psychophysics. Emphasis is placed on experimental methodology. This course consists of five laboratory hours and one lecture hour per week. Prerequisite: Psychology 250 and satisfactory performance on a placement examination.

360 Analysis of Behavior II: Contingencies and Consequences 5 hrs. Fall, Winter

A study of the various approaches to response measurement, experiment methodology, and theoretical interpretations of data in the areas of classical conditioning and operant behavior. This course consists of five laboratory hours and one lecture hour per week. Prerequisite: Psychology 350 or permission of the instructor.

450 Methodological Foundations of Psychology I: Principles 3 hrs. Fall, Winter

Interpretation and application of descriptive and inferential statistical techniques necessary in the understanding of data in behavioral research. Other topics will be the methodology of the experimental analysis of the behavior of individual organisms, the methodology of research with groups, non-statistical quantitative techniques, and philosophy of science. Prerequisites: Psychology 360 and Mathematics 260 or permission of the instructor.

460 Methodological Foundations of Psychology II: Applications 3 hrs. Fall, Winter

Class discussions, laboratory experiences and field work concerned with the teaching of psychology in high school. Prerequisite: Permission of the instructor.

ADVANCED COURSES

505 Teaching Psychology in the Secondary School 3 hrs. Fall, Winter

Class discussions, laboratory experiences and field work concerned with the teaching of psychology in high school. Prerequisite: Permission of the instructor.
512 Physiological Psychology 3 hrs. Fall, Winter
A survey of the relationships of physiological and behavioral processes. Lecture and laboratory. Prerequisite: Permission of the instructor.

513 Animal Behavior I 3 hrs. Fall
An examination of the topic of animal behavior and the analysis of various behavior categories. Emphasis will be placed on non-learning processes with comparisons of Ethological and Psychological methodologies.

514 Animal Behavior II 3 hrs. Winter
An in-depth study of research in animal behavior. Emphasis will be on data collection and analysis. An individual research project will be required. Both laboratory and field research will be discussed.

516 Conditioning and Learning 3 hrs. Fall, Winter
A study of the various approaches to response measurement, experimental methodology, and theoretical interpretations of data in the area of conditioning and learning. Prerequisite: Permission of the instructor.

518 Sensory and Perceptual Processes 3 hrs. Fall, Winter
A survey of sensory and perceptual phenomena with an emphasis on vision and audition. Lecture and laboratory. Prerequisite: Permission of the instructor.

535 Instrumentation in Psychology 3 hrs. Fall, Winter
A survey of problems in response measurement in experimentation. Lecture and laboratory. Prerequisite: Permission of the instructor.

542 Human Factors in Engineering 3 hrs. Fall, Winter
A survey of research on the adaptation of equipment, products, and environment to man's use. Prerequisite: Permission of the instructor.

574 Experimental Social Psychology 3 hrs. Fall, Winter
Methodology of research with groups with emphasis on experimental design and application. Lecture and laboratory. Prerequisite: Permission of the instructor.

595 History of Psychology 3 hrs. Fall, Winter
The historical and philosophical foundations of contemporary American psychology.

SEMINARS AND INDEPENDENT STUDY

397 Seminar in Contemporary Problems 1-5 hrs. Fall, Winter
Survey and discussion of selected topics in contemporary psychology. Prerequisite: Permission of instructor. May be repeated for credit.

398 Independent Study 1-5 hrs. Fall, Winter
This course provides an opportunity for independent reading and/or research under the direction of a faculty member. Prerequisite: Permission of instructor. May be repeated for credit.
597 Topical Seminar
A survey in depth and discussion of a research topic of current interest. Prerequisite: Permission of instructor. May be repeated for credit.

598 Special Projects in Psychology
Prerequisite: Permission of instructor. May be repeated for credit.

HONORS COURSE

151 Introduction to the Science of Behavior: Honors Section
This course is designed to provide an opportunity for more depth in reading, laboratory work, and report writing. Emphasis will be placed on the theoretical aspects of psychology. This course consists of three laboratory hours and two lecture-discussion hours. Enrollment by permission of the Honors College only.

SPECIAL COURSES

Three hours of introductory psychology is a prerequisite to all special courses.

205 Intermediate Psychology
This course is designed as an orientation for students who have had one or more psychology courses at institutions other than Western. An emphasis is placed on the basic principles of behavior and their applications to personality and developmental psychology. Elementary quantitative concepts needed to understand psychological literature will also be presented. This course is not open to students who have had Psychology 150 or 160. Prerequisite: One psychology course outside this department.

380 Psychological Testing in Education
An introduction to psychological testing with an emphasis on educational applications.

381 Psychological Testing in Business and Industry
An introduction to psychological testing with an emphasis on applications to business and industry. (A student may not receive credit for both 380 and 381).

510 Advanced General Psychology
Lecture and discussion of topics in the behavioral sciences. Prerequisite: Psychology 150.

517 Psychology of Learning for Teachers
A methods course 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 construction of objectives, selection and preparation of instructional material, programmed instruction, incentive learning and behavior problems. Practical application is stressed.

530 Statistics for Education
An introduction to basic procedures and concepts. (Not open to psychology majors).
College of Arts and Sciences

540 Industrial Psychology

Application of psychological principles to industry. An examination of employee selection, occupational analysis and classification, training, evaluation of performance, supervision, and working conditions.

580 Testing and Measurement in Education

Educational applications of testing and measurement procedures.

581 Personnel Selection and Placement

Application of testing procedures to selection and placement problems in industry. Prerequisite: Any course in Statistics.

Religion

The study of religion in a public university is universal in scope and theoretical in intent. It is universal rather than parochial because the course offerings are not confined to any particular religious tradition, such as the Judeo-Christian heritage peculiar to Western culture, but are attempts to consider the religious experiences and expressions of mankind. It is theoretical rather than practical in that students are challenged to learn and think about religion both critically and constructively. There is no explicit attempt to make the students more religious.

Since religion is a basic mode of experiencing, expressing and appropriating humanness, the study of religion can contribute to an appreciative awareness of that humanness. Thus its purpose is generally humanistic, at least as far as the education of undergraduates is concerned. The various courses which comprise the curriculum in Religion can serve to deepen the student's self-understanding both within the context of Western culture and in the light of cross-cultural perspectives. This humanistic emphasis should not, however, obscure the fact that courses in Religion can be useful to students who wish to continue the study of religion on a graduate level, to students who plan to go into professional religious work, or to students who need to deepen their knowledge of other cultures.

The data for the study of religion are drawn from many sources, including the disciplines of anthropology, archaeology, sociology, psychology, history, philosophy, and from the arts. But in the Department of Religion, these data are structured and interpreted in terms of an autonomous discipline which is specifically designed to consider the nature and history of man's encounter with the sacred. In the context of this discipline the data are approached in four different ways, and the courses are thus under four specific fields of study. In the Field of Historical Studies the focus is on the development of various religious traditions and on the development of religion in different periods and places. The field of Morphological and Phenomenological Studies approaches religious phenomena through the study of recurring religious patterns, forms or structures as they can be discerned regardless of time or place. This field is concerned with the structure of religion rather than with the
Religion

history of religion. The field of Methodological Studies is analytical and critical in its approach to religion. An important element in this field is a disciplined consideration of how to study religion. The field of Constructive Studies is especially concerned with the power of religion as it explores issues and proposals in the contemporary religious situation, the significance of new religious forms, and the religious possibilities for the future which emerge in and through ecumenical and cross-cultural perspectives.

REQUIREMENTS FOR MAJORS AND MINORS

A major in religion consists of a minimum of 28 hours and includes Rel. 200 (Introduction to Religion), two courses in the field of Historical Studies, and at least one course from each of the remaining three fields (Morphological studies, Methodological studies, constructive studies). Two of these courses should be at the 500 level.

A minor in religion consists of a minimum of 16 hours and includes Rel. 200 (Introduction to Religion). One course is required in the field of Historical Studies. The two remaining courses should be taken in two of the three remaining fields.

COURSE DESCRIPTIONS

200 Introduction to Religion 4 hrs.
An introduction to the study of religion emphasizing the historical and structural aspects of religion and developing the methodological and constructive issues involved in the discipline.

HISTORICAL STUDIES

300 Prehistoric and Primitive Religions 4 hrs.
The purpose of this course is to introduce the student to the religious life of prehistoric and primitive peoples. Primary attention will be placed on various religious forms created and used by these people. Such religious forms will include burial rites, mother goddess, sacrifices, pictographs, cave art, myths, ideas of the soul, initiation ceremonies, etc. In focusing upon the emergence and modifications of religious forms the religious continuity and discontinuity between prehistoric and primitive peoples will be indicated.

301 Protohistoric Religions: Ancient Near East, Greece and Rome, Meso-America 4 hrs.
Cities were once a new mode of human existence on the face of the earth, and they brought with them many new religious forms. This course will consider some of the major religious discoveries made in the urban centers of the Ancient Near East, Greece, Rome, and Meso-America with an attempt to find answers to questions such as: What is a city? What has man discovered about himself and his world through the experience of living in cities? Is the city itself a religious form?

302 Religion in the Indian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions native to India—i.e. Brahmanism, Buddhism, Jainism, and Hinduism. Particular Attention is paid to the continuities of motif and practice that allow one to speak of "Indian Religion" as a unified phenomenon with a single history. Means of instruction are, insofar as it is possible, primary texts in translation and archeological data.
302 Religion in the Chinese and Japanese Traditions  4 hrs.

A study of two important religious traditions in their historical continuity and overall unity taking each tradition separately. In each tradition a historical analysis reveals a number of rather diverse religions which coexist within the unity of a larger tradition. In China the formal religions of Confucianism, Taoism, and Chinese Buddhism, as well as the informal religious movements of "ancestor worship," family religion, and state religion will be studied. In Japan the formal religions of Shinto and Japanese Buddhism, as well as the informal religious factors of reverence for the dead, agricultural festivals, family religion, religious Taoism and Confucianism will be studied. An attempt is made to assess the meaning of religion in Chinese and Japanese history.

304 African Religions  4 hrs.

This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focusing on the myriad religious forms, e.g. idea of the soul, cosmology, initiation rites, etc. which have emerged during the long history of Africa. The course pays attention to religious forms which either came into being with or define a specific cultural stratum. For example, Hunters and Foodgathers, Horticulturalists, Agriculturalists, Nomadic Herders. Finally an attempt is made to see what changes Westernization has made in the appropriation by the Africans of their traditional religious symbols.

305 The Christian Tradition  4 hrs.

A historical survey of the development of Christianity with an emphasis upon its rites and symbols, its theological ideas, its institutional patterns, its continuity and discontinuities.

306 The Jewish Tradition  4 hrs.

A comprehensive survey of the development of Judaism from its pre-exilic roots to the present. Attention will focus on the problem of the nature and continuity of the Jewish religion within the context of Near Eastern, Greek, and Western culture.

307 The Islamic Tradition  4 hrs.

A study of Islam in its historical continuity and overall unity, from its appearance on the arabian peninsula to its later expansion. Topics to be covered will include Pre-Islamic influence, the life of Muhammed, the early Muslim community, and Koran and "tradition," prayer, pilgrimages, Muslim law, theology, mysticism, sect developments, and geographical expansion.

500 Historical Studies in Religion  2-4 hrs.

The topic to be announced in the 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: Special problems in prehistoric and primitive religions, Japanese, Chinese, and Indian Buddhism, The Protestant Reformation, Early and Medieval Christianity, Romantic Spirituality, 20th Century Neo-Orthodoxy, the Evolution of Modern Catholicism, the Occult Tradition.

**MORPHOLOGICAL AND PHENOMENOLOGICAL STUDIES IN RELIGION**

310 The Morphology and Phenomenology of Religion  4 hrs.

Method in the most general sense refers to a way of organizing data with a specific goal in mind. This course will attempt to organize selected religious data in terms of
forms (morphe) and structures (phenomenology). The specific purpose of the course will be to elucidate both the specificity of religious structures and their comprehensiveness. Types of data to be included are Divine forms, cultic practices, initiatory scenarios, religious symbols, etc.

311 Myth and Ritual

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

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 Adrogyne, Demons, Initiation, Vocation, The Eschaton, and Cosmic and spiritual regeneration will be identified and exemplified in particular works of literature.

510 Morphological and Phenomenological Studies in Religion

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: Divine Forms in West African religions, Christian rites and symbols, theology as a religious form, Sacred texts, sacrifice, initiation.

METHODOLOGICAL STUDIES IN RELIGION

320 The Philosophy of Religion

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

In calling mythology a “disease of language,” and religion an error founded on dreams, a projection of society, and Oedipus complex, etc. a number of great thinkers helped to found a discipline—and to endow it with some massive problems. This course will introduce students to these major thinkers and the contributions of their various fields; philology, anthropology, sociology, psychology, psychoanalysis, and even theology. Special attention will be devoted to the problem of the autonomy of the discipline of religion in relation to the “parental” human sciences.

520 Methodological Studies in Religion

Topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Philosophical and Cultural Approaches to Religion, Psychological and Sociological Approaches to Religion, Myth and Symbol in Religion and Literature, Theological Method, Hermeneutics and Exegesis.
521 The Teaching of Religion in the Public School 2 hrs.

This course focuses on methods and issues involved in the teaching of religion in the public school. Particular attention is given to the problems of its constitutionality, the distinction between the academic study of religion and religious instruction, and the question of meaning. Various approaches to the teaching of religion are critically evaluated. Teaching methods appropriate to the level of instruction, availability, organization, selection and use of materials will be discussed.

Required of all students following an Elementary or Secondary Education Curriculum which includes the academic study of Religions as a minor.

CONSTRUCTIVE STUDIES IN RELIGION

330 Studies in Contemporary Theology 4 hrs.

Topics such as the following will be studied: Radical Theology, Modern Catholic Theology, Ecumenical Theology, Christian-Marxist dialogue, etc. Radical theology involves a study of the issues involved in Death of God Theology as well as secular theology as represented by Catholic, Protestant, and Jewish thinkers. Modern Catholic theology involves a study of the problems and promises of the Church’s affirmative response to the reality of the modern world, particularly since Vatican II. Ecumenical theology involves a study of the issues which divide Christians and the attempt to resolve these issues in a conciliatory manner. The Christian-Marxist dialogue involves a study of the theological and ethical issues which separate a religious point of view, particularly a Christian one, from a Marxist’s view of the world as well as the similarities of these perspectives.

331 The Religious Quest in Modern Literature 4 hrs.

Several novels and plays are read as concrete and dramatized forms of different religious options or “quests” which students are challenged to evaluate in the context of their dramatic efficacy and power. A disciplined attempt is made to recognize secularized aspects of the Judeo-Christian tradition as well as the neo-pagan religious motifs of modern literature.

332 Religion and Social Ethics 4 hrs.

A study of the creative socio-ethical ideas, problems, and attitudes in religion with particular reference to modern revolutionary changes in family life, economics, politics, and culture.

530 Constructive Studies in Religion 4 hrs.

Topics to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: The nature and function of religion in contemporary society, the possibility of a post-Christian theology, a constructive theory of religious symbolism, the possibility of a religious humanism, religious dimensions of social evolution.
Courses are designed to give students a better understanding of the significant factors and processes of modern life, to meet the needs of students preparing to teach in the social science field, to prepare students to do graduate work in sociology, and to stimulate interest in and provide prereqquisite study for the profession of social work. All courses may be taken separately and taken in any order by students who have had the prerequisite courses.

For sociology majors or minors, any transfer credit in sociology without a stated equivalent must be evaluated by the Sociology Department. Students planning to major or minor in sociology should contact Helen Nelson, administrative assistant (2407 Sangren Hall), for further information and academic advising. Sociology majors enrolled in the undergraduate social work curriculum should see Robert Barstow, School of Social Work, A106 Henry Hall, for academic advising.

A major in sociology consists of a minimum of 30 hours. Sociology 200, 382, and 504 are required. Students entering before Fall 1971 have the option of taking either Soc. 382 or 582 to meet the methodology requirement for majors. Six hours of social work or anthropology courses may be counted toward the major.

A combined major in sociology and anthropology consists of a minimum of 30 hours. Soc. 200, 382, and 504, and Anthro. 210, 220, and 250 are required. Students entering before Fall 1971 have the option of taking either Soc. 382 or 582 to meet the methodology requirement for this major. At least 12 hours of course work in each field are required.

A minor in sociology consists of a minimum of 20 hours. Soc. 200 and 210 are required. Four hours of social work or anthropology courses may be counted toward the minor.

Soc. 500 and 580 are recommended for those planning to do graduate work in sociology.

The Center for Sociological Research has conducted studies of group dynamics, marital roles, race relations, voting behavior, migrancy, alcoholism, and mental health since it was established in 1956 within the Department of Sociology. As the research arm of the department, it aims: (1) to contribute to the field of sociology, (2) to assist and provide research facilities to faculty members engaged in research projects, (3) to enable students to participate in current research, and (4) to provide factual information for the community and the region.

Certain students majoring in sociology may spend one or two semesters at the Merrill-Palmer Institute in Detroit, receiving credit toward graduation at Western.

A limited number of departmental assistantships is available for qualified undergraduate and graduate students. Information concerning applications may be obtained from Helen Nelson (2407 Sangren).
THEORY

200 Principles of Sociology 3 hrs. Fall, Winter
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.

500 History of Social Thought 3 hrs. Fall
A critical survey of the social thinking of outstanding students of society from Plato to modern social scientists. Prerequisite: 9 hours of sociology.

504 Sociological Theory 3 hrs. Fall, Winter
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: 9 hours of sociology.

SOCIAL PROBLEMS

210 Modern Social Problems 3 hrs. Fall, Winter
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. Prerequisite: Soc. 200.

220 Rural Sociology 3 hrs. Winter
See course description page 401.

312 Criminology 3 hrs. Fall, Winter
A study of crime as a social problem. Course includes an analysis of causative factors in crime, a study of American police and court systems, survey of problems of penology, and consideration of crime prevention. Prerequisite: Soc. 200.

314 Race Relations 3 hrs. Fall, Winter
A study of race and ethnic relations, stressing the meaning of race and ethnicity; the nature and roots of prejudice, discrimination, and other forms of inter-group conflict; and the effectiveness of various strategies for dealing with the problems. Prerequisite: Soc. 200.

510 Studies in Social Problems: Variable Topics 3 hrs. Fall
An examination of a selected area of concern in social problems not intensively covered in other courses. The focus of the course will be substantive, as well as theoretical and methodological. Topics may include such areas as poverty, mental illness, narcotic addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: Soc. 200 and 210 or consent of instructor.

512 Seminar in Criminological Theory 3 hrs.
A critical analysis and evaluation of the leading theories concerning the causes of crime, the nature of criminal personality and the treatment of convicted offenders. Prerequisite: Soc. 312 or 514 or consent of instructor.
514 Juvenile Delinquency and the Community 3 hrs. Fall, Winter

A study of juvenile delinquency as a social problem. Extent, causative factors, methods of treatment, and programs of prevention and control are covered. When feasible community resource people are invited to participate. Prerequisite: Soc. 200 or 600*.

515 Social Conflict 3 hrs. Winter

An examination of causes of social conflict, strategies in pursuing conflict, and forms of conflict resolution in conflicts between individuals, between groups, and between nations. Prerequisite: 15 hours of sociology, political science and/or economics.

SOCIAL PSYCHOLOGY

320 Introduction to Social Psychology 3 hrs. Fall, Winter

An introduction to social psychological theory and research, covering the interaction of individuals and the relationships of individuals to groups. Includes such topics as social influence, attitudes, socialization, and personality. Prerequisite: Soc. 200.

520 Studies in Social Psychology: Variable Topics 3 hrs. Fall, Winter

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.

523 Contemporary Social Movements 3 hrs. Fall

A study of the origins, growth, and place in contemporary society of selected social movements, including communism, fascism, Ku Klux Klan, the Townsend movement, and the like. Prerequisite: Soc. 200 or 600.

525 Social Psychology of Education 3 hrs. Fall

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.

532 Introduction to Comparative Sociology 3 hrs. Fall

An introduction to the history, major theoretical perspectives and methodological issues associated with cross-national and cross-cultural studies. Particular emphasis will be placed upon those studies which have been central to the development of the comparative approach in sociology. Prerequisite: 9 hours of sociology or consent of instructor.

*600 Social Dynamics of Human Behavior is a foundational course in sociology at the graduate level.
353 The City 3 hrs. Fall
A survey of the forms and functions of cities, past and present. Special emphasis will be given selected topics, such as the impact of industrialization, political and economic processes, urban planning, and urban problems. Prerequisite: Soc. 200.

355 Social Structure of Black America 3 hrs. Winter
A study of social structure and interpersonal relations in black communities, including historical and anthropological perspectives. The course will focus selectively on family, religious, educational, political, legal and economic institutions. Emphasis will be given to the patterned consequences of white domination in the society. Prerequisite: Soc. 200.

552 Sociology of Aging 3 hrs.
An examination of the process of aging in American society, with particular emphasis on the periods of late maturity and old age. Consideration will be given to theories of aging and the social implications of age grading, the meaning of work and retirement, and the status and roles of the aged. Prerequisite: 6 hours of sociology including Soc. 200 or 600.

554 Sociological Analysis of Population 3 hrs. Fall
Application of selected sociological theories to the analysis and interpretation of population characteristics and processes such as size, growth, social structure and social change. Prerequisite: 6 hours of sociology or consent of instructor.

556 Social Stratification 3 hrs. Winter
An analysis of the 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.

557 Changing Social Systems—Sub-Saharan Africa 3 hrs. Winter
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems resulting from the impact of European culture and other contemporary world influences. Prerequisite: Soc. 200 or 600 or Anthro. 220 or consent of instructor.

558 Social Forces in Underdeveloped Areas 3 hrs. Winter
An examination of the social factors which influence the growth of industrialization in underdeveloped areas. These factors include cultural tradition, social stratification and the problems involved in a shift from rural to urban residency. Prerequisite: Soc. 200 or 600, or Anthro. 220 or consent of instructor.

559 Studies in Ethnic Relations: Designated Areas 3 hrs. Fall
An investigation of the structure and dynamics of tribal, ethnic, and 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.
INSTITUTIONS

371 Dynamics of Contemporary Social Change
3 hrs. Fall
A study of sources, mechanisms, and consequences of social change; forces promoting or impeding change; and planning for change in contemporary societies. Prerequisite: Soc. 200.

376 Sociology of Education
3 hrs. Fall, Winter
A study of contemporary educational problems from a sociological perspective. Includes such topics as race relations in the schools, teacher professionalization, classroom behavior, teacher organizations, and studies on modern youth culture. This course is intended as a general introduction to sociology of education for sociology majors and other interested students. Prerequisite: Soc. 200.

549 (Anthropology) Anthropology of Education
3 hrs. Fall
See Department of Anthropology for course description.

571 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.

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.

573 The Sociology of Political Behavior
3 hrs. Winter
Systematic sociological theory and research applied to the study of political organization and behavior in the United States and in selected countries abroad. Such topics as political parties, voting, bureaucracy, and political ideology will be considered. Prerequisite: 9 hours of sociology and/or political science.

574 Sociology of Religious Institutions
3 hrs. Winter
A study of the social role of religious institutions and beliefs, with particular reference to the United States. The course considers social factors affecting the development of different types of religious institutions and the influence of religion on American society. Prerequisite: Soc. 200 or 600.

575 Industrial Sociology
3 hrs. Fall, Winter
The sociological study of industrial organizations and of the process of industrialization. The impact of technology and related factors on work organizations, the structure and operation of labor unions, and the changes occurring in industrial society are discussed. Prerequisite: Soc. 200 or 600.

576 Advanced Sociology of Education
3 hrs. Fall
Advanced studies in sociology of education, emphasizing important theoretical and methodological issues, including in-depth examination of such substantive areas as: socialization, teacher-pupil interaction, teacher role, the school as a social institution, and the structure of the school system as it is affected by the community and the society at large. Prerequisite: 12 hours of sociology or consent of instructor.
577 Comparative Institutional Studies 3 hrs.
A comparative study of the structure and functioning of selected aspects of culture in America and other selected countries, such as the legal structure, family and educational systems, the welfare structure, stratification, economic institutions, political organization, the role of science and the basic character of social change. Prerequisite: Soc. 200 or 600.

578 Sociology of Law 3 hrs.
An examination of legal organization, the legal profession, and legal norms in the United States and other western societies. Emphasis will be placed upon the relationship between the legal system and the society in which it functions. Prerequisite: Soc. 200 or 600.

RESEARCH

382 Methods of Sociological Inquiry 5 hrs. Fall, Winter
An introduction to quantitative and qualitative methods of empirical research in sociology and the description of findings. Theory and techniques of research design are considered, including 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.

580 Sociological Statistics I 3 hrs. Fall, Winter
An introduction to statistical reasoning with particular reference to social science research. The course will view statistics as an aspect of scientific inquiry and consider problems of analysis and interpretation of typical social science data. While no mathematics prerequisite is required, a course in college algebra will be helpful.

582 Research Methodology 3 hrs. Fall, Winter
An introduction to the basic methods of empirical research in sociology. Theory and techniques of research design, formulating and testing hypotheses, sampling, and the collection, analysis and interpretation of data are studied. Prerequisite: 9 hours of sociology.

MARRIAGE AND FAMILY

390 Marriage and Family Relations 3 hrs. Fall, Winter
A sociological analysis of the structural and interactional aspects of marriage and family groups in contemporary society, with particular emphasis on the American middle class. Consideration is given to change and diversity in family patterns, norms, and values, and to factors contributing to family unity or disorganization. Prerequisite: Soc. 200.

590 The Family as a Social Institution 3 hrs. Winter
The family viewed in historical and cross-cultural perspectives. A structural-functional analysis of the family institution and the relationship between the social structure of society and the family system. Emphasis is placed on change and comparative analysis. Prerequisite: Soc. 200 or 600.
592 Family Life Education and Counseling  
Provides the student with working knowledge of the methods and materials appropriate in the school, the church and other social situations, for working with individuals and small groups who desire preparation for marriage and parenthood. Some attention will be given to the techniques for handling counseling opportunities arising out of these teaching situations. Prerequisite: Soc. 200 or 600, or consent of instructor.

INDEPENDENT STUDIES

498 Honors Study  
A program of independent study (reading or research) to provide the honors student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. May be repeated once. Permission to register must be obtained from the department chairman.

499 Honors Seminar  
Investigation of selected topics in seminar sessions by advanced undergraduates. Registration by special invitation from the department chairman.

598 Readings in Sociology  
Offers sociology majors with good scholastic records an independent program of specialized study in an area arranged in consultation with the instructor. One to two hours credit per semester, cumulative to four hours. Prerequisite: Consent of instructor and the department chairman.
Communication is the most complex aspect of human behavior. Impairments in the process of communication—speech, language, and hearing—leave myriad problems in their wake. The child with a communication problem may encounter overwhelming obstacles to learning and may find it difficult to establish relationships with other children which are essential to growing up to a healthy, stable adulthood. The adult who acquires a speech or hearing disorder may experience a variety of social problems. Speech pathology and audiology is the area of professional specialization which has developed out of concern for persons with disorders of communication.

The curriculum is designed to reflect standards of the American Speech and Hearing Association, which requires a master’s degree in the field or its equivalent for membership and for professional certification by that national organization. This program provides the preprofessional foundation for the necessary graduate education and training.

Students interested in careers as clinicians in the public schools must also fulfill the Michigan State Department of Education requirements for school clinicians. The appropriate undergraduate program for those students is the Special Education Curriculum, on page 396.

The Department of Speech Pathology and Audiology maintains certain standards for academic and clinical work which students must meet. Detailed information about these standards and other departmental policies as well as additional information about the undergraduate and graduate programs may be obtained from the department office.
A. Minimum Hours required for this curriculum

B. Course Requirements

1. General studies requirements as described on page 25 of this catalog must be met.

2. Psychology

3. Teacher Education and Special Education
   - Human Development and Learning 250
   - Education of Exceptional Children 530
   - Behavior Problems in School-Age Children 588

4. Speech Pathology and Audiology
   - Introduction to Communication Disorders 200
   - Orientation to Clinical Practice 201
   - Anatomy and Physiology of Speech 202
   - Speech and Language Development 203
   - Phonemics 204
   - Bases of Speech and Hearing 300
   - Phonemic Disorders 351
   - Phonatory Disorders 352
   - Fluency Disorders 353
   - Language Disorders in Children 354
   - Hearing Disorders 355
   - Introduction to Audiometry 357
   - Practicum I 400
   - Practicum II 401
   - Electives in major area

5. Physical Education

C. One academic minor.

D. During the program the student must satisfactorily complete clinical requirements as specified by the Department of Speech Pathology and Audiology.

E. The candidate must satisfy the requirements for either the A.B. or B.S. degree.

200 Introduction to Communication Disorders
An introduction to the professions of speech pathology and audiology with emphasis on the communication and associated problems of people served by the clinical speech pathologist. Prerequisite: Sophomore standing.

201 Orientation to Clinical Practice
An introduction to the clinical procedures, methodology, and instrumentation employed in the treatment of individuals with communication disorders. Demonstration therapy is included. Taken concurrently with 200. Not open to non-majors.

202 Anatomy and Physiology of Speech
The structural anatomy and physiology of the processes related to normal speech production. Major units include respiration, phonation, articulation, and the nervous system. Prerequisite: Sophomore standing.

203 Speech and Language Development
A study of the nature and development of the normal acquisition of speech and language. Prerequisite: Sophomore standing.
401 Practicum in Speech Pathology and Audiology II
Clinical experience in the management of speech, language, and/or hearing disorders. Prerequisite: 400.

300 Bases of Speech and Hearing
An introduction to the scientific study of speech production, perception, and reception. Speech is studied as an acoustic event, and modern developments in the recording and analysis of vocal utterances are examined. Prerequisites: 202, 204.

351 Phonemic Disorders
A detailed study of the nature of phonemic disorders; orientation to clinical management. Prerequisites: 200, 202, 204.

252 Phonatory Disorders
A detailed study of the nature of phonatory disorders; orientation to clinical management. Prerequisites: 200, 202, 300.

353 Fluency Disorders
A detailed study of the nature of fluency disorders; orientation to clinical management. Prerequisite: 200.

354 Language Disorders in Children
A detailed study of the nature of communication problems associated with congenital or acquired impairment of language function in children; orientation to clinical management. Prerequisites: 200, 202, 203, 204, 351.

355 Hearing Disorders
A study of aural pathology and the effects on hearings. Prerequisites: 200, 202, 300.

357 Introduction to Audiology
An introduction to the study of the measurement of hearing and to the field of audiology. Prerequisite: 200, 202, 300.

400 Practicum in Speech Pathology and Audiology I
Clinical experience in the management of speech, language, and/or hearing disorders.

401 Practicum in Speech Pathology and Audiology II
Clinical experience in the management of speech, language, and/or hearing problems. Prerequisite: 400.

455 Seminar in Speech Pathology and Audiology
Designed to provide an opportunity for qualified students to examine and discuss a subject area in a field of common interest. Prerequisites: senior standing.

550 Advanced Speech and Hearing Science
Theories of speech production, reception and perception are considered in this course from the point of view of experimental phonetics and experimental audiology. Prerequisite: 300, 357.
551 Neuropathologies of Speech  
2 hrs. Fall, Winter
This course is concerned primarily with surveying selected communication disorders associated with neuropathologies. Prerequisites: 200, 202, 203.

554 Speech and Hearing Therapy in the Schools  
2 hrs. Fall, Winter
Study of clinical work with speech- or hearing-disordered children in the school setting. Prerequisites: 351, 352, 353, 354, 355.

555 Speech and Language Development of Hearing Impaired  
3 hrs.
A detailed study of the problems of speech and language acquisition to the deaf and hard of hearing child; orientation to clinical management. Prerequisite: 357.

556 Aural Rehabilitation  
2 hrs. Fall, Winter
Orientation to the clinical management of communication problems associated with auditory impairment. Prerequisites: 355, 357.

557 Psychosociological Aspects of Hearing Impairment  
3 hrs.
This course is designed to acquaint the student with the educational, psychological, sociological and vocational problems and needs of the deaf and hard of hearing. Prerequisite: 357.

595 Oral Language Development and Dysfunction  
2 hrs.
This course is designed to provide the student preparing to be a classroom or special teacher with information about the nature of oral language, its development, conditions associated with dysfunction, and the principles and methods of treatment for children with specific speech or language disorders. Not open to students who have had Speech Pathology and Audiology 200 or its equivalent.
The School of Social Work offers both an undergraduate curriculum and a graduate-professional program. The undergraduate curriculum is designed to offer social welfare content as part of the student's Liberal Arts Education; to provide preparation for graduate training in social work and to prepare students for beginning level social work practice. The graduate-professional program is designed to educate students for direct service and leadership positions in the field of social welfare.

Students enrolled in the undergraduate social work curriculum are required to complete a major consisting of 32 hours. A minor consisting of a minimum of 15 hours is offered for students in other curricula.

Offerings in the Social Work major proceed in three substantive components. The first component provides knowledge about social welfare systems and policies. The second deals with psychological and sociological theories concerned with individual, family, group organization and social systems. The third component focuses upon social work practice content.

The graduate-professional program focus is on contemporary social problems and problem solving processes. It provides a two year curriculum leading to a Master's degree in social work. Further information about this program can be found in the Graduate Catalog.
UNDERGRADUATE SOCIAL WORK CURRICULUM

A. Minimum hours required for graduation 122 hrs.

B. Course Requirements

1. General Studies requirements
2. Requirements for the undergraduate social work major 32 hrs. (May be taken only by students registered in the Social Work curriculum)
   - 200 Introduction to Social Service 3
   - 300 Social Welfare as a Social Institution 3
   - 301 Social Issues and Program Analysis 3
   - 350 Individual and Family Behavior 3
   - 351 Group, Community and Organizational Behavior 3
   - 400 Social Work Practice: Values and Problem Analysis 3
   - 401 Social Work Practice: Intervention and Evaluation 3
   - *410 Field Experience and Seminar I 4
   - *411 Field Experience and Seminar II 4
   - 533 Dynamics of Race and Culture for Social Work Practice 3

   (Note: There is no minor required of the student majoring in social work. In consultation with an adviser the student is expected to liberally select offerings from the total university program, relating these to his or her particular career objectives.)

3. Physical Education 2-8 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, Philosophy, Political Science, Psychology, Sociology. The following 500 level courses are also available as electives for both graduate and undergraduate students:
   - *412 Projects in Social Work 4
   - 561 Community Development in Selected Countries 3
   - 562 Community Organization in Urban Areas 3
   - 563 Social Work Concepts in Rehabilitation 3
   - 565 Correctional Process and Techniques 3
   - 566 Social Service in the Schools 3
   - 572 Community Agency Resources 2
   - 598 Readings in Social Work 1-4

5. Requirements for the undergraduate social work minor 15 hrs.
   - 200 Introduction to Social Services 3
   - 300 Social Welfare as a Social Institution 3
   - 301 Social Issues and Program Analysis 3

   plus
   Two of the following Social Work courses: 6
   - S.W. 350, 351, 533, 561, 562, 565, or 566.

C. The student must satisfy the requirements for the A.B. or B.S. degree.

*Applications required at least six weeks prior to assignment.
COURSE DESCRIPTIONS

200 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. (Prerequisite to all social work courses).

300 Social Welfare as a Social Institution 3 hrs.
Course objective is to enable the student to develop a perspective on the growth of welfare services and their relationship to welfare needs. It is a critical examination of the forces (e.g., social, economic, historical, political, and philosophical) that have led to the institutionalization of social welfare. (Prerequisite: S.W. 200).

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. (Prerequisite: S.W. 200 & 300).

350 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. 200).

351 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 concepts, system 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. (Prerequisite: S.W. 200 and 350).

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 or role and status and interrelationships of client action, service, and target systems. The student learns to identify problems at various system levels (individual, small group, community and organization); to recognize and seek varying perceptions of a given problem; to assess the accuracy of information needed; to order and interpret information from different theoretical perspectives; to write a diagnostic statement; to determine priorities and service limits; and to formulate objectives. (Prerequisites: S.W. 200, 300, 301, 350 and 351).

401 Social Work Practice: Intervention and Evaluation 3 hrs.
Taken concurrently with S.W. 411. Focuses upon implementation of strategies at various system levels (i.e., individual, group, community and organization); the mutuality, structure and processes of interventions; and evaluation and measure-
Social Work

Content includes the social work contract; change processes, tactics, methods, procedures and techniques (e.g. principles of interviewing; leading and programming for a group; family counseling; advocacy; negotiation; crisis intervention; etc.); the location and milieu of intervention; selection or participants and their number; time elements; measuring results; transfer of responsibilities; and termination. (Prerequisite: S.W. 400).

*410 Field Experience and Seminar I

Seventy five clock hours in the field. Through this experience, the student is given the opportunity to test out skills and theories taught in the classroom. The field experience is accompanied by a seminar of one hour per week. S.W. 410 and 411 (below) are taken concurrently with S.W. 400 and 401, respectively. Students electing 410 must plan to take 411 as continuation of training.

*411 Field Experience and Seminar II

Continuation of S.W. 410. Seminar of one hour per week and 120 clock hours in the field.

*412 Special Projects in Social Work

An alternative field work experience for students electing this rather than 410 and 411. Individually planned service and study in the field developed with faculty adviser. Weekly reports, term paper required. Students required to complete 180 clock hours in the field. Not open to students who have taken 410 and 411.

533 Dynamics of Race and Culture for Social Work Practice

Racial and group cultural characteristics of social welfare consumer groups and social work clientele are examined. Included in this analysis is an extensive survey of social science and administrative research materials. Implications are drawn for planning, organization, administration and provision of programs and services. Particular emphasis is placed on racial and cultural conflict.

561 Community Development in Selected Countries

This course is intended to provide basic information needed in understanding community life in developing countries. It places emphasis on the history and philosophy of community development in the context of differential socio-economic systems. Includes evaluation and analysis of organizational and administrative problems, involved in implementing programs.

562 Community Organization in Urban Areas

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.

563 Social Work Concepts in Rehabilitation

Application of social work problem solving concepts to social-psychological problems in the broad field of physical and mental rehabilitation. Both individualized services and programmatic implications are given consideration. Open to M.S.W. students and students from related professional department with consent of instructor.

*Applications for 410, 411, or 412 to be made at least six weeks prior to assignment.
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.

566 Social Services in the Schools 3 hrs.
The role of the Social Worker in elementary and secondary schools and the necessary adaptations in the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationships with the surrounding community. The specific contributions of a School Social Worker as a helping person to the pupils, the school staff and the homes by various interventive means is explored.

572 Community Agency Resources 2 hrs.
A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc. (Prerequisite: C card).

598 Readings in Social Work 1-4 hrs.
Offers advanced students with good scholastic records an independent program of study, arranged in consultation with the instructor. One to four hours credit per semester.
College of Business

ARNOLD E. SCHNEIDER,
Dean

DARRELL G. JONES,
Associate Dean

LEO NIEMI,
Administrative Assistant

Departments:
Accountancy
Business Education and Administrative Services
General Business — Finance, Law
Management
Marketing

Institute:
Business Research and Service
OBJECTIVES OF THE COLLEGE OF BUSINESS

The function of the College of Business is to prepare capable men and women for responsible positions in business, industry, and public service. Three major areas of education are involved in the development process. They are:

1. A foundation of liberal arts and sciences in full recognition that as a future leader in the business and industrial world, the student will need a sound understanding of his relationships to social, economic, political and cultural trends.

2. The presentation of a core curriculum which contemplates a thorough grounding in the fundamentals through which our free enterprise economic system operates. These fundamentals are met through business core subjects such as accounting, statistics, law, finance, marketing, management and communication.

3. An opportunity for specialization in various aspects of business activity.

Continuing opportunities are made available to resident students to participate in campus meetings with business, industrial, and public service leaders, as well as outstanding professional men from various disciplines. In addition, business firm visitations, as well as business internships, give ample opportunity for the student to relate himself to his future role. Western's Career Planning and Placement Office is visited by the major firms that are engaged in recruiting activities.

The six main programs in the College of Business are:

1. Business Administration—Bachelor of Business Administration Degree.


3. Master of Business Administration for graduate students with Liberal Arts, Engineering, Business or other undergraduate preparation.

4. Master of Science in Accountancy for students desiring intensive preparation for a professional accounting career.

5. Master of Science in Management and other Business areas for students desiring intensive preparation for professional careers in Management or other Business areas.

6. Master of Arts in the teaching of business subjects and Specialist in Arts in Business Education are intended to prepare teachers for superior classroom performance at both the secondary and post-secondary levels.
Business Administration Curriculum

Bachelor of Business Administration Degree

The courses and their proper sequence for the BBA degree are listed below.
The courses with lower numbers are considered general prerequisites to those with higher numbers. In addition, many are specific prerequisites as noted in the course descriptions in this catalog. Students are therefore cautioned against deviating from this pattern.

A further requirement is that of the 120 hours of course work exclusive of physical education, at least 48 hours must be taken from areas outside of business and upper division economics.

The last 30 hours of work for those in the BBA curriculum must be taken on campus. Exceptions may be granted only by approval of the Department Head and the Dean of the College of Business.

A. Minimum Hours Required for this Curriculum 124 hrs.

B. Course Requirements:

Freshman Year

1. General Studies
   Select one course from the following: Bus. Ed. 142, Business
   Informational Writing; G.S. 116, College Writing; English
   105, Commentary on English Thought and Language (options
   A or B); A.A.S. 120, Technical Communication.
   General Studies Reading 140
   Early Western Civ. 100 or Modern Western Civ. 101
   One from the following: Physical Geography 105, Biological
   Science 107, Physical Science 108, Aims and Achievements of
   Science 110, Geological Science 112

2. BBA Core Cognates
   Comm. Arts & Sciences 104, Bus, and Prof. Speech
   or 170 Interpersonal Communication I
   Psychology 150, An Intro. to the Science of Behavior
   Math 116, Finite Math with Applications

3. Physical Education

4. Electives (Bus. Education 140, Ind. & Bus. World;
   Management 102, Computer Usage; etc.)

   *The following 15 semester hours of BBA Core Cognates are approved alternatives to complete the 40 hours required in General Studies: Psychology 150 in Science; Economics 201, 202 in Social Science, Comm. Arts & Sciences 104 and Math 116 under General Studies III.
### Sophomore Year

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Course Details</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Studies</td>
<td>Arts and Ideas 222 or Non-Western Arts and Ideas 224</td>
<td>4</td>
</tr>
<tr>
<td>2. BBA Core Cognates</td>
<td>Principles of Economics 201, 202</td>
<td>6*</td>
</tr>
<tr>
<td></td>
<td>National Government 200</td>
<td>3</td>
</tr>
<tr>
<td>3. BBA Core</td>
<td>Principles of Accounting 210, 211</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Business Communication 242</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Statistics 200</td>
<td>3</td>
</tr>
<tr>
<td>4. Electives**</td>
<td>Economic Geography 244, Prin. of Sociology 200</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total S.H.: 31**

### Junior Year

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Course Details</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Studies</td>
<td>Introduction to the Non-Western World 304 or approved substitute</td>
<td>4</td>
</tr>
<tr>
<td>2. BBA Core Cognates</td>
<td>One advanced course in Economics</td>
<td>3</td>
</tr>
<tr>
<td>3. BBA Core</td>
<td>The Legal Environment 340</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Business Law 341</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Business Finance 320</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Fundamentals of Management 300</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>4. Major and Minor Requirements and Electives**</td>
<td></td>
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</tr>
</tbody>
</table>

**Total S.H.: 31**

### Senior Year

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Course Details</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Studies</td>
<td>Elect one course from: Human Communications 400, Science and Intellectual History 401, American Culture 402, Criticism of Mass Media 403, Molders of Thought 405, Social and Cultural Change 408, Seminar in Contemporary Issues 497</td>
<td>4</td>
</tr>
<tr>
<td>2. BBA Core</td>
<td>Management Problems 499</td>
<td>3</td>
</tr>
<tr>
<td>3. Major and Minor Requirements and Electives</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

**Total S.H.: 31**

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**Note to Transfer Students:**

Students at two-year community colleges who plan to continue at WMU are urged to take courses equivalent to the ones listed for the Freshman and Sophomore years. Except for 341 Business Law, they should not take the upper division courses listed for the Junior and Senior years as these cannot be accepted as equivalents to satisfy curriculum, major or minor requirements; nor will the hours transfer for University credit.

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*See footnote on p. 353.

**Four hours of the Electives must be outside of Business and Economics (other than Principles of Economics) to meet the 48-hour requirement.*
Regarding the Mathematics 116 requirement, a three-hour college algebra course based on a prerequisite of three years of college preparatory mathematics is acceptable as a transfer course.

With departmental approval, transfer courses from four-year schools (and appropriate lower-division courses from community colleges) may be included in majors and minors. However, a minimum of 12 semester hours for a major and 9 for a minor must be taken at WMU.

**Major Areas of Concentration In Business Administration**

**DEPARTMENT OF ACCOUNTANCY**

**Major Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Accounting 210, 211</td>
<td>6</td>
</tr>
<tr>
<td>Financial Accounting 310, 311</td>
<td>6</td>
</tr>
<tr>
<td>Cost Accounting 322</td>
<td>3</td>
</tr>
<tr>
<td>Income Tax Accounting 324</td>
<td>3</td>
</tr>
<tr>
<td>Financial Accounting 411</td>
<td>3</td>
</tr>
<tr>
<td>Auditing 516</td>
<td>3</td>
</tr>
<tr>
<td>Elective in Accountancy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

**Accountancy Electives Available for Major Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting Information Systems 413</td>
<td>3</td>
</tr>
<tr>
<td>Institutional Accounting 414</td>
<td>3</td>
</tr>
<tr>
<td>Honors Seminar in Accounting 418</td>
<td>3</td>
</tr>
<tr>
<td>Theory and Problems 518</td>
<td>3</td>
</tr>
<tr>
<td>Studies in International Accounting 521</td>
<td>3</td>
</tr>
<tr>
<td>Cost Accounting—Theory and Practice 522</td>
<td>3</td>
</tr>
<tr>
<td>Studies in Tax Accounting 524</td>
<td>3</td>
</tr>
</tbody>
</table>

**Advisors:** Report to the Department of Accountancy, 150 East Hall for assignment to an advisor. Your advisor will be pleased to assist you in recommending elective courses and planning your program.

**Transfer Credits:** Up to 6 hours of Elementary Accounting may be accepted from other than a four-year accredited school. All accounting majors must take a minimum of 12 hours of accounting courses at Western Michigan University.
Business Education and Administrative Services

1. Teaching of Business Subjects
   Advisor: Contact Departmental Office

   The B.B.A. degree with certification for teaching business subjects at the secondary school level requires, in addition to the Business Administration curriculum, 21 semester hours of professional education courses listed on page 361 and Methods of Teaching Business Subjects, 346. Particular attention is called to the footnote on that page.

   To obtain teacher certification, it is necessary to have on record a teachable business major consisting of 30 appropriate hours and a teachable minor of 20 appropriate hours which may also be in business.

   For certification with the B.S. or B.A. degree see the curriculum in Business Teacher Education listed on page 361.

2. Secretarial Administration

   The Secretarial Administration Curriculum enables students to progress through sequential preparatory phases as they move toward the acquisition of a bachelor's degree and final preparation to undertake administrative, secretarial and office supervisory positions.

   A. Secretarial Internship Phase
      Advisor: Null

      This work-study program concentrates on the development of skills through cooperative work experience combined with classroom experience. The latter is combined with part-time employment during the Sophomore year.

   First and Second Semesters S.H.      Third and Fourth Semesters S.H.
   Informational Business Writing 142*  3  Business Communication 242  3
   General Studies Reading 140        2  Records Management 288  2
   General Studies Electives**       3  Coordinated Business Experience 282  3
   Transcription 184                 4
   Integrated Office Skills 281      3  Coordinated Business Experience 283  1
   Psychology 1 150                  3  Accounting 210  3
   Industrial and Business World 140  1  Office Organization 386  3
   Physical Education                1  Secretarial Administration 287  4  Electives**  12
   ______________________________________________________________
   31                                                                 31

   B. Administrative Supervision Phase (fifth, sixth, seventh, and eighth semesters)

   This phase of the curriculum requires the completion of:

   1. The General Studies requirements listed on page 25 of this catalog.
   2. The Business Administration Curriculum requirements listed on page 353.

*Or G.S. 116 or English 105 (options A or B)
**Electives chosen after consulting with advisor.
3. Administrative Services Major

The Administrative Services concentration prepares students to assume supervisory and administrative positions in a variety of organizational settings.

In addition to completing the B.B.A. core, the curriculum comprises 24 hours of work and includes:

- Bus. Ed. 288, Records Management 2
- Bus. Ed. 330, Office Automation 3
- Bus. Ed. 342, Organizational Communication 3
- Bus. Ed. 556, Office Management 3
- Accounting 413, Accounting Informational Systems 3
- Business electives (in consultation with advisor) 10

Administrative Services Minor

An Administrative Services minor consists of 18 hours chosen in consultation with an adviser. Suggested areas of concentration include business communication, secretarial administration, data processing, or appropriate combinations.

FINANCE

I. Finance Majors (24 Hours)

The Finance Area offers majors in four specific areas and a fifth to encompass those students desiring a general finance major.

The major optional areas and advisers are as follows:

I. Corporate Financial Management
   Advisors: Grossnickle and Garg

II. Securities and Investment Management
   Advisors: Edwards and Wiseman

III. Financial Markets and Institutions
    Advisor: Walsh

IV. Insurance
    Advisor: Burdick

V. General Finance
    Advisors: All Finance Professors

All Options except IV require American Financial System 310 and General Finance 320. The remaining six courses would be determined with the counsel and advice of the appropriate advisor.

Option IV requires 310 and 320 plus Risk and Insurance 321. The remaining five courses would be selected following consultation with Professor Burdick, advisor.

List of courses from which selections may be made to complete Finance major.

- 321 Risk and Insurance
- 322 Real Estate Finance
- 326 Investments
- 328 Internship in Insurance
- 422 Life and Health Insurance
- 424 Property and Liability Insurance
- 425 Financial Management I
- 426 Money and Capital Markets
- 427 Financial Management II
- 428 Management of Financial Institutions
- 499 Senior Topics in Finance
- 520 Security Analysis
- 521 International Finance
- 526 Advanced Life and Health Insurance
- 528 Problems in Multiple-Line Insurance
- 598 Readings in General Business (Finance)

It is strongly suggested that major programs be developed during the Junior year so that potential course conflicts can be minimized.
2. Finance Minors (15 Hours)  
American Financial Systems 310, Business Finance 320, plus nine additional hours in Finance selected with the approval of the advisor from the courses listed at the bottom of p. 357.

GENERAL BUSINESS

1. General Business Majors  
Advisors: Morrison, Casey, Bliss McCarty and Gossman

In addition to the Business Administration Core, elect a logical sequence of five advanced business courses, but not more than three courses from any one department or area.

2. General Business Minors

Option I: General Business

Any student who has completed five courses from the Business Administration Core listed on page 354 shall be entitled to declare these as his 15-semester-hour General Business minor.* One advanced business course of three or more semester hours may be substituted for one of the five core courses. However, not more than two courses may be taken from any one of the following six areas: Accounting, Business Education, Finance, Law, Management and Marketing. The requirement of a written minor slip and consent of the advisor is waived.

Option 2: Business Law

Any student who has completed five courses from General Business 340, 341, 442, 541, 542, 543, 544, or Political Science 526, may declare these as his Business Law Minor. The requirement of a written minor slip and consent of the advisor is waived.

MANAGEMENT

Major in Management (24 hrs.)

A major in Management consists of the five courses listed below plus an additional nine hours of advanced work. Such advanced work may be drawn from Topics in Management 400, Independent Study 458, and other approved courses from Management Department offerings.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Management 300</td>
<td>3</td>
</tr>
<tr>
<td>Fundamentals of System Performance 301</td>
<td>3</td>
</tr>
<tr>
<td>Concepts of Analysis 302</td>
<td>3</td>
</tr>
<tr>
<td>Information for Decision Making 303</td>
<td>3</td>
</tr>
<tr>
<td>Systems Analysis and Design 304</td>
<td>3</td>
</tr>
</tbody>
</table>

(Management 301-302 and 303-304 are taken concurrently.)

Minor in Management (15 hrs.)

A minor in Management consists of 300, 301, 302, 303 and 304.

*For a 20-semester-hour Business Education Teaching Minor, see Business Education advisor.
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
   S.H.
   Marketing 370 .................................................. 3
   Advertising 374 .................................................. 3
   Sales Administration 376 ....................................... 3
   Advertising Copy & Layout 474 .................................. 3
   Advertising Media/Campaigns & Strategies 572 .............. 3
   Marketing Research 573 ......................................... 3
   Marketing Problems 576 .......................................... 3
   Elective From Marketing Department ................................ 3
   ................................................................. 24

2. Retailing
   Advisor: Embertson
   Marketing 370 .................................................. 3
   Advertising 374 .................................................. 3
   Principles of Retailing 375 ...................................... 3
   Sales Administration 376 ....................................... 3
   Retail Merchandising & Promotion 476 ......................... 3
   Marketing Internship 479 ...................................... 1-6
   Marketing Research 573 ......................................... 3
   Marketing Problems 576 .......................................... 3
   ................................................................. 24

3. Industrial Marketing
   Advisor: Otteson
   Marketing 370 .................................................. 3
   Purchasing Management 372 ...................................... 3
   Advertising 374 .................................................. 3
   Sales Administration 376 ....................................... 3
   Industrial Marketing 470 ....................................... 3
   Marketing Research 573 ......................................... 3
   Marketing Logistics 574 ........................................ 3
   Marketing Problems 576 .......................................... 3
   ................................................................. 24

4. General Marketing
   Advisors: “A” thru “K”—Hardin
   “L” thru “Z”—Orr
   S.H.
   Marketing 370 .................................................. 3
   Advertising 374 .................................................. 3
   Sales Administration 376 ....................................... 3
   Industrial Marketing 470 ....................................... 3
   Marketing Research 573 ......................................... 3
   International Marketing 575 .................................... 3
   Marketing Problems 576 .......................................... 3
   Elective From Marketing Department ................................ 3
   ................................................................. 24
Any deviations from course sequence or course substitutions must have written approval from the student's major advisor.

A minor in Marketing will consist of the following courses:
1. Marketing 370, 3 Credit Hours.
2. Advertising 374, 3 Credit Hours.
3. Sales Administration 376, 3 Credit Hours; plus six hours of electives from within the Department and approved by the Departmental advisor.

**RELATED MAJORS**

Students who complete the B.B.A. curriculum core requirements listed on pages 353-54 may major in the following two areas and receive the B.B.A. Degree.

1. **Economics**
   Advisor: Bowers
   Elect 30 semester hours from the Department of Economics.

2. **Public Administration**
   Advisor: Morrison
   The Public Administration curriculum requires the completion of the Business Administration major and the Political Science minor listed below.*

**Major:** In addition to the Business Administration Core, elect at least 15 semester hours from the following:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Accounting, Accounting 414</td>
<td>3</td>
</tr>
<tr>
<td>Electronic Data Processing, Management 555</td>
<td>3</td>
</tr>
<tr>
<td>Real Estate Finance, Gen. Bus. 322</td>
<td>3</td>
</tr>
<tr>
<td>Law of Real Property, Gen. Bus. 542</td>
<td>3</td>
</tr>
<tr>
<td>Legal Problems of International Business, Gen. Bus. 543</td>
<td>3</td>
</tr>
<tr>
<td>Office Management, Bus. Edu. 556</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Logistics, Marketing 574</td>
<td>3</td>
</tr>
<tr>
<td>International Marketing, Marketing 575</td>
<td>3</td>
</tr>
<tr>
<td>Income Tax Accounting, Accounting 324</td>
<td>3</td>
</tr>
<tr>
<td>Management Report Writing, Bus. Ed. 552</td>
<td>3</td>
</tr>
</tbody>
</table>

**Minor:** (Political Science)

<table>
<thead>
<tr>
<th>Course Description</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Government 200</td>
<td>3</td>
</tr>
<tr>
<td>State and Local Government 202</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Public Administration 330</td>
<td>3</td>
</tr>
<tr>
<td>Problems of Public Administration 530</td>
<td>3-4</td>
</tr>
<tr>
<td>Administrative Law and Public Regulation 526</td>
<td>3</td>
</tr>
<tr>
<td>Electives, with approval of Political Science Department</td>
<td></td>
</tr>
<tr>
<td>Chairman</td>
<td>4-3</td>
</tr>
</tbody>
</table>

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*Another option is available where a student may major in Political Science and minor in Business. See Political Science advisor.
Teaching of Business

A Michigan Secondary Provisional Certificate for teaching of business subjects in grades 7 to 12 is granted to students who complete this curriculum with a 30-semester-hour major in business and a 20-semester-hour minor, which may also be in business.

Provision is also made for meeting the requirements for a vocational certificate. Only persons holding a Vocational Certificate may teach in or coordinate the reimbursed office education programs.

A. Minimum hours required for this curriculum

B. Course Requirements

1. General Studies requirements as described on page 25 of this catalog must be met.

2. Social and Behavioral Sciences
   - National Government 200 3
   - Principles of Economics 201, 202 6*
   - Psychology I 150 or equivalent 8**

3. Professional Education courses
   - Human Development and Learning 250 4
   - Teaching and Learning, Secondary 300 3****
   - Seminar in Education 410 2
   - School and Society 450 3
   - Directed Teaching 470 9

4. Business Education Core
   - Coordinated Business Experience 282 or equivalent 3
   - Business Communication 242 3
   - Industrial and Business World 140 or elective from Marketing or Management 3

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*May be used as an approved alternative in Social Science under General Studies I.
**May be used as an approved alternative in Science under General Studies I.
***Completion of 70 semester hours in the College of Arts and Sciences leads to a Bachelor of Arts degree.
****A Professional Education Sequence card must be presented when registering for Teaching and Learning, TEED 300. It is necessary to be enrolled in Human Development and Learning, TEED 250, before application for sequence card may be made.
College of Business

Consumer Principles and Practices 292  
Office Automation 330  
Teaching of Business Subjects 346  
Office Organization 386  

5. Major and minor requirements: electives  
   Student must select one area of emphasis in C below.  
   Physical Education 2

C. Areas of Emphasis  
   Advisor: Contact Department Office

Business Education majors must select a minimum of one teaching emphasis in addition to the Business Education Core.

1. Accounting and related business subjects (Business Education 281 and Accountancy 210, 211 are required)
2. Clerical and related business subjects (Business Education 185, 281 and Accountancy 210 are required)
3. Data Processing and related subjects (Accountancy 210, 211 and Management 555 are required)
4. General Business and related subjects (Law 340, Accountancy 210, a finance or insurance course)
5. Salesmanship, retailing, and related subjects (Marketing 270, 370, 375 are required)
6. Secretarial and related business subjects (Business Education 184, 185, and 287 are required)
7. Other areas of emphasis may be selected with the permission of the Department Head

D. Business Education Minors  
   Advisor: Contact Department Office

1. For students majoring in Business Education, a teachable General Business minor is available.
   With the approval of the adviser, select 20 semester hours of courses from subject matter areas such as Accounting, General Business, Electronic Data Processing, Retailing, Salesmanship, or other areas appropriate for secondary education.
2. For education majors not majoring in Business Education
   The Business Education minor of at least 20 semester hours of course work chosen with the approval of the adviser. Student should select at least one of the teaching areas listed above.
399 Field Experience (Community Participation)  
A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student’s project, approved by a faculty supervisor, and approval from the office of the dean.

Students may receive six hours credit in any combination of departments as described, provided the seminar is planned with that combination in mind. No student will receive credit under the course plan indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the College of Business.

504 International Business Seminar  
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.

The Department of Accountancy prepares its majors for positions as accountants in industrial, governmental and public accounting enterprises. Accountancy majors must complete the Business Administration curriculum.

Students preparing for positions in industry wishing to minor in Accountancy are required to take 15 hours. Of those 15 hours, Accounting 210, 211 and 310 are required. The remaining 6 hours will be selected with the student’s professional objective in mind.
364

College of Business

201 (215) Accounting Concepts and Applications 3 hrs. Winter, Spring

A study of the fundamental concepts and applications of accounting. Especially designed for the non-business student. This course does not serve as a prerequisite for any other accounting course and cannot be used for a major or minor in business. Not open to students with credit in accounting.

210 Principles of Accounting 3 hrs.

An introductory course in accounting which includes the recording and reporting of business transactions, and the measuring, planning and controlling of business income, assets and equities.

211 Principles of Accounting 3 hrs.

A continuation of course 310 with emphasis on financial and cost accounting concepts. Prerequisite: 210.

310 Financial Accounting I 3 hrs.

A study of the valuation of current assets, investments, plant and equipment and current liabilities as well as their affect on business net income. Prerequisite: 211.

311 Financial Accounting II 3 hrs.

A continuation of accounting 211, includes the following topics: Corporate capital statements from incomplete data; financial statement analysis, and statement of application of funds. Prerequisite: 310.

322 (512) Cost Accounting 3 hrs.

The relation of cost accounting to management for control; general principles involved in constructing a cost system; distribution of cost-materials, labor, and burden; cost records; operating reports, standard cost and budgetary control. Prerequisite: 211.

324 (514) Income Tax Accounting 3 hrs.

A study of the federal income tax laws, as they apply to individuals, partnerships, and corporations. Prerequisite: 211.

410 Internship in Accounting 1-4 hrs.

Under the direction of a faculty advisor, students attain employment experience with public accounting or other business organizations. Participation is limited to available internships and selection by the faculty advisor. Students are required to file reports during the internship period and also write a final term report. In addition, they are evaluated by the executives of the firm. Prerequisite: Written consent of instructor.

411 (511) Financial Accounting III 3 hrs.

Accounting for problems in special sales, consolidations and equities. Prerequisite: 311 and senior standing.

413 (513) Accounting Information Systems 3 hrs. Fall, Winter

An examination of the accounting system as an element of the management information system in various types of businesses. Prerequisite: 211 or written consent of instructor.

414 (314) Institutional Accounting 3 hrs. Spring

A study of accounting principles and practices of school districts and federal,
state, county, and city government agencies. Prerequisite: 211 or written consent of instructor.

418 Honors Seminar in Accounting 3 hrs. Fall, Winter
Seniors who are eligible may enroll for departmental honors. Requirements and permission to elect must be obtained at Department of Accountancy office.

516 (416) Auditing 3 hrs.
The theory and practice of public and internal auditing of business enterprises. Prerequisite: 311 and senior accounting major.

518 Accounting Theory and Problems 3 hrs. Winter
Theoretical consideration of accounting problems. The analysis of the type of problems that are found in the CPA examination, or encountered by business management is included. Prerequisite: Senior standing, accounting majors.

521 Studies in International Accounting 3 hrs. Fall
(Aodd-numbered years)
A study of the differences in the principles of accounting auditing standards, and auditing procedures in selected countries of the world. Emphasis is placed on those countries which are important in world commerce. Prerequisite: Written consent of instructor.

522 (517) Cost Accounting—Theory and Practice 3 hrs. Winter
The development and application of cost accounting principles to industrial situations. The course includes the application of costs to operations and to products. The preparation and analysis of detailed cost information, as well as methods and procedures for solving complex cost problems encountered in industry, are included as a major part of the course. Prerequisite: 322.

524 Studies in Tax Accounting 3 hrs. Winter, Spring
Special studies related to tax problems of individuals, partnerships and corporations. Emphasis on corporation taxes, trusts and estate tax problems. Gift and estate taxes, and an introduction to tax planning are included. Prerequisite: 324 or written consent of instructor.

598 Readings in Accounting 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
The Department of Business Education and Administrative Services includes the areas of preparation for business teaching, office education coordination, administrative services, and administrative secretarial jobs. Students enrolled in the secretarial internship phase of the Secretarial Administration Curriculum learn by combining the classroom theory and the practical experience gained from business, government, educational, and industrial office situations.

To be vocationally certified as an office education teacher in the State of Michigan, it is necessary to have two years of unsupervised office work experience or one year of supervised internship experience. A statement certifying the completion of the internship phase of the Business Teacher Education or the Secretarial Administration programs will be available upon request.

A teaching major in the Department consists of 30 semester hours; a teaching minor, which may also be within the Department, consists of 20 semester hours. The Administrative Services major consists of 24 semester hours; the Administrative Services minor consists of 18 semester hours.

140 Industrial and Business World 3 hrs. Fall, Winter, Spring

An introductory course which, through a very broad approach, acquaints the student with principles and problems of business and industry. Such topics as organization of American businesses, current business problems and trends, financing, insurance, physical location and organization, production and distribution problems are included. Not open to Junior and Senior B.B.A. students.

142 Informational Business Writing 3 hrs.

Development of the basic writing composition skills required of the competent business writer. Through continuing directed practice in writing, the student will develop competence in the use of basic English grammar and in the organization and presentation of business and technical information in writing.

180 Beginning Shorthand 4 hrs. Fall, Winter

A study of the theory and principles of Gregg shorthand. Typewriting 182 or its equivalent is a prerequisite or should be elected concurrently. Credit is given to beginning students or students with not more than one semester of high school shorthand. In addition to classwork, at least two hours of laboratory work is required each week.
181 Intermediate Shorthand
A continuation of 180. Emphasis on developing speed in taking dictation in shorthand and transcription procedures. Prerequisites: Business Education 180 and 182, or equivalents. Credit given to students with not more than one year of high school shorthand: In addition to classwork, at least two hours of laboratory work is required each week.

182 Beginning Typewriting
The mastery of the keyboard and the proper techniques of typewriting are developed in this course. In addition to meeting departmental standards, each student will complete a project related to his major field in which the typewriter is used as a communication tool. Credit given to beginning students or to students with not more than one semester of high school typewriting.

183 Intermediate Typewriting
Emphasis is placed upon perfecting the techniques necessary for accuracy and speed in office typewriting. Includes office production problems at rates acceptable for initial employment. Prerequisite: Business Education 182 or equivalent. Credit given to students with not more than one year of high school typewriting.

184 Transcription
Emphasizes superior skill in the typewritten transcription of business letters and other office communications. Prerequisites: Business Education 181, or 3 semesters of high school shorthand, or equivalent; Business Education 183, or equivalent. In addition to classwork, at least two hours of laboratory work is required each week.

185 Production Typewriting
The development of superior skill in the production of typewritten materials for office use. Prerequisite: Business Education 183 or equivalent. This course follows 3 semesters or more of high school typewriting.

242 Business Communication
A study of the theory of interpersonal and written communication. Application of principles of effective interpersonal communication to problems in business communication. Directed practice in utilization of a variety of business communication formats. Prerequisite: Business Education 142 or equivalent.

246 Survey of Office Machines
A study to develop a working knowledge of the basic mathematical operations applied to typical business problems on office calculating machines. Not open to Business Education or Secretarial Administration majors.

281 Integrated Office Skills
This course is designed for students preparing for administrative services and executive secretarial occupations and/or business teaching. Utilizes exercises integrating typewriting, voice writing, duplicating, and calculating machines. Prerequisite: Business Education 183 or equivalent. In addition to classwork, three hours of laboratory time is recommended each week.

282 Coordinated Business Experience
A work-experience course for students in the Secretarial and Business Teacher Curriculums. Prerequisite: Departmental permission.
283 Coordinated Business Experience
A continuation of Business Education 282. Prerequisite: Departmental permission.

287 Secretarial Administration
This course develops the knowledge and abilities expected of executive secretaries. Emphasis is placed on problem solving and decision making. Prerequisites: Business Education 184 and 185 or equivalents.

288 Records Management
The study of efficient methods and procedures of processing, controlling, and disposing of the records of business. Includes information retention and retrieval, classifying, and the administration of paperwork. Emphasis on the role of supervisory personnel in a records management program.

292 Consumer Principles and Practices
A study of national and individual consumer practices and habits. Consideration of purchasing, credit, insurance, financing, advertising, law—warranty, guaranty, landlord and tenant.

330 Office Automation
The historical development of office automation from elementary manual to fully automatic techniques is studied. Consideration is given to the impact of automation on the various administrative service functions performed in organizations.

342 Organizational Communication
A study of the theory of communication in structured organizations and applications of communication theory to the solution of communication problems in organization. Directed practice in preparation of written and oral business reports and in utilization of other organizational communication formats. Prerequisite: Business Communication 242.

346 Teaching of Business Subjects
A course in the methods of teaching the business subjects including shorthand, typewriting, bookkeeping, and basic business subjects such as general business, consumer economics, and business law. This course should immediately precede directed teaching in business education. This course is required for business education certification and follows this pattern:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Wks.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Introduction to Business Education</td>
<td>1-3</td>
<td>1</td>
</tr>
<tr>
<td>II Basic Business Subjects</td>
<td>4-6</td>
<td>1</td>
</tr>
<tr>
<td>III Bookkeeping</td>
<td>7-9</td>
<td>1</td>
</tr>
<tr>
<td>IV Typewriting</td>
<td>10-12</td>
<td>1</td>
</tr>
<tr>
<td>V Shorthand, Secretarial Subjects</td>
<td>13-15</td>
<td>1</td>
</tr>
</tbody>
</table>

All students will enroll for Unit I and at least 2 others. The course provides for those students who expect to teach Bookkeeping, Basic Business, Typewriting and Shorthand.

Prerequisites: Open only to Business Education majors or minors; TEED 300.

380 Alphabetic Shorthand I
A system of alphabetic shorthand for personal use and for business use where 100 words a minute is adequate. Prerequisite: ability to typewrite.
381 Alphabetic Shorthand II  
4 hrs. Winter  
A continuation of Business Education 380 with emphasis on transcription. Prerequisite: Business Education 380 and 183 or equivalent.

386 Office Organization  
3 hrs. Fall, Winter  
A study of the methods of handling and procurement of office equipment and supplies; work flow methods, work simplification. Professionalization of office work and role of supervisory worker. Designed for those entering professional office work, or preparing to teach office workers.

410 Internship in Business Education  
2-4 hrs.  
Under the direction of a faculty advisor, qualified students may elect to engage in teaching-learning experiences they would not ordinarily have available to them. Some examples of such teaching-learning experiences are: teaching typewriting and other office machines to the handicapped; teaching consumer education and basic business in programs for the disadvantaged; supervising simulated office laboratory experiences; tutoring foreign students; participation in federal, state and local adult education programs. Scheduled meetings with advisor and submission of written experience reports required. Prerequisites: filing of a departmental permission-to-elect form; permission of the instructor. May be repeated for a maximum of 4 hours credit.

554 Topics in Business Communication  
3 hrs.  
An intensive study of a selected topic in Business Communication such as report writing, communication effectiveness and attitude change, communication media in business, business and educational publicity, and others. The topic will be announced in advance. May be repeated for credit.

556 Office Management  
3 hrs.  
Areas of office services from the managerial viewpoint. An overview of the problems of organizing, constructing, installing, and maintaining office systems.

583 Coordination Techniques in Office Education  
2 hrs.  
A study of the role and responsibilities of the office education coordinator in his educational system. Surveys the organization of the office education program, the course content of the related class, supervision of on-the-job trainees, the establishment of working relationships among the school, business and home; examines latest pertinent research. Prerequisite: DE 573, Coordination Techniques in Cooperative Education.

584 Improvement of Instruction in Shorthand and Secretarial Subjects  
2 hrs.  
A study of the latest research findings, materials, teaching procedures, tests and measurements, and future developments in shorthand.

586 Improvement of Instruction in Typewriting  
2 hrs.  
A study of the latest research findings, materials, teaching procedures, tests and measurements, and future developments in typewriting.

588 Improvement of Instruction in Bookkeeping and Basic Business Subjects  
2 hrs.  
A study of the latest research findings, materials, teaching procedures, tests and measurements, and future developments in the business subject matter of this field.

589 Organization and Teaching of Office Practice  
2 hrs.  
A consideration of aims and content of an office-practice course in the secondary
school, with plans and techniques for organizing and teaching the subject matter of the course and its laboratory material.

596 Independent Study in Business Education and Administrative Services 1-4 hrs.
A directed independent project in an area of Business Education or Administrative Services. Prerequisite: Written consent of Department Head.

598 Readings in Business Education and Administrative Services 1-4 hrs.
A series of directed readings in the area of Business Education or Administrative Services. Prerequisite: Written consent of Department Head.

General Business

Arnold Schneider, Head

The General Business Department includes the areas of Finance and Law.
Specialized majors may be obtained from the areas of Finance and specialized minors in Finance, Insurance, and Law. In addition, non-specialized General Business majors and minors may be obtained by selecting a logical sequence of courses from the several departments within the College of Business. All majors and minors (except General Business and Law minors) in this department must be approved by the assigned advisor.

FINANCE AREA

William L. Burdick
Adrian C. Edwards, Area Chairman
Ramesh Garg

Edwin Grossnickle
J. Michael Walsh
Donald E. Wiseman

310 The American Financial System 3 hrs. Fall, Winter, Spring
A survey of the financial system of the United States designed to provide essential foundation for advanced finance and business courses. The emphasis is on the impacts and implications of changes in monetary policies and financial conditions upon the business community, especially as these changes affect business managers. The course covers the development of the American financial system, the major financial institutions, the financial markets, the monetary theory underlying modern financial systems, and stabilization policies. Prerequisites: Accounting 210 and 211.

320 Business Finance 3 hrs.
Present a basis for understanding the financial management function of the business enterprise. Considers financial principles and techniques essential for planning and controlling profitability and liquidity of assets, planning capital structure and cost of capital, and utilizing financial instruments and institutions for capital raising. Prerequisites: Accounting 210 and 211.
321 Risk and Insurance  3 hrs. Fall, Winter, Spring
A comprehensive course which considers the nature and orientation of insurance risks and their management. Major business and personal risks are analyzed and their insurance treatment evaluated, as are the functional aspects of insurer operations. The impact of insurance on public policy is also considered.

322 Real Estate Finance  3 hrs. Fall, Winter
Supplies the basis for comprehension in real estate of the basic economic characteristics and the organization and techniques used in the real estate business. Treats real estate resources, marketing, financing valuation, and trends.

326 Investments  3 hrs. Fall, Winter, Spring
Concentrates on corporate securities as long-term investment media, largely from the standpoint of the individual investor. Examines security appraisal techniques and portfolio management strategies, with some discussion of strategies appropriate for selected financial institutions. Considers mechanics, markets, institutions and instruments important to the investment process. Prerequisite: 320 Business Finance. Recommended: 310 The American Financial System.

328 Internship in Insurance  1-4 hrs.
Open only to insurance students. Under the direction of the advisor, students obtain home office or branch office experience with insurance companies. They are required to file reports during the internship period, and will be evaluated by company officers.

422 Life and Health Insurance  3 hrs. Spring
This course combines a discussion of the economic aspects of life and health insurance with basic analysis of life insurance, health insurance and annuity contracts. It also includes investigation of the major functional aspects of life and health insurance companies. Prerequisite: 321 Risk and Insurance.

424 Property and Liability Insurance  3 hrs. Winter
This course includes analytical study of the major property and liability contracts, together with discussion of the principal functional aspects of property and liability company operations. Prerequisite: 321 Risk and Insurance.

425 (324) Financial Management I—Short-term Capital  3 hrs. Fall, Spring
An analysis of the managerial aspects relating to the inflows and outflows of working capital in corporate enterprises. The course examines in lecture and case discussion the different aspects involved in the effective management of the cash, receivables and inventory functions; the use of rating agencies in aiding credit acceptance; and the many considerations which become a part of the short-term financing function of the corporate enterprise. Prerequisite: Business Finance 320.

426 Money and Capital Markets  3 hrs. Fall
A systematic analysis of the functions and operations of the major American financial markets and institutions with special emphasis upon their function as suppliers of credit to the financial system. Examines the impact of cyclical and secular changes in business activity upon the money and capital markets through national income and flow-of-funds techniques. Prerequisite: 310 The American Financial System and Business Finance 320.
427 Financial Management II—Long-term Capital 3 hrs. Winter, Spring
An analysis of the managerial aspects relating to the inflows and outflows of permanent capital in corporate enterprises. The course examines in lecture and case discussion the different aspects involved in the effective management of long-lived assets, intermediate and long-term credit, equity and internal financing. It covers, in addition, the areas of corporate expansion including mergers and acquisitions and covers the financial aspects of corporate reorganizations and bankruptcies. Prerequisite: Business Finance 320.

428 The Management of Financial Institutions 3 hrs. Winter
This course is devoted to in-depth analysis of the operations of selected major financial institutions (commercial banks, savings and loans associations, insurance companies, trust companies, mutual funds, pension funds, etc.) with emphasis on management decision-making processes. Through case analysis and problems the student is introduced to cash, loan, deposit, investment, and management problems faced daily by managers of these financial institutions. Prerequisites: The American Financial System 310 and Business Finance 320.

499 Senior Topics in Finance 3 hrs. Winter
This course is designed as a capstone course for finance majors who can benefit from intensive study of selected current issues in finance. Course designed to increase research and analytical capacities of finance majors through intensive faculty-student work. Student permitted freedom to explore topics of interest in depth with assistance of professors. Prerequisite: Written consent of instructor.

520 Security Analysis 3 hrs. Fall, Winter, Spring
A sophisticated analysis of investment securities from the viewpoint of establishing meaningful valuation techniques. The course is designed for students anticipating careers in investment management in industrial firms and/or financial institutions. Prerequisite: Investment 326.

521 International Finance 3 hrs. Winter, Spring
A study of contemporary problems in international finance. The course examines the international money markets, working capital considerations and capital budgeting problems as faced by the multinational corporation. Prerequisite: Finance 320 or equivalent or consent of instructor.

526 Advanced Life and Health Insurance 3 hrs. Winter
By means of problems and cases this course analyzes in detail the following areas: group life and health insurance, business life and health insurance, insured pension plans and estate and tax planning. Prerequisite: Life and Health Insurance 422.

528 Problems in Multiple-Line Insurance 3 hrs. Fall
The topics studied by means of cases and problems in this course include multiple-line insurance operations, special problems in functional areas of industry operations and personal and commercial risk surveys and analysis. Prerequisite: Property and Liability Insurance 424.

598 Readings in General Business 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
LAW AREA

James R. Bliss  
James S. Casey  
Thomas Gossman  
F. William McCarty  
William F. Morrison, Area Chairman

340 Legal Environment  
3 hrs.  
An introduction to the legal environment in society.

341 Business Law  
3 hrs.  
Continuation of Legal Environment 340 with emphasis on contracts, borrowing and banking transactions to include checks and other commercial paper, agency and employment contracts. Prerequisite: 340 Legal Environment.

442 Damage and Tort Liability  
3 hrs. Winter  
The study of business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: 340 Legal Environment.

541 Law of Sales and Personal Property  
3 hrs. Fall, Spring  
The study of law as it applies to the sale of goods emphasizing the legal aspects of marketing a product. Prerequisite: 340 Legal Environment.

542 Law of Real Property  
3 hrs. Winter  
The study of land ownership, sales agreements including the legal duties of the real estate broker, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: 340 Legal Environment.

543 Legal Problems of International Business  
3 hrs. Winter  
A study of United States, foreign and international law which affect business corporations. Prerequisite: 340 Legal Environment.

544 Law of Business Organizations  
3 hrs. Fall, Spring  
Study of business organizations including partnerships and corporations. Prerequisite: 340 Legal Environment.

598 Readings in General Business  
1-4 hrs.  
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
J. Michael Keenan, Chairman

102 Computer Usage 3 hrs.
An introductory course in the use of time-shared computers. The student will utilize a remote terminal for the recording, transmission, and analysis of data through generally available program libraries.

200 Statistics 3 hrs.
An applications-oriented study of statistical concepts and techniques. 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 116 or equivalent.

250 Small Business Management 3 hrs.
A study of the fundamental principles involved in the operation of a small business enterprise. The structure, functions, and basic operating principles will be discussed and developed. Prerequisite: Non-BBA students only.

300 Fundamentals of Management 3 hrs.
An introduction to management through exposure to relevant literature, organizational experience, classroom exercises and a management game. Optional activities allow the student to pursue his own interest. Prerequisite: Econ. 201.

301 Management Analysis and Behavior (I) 3 hrs.
Management analysis and behavior will be presented and practiced by the student in small task oriented groups working on real problems. Group decision making, problem solving, and business presentations are emphasized. In addition, the student will learn the costs and benefits of assuming different group roles. Prerequisite: Management 200, 300, co-requisite: Management 302.

302 Management Analysis and Behavior (II) 3 hrs.
An extension of Management 301, must be taken with 301.

303 Management Analysis and Organizational Design (I) 3 hrs.
The students develop and experiment with their own model of an organization by assuming different roles and exercising influence in a large task oriented group.
working on a real problem. The course is designed to give students practice in integrating relevant variables, analyses, and data into an operating system. Pre-requisite: 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 Manpower Management 3 hrs.
The manager-employee relationship, oriented toward the personnel responsibilities of all managers: the nature of the manager-employee relationship; selection, appraisal, and development of subordinates; communication, discipline, and leadership; relationship of the individual and the organization. This course is an introductory course in personnel management.

400 Topics in Management 3 hrs.
An examination of advanced topical problems in management. Prerequisite: Management 301-304, and consent of instructor. (Repeatable).

420 Forecasting 3 hrs.
A study of the typical business cycle behavior, significant business indicators and methods of analyzing and forecasting business trends. Includes a critical analysis of published research on business trends and a small research study by the student on the analyses of various bodies of data. Prerequisite: Management 200.

430 Systems Analysis 3 hrs.
The course is organized as a project team effort to analyze a specified problem within the topic area listed. The team will develop a proposal, organize work packages and complete an analysis of the selected system. Prerequisite: Management 301-304 and permission of department. (Repeatable)

458 Independent Study 3 hrs.
Independent research on specialized management topics. Prerequisite: Management 301-304, and consent of instructor. (Repeatable.)

490 Honors Seminar 1-3 hrs.
A discussion of selected topics in contemporary management. Prerequisite: Consent of departmental honors committee and instructor. (Repeatable)

491 Independent Honors Studies in Management 1-3 hrs.
Opportunity for independent reading and/or research under the direction of a faculty member. Prerequisite: Consent of departmental honors committee and instructor. (Repeatable)

499 Management Problems 3 hrs.
An integrating course intended to give the student an opportunity to solve management problems by bringing together the knowledge gained in the study of areas such as finance, accounting, marketing, economics, management. Prerequisites: Senior standing and all core courses.

500 Management Literature 1-4 hrs.
Studies in specialized areas of the management literature. The students will prepare an original paper on an assigned topic. These papers will be integrated by the class into a single document focused on a selected area of management theory. May be repeated by permission of Department Chairman.
College of Business

540 Advanced Statistics 3 hrs.
A second course in statistics complete enough to be used with limited background. Includes probability theory, t, Z, F, and binomial probability distributions, hypothesis testing with sampling theory and Type I, Type II errors, point and interval estimates, statistical inference, comparison tests (two-sample and K-sample), association tests (correlations and regression), and nonparametric tests. Prerequisite: Management 200.

553 Planning and Analysis for Production 3 hrs.
An examination of modern methods of analysis, their relation to the production process and their utilization in management planning. Cases and problems will be utilized. Prerequisites: Economics 201 and Management 200.

554 Introduction to Management Science 3 hrs.
Modern scientific techniques used in business and industry for controlling operations, maximizing profits or minimizing cost. Allocation of men, money and machines among alternative uses. Other strategies and control methods applicable to management, marketing and finance. Prerequisite: Management 200.

555 Electronic Data Processing (Topic) 3 hrs. Fall, Winter, Spring
Computer programming in BASIC, FORTRAN IV and COBOL languages. Special topics relating to the planning, organization and direction of management information systems in business, industry and government. The course may be repeated for different programming languages and topics.

557 Inventory Management 3 hrs.
The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisite: Management 200.

564 Simulation Models 3 hrs.
Development of a model for the integration of the functional areas of business to create more successful management policies and organizational structures. Prerequisite: Management 200.

598 Readings in Management 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. May be repeated for credit by permission of Department Chairman.
Marketing

Robert B. Trader, Head
Zane Cannon
Richard E. Embertson
Jim L. Grimm
Frances S. Hardin

Leonard D. Orr
Conner P. Otteson
Emil J. Sokolowski
Dale U. Varble

270 (370) Salesmanship

3 hrs. Fall, Winter, Spring
An introduction to the principles of selling. Includes study of selling in our present economy, analysis of the steps in a sales demonstration, and a classroom demonstration. Not open for Marketing major or minor credit.

370 (240) Marketing

3 hrs.
Functions, institutions, and problems of marketing examined from the viewpoint of their affect on distribution of goods. Prerequisite: Econ. 201.

372 (358-558) Purchasing Management

3 hrs. Fall, Winter, Spring
The organization and operation of the purchasing function, responsibilities and policies: problems confronting the purchasing department; relationships with other departments and suppliers. Prerequisite: Mktg. 370.

374 Advertising

3 hrs.
A comprehensive survey of basic principles and practices of advertising in their relationship to the economy, society, and the system of mass communication. Prerequisite: Mktg. 370.

375 Principles of Retailing

3 hrs. Fall, Winter
Designed to give the student an over-all view of the field of retailing. Includes history of retailing, types of retail institutions, store location, layout, fixtures, and equipment; store organization; store records; customer services; personnel management; systems and store protection. Prerequisite: Mktg. 370.

376 (370) Sales Administration

3 hrs. Fall, Winter, Spring
Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting; training; sales communication; territories and quotas; motivation, measuring selling effectiveness. Prerequisite: Mktg. 370.

470 Industrial Marketing

3 hrs. Fall, Winter
A course designed to analyze the problems of marketing industrial goods. Attention is given to market information, market planning, methods of distribution, pricing, and the promotional problems of industrial marketing. Prerequisite: Mktg. 370.

474 (572) Advertising Copy and Layout

3 hrs. Fall, Winter
Study of the theory and practice in the writing, preparation and typographical composition of advertising including the writing of radio, television, magazine, and newspaper copy. Prerequisite: Advertising 374.
476 (474-573) Retail Merchandising and Promotion 3 hrs. Fall, Winter

Covers the two major functions of retailing; merchandising and promotion. Includes sales and customer analysis; merchandising budgeting; promotional planning: expense control systems; and pricing policies. Prerequisite: Retailing 375.

477 Consumer Behavior 3 hrs.

Investigate, analyze and interpret the extensive body of research information on consumer behavior considering both the theoretical and practical implications. Prerequisite: Marketing, 370.

479 (371) Marketing Internship 1-6 hrs. Arranged

Cooperative internship training for the BBA degree marketing majors having completed sophomore year. Variable credit at the rate of approximately one credit per 100 hours of internship training acceptable to advisor. May be repeated for a maximum of 6 hours. Term reports required; evaluations completed by executives of firms in which training takes place. Prerequisite: Marketing major; permission of the instructor.

572 (570-577) Advertising: Media/Campaigns and Strategies 3 hrs. Fall, Winter

Evaluation of media and advertising through communications research, analysis and preparation of advertising as a communication tool. Includes theory and practice of media research, media plans, schedules, and strategies. Case studies. Prerequisites: Adv. 374, 474.

573 (576) Marketing Research 3 hrs. Fall, Winter, Spring

Designed to include an introduction to market research, the procedures and applications of research, and the accomplishment of a research project. Term project includes selection of problems, preparation of questionnaires, data collection, analysis of data, and final report. Prerequisite: Mktg. 370, Statistics 200.

574 (578) Marketing Logistics 3 hrs. Fall, Winter

An analysis of problems relating to the movement, handling and storage of industrial products. Attention will also be given to changing market conditions and industrial structure as they affect the physical distribution of industrial goods. Prerequisite: Mktg. 370.

575 (579) International Marketing 3 hrs. Fall, Winter

An examination of the theories and principles of international marketing. Attention directed to related commercial policies, trade practices and procedures, and marketing research tools and techniques required to locate and evaluate foreign markets. Prerequisite: Mktg. 370.

576 (574) Marketing Problems 3 hrs.

Analysis of current marketing problems utilizing the case method of study. Capstone course in marketing series.

598 Readings in Marketing 1-3 hrs. Arranged

Directed individual study of bodies of knowledge not otherwise treated in departmental offerings. Prerequisite: Written permission of instructor.
College of Education

JOHN E. SANDBERG, Dean
KENNETH F. SIMON, Associate Dean
MORVIN A. WIRTZ, Associate Dean

Departments:
Teacher Education
Special Education
Educational Leadership
Counseling and Personnel
Physical Education for Men
Physical Education for Women

Agencies:
Center for Educational Research
Center for Directed Teaching
Educational Resources Center
Institute of Blind Rehabilitation
Reading Center and Clinic
The College of Education consists of the following departments and agencies: Teacher Education, Special Education, Educational Leadership, Counseling and Personnel, Physical Education for Men, Physical Education for Women, the Educational Resources Center, the Institute of Blind Rehabilitation, the Center for Educational Research, the Center for Directed Teaching, and the Reading Center and Clinic.

In general, the College of Education performs six functions:
1. Supervises the selection, admission and retention of students in advanced teacher education curricula;
2. Offers professional education courses designed to develop competent, efficient performance in the classroom and within a school system;
3. Offers advanced specialized courses in selected major and minor fields in departments within the college;
4. Offers service courses to students in other colleges within the University;
5. Provides clinical and curricular services to teachers and school personnel; and
6. Conducts experimentation and research at all levels of professional education.

**ALL COLLEGE COURSE**

399 Field Experience (Community Participation) 2-8 hrs.

A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

**ADMISSION TO THE TEACHER EDUCATION PROGRAM**

The student who wishes to prepare for the profession of teaching will take the following steps:

**Step 1—Declaration of Intent to Prepare for Teaching**

The student will identify himself as a prospective teacher candidate by declaring at the time of application to the University his intention to follow a Teacher Education curriculum.

**Step 2—Admission to the Teacher Education Program**

The student will apply for formal admission to the professional education sequence early in the semester in which he will have earned credits equal to 45 semester hours. The application must be made not later than the semester in which the credits equal 60 semester hours. The student who applies later than this may be required to take additional hours of work at the University to fulfill requirements for teacher certification. Application for admission to the professional education sequence will be initiated by the student in Room 2112 Sangren Hall. To enroll for the professional education sequence the student must have a cumulative point hour ratio of 2.00 or above. Factors such as academic achievement, health, personality, and general competence to teach are considered for admission to the Professional Education Sequence.

**Step 3—Admission to Directed Teaching**

The student should apply at the Directed Teaching Office for admission to the directed teaching program early in the semester following completion of seventy-five hours of credit. In addition to the general requirements stated above, the student shall: (1) present satisfactory evidence of continued academic competency; (2) receive satisfactory recommendations from both the Department of Teacher Educa-
tion and the major department in which he has been working; (3) receive approval of an all-University teacher education selection committee; and (4) have completed Teacher Education 250 and 300 in curricula for which these courses are a requirement.

COOPERATIVE TEACHING INTERNSHIP PROGRAM TO PREPARE ELEMENTARY SCHOOL TEACHERS

The Cooperative Internship Program offers the competent student intending to be an elementary school teacher the opportunity of obtaining an earlier start on a professional career. Paid internship begins in the fourth year of his college preparation, when approximately 106 to 110 semester hours of credit have been earned. The work-study design of the internship allows the student to earn a salary while learning. During intern teaching, the student is in complete control of his own classroom, aided by the guidance and counsel of a master teacher. Students interested in enrolling in this program should apply to the Directed Teaching Center, 2504 Sangren Hall. This program leads to full certification and the bachelor's degree.

CURRICULA FOR TEACHERS

The program for prospective teachers consists of three parts: (1) general education, designed to develop those understandings and competencies which make for effective living and good citizenship, offered largely in the College of General Studies; (2) advanced specialized study, with major and minor interests in the fields of the student's choice, offered in the various colleges of the University; and (3) professional education courses offered in the College of Education.

In general, prospective teachers choose to work for the State Elementary Provisional Certificate, valid for grades kindergarten through eight, or the State Secondary Provisional Certificate, valid for grades seven through twelve.

Students majoring in Art, Music, Physical Education and Special Education may be certified to teach this major in all grades by completing requirements of the Elementary Provisional or Secondary Provisional certificate and the curriculum requirements of his major.

Those preferring to teach in smaller communities may elect the Rural Elementary curriculum which leads to the State Elementary Provisional Certificate.
ELEMENTARY CURRICULUM

Bachelor of Arts or Bachelor of Science Degree

State Elementary Provisional Certificate

(For the preparation of Teachers of Kindergarten and Grades 1-8)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements

1. General Studies Requirements as described on page 25 of the catalog must be met.

2. Elementary Education Minor 21 hrs.
   Mathematics 150—Structure of Arithmetic 4
   English 282—Children's Literature 4
   Teacher Ed. 507—Elem. School Social Studies 2
   Music 140—Music for the Classroom Teacher 4
   Art 150—Art Education Workshop 3
   Practical Arts†† 3
   Physical Education 340 (PEW)—Physical Education for the Classroom Teacher 1

   NOTE: Students electing the Integrated Creative Arts Minor must use an approved replacement for Music 140 and Art 150.

3. Teacher Education 24 hrs.
   Human Development and Learning 250 4
   Teaching and Learning in the Elementary School 300 3
   Teaching of Reading 312 3
   Directed Teaching 470—9 hrs., Seminar in Education 410—2 hrs., School and Society 450—3 hrs. (usually taken concurrently in one semester) 14 hrs.

4. Physical Education 2 hrs.
   (Must include PEW 340 Physical Education for the Elementary Teacher)

C. Two minors of 20 hours each or group minors of 24 hours each; or one major of 30 hours or group major of 36 hours are required. This requirement is in addition to the required EI. Ed. minor. (Check catalog descriptions for major and minor requirements.)

The following areas are acceptable fields for majors and/or minors in Elementary Education:

   African Studies*; American Studies**; Anthropology; Art; Asian Studies*; Biology; Black Americana Studies*; Chemistry; Communication Arts and Sciences; Earth Science; Economics; English; Family Life Education*; French; Geography; Geology; German; Health Education*; Health Physical Education and Recreation (Men); History; Integrated Creative Arts*; Latin American Studies*; Library Science*; Linguistics*; Mathematics; Music; Physical Education (Women); Physics; Political Science; Rural Life and Education**; Russian; Science; Slavic Studies*; Social Science; Sociology; Spanish.

*Minors only—**Majors only

†Students wishing to meet State Certification Requirements for Nursery Teaching inquire at Teacher Education Office (2112 Sangren).

††Students with a minor in Librarianship may substitute 3 S.H. of Library Science courses for the practical arts requirement.
NOTE: Students who choose a Special Education major must be admitted to the Special Education curriculum. See requirements on pages 392-396.

D. The candidate must satisfy the requirements of the A.B. or B.S. Degree.
E. Nursery School Certification.

RURAL ELEMENTARY CURRICULUM
Bachelor of Arts or Bachelor of Science Degree
State Elementary Provisional Certificate

Major attention is given to preparation for teaching in schools located in rural or small community areas—population 2,500 or less.

Students desiring to teach in schools serving these areas select the Rural Life major or two academic minors under the guidance of the Director of Rural Life and Education. Thought is given to the many demands made upon the teacher in the small school. Those preparing to serve the smaller communities in other professional groups, such as ministers, librarians, recreation leaders, etc. either at home or overseas, will find considerable basic work in the curricula of Rural Life and Education.

Rural Elementary Curriculum

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements

1. General Studies requirements as described on page 25 of the catalog must be met. (Students should include Physical Geography and Biological Science.)

2. Elementary Education Minor 20-21 hrs.
   - Children's Literature 282 4
   - Structure of Arithmetic 150 4
   - Music for the Classroom Teacher 140 4
   - Art Education Workshop 150 3
   - Physical Education for the Elem. Teacher 340 1
   - Elementary School Social Studies 507 2
   - Practical Arts course (One course in Business, Home Econ., Indus. Ed. or Occup. Therapy) 3

3. Professional Education Sequence 19-24 hrs.
   - Human Development and Learning 250 4
   - Teaching and Learning 300 3
   - Teaching of Reading 312 3
   - Directed Teaching* 9 or 5
   - Seminar in Education 410** 2
   - School and Society 450 3

*Students wishing to meet State Certification Requirements for Nursery Teaching inquire at Teacher Education Office (2112 Sangren).

**Only for students enrolled in the Special Program described on following page.

**Not required of students enrolled in the Special Program.
   - Rural Sociology 220 .......................................................... 3
   - Rural Economics 230 .......................................................... 3
   - Rural Life (Seminar) 525 ...................................................... 2
   - Curr. Organization in Small Schools 201 .................................. 3
   - Problems of Comm. Schools in Rural Areas 411 ...................... 1-2
   - Supervision in Rural Area School (Sem.) 408 ......................... 1-2

5. Physical Education (General)
   (Physical Education 340 will count toward one hour of this) .......... 2 hrs.

C. Either a group major in Rural Life, including Rural Sociology, Rural Economics, Rural Life Seminar, Introduction to the Non-Western World, and 22 additional hours selected from courses offered in liberal arts; or two academic minors in subject fields taught in the elementary school, chosen with the guidance of the Director of Rural Life and Education. In addition to the major or two minors, the Elementary Education minor is required.

D. The candidate must satisfy the requirements for the B.A. or B.S. degree.

Rural Life and Education Curriculum—
Special Program for Education of Career Teachers
in Rural and Small Communities

Individuals electing this curriculum will fulfill requirements for the Bachelor's degree and the Rural Elementary Curriculum as outlined above. Students who qualify will complete a Rural Life major.

An important feature of this program is the teacher intern "earn and learn" provision. The student, upon recommendation of the Director of Rural Life and Education, may teach full time with pay after successfully completing 90 hours of carefully selected courses, including directed teaching, from the curriculum.

The teacher intern remains under close University and local supervision while teaching. He continues his academic and professional studies on a restricted but uninterrupted basis. The internship terminates at the end of two years, by which time all requirements for the degree and certificate must be met.
MIDDLE SCHOOL AND
JUNIOR HIGH SCHOOL CURRICULUM
Bachelor of Arts or Bachelor of Science Degree
State Secondary Provisional Certificate
(With special emphasis for preparation of teachers in Grades 7, 8, and 9)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements

1. General Studies requirements as described on page 25 of the catalog must be met.

2. Communication Arts and Sciences, Language, Literature, Philosophy and Religion .............................................. 3 hrs.
   Speech for Teachers 102 ................................................................. 3

   Psychology II 160 .................................................................

4. Social Sciences ................................................................. 6 hrs.
   Principles of Sociology 200 .............................................. 3
   Juvenile Delinquency and the Comm. 514 .................................... 3

5. Teacher Education ............................................................. 21 hrs.
   Human Development and Learning 250 .................................. 4
   Teaching and Learning in Jr. H.S. 300 ..................................... 3
   Directed Teaching, Seminar in Education and School
   Society 470, 410, and 450 .................................................... 14

6. Physical Education ............................................................. 2-8 hrs.

NOTE: 322 Teaching of Reading-Secondary, is recommended for all students.

C. One group major of 36 hours and one minor of 20 hours or one major of 30 hours and one minor of 24 hours, or one major of 30 hours and one second major of 30 hours (State Secondary Provisional Certificate only) must be completed in subjects or subject fields taught in the junior high school. Certain courses in some departments may not be counted toward majors or minors. (See course descriptions.)

Acceptable academic majors for this curriculum are designed in the following fields: Communication Arts and Sciences, English, Social Science, Mathematics Science, Foreign Languages, and Linguistics (second major only). Minor areas must be chosen from fields related to the major. For example, desirable combinations may relate the fields of English and Linguistics, Social Science and Communication Arts and Sciences, or Science and Mathematics. Majors in foreign language should choose minors in English, Speech, Social Science, or a second foreign language. Other combinations of major and minor areas may be elected with the consent of the academic adviser.

Students who plan to teach in areas such as Physical Education, Art, Music, Home Economics and Industrial Arts, should follow major and minor requirements of the respective departments.

D. The candidate must satisfy the requirements of the A.B. or B.S. degree.

E. The candidate for the State Secondary Provisional Certificate must present a methods course in a major or minor field, preferably at the junior high school level.
SECONDARY CURRICULUM
Bachelor of Arts or Bachelor of Science Degree
State Secondary Provisional Certificate
(For the preparation of teachers in Grades 7-12)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements
1. General Studies requirements as described on page 25 of the catalog must be met.
2. Teacher Education 21 hrs.
   Human Development and Learning 250 4 hrs.
   Teaching and Learning in Jr. or Sr. H.S. 300 3 hrs.
   Directed Teaching 470—9 hrs., Seminar in Education 410—2 hrs.,
   School and Society—3 hrs. (usually taken concurrently in one
   semester) 14 hrs.
3. Physical Education 2-8 hrs.

NOTE: 322 Teaching of Reading—Secondary, is recommended for all students.

C. The candidate for the State Secondary Provisional Certificate must present
   a methods course in a major or minor field.

   The following areas are acceptable fields for majors and/or minors in Secondary
   Education:
   African Studies*; Agriculture; American Studies**; Anthropology; Art; Asian
   Studies*; Biology; Black Americana Studies*; Business Education (from Business
   Ed. Dept. only); Chemistry; Communication Arts and Sciences; Distributive Edu-
   cation; Earth Science; Economics; English; Family Life Education*; French; General
   Business*; Geography; Geology; German; Health Education*; Health, Physical
   Education and Recreation (Men); History; Home Economics; Industrial Arts; Latin;
   Latin American Studies*; Library Science*; Linguistics***; Mathematics; Music*;
   Music Education**; Physical Education (Women); Physics; Political Science; Psy-
   chology; Retailing*; Russian; Science; Slavic Studies*; Social Science; Sociology;
   Spanish; Vocational-Technical Education.
   *Minors only—**Majors only—***Minors or second majors only

NOTE: Students who choose a Special Education major must be admitted to the
   Special Education Curriculum. See requirements on pages 392-396.

D. One major of 30 hours or group major of 36 hours, and one minor of 20
   hours or group minor of 24 hours or one second major in subjects or subject
   fields taught in the Junior and Senior high school. Certain courses in some
   departments may not be counted toward majors or minors (See course
   descriptions).

E. The candidate must satisfy the requirements for the A.B. or B.S. degree.
LIBRARIANSHIP CURRICULUM

Bachelor of Arts or Bachelor of Science Degree
State Elementary or Secondary Provisional Certificate
(For Teacher-Librarians)

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

B. Course Requirements

1. General Studies requirements as described on page 25 of the catalog must be met.

2. Teacher Education .................................................................................. 21-26 hrs.
   See elementary, junior high and senior high curricula requirements.

   Librarianship as a Profession: Introduction
   (Strongly recommended for elementary; required for secondary) .............. 2
   Fundamentals of Library Organization 230 .............................................. 3
   Building Library Collections 510 ......................................................... 3
   Reference Service 512 .......................................................................... 3
   Introduction to Classification and Cataloging ............................................ 3
   School Library Experience 407 ............................................................. 3
   Reading Interests of Young Adults 542* ............................................... 3
   Storytelling 546** .............................................................................. 3
   Elementary School Library Materials 516** ............................................ 3

   Modern foreign language ....................................................................... 8
   Children's Literature 282 ....................................................................... 4
   (elementary and junior high)
   English electives ................................................................................. 4-8
   Communication Arts and Sciences ....................................................... 3
   Elective ................................................................................................. 3
   (junior high and secondary)

5. Social Science ....................................................................................... 3-9 hrs.
   Political science (government) elective .................................................. 3
   History electives .................................................................................... 3-6
   (junior high and secondary only)

6. Science
   Elective ................................................................................................. 3-4 hrs.
   (elementary and junior high—see curricula requirements)

7. Physical Education .................................................................................. 2-8 hrs.

C. Candidates for the secondary provisional certificate must elect a major or group major of 30 or 36 hours in subjects or subject fields taught in the secondary school; candidates for the elementary provisional certificate must elect an additional minor or group minor of 20 or 24 hours.

D. A portion of the Directed Teaching period is spent in a selected school library.

E. The candidate must satisfy the requirements of the A.B. or B.S. degree.

*Required only for teacher-librarian candidates in the secondary curriculum.
**Required only for teacher-librarian candidates in the elementary curriculum.
A. Minimum hours required for this curriculum
   (The usual number of hours in these curricula vary from 134 to 137.
   Certain proficiencies in the Secondary Performance media may be
   met by comprehensive examinations to reduce the usual number of hours.)

B. Course Requirements
   1. General Studies requirements as described on page 25 of the catalog
      must be met.
      Basic Music 160, 161, 260, 261, 360 .................................. 16
      Theory Elective ............................................................... 2
      Major Performance Medium ............................................... 16
      Secondary Performance Media, Conducting and Ensemble .......... 20-26
      (These requirements vary for Instrumental, Vocal and
      Combined curricula. See Music Supplement Catalog for details.)
   4. Teacher Education ......................................................... 30 hrs.
      Human Development and Learning 250 .................................. 4
      Teaching and Learning in Secondary School 300 ......................... 3
      Directed Teaching, Seminar in Education and School and
      Society 470, 410, and 450 .................................................. 14
      General Music Methods 240 ............................................... 3
      Music Methods Electives ................................................... 6
   5. Physical Education .......................................................... 2-8 hrs.

C. Candidates may be additionally certified to teach music in Grades Kindergarten—Six, inclusive, if they qualify through methods courses and directed teaching at the elementary level.

D. The candidate must meet the requirements of the B.M. degree. (See Music Supplement Catalog for details.)
ELEMENTARY CURRICULUM—MUSIC MAJOR

Bachelor of Science Degree

State Elementary Provisional Certificate

(For preparation of Elementary Music Teachers and/or Classroom Teachers Grades K-8)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements

1. General Studies requirements as described on page 25 of this catalog must be met.

   - Basic Music 160-161 ................................................. 6
   - Elem. Music Practicum 244-245 ..................................... 6
   - Piano and Voice ..................................................... 10
   - Music Appreciation 170 ............................................. 4
   - General Methods 240 ................................................ 3
   - Graderoom Music Literature 374 ................................... 3
   - Ensemble ............................................................. 5
   - Choral Conducting 330 .............................................. 2

3. Elementary Education Minor ........................................ 21 hrs.
   - Children's Literature 282 ......................................... 4
   - Structure of Arithmetic 150 ....................................... 4
   - Elementary School Social Studies 507 ............................ 2
   - Approved Elective (Substitution for Music for the Classroom Teacher 140) ................................. 4
   - Art Education Workshop 150 ....................................... 3
   - Physical Education for Classroom Teacher 340 .................. 1
   - Practical Arts ....................................................... 3

4. Teacher Education ..................................................... 24 hrs.
   - Human Development and Learning 250 ........................... 4
   - Teaching and Learning in Elementary School 300 ............... 3
   - Teaching of Reading 312 .......................................... 3
   - Directed Teaching, Seminar in Education, and School Society, 470, 410, and 450 ............................. 14

5. Physical Education ...................................................... 2 hrs.
   (Includes Physical Education for the Elementary Teacher 340)

6. Electives to make 122 hours
SPECIAL EDUCATION CURRICULUM
ORTHOPEDICALLY HANDICAPPED

Bachelor of Science Degree

State Elementary Provisional Certificate

(For the preparation of teachers of crippled and homebound children)

A. Minimum hours for this curriculum
(if B.A. degree is desired, see page 25 for these requirements)

130 hrs.

B. Course Requirements

1. General Studies requirements must be met.

2. Communication Arts and Sciences, Language, Literature,
   Philosophy, Religion ........................................ 4 hrs.
   Children's Literature 282 .................................. 4

3. Science, Mathematics, Psychology
   Structure of Arithmetic 150 .................................. 7 hrs.
   Psychology I 150 .............................................. 4

4. Teacher Education
   Human Development and Learning 250 .................... 11 hrs.
   Teaching of Reading 312 .................................... 4
   Directed Teaching 471 (Regular Class) .................. 3

5. Fine Arts (Art and Music)
   Music for the Classroom Teacher 140 .................... 7 hrs.
   Art Education Workshop 150 ................................. 4

6. Practical Arts
   Arts and Crafts for Teachers 593 ......................... 2 hrs.

7. Orthopedically Handicapped—Major
   Education of Exceptional Children 530 .................. 40 hrs.
   Practicum in Special Education 531 .................... 3
   Behavior Disorders in School-Aged Children 588 ...... 3
   Nature and Needs of Crippled and Homebound Children 543 .. 4
   Communication Disorders 200 ............................. 3
   Diagnostic and Prescriptive Techniques in Special Education 533 .. 4
   Special Education 533 ...................................... 4
   Curricular and Instructional Provisions for Exceptional
   Children 534 .................................................. 4
   Orthopedic and Medical Lectures 524 .................... 4
   Directed Teaching (Special Educ.) 474 .................. 8
   Seminar in Education 410 .................................. 2
   School and Society 450 ..................................... 3

8. Physical Education ........................................... 2-8 hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. One Academic Minor in a subject or subject field taught in
the elementary school ....................................... 20 hrs.

D. Electives (Under Advisement) .............................. 3 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the
B.A. degree.
Special Education Curriculum

Visually Handicapped

Bachelor of Science Degree
State Elementary Provisional Certificate

(For the preparation of teachers of visually impaired children)

A. Minimum hours for this curriculum 130 hrs.
   (If B.A. degree is desired, see page 25 for these requirements)

B. Course Requirements
   1. General Studies requirements must be met
   2. Communication Arts and Sciences, Language, Literature,
      Philosophy or Religion ........................................ 7 hrs.
      Children's Literature 282 .................................... 4
      Public Speaking I 130 ........................................... 3
      Structure of Arithmetic 150 ................................. 4
      Psychology I 150 .............................................. 3
   4. Teacher Education .................................................. 11 hrs.
      Human Development and Learning 250 ......................... 4
      Teaching of Reading 312 ..................................... 3
      Directed Teaching 471 (Regular Class) ...................... 4
   5. Fine Arts (Art and Music) ....................................... 7 hrs.
      Music for the Classroom Teacher 140 ....................... 4
      Art Education Workshop 150 .................................. 3
   6. Practical Arts ....................................................... 2 hrs.
      Arts and Crafts for Teachers 593 ............................ 2
   7. Visually Handicapped—Major ..................................... 38 hrs.
      Education of Exceptional Children 530 ...................... 3
      Practicum in Special Education 531 .......................... 2
      Education of Blind and Partially Sighted 592 ............. 2
      Diagnostic and Prescriptive Techniques in Special Education 533 ........ 4
      Curricular and Instructional Provisions for Exceptional
      Children 534 ................................................... 4
      Braille and Other Communication Methods 591 .......... 2
      Methods and Techniques of Teaching Braille and Other Areas
      of Communication 593 ........................................ 3
      Physiology and Function of the Eye 590 ..................... 2
      Principles of Orientation and Mobility for the Blind 594 ... 3
      Directed Teaching (Special Education) 474 ............... 8
      Seminar in Education 410 .................................... 2
      School and Society 450 ........................................ 3
   8. Physical Education .................................................. 2-8 hrs.
      (Must include Physical Education for the Elementary Classroom
      Teacher 340)

C. One Academic Minor in a subject or subject field taught in the
   elementary school ................................................. 20 hrs.

D. Electives (Under Advisement) ..................................... 2 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the
   B.A. degree.
A. Minimum hours for this curriculum 130 hrs.
(If B.A. degree is desired, see page 25 for these requirements)

B. Course Requirements
1. General Studies requirements must be met
2. Communication Arts and Sciences, Language, Literature, Philosophy or Religion ........................................ 4 hrs.
   Children's Literature 282 ........................................ 4 hrs.
   Structure of Arithmetic 150 ........................................ 4 hrs.
   Psychology I 150 ........................................ 3 hrs.
4. Teacher Education ............................................................ 13 hrs.
   Human Development and Learning 250 ......................................... 4 hrs.
   Teaching of Reading 312 ........................................ 3 hrs.
   Elementary School Social Studies 507 .................................... 2 hrs.
   Directed Teaching 471 (Regular Class) ..................................... 4 hrs.
5. Fine Arts (Art and Music) .................................................. 7 hrs.
   Music for the Classroom Teacher 140 ................................ 4 hrs.
   Art Education Workshop 150 ........................................ 3 hrs.
6. Practical Arts ................................................................. 2 hrs.
   Arts and Crafts for Teachers 593 ........................................ 2 hrs.
7. Emotionally Disturbed—Major ........................................... 36 hrs.
   Education of Exceptional Children 530 .................................. 3 hrs.
   Practicum in Special Education 531 ...................................... 2 hrs.
   Communication Disorders 200 ........................................ 3 hrs.
   Programs and Intervention Strategies with the Socially and Emotionally Maladjusted 589 ..................................... 4 hrs.
   Behavior Disorders in School-Aged Children 588 .......................... 3 hrs.
   Diagnostic and Prescriptive Techniques in Special Education 533 ........................................ 4 hrs.
   Curricular and Instructional Provisions for Exceptional Children 534 ........................................ 4 hrs.
   Directed Teaching (Special Education) 474 .................................. 8 hrs.
   Seminar in Education 410 ........................................ 2 hrs.
   School and Society 450 ........................................ 3 hrs.
8. Physical Education .......................................................... 2 hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. One Academic Minor in a subject or subject field taught in the elementary school ........................................ 20 hrs.

D. Electives (Under Advisement) ........................................ 5 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.
SPECIAL EDUCATION CURRICULUM
MENTALLY HANDICAPPED
Bachelor of Science Degree
State Elementary Provisional Certificate

(For the preparation of teachers of mentally handicapped children)

A. Minimum hours for this curriculum 130 hrs.
(If B.A. degree is desired, see page 25 for these requirements)

B. Course Requirements

1. General Studies Requirements must be met

2. Communication Arts and Sciences, Language, Literature,
   Philosophy, Religion .................................................. 7 hrs.
   Children's Literature 282 ........................................... 4
   Public Speaking I 130 .................................................. 3

   Structure of Arithmetic 150 .......................................... 4
   Psychology I 150 ....................................................... 3

4. Teacher Education ................................................... 11 hrs.
   Human Development and Learning 250 ............................ 4
   Teaching of Reading 312 .............................................. 3
   Directed Teaching 471 (Regular Class) ........................... 4

5. Fine Arts (Art and Music) ............................................ 7 hrs.
   Music for the Classroom Teacher 140 ............................. 4
   Art Education Workshop 150 ......................................... 3

6. Practical Arts ......................................................... 2 hrs.
   Arts and Crafts for Teachers 593 .................................. 2

7. Mentally Handicapped—Major ...................................... 36 hrs.
   Education of Exceptional Children 530 .......................... 3
   Practicum 531 .......................................................... 3
   Communication Disorders 200 ....................................... 3
   Nature and Needs of the Mentally Handicapped 532 .......... 4
   Behavior Disorders in School-Aged Children 588 ............... 3
   Diagnostic and Prescriptive Techniques in Special 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 .................................................... 2-8 hrs.
   (Must include Physical Education for the Elementary Teacher 340)

C. One Academic Minor in a subject or subject field taught in
   elementary school ................................................. 20 hrs.

D. Electives (Under Advisement) ...................................... 4 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the
   B.A. degree.
SPECIAL EDUCATION CURRICULUM
SPEECH PATHOLOGY AND AUDIOLoGY

Bachelor of Science Degree
State Elementary Provisional Certificate
(For preparation of School speech and hearing clinicians)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements

1. General Studies Requirements as described on page 25 of this catalog must be met.

2. Language, Literature, Philosophy, Religion ................................................. 4 hrs.
   Children's literature 282 ......................................................... 4

3. Mathematics and Psychology ................................................................. 10 hrs.
   Psychology ......................................................................................... 6
   Structure of Arithmetic 150 ............................................................... 4

4. Teacher Education and Special Education .................................................. 35 hrs.
   Human Development and Learning 250 ............................................ 4
   Teaching of Reading 312 .................................................................. 3
   Teaching and Learning (Elem.) 300 ................................................... 3
   Elem. School Social Studies 507 ....................................................... 2
   Practical Arts Elective ...................................................................... 3
   Education of Exceptional Children 530 ............................................. 3
   Behavior Disorders in School-Aged Children 588 .............................. 3
   Directed Teaching, Seminar in Education and School and Society 470, 410, and 450 ....................................................................................... 14

5. Fine Arts ................................................................................................. 7 hrs.
   Music for Classroom Teacher 140 ................................................... 4
   Art Education Workshop 150 ............................................................. 3

   Intro. to Communication Disorders 200 ........................................... 3
   Orientation to Clinical Practice 201 ................................................... 1
   Anatomy and Physiology of Speech 202 ........................................... 3
   Speech and Language Development 203 ........................................... 2
   Phonemics 204 ............................................................................... 2
   Bases of Speech and Hearing ......................................................... 3
   Phonemic Disorders 351 ................................................................. 2
   Phonatory Disorders 352 ................................................................. 2
   Fluency Disorders 353 ................................................................. 2
   Language Disorders in Children 354 .............................................. 2
   Hearing Disorders 355 ................................................................. 2
   Introduction to Audiometry 357 ....................................................... 2
   Practicum I 400 ............................................................................ 1
   Practicum II 401 ........................................................................... 1
   Electives in major area ................................................................. 2
   (Recommended: Speech and Hearing Therapy in the Schools 554)

7. Physical Education including Physical Education for the Elementary
   Teacher 340 .................................................................................. 2-8 hrs.

C. One minor appropriate to Elementary Education

D. During the program the student must satisfactorily complete clinical requirements as specified by the Department of Speech Pathology and Audiology.

E. The candidate must satisfy the requirements for the B.S. Degree.
CLINICS

READING CENTER AND CLINIC

Dorothy McGinnis, Director

The primary purpose of the Reading Center and Clinic is to provide educational and clinical experiences for mature students enrolled at Western Michigan University who are preparing to do educational and psychological work with children and adults. A secondary function of the clinic is to provide educational and psychological services to parents, teachers and college students. Special activities carried on by the clinic are designed to provide developmental and corrective instruction in reading for children and adults, and to furnish consultative services for teachers and schools in Southwestern Michigan. Furthermore, the clinic provides students in education and psychology an opportunity to see the administration of educational and clinical tests and the procedures employed in interviewing children.

University students encountering difficulty in reading or those wishing to improve their reading skills may seek assistance in the Reading Center and Clinic located in Room 300 of the Speech and Hearing Center on the East Campus. Referrals come from the students themselves as well as the Counseling Center and members of the faculty. After causal factors have been identified, treatment is provided.

INSTITUTE OF BLIND REHABILITATION

Donald Blasch, Director

The Institute of Blind Rehabilitation offers clinical and educational services to students and other clients who have severe visual impairments and works cooperatively with the Michigan Division of Services for the Blind. Operating in part on grants from the Vocational Rehabilitation Administration, and the Department of Health, Education, and Welfare, the Institute offers graduate programs in Orientation and Mobility, Home Teachers for the Adult Blind, and undergraduate programs for teachers of visually handicapped children. Part of its function is to conduct workshops for people working in the field, provide consulting services, and to initiate pertinent research in this area.

Faculty members of the Institute are members of the Department of Special Education and are responsible to that department for teaching courses, counseling students and curricular revision.
Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to take a minimum of 21 hours of professional courses in teacher education, plus a methods course offered in the major or minor field; students in elementary education are required to complete 26 hours in professional education courses. A "C" average or better must be earned in required professional courses.

Applicants for the secondary provisional certificate are not permitted to major in Teacher Education.

Elective courses are available in the following fields: elementary education, secondary education, rural life and education, special education, methods of teaching, foundations of education, and related areas. Certain special-methods courses are available in other departments of the university.

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 departmental adviser at the earliest possible date. Those majoring in certain fields requiring continuous study throughout the senior year may, upon application to the Directed Teaching office, be permitted to take 450 during the other semester of that year.
INTEGRATED CREATIVE ARTS MINOR

An interdepartmental minor in the creative arts is now offered for elementary teachers. Students selecting this minor must be admitted to the minor through a personal conference with one of the Teacher Education faculty in charge of the program. Faculty names are available in the Teacher Ed. Office. This minor consists of 24 semester hours distributed as follows:

Teach. Ed. 230*—The Nature of Creativity ........................................ 4 hrs.
Women's Phys. Ed. 341—Creative Dance for Children .......................... 4
Music 140—Music for the Classroom Teacher .................................... 4
Art 200—The Creative Process through Art ....................................... 4
Comm. Arts and Sci. 564—Creative Dramatics for Children ................. 4
Teacher Ed. 430—Creativity in the Elem. School ............................... 4

Students enrolled in this minor must take TEED. 430 (Creativity in the Elementary School) after they have taken all other courses in the minor. Students in this minor must take an approved replacement for Music 140 and Art 150 in the El. Ed. Minor.

HEALTH EDUCATION GROUP MINOR

A Group Minor is offered in Health Education. It is open to all students and is especially appropriate for those specializing in Elementary Education, in Special Education, and in Secondary Education with majors in such areas as Biology, Home Economics, Physical Education, Psychology, Sociology, and Speech Pathology and Audiology. The Health Education Group Minor consists of 24 hours. Ten to eleven hours are required and the other thirteen to fourteen are elective. Since health is a multidisciplinary program, students should not elect more than two courses in any one department exclusive of required courses.

Adviser: Dr. Margaret S. Large

Required Courses .................................................................................. 10-11 hrs.

Biology

100 Principles of Biology or
101 Animal Biology or
107 Biological Science ......................................................... (elect one) 3-4
205 Human Body in Health and Disease** ............................... 4

Elective Courses ............................................................................... 13-14 hrs.

Biology

111 Healthful Living ........................................................................ 2
210 Mammalian Anatomy .............................................................. 4
219 Human Physiology ................................................................. 4

Teacher Education

555 Alcohol Education .................................................................... 2

*May be substituted for Arts and Ideas in the General Studies Program.
**Mammalian Anatomy (210) or Human Physiology (219) may be substituted for Human Body in Health and Disease (205).
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<tr>
<th>Course Area</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>College of Education</td>
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<td><strong>Home Economics</strong></td>
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<td>212 Foods and Nutrition</td>
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<td><strong>Psychology</strong></td>
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<td>150 Psych. I: Introduction to the Science of Behavior</td>
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<td>160 Psych. II: Personality and Developmental Psych.</td>
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<td>250 Behavior Mod. I: Abnormal Psych.</td>
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<td><strong>Sociology</strong></td>
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<td>200 Principles of Soc.</td>
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<td>290 Modern Marriage</td>
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<td>572 Community Agency Resources</td>
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<td>592 Family Life Education and Counseling</td>
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<td><strong>Special Education</strong></td>
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<td>530 Education of Exceptional Children</td>
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<td>588 Behavior Disorders in School-Aged Children</td>
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<td><strong>Speech Pathology and Audiology</strong></td>
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<td>200 Introduction to Communication Disorders</td>
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<td><strong>P.E.W.</strong></td>
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<td>150 First Aid</td>
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<td>275 Community Health</td>
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<tr>
<td>342 El. School Health and Safety Ed. or</td>
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<td>343 Sec. School Health and Safety Ed.</td>
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<tr>
<td>514 Health Education Materials and Methods</td>
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<td>516 Issues in Health Education:</td>
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<td>(a) Mental Health, (b) Sex Education, (c) Mood Modifiers, (d) Environmental Pollution, (e) etc. Students may register for 516 more than once but may not repeat the same issue</td>
<td>1-4</td>
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<tr>
<td><strong>TEACHER EDUCATION (TEED) COURSES</strong></td>
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<tr>
<td>100 Introduction to Education</td>
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<td>2 hrs.</td>
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<td>This course is designed to provide an early introduction to the profession of teaching and to the educational services present in communities of the state and nation. Field trips, observations, audio-visual materials, resource persons, tests and personal inventories are used to acquaint students with the purposes and functions of education in American society, and to help students make intelligent choices of areas of specialization within the profession. Course meets three hours a week for two hours credit.</td>
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<td>102 Techniques of Learning and Adjustment</td>
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<td>2 hrs.</td>
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<td>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.</td>
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<td>104 Adult Reading</td>
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<td>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</td>
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building, problem solving, concentration and critical reading. Group and individual conferences are provided.

201 Curriculum Organization in Small Schools 3 hrs.
A study of the objectives of education as related to rural children and rural needs and teaching practices leading toward these objectives. Students experience through observation and participation the development of materials suitable for use in small schools.

220 Rural Sociology 3 hrs.
A study of life in the rural environment—local, regional and world wide, including cultural factors; population trends; impact of industrialization; family, village, community; social institutions, agencies and organizations; educational, recreational, religious, health and government facilities. Magazines, pamphlets, and other sources supplement textbooks.

230 The Nature of Creativity 4 hrs.
An interdisciplinary course dealing with creativity as a human function central to man’s behavior, institutions and environment. Team-taught by faculty members from the departments of Art, Communication Arts and Sciences, Music, Physical Education (Women), and Teacher Education.

231 Rural Economics 3 hrs.
Basic economic principles are considered in terms of rural conditions—local, national, international. Economic interpretations are given topics found in local school's curricula, conservation, taxes, insurance, consumer education, cooperatives, agricultural extension, services, etc.

250 Human Development and Learning 4 hrs.
This course deals with the physical, social, emotional, and intellectual development of children and adolescents. Classes meet four hours a week. All students are required to observe and/or work with children or adolescents and should reserve one-half day a week for this purpose. Early in the course students should apply for the professional sequence card required for registering in 300 or 400 courses of this sequence.

300 Teaching and Learning (in Elem., Jr. H.S., Sr. H.S.) 3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; non-instructional duties of the teacher in school and community. Sections are divided according to school levels: elementary, junior high school and senior high school. Prerequisite: TEED 250, Human Development and Learning, and admission to professional sequence.

301 Stories for Childhood 2 hrs.
A study of stories and poems suitable to childhood. Classroom practice in story telling.

311 Reading Workshop 3 hrs.
The basic purpose of the workshop will be to study typical classroom reading problems. Tools useful in identifying problems, materials available, and techniques for the teaching of reading will be examined and experimented within the classroom. Special consideration will be given to a case study of one severe reading problem.
312 The Teaching of Reading (Elementary) 3 hrs.
A summary of the results of the scientific studies made in the field of reading. Methods of teaching reading are critically analyzed. Stress is placed on appropriate materials at various levels.

313 Problems in Elementary Education 3 hrs.
This course is designed to deal with problems of immediate concern to beginning teachers—discipline, group activity, teacher-pupil planning, and other problems dealing with teaching in the elementary school.

322 The Teaching of Reading (Secondary) 3 hrs.
This course deals with methods and materials for improving reading in the junior and senior high school. Both developmental and remedial procedures are stressed.

340 General Safety Education 3 hrs.
A survey course. The philosophy and psychology of accident prevention in the areas of public, home, industrial, and school safety will be studied. Emphasis will be on safe human behavior. The course is intended for elementary, middle, and high school teachers.

408 Supervision in Rural Area Schools 1-2 hrs.
Planned for supervisors, principals, and administrators. Discussion and individual reports center on curriculum problems, orienting new teachers, teaching practices and in-service education. Other supervisory problems for all types of rural schools are included.

410 Seminar in Education 2 hrs.
(Taken in conjunction with Directed Teaching)
Students work individually and in groups on the kinds of problems faced in directed teaching situations in classroom, school and community. Other problems to be faced later as full-time teachers are considered. Suggestions and guidance are afforded by staff members and by resource persons. The seminar is divided into elementary and secondary sections.

411 Problems of Community Schools in Rural Areas 1-2 hrs.
An analysis of the community school-reorganization of school districts; functions of the local intermediate and state boards of education; school building planning, supplies, equipment, professional organizations, school law, public relations and other topics. Prerequisite: TEED 201.

416 Later Elementary Education 3 hrs.
A study of the characteristics and needs of pupils in the later-elementary grades and of the materials and methods of instruction.

430 Creativity in the Elementary School 4 hrs.
A synthesis of the principles of creativity in application to teaching and learning situations in elementary education. Team-taught by faculty members from the departments of Art, Communication Arts and Sciences, Music, Physical Education (Women), and Teacher Education.

442 Fundamentals of Driver Education 2 hrs.
Fundamentals, principles, practices, objectives, and subject matter content of high school Driver Education and Traffic Safety. Methods of teaching in the class-
Teacher Education

room. First of three required courses to certify Driver Education teachers. Prerequisites: Junior level and valid driver's license.

450 School and Society 3 hrs.

Course content includes such matters as social, political, and economic influences on education; historical and philosophical backgrounds of present-day education; changes and trends in education; and current problems in education.

470 Directed Teaching 9 hrs.

Students devote a minimum of four and one-half days per week for one semester to Directed Teaching, at which time they have experience in both the curricular and extra-curricular programs of the school in which they teach. All students expecting to do Directed Teaching should enroll at the Directed Teaching Center well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: TEED 250 and 300, or equivalent; 2.0 average in all education courses and in overall average.

471 Directed Teaching 1-8 hrs.

Only for seniors who have completed most of their professional course work prior to the senior year. Similar to description for 470. Students should enroll at the Directed Teaching Center for 471, 472 or 474 well in advance of the semester in which the directed teaching is to be done. Prerequisite: 2.0 average in all education courses and in overall average.

472 Directed Teaching 4-9 hrs.

Only for seniors who have previously fulfilled a part of their requirement in directed teaching. Similar to description for 471.

474 Directed Teaching (Special Education) 4-8 hrs.

Only for students specializing in special education. Candidates must be approved by the Head of the Special Education Department.

502 Curriculum Workshop 2-4 hrs.

Opportunity is provided for teachers, supervisors and administrators in selected school systems to develop programs of curriculum improvement. A wide variety of resources is used for instructional purposes, including several specialists, library and laboratory facilities, field trips, audio-visual materials and the like.

506 Adult Education 2-4 hrs.

This course will include such topics as organizing and financing formal public school adult education programs, promoting informal adult education activities, leadership training, program planning, and adult education group techniques. Students will be permitted to select special areas of interest for research and study.

507 Teaching of Social Studies in the Elementary Schools 2 hrs.

This course is designed to help teachers understand the role of the social studies in the elementary school, gain insight into important considerations in the selection of content, and discover how to guide and assess the learning of children in this field. Planning social studies experiences and ways of working with children in a classroom setting will be emphasized.

508 Parent Education 2 hrs.

Places major emphasis on home problems which have educational implications for the child. Parent-teacher relationships, council programs, and cooperative efforts for improvement of education in home and in school are studied.
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. Prerequisite: TEED 312 or 322 and permission of instructor.

514 Nursery-Kindergarten Education  2 hrs.
This course will acquaint the students with the history and present-day status of nursery school and kindergarten education. Consideration will be given to the organization, equipment, curriculum and approved teaching procedures.

525 Rural Life  2 hrs.
Critical study of recent books in rural social life. Consideration is given to individual problems related to social aspects of community life. Special problems are selected for study by each student. Field work is encouraged. Prerequisite: TEED 220.

535 Introduction to Teaching the Disadvantaged  3 hrs.
Designed for teachers and administrators who are presently working with disadvantaged children and youth. Class meetings are centered around problems arising from practical situations, particularly with respect to affective factors of environment and their relation to teaching and learning. Extensive use is made of consultants from social, governmental and educational agencies working with the disadvantaged.

542 Administration and Methods of Driver Education  2 hrs.
History, philosophy, and psychology of driver education. Emphasis on organization and administration of high school Driver Education programs. Laboratory work in dual control cars and driving range programs. Prerequisite: TEED 442.

544 Psychology of Driver Education  2 hrs.
Psychological and perceptual aspects of the driver and traffic safety. The role of the teacher in influencing driver behavior. Research in traffic safety. Prerequisite: TEED 442.

548 Fundamentals of Audiovisual Media  2 hrs.
A survey of audiovisual media as effective means for achieving educational objectives. Emphasizes selection and classroom use of both commercially available and simple, locally produced instructional materials. Students preview and evaluate films, filmstrips, recordings, etc. and are expected to show proficiency in the operation of projectors, tape recorders and other equipment during correlated laboratory sessions which require several hours outside of class during the semester. In addition to text materials, students must provide supplies averaging about $5.00 per student. Limited to 30 students.
549 Basic Production of Audiovisual Materials 3 hrs.
A laboratory course in the preparation and effective use of teacher-made visual materials. Covers basic processes of mounting, laminating and reproducing pictures, designing and creating posters and displays, design and production of transparencies for overhead projection, and fundamentals of photography. In addition to text materials, students must provide supplies averaging about $15.00 per student and must have the use of a simple camera. Limited to 15 students. Prerequisite: TEED 548.

552 Comparative Education 3 hrs.
Provides an analysis of selected educational systems throughout the world. The goals, organizational structure, curricula, and methods of education are examined in relation to the salient features of each culture, and in comparison to the American educational system.

555 Alcohol Education 2 hrs.
Deals with problems of alcohol education in the school and community, with special emphasis on teaching methods and procedures, relationships with governmental and social agencies and administration of the program.

560 Practicum: Sociological and Psychological Foundations of Teaching the Disadvantaged 2-6 hrs.
The initial course required of all students in this program. Designed to develop awareness of family situations, community conditions, behavior, value systems, and characteristics of the disadvantaged, as well as to develop positive attitudes toward these children and their problems. Consists of readings, lecture-discussions, and field experiences with the disadvantaged, including home visits, visits to social and governmental agencies, and school experiences including supervised teaching. Generous use is made of consultants from all agencies dealing with the problems of the disadvantaged.

586 Clinical Studies in Reading 2 hrs.
This course is intended to provide the basic information needed in the examination of persons with reading disorders. Interviewing techniques and examination procedures will be the basic content of the course. Emphasis will be placed on the physical, psychological and sociological factors affecting reading performance.

587 Educational Therapy in Reading 2 hrs.
A study is made of the psychological, sociological and physiological factors affecting children's reading ability, together with laboratory application of such knowledge in the prevention, diagnosis and treatment of reading problems. Open only to experienced teachers by permission of the instructor.

597 Reading and Related Language Experiences 2 hrs.
A study of the current research in the many aspects of language which are involved in the process of effective reading.

598 Selected Reading in Education 1-4 hrs.
Designed for highly qualified students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental adviser and instructor.
The Department of Special Education offers undergraduate and graduate programs for the preparation of teachers, administrators and clinical service personnel in the areas of visually impaired, emotionally disturbed, crippled and homebound, and mentally handicapped. Students in undergraduate programs are awarded an elementary provisional certificate with a major in one of the above fields, which also permits them to teach in their major throughout all grades of the school system.

The curricula in Special Education represent balanced programs of general, specialized and professional education, and are designed to meet state requirements for approval of teachers in the respective fields. Students officially admitted to, and enrolled in, undergraduate curricula in Special Education, are expected to consult with departmental advisors early in their college career. Questions regarding enrollment procedures in Special Education, course substitutions, or practicum placements, should be referred to the student's advisor.

**SPECIAL EDUCATION**

474 Directed Teaching in Special Education 4-8 hrs.

See p. 403.

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.

528-29 Interdisciplinary Education & Rehabilitation Techniques 4 hrs.

(2 per semester)

This course is intended to develop a thorough understanding of the roles of the various disciplines involved in the diagnosis, education, and rehabilitation of exceptional children and youth. Lectures, taped and filmed interviews, and live demonstrations are utilized.

530 Education of Exceptional Children 3 hrs.

Deals with the problems and methods involved in the adjustment and training of exceptional children in the schools—the mentally retarded, the gifted, the crippled, the deaf, the blind, the emotionally disturbed, the socially maladjusted, and the mentally handicapped. Prerequisite: Junior standing.
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. Prerequisite: TEED 250 and Junior standing.


A course especially intended for teachers of mentally handicapped children. Also recommended for school counselors, psychologists, social workers and other auxiliary personnel. Course objectives include an understanding of the causes, diagnoses, classification and interpretation of mental deficits. Prerequisite: Spec. Educ. 530 or equivalent.

533 Diagnostic and Prescriptive Techniques in Special Education 4 hrs.

A thorough study of educational diagnostic instruments and techniques will precede the student's utilization of these measures in evaluating exceptional children in his curricular area. Diagnostic findings will be translated into individualized educational prescriptions. For majors enrolled in Special Education curricula and to be taken concurrently with Special Education 534. Prerequisites: Special Education 530, 531 and consent of Department.

534 Curricular and Instructional Provisions for Exceptional Children and Youth 4 hrs.

Critical issues in determining curricular expectations for atypical individuals will be analyzed. Essentials in ascertaining appropriate behavior for these pupils will be combined with identifying and evaluating a variety of educational methods and materials. Students enrolled in this course will be expected to delineate behavioral goals for those evaluated in Special Education 533 and translate diagnostic data into meaningful education programs. Prerequisites: Special Education 530, 531 and concurrent enrollment in 533.

536 Contemporary Issues in Special Education: Honors Seminar 1 hr.

A course especially designed for selected undergraduate majors in Special Education curricula. Emphasis will be placed on theoretical discussion of social, philosophical, economic and educational problems related to the education of exceptional children and youth. Prerequisites: Special Education 530, 531 and faculty approval of the applicant.

543 Nature and Needs of Crippled and Homebound Children 4 hrs.

Study of educational, psychological, and therapeutic needs of crippled children and the role of allied disciplines in meeting these needs. Prerequisite: Special Education 530.

588 Behavior Disorders in School-Aged Children 3 hrs.

Deals with the psychoeducational aspects of disturbed or disturbing behavior as related to the school program. Issues and problems associated with normal development, concepts of diagnosis, and the incidence of maladjustment will be reviewed. The characteristics, causes, diagnosis, and treatment of the effects of such conditions in children as psychoneurosis, mental subnormality, juvenile delinquency, psychosis, learning disability, and social 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 531.
College of Education

589 Programs and Intervention Strategies for the Socially and Emotionally Maladjusted 4 hrs.

This course, open only to majors in Special Education curricula, will emphasize techniques and procedures applicable to socially-emotionally maladjusted children in various special or public school settings. Current theories, contemporary programs and trends in behavioral change and management will be reviewed and discussed. Prerequisites: Special Education 588 and consent of Department.

BLIND REHABILITATION

590 Physiology and Function of the Eye 2 hrs.

The anatomy, structure and function of the eye. Various eye diseases and malfunctions are stressed. The student is given an opportunity to observe all types of eye conditions, eye prosthesis and low visual aids.

591 Braille and Other Communication Methods 2 hrs.

Acquaints the student with the basic rudiments of Braille reading and writing. Familiarization with other means of communication used by the blind.

592 Education of the Blind and Partially Sighted 2 hrs.

An overview of the education of visually handicapped children and adults. An introduction to the literature, history, principles, practices and problems in the field, including curricular and methodological adaptations of various educational programs.

593 Methods and Techniques of Teaching Braille and Other Areas of Communication 3 hrs.

Provides students with the ability to teach areas of communication essential to the blind, such as: social communication, use of Braille, typing, script writing, electronic devices and other media. Opportunity for supervised practical application of methods will be afforded to the student.

594 Principles of Orientation and Mobility for the Blind 3 hrs.

An examination of the fundamental principles underlying spatial and geographical orientation and mobility for the blind. This will include an analysis of the sensorium in orientation and a study of bodily alignment and movement in mobility. There will also be a study of the specific characteristics of various mechanical typhlostaffs, plus an evaluation of electronic sensory aids for travel.

595 Orientation and Mobility 2 hrs.

Techniques will be acquired under conditions simulating blindness. Emphasis will be placed on the use of the remaining senses, common objects, the muscles and the skeleton in activities of daily living. Permission of instructor.

596 Advanced Orientation and Mobility 4 hrs.

Orientation and mobility techniques and the proper methods of incorporating them into a person's method of travel. Guided observation and practice with blinded individuals ranging in age from the pre-kindergarten through the aged in various environments, such as: school, residence, community, and work situations. Permission of instructor.
599 Gerontology

The course offers an overview of the characteristics, circumstances and needs of the aging population of the United States, and explores the types of services available to meet their needs. The course will focus upon the demography of the aged, the physiological changes and chronic diseases of aging, the social and economic aspects of aging, the psychological changes which come with age, and a review of the community resources which serve the aged.

Educational Leadership

Harold W. Boles
James A. Davenport
Sidney Dykstra
Gerald Martin
Dorothy McCuskey

Theodore L. Ploughman
Rodney W. Roth
William P. Viall
Donald C. Weaver

This department offers curricula in Line Administration, Staff Administration, and Program Leadership, leading to a degree of Master of Arts, Specialist in Education, or Doctor of Education. While most of the department's courses, seminars, studies, etc., are intended for graduate students, programs of studies may be outlined and pursued by advanced undergraduate students whose career goals include positions as leaders in the many and varied educational agencies that are operative in society today. Interested students should see the Graduate Bulletin for more detail.
Counseling & Personnel

William D. Martinson, Head
Robert L. Betz
Kenneth Bullmer
William A. Carlson
Kenneth B. Engle
L. Dale Faunce

Paul L. Griffeth
Neil Lamper
Arthur J. Manske
Gilbert E. Mazer
Thelma Urbick

The Department of Counseling & Personnel offers work in the fields of counseling and personnel. Most of 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. A thorough investigation of the philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.

581 Interpretation and Use of Tests in Guidance 2 hrs.
Designed to familiarize students with various psychological tests and scales that may be used in school guidance programs. Tests are taken and scored by students, and the results are interpreted and evaluated.

582 The Information Service in Guidance 2 hrs.
Designed to introduce counselors, teachers and other personnel workers to: (1) basic resources available in the area of occupational, educational and personal social information, (2) theories of vocational development and their application to the process of guidance and counseling, and (3) the world of work, and especially an analysis of work's impact on American culture. (C-Card required)

583 Guidance Workshop 2-4 hrs.
Designed for teachers and counselors who wish to study particular guidance problems and procedures in relation to their local guidance program.

584 Elementary School Guidance 2 hrs.
Designed to give teachers, administrators and elementary counselors an understanding of the principles and techniques of guidance in elementary schools.
Physical Education
for Men

Joseph T. Hoy, Head
Donald E. Boven
Boice M. Bowman
Bill M. Chambers
J. Patrick Clysdale
Charles Comer
Robert L. Culp
George G. Dales
Fred A. Decker
David Diget
F. William Doolittle
Edward A. Gabel

George W. Hobbs
J. Arthur Jevert
Jack D. Jones
Steven C. Kaiser
Eldon J. Miller
John T. Miller
Fred C. Orlofsky
Richard Raklovits
Harold L. Ray
William Rowe kamp

Merle J. Schlosser
John F. Shaw
Richard A. Shiltz
Thomas C. Slaughter
Raymond F. Sorensen
Fred L. Stevens
Ajac Triplette
Ronald J. Winter
Robert F. Wyman
Roger M. Zabik

THE GENERAL PHYSICAL EDUCATION
REQUIREMENT

All men must participate in general physical education beginning with the first
semester or session of residence, until a minimum of two hours is completed.
Classes meet two hours weekly for one semester of credit.

Exceptions:
1. Any student 30 years of age or older is not required to take physical education.
   (122 hours required for graduation)
2. Students in the marching band may count band participation towards 2
   semesters of general physical education.
3. A veteran (defined as one having served one year's continuous active duty)
   will be exempt from the general physical education requirement.
4. A transfer student must enroll in general physical education during the first
   semester or session of residence at Western and thereafter each semester or session
   until the 2 hour requirement is completed.
5. A member of varsity athletic teams may receive up to 2 credits in general
   physical education by enrolling in the appropriate course in the PEM 220-230 series.
6. Students are classified for physical education activities on the basis of a
   medical examination required by the University Health Service. Students classi-
   fied as 'limited' in terms of physical activity should enroll in the adapted physical
   education program (2 semester hours are required)

Restrictions:
1. Up to eight hours of general physical education will be accepted as credits
   towards graduation.
2. A freshman, sophomore, or junior student may not enroll in more than one
   hour of general physical education in any one semester. A senior may enroll in two
   hours in one semester (just cause must be shown) upon obtaining the written
   consent of the Coordinator of General Physical Education.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Department</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>Physical Fitness Program</td>
<td></td>
<td></td>
<td>(No credit)</td>
</tr>
<tr>
<td>100</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>100</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>101</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>101</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>102</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>102</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>103</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>103</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>104</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>104</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>105</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>105</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>106</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>106</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>107</td>
<td>General Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>107</td>
<td>Adapted Physical Education</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>124</td>
<td>Social Forms of Dance (Co-Educational)</td>
<td>Women's Department</td>
<td>1 hr.</td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>General Physical Education (Co-Educational Bowling)</td>
<td>Women's Department</td>
<td>1 hr.</td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>General Physical Education (Football)</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>221</td>
<td>General Physical Education (Cross Country)</td>
<td></td>
<td>1 hr.</td>
<td>Fall</td>
</tr>
<tr>
<td>222</td>
<td>General Physical Education (Basketball)</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>223</td>
<td>General Physical Education (Swimming)</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>224</td>
<td>General Physical Education (Wrestling)</td>
<td></td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td>225</td>
<td>General Physical Education (Baseball)</td>
<td></td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
<tr>
<td>226</td>
<td>General Physical Education (Track)</td>
<td></td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
<tr>
<td>227</td>
<td>General Physical Education (Golf)</td>
<td></td>
<td>1 hr.</td>
<td>Spring</td>
</tr>
</tbody>
</table>
Physical Education

228 General Physical Education (Tennis) 1 hr. Spring

229 General Physical Education (Gymnastics) 1 hr. Winter

230 General Physical Education (Ice Hockey) 1 hr. Winter

231 General Physical Education (Soccer) 1 hr. Fall

PROGRAMS FOR SPECIALIZING STUDENTS

PATTERN I—GROUP MAJOR IN H.P.E.R. (36 hours)

Required Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 150</td>
<td>Foundations of Physical Ed.</td>
<td>3</td>
</tr>
<tr>
<td>190</td>
<td>Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>280</td>
<td>Foundations of Sports Injuries</td>
<td>2</td>
</tr>
<tr>
<td>290</td>
<td>Practicum II</td>
<td>1</td>
</tr>
<tr>
<td>352</td>
<td>Tests and Measurements</td>
<td>2</td>
</tr>
<tr>
<td>375</td>
<td>Scientific Foundations P. E. and Ath.</td>
<td>3</td>
</tr>
<tr>
<td>290</td>
<td>Teaching of Phys. Ed.</td>
<td>2</td>
</tr>
</tbody>
</table>

Elect a minimum of one course from any three of the groups I-IV. The remaining hours are elected, as desired, from Groups I-VI.

Group I—Adapted Physical Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>242</td>
<td>Intro. to Habilitation of the Handicapped</td>
<td>3</td>
</tr>
<tr>
<td>320</td>
<td>Adapted P.E. Activity Series (Repeatable)</td>
<td>2</td>
</tr>
</tbody>
</table>

Group II—Elementary Physical Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 245</td>
<td>Introduction to Elem. School P.E.</td>
<td>2</td>
</tr>
<tr>
<td>246</td>
<td>Elementary School P.E. Curriculum</td>
<td>2</td>
</tr>
</tbody>
</table>

Group III—Coaching Techniques Series

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>PEM 160</td>
<td>Intro. To Coaching</td>
<td>3</td>
</tr>
<tr>
<td>330</td>
<td>Fundamentals of Coaching Series (Repeatable)</td>
<td>2</td>
</tr>
<tr>
<td>561</td>
<td>Prin. and Problems of Coaching</td>
<td>2</td>
</tr>
</tbody>
</table>

Group IV—Recreation Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>PEM 270</td>
<td>Outdoor Education</td>
<td>2</td>
</tr>
<tr>
<td>370</td>
<td>Community Recreation</td>
<td>2</td>
</tr>
<tr>
<td>371</td>
<td>Procedures &amp; Materials in Recreation</td>
<td>2</td>
</tr>
</tbody>
</table>

Group V—Health Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 342</td>
<td>or 343 School Health and Safety</td>
<td>3</td>
</tr>
<tr>
<td>514</td>
<td>Health Ed. Materials and Methods</td>
<td>2</td>
</tr>
<tr>
<td>516</td>
<td>Issues in Health Education</td>
<td>2</td>
</tr>
<tr>
<td>H.Ec. 212</td>
<td>Foods and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>TEED 555</td>
<td>Alcohol Education</td>
<td>2</td>
</tr>
</tbody>
</table>

Group VI—Additional Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>PEM 244</td>
<td>Sports Officiating</td>
<td>2</td>
</tr>
<tr>
<td>260</td>
<td>Organ. and Admin. of Intramurals</td>
<td>2</td>
</tr>
<tr>
<td>430</td>
<td>Water Safety Instructors</td>
<td>1</td>
</tr>
<tr>
<td>490</td>
<td>Dir. Field Exp. (Repeatable)</td>
<td>2</td>
</tr>
</tbody>
</table>
College of Education

560 Administration of P.E. ............................................. 2
580 Prev. and Treatment of Sport Injuries ............................ 3
590 Exercise Physiology .................................................. 2

Biology 210—Mammalian Anatomy, and Biol. 219—Human Physiology are required in the science area. All candidates for both the Group Major and Group Minor are expected to pass minimum standards of proficiency in a variety of motor activities as determined by a departmental committee of students and faculty.

PATTERN IIA—GROUP MINOR IN H.P.E.R. (24 hours)

Required Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 150</td>
<td>Foundations of P.E.</td>
<td>3</td>
</tr>
<tr>
<td>190</td>
<td>Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>280</td>
<td>Foundations of Sports Injuries</td>
<td>2</td>
</tr>
<tr>
<td>290</td>
<td>Practicum II</td>
<td>1</td>
</tr>
<tr>
<td>352</td>
<td>Tests and Measurements</td>
<td>2</td>
</tr>
<tr>
<td>375</td>
<td>Scientific Foundations of P.E. and Ath.</td>
<td>3</td>
</tr>
<tr>
<td>390</td>
<td>Teaching of P.E.</td>
<td>2</td>
</tr>
</tbody>
</table>

14

Students in this program will elect one course from any two Groups I-V. Remaining hours are elected as desired. (Each group is identical to the Group Major)

Biology 210—Mammalian Anatomy, is required in science area.

PATTERN IIB—RECREATION MINOR (20 hours) (Non-Teaching)

Required Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM 270</td>
<td>Outdoor Education</td>
<td>2</td>
</tr>
<tr>
<td>370</td>
<td>Community Recreation</td>
<td>2</td>
</tr>
<tr>
<td>371</td>
<td>Procedures and Materials in Recreation</td>
<td>2</td>
</tr>
<tr>
<td>470</td>
<td>Directed Field Experiences</td>
<td>2</td>
</tr>
</tbody>
</table>

8

ELECTIVES

Group I—Arts and Crafts ............................................. 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>190</td>
<td>Ind. Arts for Elementary Teachers</td>
<td>3</td>
</tr>
<tr>
<td>192</td>
<td>Related Arts and Crafts</td>
<td>3</td>
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</tbody>
</table>

Group II—Aquatics .................................................. 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>100</td>
<td>Beginning Swimming, Life Saving, Advanced Swimming, series Water Polo</td>
<td>1</td>
</tr>
<tr>
<td>430</td>
<td>Water Safety Instruction</td>
<td>1</td>
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</table>

Group III—Activity Skills ......................................... 3-4

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>150</td>
<td>Foundations of Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>100-215</td>
<td>General Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>160</td>
<td>Introduction to Coaching</td>
<td>3</td>
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</tbody>
</table>

Group IV—Additional Electives ..................................... 5-11

Biology

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>234</td>
<td>Outdoor Science for Teachers</td>
<td>3</td>
</tr>
</tbody>
</table>
232 or
233 (Seasonal) ........................................... 3

Physical Education
PEM 244 Sports Officiating ........................................... 2
260 Intramural Sports ........................................... 2
280 Found. of Sports Injuries ........................................... 2
PEW 101 Recreation Games ........................................... 1
143 Introductory Games and Sports ........................................... 1
170 Recreation and Society ........................................... 3
271 Recreation for Exceptional Children ........................................... 3
272 Music and Drama in Recreation ........................................... 3
461 First Aid ........................................... 2
470 Recreation and Facilities ........................................... 3

Geography
350 Conservation Natural Resources ........................................... 3

Sociology
368 Welfare Organization ........................................... 2

Librarianship
546 Storytelling ........................................... 2

Teacher Education
310 Stories for Childhood ........................................... 2

Students from outside H.P.E.R. normally select a minimum of 5 hours from Group IV. Majors and minors in physical education should see their Departmental counselor.

PATTERN IIC—HEALTH EDUCATION GROUP MINOR (24 hours)
See page 399.

PATTERN IID—COACHING MINOR (20 hours)
This minor is a SECOND MINOR ONLY. It does NOT certify a student to teach physical education. Based on the recommendations of a Task Force of the American Association of Health, Physical Education, and Recreation, the basic format is as follows:

Required Core
PEM 160 Introduction to Coaching ........................................... 3
280 Foundations of Sports Injuries ........................................... 2
375 Scientific Fdtns. of P.E. and Ath. ........................................... 3
490 Directed Field Exper. (Coaching) ........................................... 2
561 Prin. and Prob. of Coaching ........................................... 2

Group I—Coaching Techniques Courses: Student elects any six hours.
PEM 330 Fundamentals of Coaching Series (repeatable) Baseball, Basket-

ball, football, gymnastics, soccer, swimming, tennis, track, wrestling ........................................... 2

Group II—Additional Electives
PEM 244 Sports Officiating ........................................... 2
580 Prev. and Treatment Sprts. Injuries ........................................... 3
590 Exercise Physiology ........................................... 2
DESCRIPTION OF COURSES

150 Foundations of Physical Education 3 hrs.
Taught by a teaching team, the course provides an orientation to the profession by integrating theory and practical application. Fundamentals of a variety of sports are presented. History of sports and scientific foundations stressed. Motor readiness of professional students determined by testing program.

160 Introduction to Coaching 3 hrs.
To acquaint the prospective teacher with the ethics, responsibilities, and skills necessary for a coaching career. Emphasis is placed on fundamentals of basketball, baseball, track, and football.

190 Practicum I 1 hr.
Permits the beginning student to complete 30 hours of observation in an elementary or secondary school setting. Opportunity is provided to work directly with youngsters during the second semester on campus. Prerequisite: approval of instructor.

242 Introduction to Habilitation of the Handicapped 3 hrs.
A survey of the physical education needs of exceptional children. Basic organization and orientation to handicapped facilities. Philosophy of teaching handicapped individuals is stressed. Background in various disabilities is highlighted. Prerequisites: Biol. 210, approval of instructor.

244 Sports Officiating 2 hrs.
This course considers rules and officiating techniques with emphasis on football, basketball, and track. The student will be required to officiate in organized athletic contests and must qualify for certification as an official under the M.H.S.A.A. regulations.

245 Introduction to Elementary School Physical Education 2 hrs.
An examination of the learning process, theory of play, and developmental movement related to elementary children. Special stress is placed on the role of physical education in an elementary school program and as a part of continuing education, preschool through college. For any student who is considering the professional H.P.E.R. program.

246 Elementary School Physical Education Curriculum 2 hrs.
An in-depth study of outstanding international elementary school programs of physical education. Special emphasis placed on use of natural and inexpensive materials. Experimentation in H.P.E.R. and conceptually-based curricular patterns form a focal part of this course. Prerequisite: PEM 245.

260 Organization and Administration of Intramural Sports 2 hrs.
A study of the philosophy, objectives, rules, policies, regulations, and other administrative details of intramural sports programs. Preparation of an intramural pro-
Subject for use on the secondary level. Opportunity is provided for practical experience in the administration of intramural sports activities.

270 Outdoor Education 2 hrs.
Agency and school camping are stressed. The aims and values of camping, laws governing camp operation and camp counseling receive attention. Opportunity for applying skills in a real camp setting is given.

280 Foundations of Sports Injuries 2 hrs.
Advanced first aid knowledge and skills, needed by coaches and physical educators, are studied. A standard first aid card is highly recommended.

290 Practicum II 1 hr.
Students serve in a role similar to teacher aides in a setting different from that experienced in PEM 190. Approximately 30 hours of supervised participation is involved. Prerequisite: Approval of instructor.

320 Adapted Physical Education Series (Repeatable) 2 hrs.
Practical adaption of teaching techniques to physical education in working with the handicapped. Areas include individual sports, team sports, recreation and leisure skills, horseback riding, and swimming. Opportunities for laboratory work with handicapped children form a primary emphasis. Prerequisite: PEM 242.

330 Fundamentals of Coaching Series (Repeatable) 2 hrs.
Philosophy, theory, and techniques of coaching a variety of specific sports. In some cases, offensive and defensive techniques are highlighted. In others, scouting, meet and game management, or purchase and care of equipment are emphasized. Selection and preparation of competitors is vital in each sport. Course content is presented from the standpoint of the beginning coach. (Baseball, basketball, football, gymnastics, soccer, swimming, tennis, track, wrestling.) Prerequisite: PEM 160.

352 Tests and Measurements in Physical Education 2 hrs.
The theory of measurement in physical education, the selection and administration of appropriate tests, and the interpretation of their results by fundamental statistical procedures.

370 Community Recreation 2 hrs.
Nature and function of play; age periods and adaptations of activities; social environment; needs and objectives; construction, management and supervision. Study of outstanding programs in operation.

371 Procedures and Materials in Recreation 2 hrs.
The student has an opportunity to participate in and direct recreational activities and to become acquainted with and collect materials. Emphasis will be on activities used on playgrounds, in schools and in community centers.

375 Scientific Foundations of Physical Education and Athletics 3 hrs.
Kinesiological and physiological principles are applied to physical education and athletic programs in order to better understand the functioning of the human organism. Specific areas of exploration include: efficiency of movement, recommendations for improving performance on sound anatomical and mechanical bases, environmental aspects of exercise, circulatory-respiratory adjustments, metabolism and exercise, nutrition, drugs, conditioning, and strength-endurance training programs. Prerequisite: Biol. 210.
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390 Teaching of Physical Education 2 hrs.
Micro-teaching is provided in laboratory sections for elementary and secondary levels. The impact of current research on teaching techniques is stressed. Problems examined include topics such as leadership development, program planning, discipline, motor-perceptual emphases, and evaluation techniques. Prerequisites: PEM 150; approval of instructor.

430 Advanced Swimming 2 hrs.
This course is designed for students who wish to qualify for the Red Cross Senior Life Saving and Instructor's Certificate. The certificate will qualify the student for waterfront administration. Prerequisite: Approval of instructor.

490 Directed Field Experiences (Repeatable) 2 hrs.
Laboratory field work is provided to help students understand the role of professional school personnel in a variety of school and community settings. Under supervision, field experience may be gained in areas such as recreation education, coaching, health education, or adapted physical education. Prerequisite: Approval of instructor.

560 Administration of Physical Education 2 hrs.
Principles of supervision, financing, construction, and equipping facilities for physical education programs. Discussion of standards for evaluating representative rural, village, and city programs. Scheduling, records management, and communicating techniques. Public relations and professional relationships are stressed.

561 Principles and Problems of Coaching 2 hrs.
Relationship of athletics to education is considered. Practical problems such as coaching ethics, contest management, practice organization and planning, scouting, selection, and utilization of personnel, athletic financing and budget, safety responsibilities, program evaluation, training rules, and motivational techniques are discussed. Prerequisites: PEM 160; senior status.

580 Prevention and Treatment of Sports Injuries 3 hrs.
Survey of sport medicine with emphasis on injury prevention, diagnosis, and management. An in-depth study is made of specific injuries occurring frequently to sports' participants. Lecture: 2 hrs/week; Lab.: 2 hrs/week. Prerequisites: PEM 280, Biol. 210, 219; or consent of graduate adviser.

590 Exercise Physiology 2 hrs.
The mechanics of muscular contraction, nerve impulse conduction, oxygen exchange, and circulatory efficiency are discussed. Basic principles concerning the adaptation of the human body to stress in the form of strenuous exercise are applied to the training and conditioning of competitive athletics. Prerequisites: Mammalian Anatomy 210, and Human Physiology 219.

598 Readings in Health, Physical Ed., and Recreation 1-3 hrs.
Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Prerequisite: Approval of department head.
Physical Education for Women

Mardell Anderson
Helen Brown
Mary Brown
Billye Ann Cheatum
Harriet Creed
Ruth Davis
Eleanor Douglass
Frances Ebert
Jean Friedel

Clara Gamble
Elisabeth Hetherington
Janet Kanzler
Opal Klammer
Margaret Large
Patricia Lemanski
Luretta McCray
Ruth Ann Meyer

Margie Jeanne Miner
John Newton
Wendy Olson
Anna May Robertson
Candace Roell
Norma Stafford
Barbara Stephenson
Janet Stillwell

THE GENERAL PHYSICAL EDUCATION REQUIREMENT

All women must participate in general physical education beginning with the first semester or session of residence, until a minimum of two hours is completed. Classes meet two hours weekly for one semester of credit.

Exceptions:
1. Any student 30 years of age or older is not required to take physical education. (122 hours required for graduation)
2. Students in the marching band may count band participation towards 2 semesters of general physical education.
3. A veteran (defined as one having served one year's continuous active duty) will be exempt from the general physical education requirement.
4. A transfer student must enroll in general physical education during the first semester or session of residence at Western and thereafter each semester or session until the 2 hour requirement is completed.
5. Students are classified for physical education activities on the basis of a medical examination required by the University Health Service. Students classified as ‘limited’ in terms of physical activity should enroll in the adapted physical education program. (2 semester hours are required)

Restrictions:
1. Up to eight hours of general physical education will be accepted as credits toward graduation.
2. A freshman, sophomore, or junior student may not enroll in more than one hour of general physical education in any one semester. A senior may enroll in two hours in one semester (just cause must be shown) upon obtaining the written consent of the Coordinator of General Physical Education.

The Department of Physical Education for Women offers undergraduate major curricula preparation in the areas of physical education, physical education with an elementary emphasis, dance education, aquatics and recreation. Minors may be obtained in physical education in elementary education, physical education in
College of Education

secondary education, recreation, coaching, swimming, dance, physical education for the exceptional child, and health.

In order to be assigned an adviser in the Physical Education Department, any transfer or currently enrolled student at Western who desires to pursue a curriculum in the Department of Physical Education for Women should consult with the Department Head.

MAJORS

PHYSICAL EDUCATION MAJOR

Physical Education Majors will be expected to Attend the Spring Session of their freshman year. Transfer students are expected to attend the Spring Session at the end of their first year of residence. By the end of the first two years in residence, the student must have completed a minimum of 12-25 clock hours of observing and working with young people on the elementary level and on the secondary level. Proficiency tests will be offered in bowling, golf, archery, softball, basketball, social forms of dance and modern dance.

**Hours Required for this Curriculum**

122 hrs.

1. **General Studies as described on page 25 of this catalog**
   A. Required courses ........................................... 33 hrs.
      Biology 101 replaces General Studies 107
   B. Liberal Arts
      Biology 210 .................................................. 4
      Biology 219 .................................................. 4

2. **Required Professional Courses** .................................................. 35 hrs.
   PEW 190 Philosophical Foundations of Physical Education ........... 3
   PEW 294 Analysis of Movement ........................................... 3
   PEW 392 Measurement and Evaluation ..................................... 3
   PEW 132 Basic Motor Skills ........................................... 1
   PEW 123 Beginning Contemporary Dance .................................... 1
   PEW 290 Teaching of Physical Education in the
      Elementary School ............................................. 3
   PEW 292 Teaching of Physical Education in the
      Secondary School ............................................. 3
   PEW 390 Scientific Bases of Human Activity ......................... 3
   PEW 140 Badminton and Tennis ........................................... 1 hr.
   PEW 120 Stunts and Tumbling or
      141 Beginning Gymnastics ........................................... 1
   PEW 131 Field Sports ............................................. 1
   PEW 142 Volleyball ................................................ 1
   PEW 135 Rhythmic Movement for Children .............................. 1
   PEW Elect 1 officiating course ........................................... 1
   PEW Two swimming courses from general program ......................... 2
   PEW 144 Track and Field ............................................. 1
   PEW 121 International Dance ........................................... 1
   PEW 143 Introductory Games and Sports ................................ 1
   Activities
   PEW 215 Bowling .............................................
   PEW 129 Golf .................................................... 2
                  { Take 2 .............................................
   PEW 115 Archery ................................................ 1
   PEW 148 Softball ................................................ 1
                  { Take 1 .............................................
   PEW 146 Basketball .............................................
   PEW 124 Social Forms of Dance ....................................
                  { Take 1 .............................................
   PEW 102 Modern Jazz .............................................
PHYSICAL EDUCATION MAJOR WITH AN ELEMENTARY EMPHASIS

Majors are to have directed teaching experience on both the elementary and the secondary level. By the end of the first two years in residence, the major must have completed a minimum of 15-25 clock hours of observing and working with young people on both the elementary level and the secondary level. Proficiencies are available in archery, badminton, tennis, basketball, bowling and golf.

Hours Required for this Curriculum .................................................. 122 hrs.

1. General Studies as described on page 25 of this catalog
   A. Required Courses ........................................................................ 33 hrs.
      Biology 101 replaces General Studies 107
      Teacher Education 230 replaces General Studies 222
   B. Liberal Arts
      Biology 210 ................................................................. 4
      Biology 219 ................................................................. 4

2. Required Professional Courses ...................................................... 35 hrs.
   PEW 190 Philosophical Foundations of Physical Education ............. 3
   PEW 294 Analysis of Movement ...................................................... 3
   PEW 392 Measurement and Evaluation ........................................... 3
   PEW 132 Basic Motor Skills .......................................................... 1
   PEW 123 Beginning Contemporary Dance ...................................... 1
   PEW 290 Teaching of Physical Education in the Elementary School ... 3
   PEW 192 Teaching of Physical Education in the Secondary School ... 3
   PEW 170 Recreation and Society .................................................... 3
   PEW 390 Scientific Bases of Human Activity .................................. 3
   PEW 296 Physical Education for Physical and Learning Disabilities ... 3
   PEW 120 Stunts and Tumbling or 141 Beginning Gymnastics .......... 1
   PEW 135 Rhythmic Movement for Children ................................... 1
   PEW 121 International Dance ....................................................... 1
   PEW 144 Track and Field ............................................................. 1
   PEW Swimming—I course ............................................................. 1
   PEW 143 Introductory Games and Sports ....................................... 1
   PEW 172 Camp Leadership ......................................................... 3

DANCE EDUCATION

Hours Required for this Curriculum .................................................. 122 hrs.

1. General Studies as described on page 25 of this catalog
   A. Required courses ........................................................................ 33 hrs.
      Teacher Education 230 replaces General Studies 222
      Biology 101 replaces General Studies 107
   B. Liberal Arts
      Biology 210 ................................................................. 4
      Biology 219 ................................................................. 4
2. **Required Professional Courses** .......................................................... 35 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEW 190</td>
<td>Philosophical Foundations of Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>PEW 392</td>
<td>Measurement and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PEW 132</td>
<td>Basic Motor Skills</td>
<td>1</td>
</tr>
<tr>
<td>PEW 123</td>
<td>Beginning Contemporary Dance</td>
<td>1</td>
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<tr>
<td>PEW 482</td>
<td>History and Philosophy of Dance</td>
<td>3</td>
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<tr>
<td>PEW 384</td>
<td>Dance Education for Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>PEW 182</td>
<td>Beginning Choreography</td>
<td>3</td>
</tr>
<tr>
<td>PEW 382</td>
<td>Advanced Choreography</td>
<td>3</td>
</tr>
<tr>
<td>PEW 282</td>
<td>Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>PEW 133</td>
<td>Intermediate Contemporary Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEW 121</td>
<td>International Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEW 124</td>
<td>Social Forms of Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEW 204</td>
<td>Dance Activities for Children</td>
<td>2</td>
</tr>
<tr>
<td>PEW 233</td>
<td>Advanced Dance Techniques</td>
<td>2</td>
</tr>
<tr>
<td>PEW 388</td>
<td>Staged Productions</td>
<td>3</td>
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</tbody>
</table>

**AQUATICS EDUCATION**

This major will qualify a student to conduct a total swimming program in a large high school.

**Hours Required for this Curriculum** .................................................. 122 hrs.

1. **General Studies as described on page 25 of this catalog**

   A. **Required Courses** ............................................................... 33 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>Biology</td>
<td>replaces General Studies 107</td>
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   B. **Liberal Arts**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Biology 210</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Biology 219</td>
<td></td>
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</table>

2. **Required Professional Courses** .................................................. 35 hrs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PEW 190</td>
<td>Philosophical Foundations of Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>PEW 392</td>
<td>Measurement and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PEW 132</td>
<td>Basic Motor Skills</td>
<td>1</td>
</tr>
<tr>
<td>PEW 123</td>
<td>Beginning Contemporary Dance</td>
<td>1</td>
</tr>
<tr>
<td>PEW 390</td>
<td>Scientific Bases of Human Activity</td>
<td>3</td>
</tr>
<tr>
<td>PEW 155</td>
<td>Teaching of Swimming</td>
<td>3</td>
</tr>
<tr>
<td>PEW 250</td>
<td>Teaching of Speed Swimming and Diving</td>
<td>2</td>
</tr>
<tr>
<td>PEW 252</td>
<td>Teaching of Synchronized Swimming</td>
<td>2</td>
</tr>
<tr>
<td>PEW 350</td>
<td>Swimming for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>PEW 400</td>
<td>Practicum</td>
<td>1</td>
</tr>
<tr>
<td>PEW 108</td>
<td>Speed Swimming</td>
<td>1</td>
</tr>
<tr>
<td>PEW 214</td>
<td>Synchronized Swimming</td>
<td>1</td>
</tr>
<tr>
<td>PEW 120</td>
<td>Stunts and Tumbling or</td>
<td></td>
</tr>
<tr>
<td>PEW 141</td>
<td>Beginning Gymnastics</td>
<td>1</td>
</tr>
<tr>
<td>PEW 137</td>
<td>Small Craft</td>
<td>2</td>
</tr>
<tr>
<td>PEW 118</td>
<td>Springboard Diving</td>
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</tr>
</tbody>
</table>

In addition, choose one of the following areas of concentration:

1. **Dance**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Dance</td>
<td></td>
<td>1 hr.</td>
</tr>
<tr>
<td>Social Forms of Dance</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Intermediate Dance Techniques</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
2. Individual Sports—Choose 4
- Tennis and Badminton ........................................ 1
- Bowling .................................................................. 1
- Golf .................................................................... 1
- Archery ................................................................ 1
- Track and Field .................................................... 1

3. Team Sports
- Field Sports .......................................................... 1
- Volleyball ............................................................... 1
- Basketball .............................................................. 1
- Softball .................................................................. 1

RECREATION EDUCATION

Designed to prepare students in the area of recreation with an emphasis in: (1) outdoor education and camping; (2) mentally, physically and socially handicapped, and (3) recreation.

Hours Required for this Curriculum ............................................. 122 hrs.

1. General Studies as described on page 25 of this catalog
   A. Required Courses ........................................... 33 hrs.
      Biology 101 replaces General Studies 107
      Teacher Education 230 replaces General Studies 222
   B. Liberal Arts
      Communication Arts and Sciences ....................... 3
      Biology 210 ......................................................... 4

2. Required Professional Courses .............................................. 35 hrs.
   A. General Professional Courses ............................... 24
   B. Specialized Area of Emphasis ............................... 11

3. General Professional Courses .............................................. 24 hrs.
   PEW 170 Recreation and Society .............................. 3
   PEW 370 Organization and Administration of Recreation 3
   PEM 370 Community Recreation ................................ 2
   PEW 272 Music and Drama in Recreation ................ 3
   PEW 143 Introductory Games and Sports ................ 1
   IE 190 Arts and Crafts for Teachers ....................... 3
   PEW General Physical Education Activity courses .... 3
   PEW 470 Recreational Facilities and Areas .............. 3
   PEW 342 Health Education in the Elementary School ... 3

   PEW 172 Camp Leadership ...................................... 3
   PEW 137 Small Craft ............................................. 2
   PEM 270 Outdoor Education .................................... 2
   PEW 101 Recreational Games .................................. 1
   PEW 400 Practicum ............................................... 3

   Emphasis II—Mentally, Physically and Socially Handicapped .......... 12 hrs.
   Sp Ed 530 Education for Exceptional Children ............ 3
   Sp Ed 588 Behavior Disorders in School-Aged Children .... 3
   PEW 296 Physical Education for Physical and Learning Disabilities .... 3
   PEW 400 Practicum ............................................... 3
College of Education

Emphasis III—Recreation Emphasis ......................................................... 11 hrs.
PEW 172 Camp Leadership ................................................................. 3
PEW 271 Recreation for the Exceptional Child ........................................... 3
LIB 546 Story Telling ............................................................................. 2
PEW 400 Practicum ............................................................................... 3

MINORS

PHYSICAL EDUCATION MINOR IN ELEMENTARY EDUCATION

Hours Required for this Minor .............................................................. 20 hrs.

1. General Studies
   Biol. 101 replaces General Studies 107
   Biol. 210 Mammalian Anatomy
   TEED 230 replaces G.S. 222

2. Required Professional Courses
   PEW 294 Analysis of Movement .......................................................... 3 hrs.
   PEW 290 Teaching of Physical Education in the
      Elementary School ........................................................................... 3
   PEW 170 Recreation and Society ......................................................... 3
   PEW 296 Physical Education for Physical and Learning
      Disabilities ...................................................................................... 3
   PEW 132 Basic Motor Skills ............................................................... 1
   PEW 120 Stunts and Tumbling or
      141 Beginning Gymnastics ............................................................. 1
   PEW 121 International Dance ............................................................. 1
   PEW 144 Track and Field .................................................................... 1
   PEW 143 Introductory Games and Sports ............................................. 1
   PEW 204 Dance Activities for Children ................................................. 2
   PEW 123 Beginning Contemporary Dance ............................................. 1

3. By the end of the first two years in residence, the student must have
   completed 15-25 clock hours of observing and working in activity
   situations with elementary children.

PHYSICAL EDUCATION MINOR IN SECONDARY EDUCATION

Hours Required for this Minor .............................................................. 21 hrs.

1. General Studies
   Biol. 101 replaces General Studies 107
   Biol. 210 Mammalian Anatomy
   TEED 230 or G. S. 222

2. Required Professional Courses
   PEW 294 Analysis of Movement .......................................................... 3 hrs.
   PEW 292 Teaching of Physical Education in the
      Secondary School ........................................................................... 3
   PEW 390 Scientific Bases of Human Activity ....................................... 3
   PEW 392 Measurement and Evaluation ................................................ 3
   PEW 132 Basic Motor Skills ............................................................... 1
   PEW 120 Stunts and Tumbling or
      141 Beginning Gymnastics ............................................................. 1
   PEW 121 International Dance ............................................................. 1
   PEW 123 Beginning Contemporary Dance ............................................. 1
PEW Elect 1 officiating course ..................................................... 1
PEW Two Individual sports ......................................................... 2
PEW Two team sports ................................................................. 2

3. By the end of the first two years in residence, the student must have completed 15-25 clock hours of observing and working in activity situations with junior or senior high school students.

RECREATION MINOR

Hours Required for this Minor .................................................. 20 hrs.
PEW 170 Recreation and Society ................................................. 3
PEM 270 Outdoor Education ......................................................... 2
PEM 371 Procedures and Materials in Recreation .......................... 2
PEW 400 Practicum .................................................................. 3
PEW 272 Music and Drama in Recreation .................................... 3
IE 190 Arts and Crafts for Teachers ........................................... 3
PEW 143 Introductory Games and Sports .................................... 1
PEW 470 Recreational Facilities and Areas .................................. 3

PHYSICAL EDUCATION COACHING MINOR

Designed to qualify the physical education major to care for and to coach interscholastic and intercollegiate athletic teams. The coaching minor, available only to physical education majors, will provide instruction in the sports which are currently emphasized by the Michigan Interschool Sports Programs: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics, and golf.

Hours Required for this Minor .................................................. 21 hrs.
PEW 160 Theory of Coaching ....................................................... 2
PEW 461 First Aid and Athletic Training .................................... 2
PEW 368 Administration and Organization of Intramural Sports ...... 2
PEW 260 Coaching and Advanced Techniques of:
  Basketball ........................................................................ 2
  Field Hockey ..................................................................... 2
  Volleyball .......................................................................... 2
  Gymnastics ........................................................................ 2
  Tennis ............................................................................... 2
  Track and Field .................................................................. 2
PEW 360 Elect 1 officiating course ............................................. 1
PEW 400 Practicum .................................................................. 1
PEW 148 Softball ......................................................................
PEW 146 Basketball } Take 1 ................................................... 1
PEW 215 Bowling 
PEW 129 Golf

SWIMMING MINOR

Hours Required for this Minor .................................................. 21 hrs.
1. General Studies
   Biol. 101 replaces General Studies 107
   Biol. 210 Mammalian Anatomy
2. **Required Professional Courses**

- **PEW 155** Teaching of Swimming ........................................... 3
- **PEW 252** Teaching of Synchronized Swimming ......................... 2
- **PEW 250** Teaching of Speed Swimming and Diving ................... 2
- **PEW 294** Analysis of Movement ............................................. 3
- **PEW 190** Philosophical Foundations of Physical Education .......... 3
- **PEW 132** Basic Motor Skills ................................................. 1
- **PEW 123** Beginning Contemporary Dance .................................. 1
- **PEW 120** Stunts and Tumbling or 141 Beginning Gymnastics ......... 1
- **PEW 118** Springboard Diving ................................................ 1
- **PEW 214** Synchronized Swimming .......................................... 1
- **PEW 108** Speed Swimming .................................................... 1
- **PEW 400** Practicum ............................................................. 2

**DANCE MINOR**

Hours Required for this Minor .................................................... 20 hrs.

1. **General Studies**
   - Biol. 101 replaces General Studies 107
   - Biol. 210 Mammalian Anatomy

2. **Required Professional Courses**
   - **PEW 482** History and Philosophy of Dance ......................... 3
   - **PEW 294** Analysis of Movement ......................................... 3
   - **PEW 384** Dance Education for Secondary Schools .................. 3
   - **PEW 586** Dance and Related Arts ....................................... 3
   - **PEW 132** Basic Motor Skills ........................................... 1
   - **PEW 102** Modern Jazz ................................................... 1
   - **PEW 121** International Dance .......................................... 1
   - **PEW 124** Social Dance .................................................. 1
   - **PEW 123** Beginning Contemporary Dance ............................. 1
   - **PEW 133** Intermediate Contemporary Dance ......................... 1
   - **PEW 204** Dance Activities for Children .............................. 2

**PHYSICAL EDUCATION MINOR FOR THE EXCEPTIONAL CHILD**

Designed to prepare special education and physical education majors in the area of recreation, physical education, swimming, health and dance for the exceptional child. Students majoring in other curricula must take the background courses in each area.

Hours Required for this Minor ................................................. 21 hrs.

1. **General Studies**
   - Biol. 101 replaces General Studies 107
   - Biol. 210 Mammalian Anatomy

2. **Background Courses** ......................................................... 6 hrs.
   A. **Physical Education Majors** ........................................... 6 hrs.
      - Sp. Ed. 530 Education for Exceptional Children .................. 3
      - Sp. Ed. 588 Behavior Disorders in School-Aged Children ....... 3
   B. **Special Education Majors** ............................................... 6 hrs.
      - PEW 290 Teaching Physical Education in the Elementary School ........................................ 3
      - PEW 292 Teaching Physical Education in the Secondary School ...... 3
3. Required Courses ................................................................. 15 hrs.
   PEW 296 Physical Education for Physical and Learning Disabilities .... 3
   PEW 271 Recreation for the Exceptional Child ......................... 3
   PEW 356 Seminar (Health for the Exceptional Child) .................. 3
   PEW 400 Practicum ......................................................... 3
   PEW 493 Psycho-Education Field Experience .......................... 3

4. General physical education activity courses for the Special Education
   major who minors in Physical Education for the Exceptional Child should
   be selected from the following list. No more than two hours in dance
   or swimming may be taken.
   PEW 132 Basic Motor Skills—required .................................. 1
   PEW 204 Dance Activities for Children .................................. 1
   PEW 120 Stunts and Tumbling or
   141 Beginning Gymnastics ................................................ 1
   PEW 121 International Dance ............................................ 1
   PEW 143 Introductory Games and Sports ................................ 1
   PEW 111 Beginning Swimming ............................................ 1
   PEW 112 Intermediate Swimming ......................................... 1
   PEW 211 Life Saving ....................................................... 1
   PEW 213 Water Safety Instructors ....................................... 1
   PEW 101 Recreational Games ............................................. 1
   PEW 123 Contemporary Dance ............................................. 1
   PEW 215 Bowling .............................................................. 1

HEALTH EDUCATION MINOR (24 Hours)

(See group minors p. 399.)

COURSE DESCRIPTIONS

GENERAL PHYSICAL EDUCATION COURSES

100 Personal Physical Education ............................................. 1 hr.
101 Recreational Games ..................................................... 1 hr.
102 Modern Jazz ............................................................. 1 hr.
103 Beginning Fencing ....................................................... 1 hr.
104 Softball ........................................................................ 1 hr.
105 LaCrosse ....................................................................... 1 hr.
106 Skiing (additional fee) .................................................... 1 hr.
107 Skating (additional fee) ................................................... 1 hr.
108 Speed Swimming ........................................................... 1 hr.
109 Horsemanship (additional fee) 
   (riding times adjusted to student schedules) ........................ 1 hr.
College of Education

110 Beginning Stunts, Tumbling and Gymnastics 1 hr.

111 Beginning Swimming
   (unable to swim in deep water) 1 hr.

112 Intermediate Swimming and Diving
   (able to swim in deep water) 1 hr.

113 Basketball 1 hr.

114 Volleyball 1 hr.

115 Archery (205) 1 hr.

116 Skin Diving 1 hr.

117 Scuba Diving 1 hr.

118 Springboard Diving 1 hr.

119 Field Hockey 1 hr.

121 International Dance 1 hr.

122 Relaxation 1 hr.

123 Beginning Contemporary Dance 1 hr.

124 Social Forms of Dance 1 hr.

126 Ballet 1 hr.

128 General Physical Education 1 hr.

129 Beginning Golf 1 hr.

130 Movement for Athletes 1 hr.

133 Intermediate Contemporary Dance 1 hr.

135 Rhythmic Movement for Children
   A study of creative dance for children using movement exploration and art materials as stimuli for movement problem solving. 1 hr.

138 Canoeing 1 hr.

139 Sailing 1 hr.

200 Beginning Tennis 1 hr.

201 Intermediate Tennis
   (Prerequisite 200 or written permission of instructor) 1 hr.

202 Badminton 1 hr.

203 Intermediate Golf
   (Prerequisite 129 or permission of instructor) 1 hr.
204 Dance Activities for Children
   A study of all dance and rhythmic activities for the elementary school child.
   (Dance majors or permission of instructor)
   2 hrs.

207 Intermediate Fencing
   (Prerequisite 103 or permission of instructor)
   1 hr.

208 Intermediate Gymnastics
   (Prerequisite 110 or with permission of instructor)
   1 hr.

211 Life Saving
   1 hr.

212 Advanced Swimming and Diving
   1 hr.

213 Water Safety Instructors
   Must have current life saving certificate
   1 hr.

214 Synchronized Swimming
   1 hr.

215 Bowling (additional fee)
   1 hr.

223 Intermediate Dance Techniques
   The study of the development and analysis of building movements sequences and
dance techniques above the beginning level. Prerequisite: Dance 123 and 133.
   2 hrs.

237 Track and Field
   1 hr.

340 Physical Education for the Elementary Classroom Teacher
   This course is required of all persons enrolled in Elementary Education curricula.
   1 hr.

SPECIAL ACADEMIC COURSES

241 Physical Education and Recreation for Teachers
   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.
   2 hrs.

341 Creative Dance for Children
   This course explores and manipulates the principles, materials and techniques of
   creative dance for elementary school children. A concentrated study is made of how
   children discover movement and create dances with form and meaning, lectures,
   observation, and laboratory experiences.
   4 hrs.

PHYSICAL EDUCATION
PROFESSIONAL ACTIVITY COURSES

120 Stunts and Tumbling
   1 hr.

131 Field Sports
   1 hr.
College of Education

132 Basic Motor Skills 1 hr.
137 Small Craft 2 hrs.
140 Badminton and Tennis 1 hr.
141 Beginning Gymnastics 1 hr.
142 Volleyball 1 hr.
143 Introductory Games and Sports 1 hr.
144 Track and Field 1 hr.
146 Basketball 1 hr.
148 Softball 1 hr.

PHYSICAL EDUCATION ACADEMIC COURSES

150 First Aid 2 hrs.
The standard course in first aid techniques leading to Red Cross certification.

155 Teaching of Swimming 3 hrs.
The techniques of water safety, swimming, diving, and pool and waterfront management. Includes participation with students.

160 Theory of Coaching 2 hrs.
The philosophy, principles, administration, organization, guidelines, and motivating techniques of coaching.

170 (276) Recreation and Society 3 hrs.
The provision for practical experiences in program planning, instruction, and evaluation in the field of Recreation which involve social environment.

172 (270) Camp Leadership 3 hrs.
The investigation of the responsibilities and duties of the counselor in various types of camps. Aims and values of camping are emphasized. Practical experience in a camp setting.

182 Beginning Choreography 3 hrs.
The study of and experimentation in compositional principles of dance. Prerequisite: Dance 123 and 133 or permission of instructor.

190 (151) Philosophical Foundations of Physical Education 3 hrs.
The application of past history and philosophy to current movements and trends in physical education.

223 Intermediate Dance Technique 2 hrs.
The study of the development and analysis of building movement sequences and dance techniques above the beginning level. Prerequisite: PEW 123 and 133.
233 Advanced Dance Technique
A study of advanced dance technique with experience in original creation or movement patterns and dance sequences.

250 Teaching of Speed Swimming and Diving
Teaching progressions and techniques for springboard diving and speed swimming, and procedures for conducting meets.

252 Teaching of Synchronized Swimming
The progressions and teaching techniques for synchronized swimming skills; show production, organization of clubs and competitive events.

260 Coaching and Advanced Technique Series
Coaching and advanced skills, selection of a team, preparation, judging and conducting competitive events.

271 Recreation for the Exceptional Child
The provision for the experience of outdoor education skill activities which have particular values to the exceptional handicapped child. Field experiences with the handicapped child will be provided.

272 Music and Drama in Recreation
The study of principles and techniques for developing community creativity in music and drama through educational and recreational programs. Emphasis on puppetry, marionette, talent-variety shows, music-dance-drama, drama productions and festivals.

275 Community Health
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.

282 Dance Accompaniment
The study of the rhythmic composition of dance movement and the use of techniques and instruments used in accompanying movement. Prerequisite: Dance 123, 133 and 223.

290 Teaching Physical Education in the Elementary School
The study of concepts and practices that actuate the progressive and sequential development of an elementary physical education program. Methods of instruction, program planning and evaluation, and the application of the fundamentals of movement to the areas of self-testing, games, and rhythmic activities are examined. Prerequisites: PEW 132, 120, 135 and 121.

292 Teaching Physical Education in the Secondary School
The secondary school program including characteristics of students school program, methods of instruction, observation and participation with students.

294 Analysis of Movement
The study of the movement of muscles and the application of kinesiology to physical activity. Prerequisite: Biology 210.
296 Physical Education for Physical and Learning Disabilities 3 hrs.
Principles and problems in physical education for those with physical and learning disabilities. Includes selected field experience with handicapped children and adults.

300 Seminar Series 1-4 hrs.
Designed to provide an opportunity for qualified students to examine and discuss a subject area in a field of common interest. Enrollment by written permission of the Chairman of Department of Physical Education for Women.

342 Elementary School Health and Safety Education 3 hrs.
This course is directed toward prospective elementary school teachers. It is designed to provide knowledge and experiences related to the total school health program.

343 Secondary School Health and Safety Education 3 hrs.
This course is directed toward prospective secondary school teachers. Through the media of knowledge and experiences the total school health program is brought into focus as an integral part of the secondary school program.

350 Swimming for the Exceptional Child 3 hrs.
The study of various handicaps, values, of swimming and teaching techniques for the exceptional child. Includes practical experiences with handicapped children.

356 Seminar (Health for the Exceptional Child) 3 hrs.
The course is directed toward the study of the health and problems of the exceptional child.

360 Officiating Series 1 hr.
The discussion and application of rules and officiating techniques. The student will be required to officiate in out-of-class athletic programs.

368 Administration and Organization of Intramural Sports 2 hrs.
The problems, policies, finances, eligibility, awards, officiating, publicity and procedures related to the intramural program.

370 Organization and Administration of Recreation 3 hrs.
The study of methods of organization in recreational programs at local, state, and federal levels with emphasis on administrative procedures concerning personnel, facilities-areas, legalities, financing and programming.

382 Advanced Choreography 3 hrs.
The study of varied use of time, space and force in dance design leading to dance works in production. Prerequisite: Dance 182.

384 Dance Education for Secondary School 3 hrs.
The study of teaching procedures for all forms of dance in the secondary school.

388 Staged Productions 3 hrs.
The study of the creation and production of dance and sports events. Aspects of lighting, scenery, costuming, accompaniment, publicity and programming will be considered.
390 Scientific Bases of Human Activity 3 hrs.

The physiological principles and facts upon which conditioning for competition in athletic activities and physical performance should be based. Special attention is given to structural, mechanical, physiological, psychological, and therapeutic aspects of exercise and fitness. Direct application to training for competition in major sports and individual activity.

392 Measurement and Evaluation 3 hrs.

The elements of test construction, item analysis, administration of a test and elementary statistics.

400 Practicum 1-4 hrs.

The practical field experience. The individual approach to practical field experiences in health, physical education and/or recreation for the normal and handicapped. Enrollment by written permission of the Chairman of the Department of Physical Education for Women.

461 First Aid and Athletic Training 2 hrs.

The knowledge and skill in meeting emergencies. The use of massage, strappings, and training room techniques. Prerequisite: Biology 100 and 210.

470 Recreational Facilities and Areas 3 hrs.

The study of the design, use and maintenance of recreational areas and the facilities appropriate to those areas in relation to community needs, program objectives and physical surroundings.

482 History and Philosophy of Dance 3 hrs.

History of dance development; its cultural and philosophic influence in education. Dance majors or permission of instructor.

491 Introduction to Research 3 hrs.

The techniques fundamental to an individual approach to research and problem solving.

493 Psycho-Educational Field Experience 3 hrs.

The study of the family, psychological and educational problems of the handicapped child. Field experience will be assigned in cooperation with the Reading Center and Clinic.

514 Methods and Materials in Health Education 2 hrs.

Lectures and demonstrations with emphasis on the effective health supervision of school children, the principles and practices of health teaching in the various grades, and the interrelation of this teaching with that of other subjects in the curriculum. (Prerequisites: PEW 353, 354 or consent of instructor.)

516 Issues in Health Education 3 hrs.

The focus will be placed on current health issues. May be designed to deal with one issue or several.

545 Philosophies of Physical Education 2 hrs.

A study of the ideas and concepts of various philosophical schools as they apply to physical education.
College of Education

562 Administration and Organization of Physical Education 2 hrs.

The administrative procedures and problems connected with physical education programs, including scheduling, facilities, personnel problems and public relations.

586 Dance and the Related Arts 3 hrs.

Study of the common principles and elements of dance, drama, music, art, and television. Dance majors and minors, Aquatics majors, and Swim majors.
College of Fine Arts

ROBERT HOLMES, Dean

Departments:
Art
Dance
Music
The College of Fine Arts offers a variety of curricula and subjects that prepare the student for careers in the principal interest areas of the fine and performing arts.

In Art, major concentration is possible in painting, sculpture, graphic design, printmaking, ceramics, textile design, jewelry, art history, and multi-media art. Each of these programs is designed to prepare the student for graduate or professional work. The student may also elect an art major with certification which will qualify him to teach art at the elementary and secondary levels.

The College of Fine Arts, created July 1, 1972, includes the newly established Department of Dance. Because this department is in its formative stages, dance programs are described in the catalog section "Physical Education for Women" (p. 419).

In Music, programs are available in applied music, theory, composition, music history, music therapy, and music education, which provides certification in both the elementary and secondary school levels.

In the belief that arts understanding, involvement, and appreciation are an important part of a liberal education, the College of Fine Arts also offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciational curricular and co-curricular activities, such as general art and art history courses, dance, and many musical ensembles.
Art

Charles E. Meyer, Head

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

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

PROGRAMS:

The Department of Art offers programs leading to the following degrees:

1. Bachelor of Fine Arts with a major in one of the areas of the department.

2. B.S. or B.A. in the general curriculum of the College of Arts and Sciences with a major in Art.


The Department of Art also offers a program satisfying the minor requirement of other curricula and courses for students in other areas.

Admission in Art Courses

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

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

Transfer Credit

Transfer students are required to submit a portfolio for transfer credit evaluation of art courses from other institutions one semester prior to enrollment. The application for admission as an art major includes the transfer evaluation procedure. Portfolio for admission or transfer credit cannot be evaluated between April
College of Fine Arts

and August inclusive.) For portfolio requirements please write to: Screening Committee, Department of Art.

The Department of Art grants transfer credit only for art courses whose quality and content is equivalent to its own courses. A maximum of 30 credit hours in art may be transferred towards the art major requirements.

Advising

Art majors should see the departmental adviser as soon as they are admitted and at least once yearly afterwards. Art minors need only fill an art minor form at the department’s office, but are required to see an advisor when deciding on the minor.

Exhibition Requirement

An exhibition of each art major’s work may be required in the senior year and the department may retain one work of art from each student for its collection.

1. B.F.A. Degree 74 credit hrs. in Art

This degree is intended for qualified students who intend to become professional artists or pursue graduate study in art. Art majors must make a special application to a departmental committee for admission to BFA candidacy in a specific major area after completing 30 hours in art and one semester residency in the department. Applications will be considered at the end of each semester.

Major areas: Art History, Ceramics, Graphic Design, Jewelry, Multi-Media Art, Painting, Printmaking, Sculpture, Textile Design, Art Education. (Art Education majors must complete the requirements of one of the studio majors in addition to the certification requirements of the College of Education).

The requirements of the general 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:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121)
- 15 hours in Art History including 220, 221
- 8 hours in Advanced Drawing (210, 310, 410)
- 2 hours in the Art Seminar (525)
- 19 hours in the major area (example: Painting 240, 340, 440, 540, or 500 Independent Study for a total of 19 hours)
- 16 hours in other art courses determined in consultation with the major adviser
- 2 hours in Graduation Presentation (413). Approval of this by a reviewing committee is necessary for the granting of the BFA degree

2. Art Major in the B.S. or B.A. degree 52 credit hrs. in Art

This program is designed for the Liberal Arts-oriented students who want to major in the visual arts. It provides maximum flexibility in terms of electives in art and non-art courses. (Professionally oriented art students may start in this program and apply for admission to the B.F.A. after completing 30 hours in Art).

The requirements of the general curriculum or the Liberal Arts 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 these curricula and are distributed as follows:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121)
- 9 hours in Art History including 220, 221
- 5 hours in Advanced Drawing (210, 310)
- 2 hours in the Art Seminar (525)
- 24 hours in Art electives, including 8 hours in one of the department’s nine areas
3. Art Major with Certification

This program is intended to develop artist-teachers certified to teach art at the elementary and secondary levels and prepared to continue their studies at a graduate school.

The requirements of the Secondary Curriculum of The College of Education (p. 388) must be satisfied. Sixty credit hours in art satisfy the major and minor requirements of this curriculum and are distributed as follows:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121).
- 14 hours composed of: drawing (210, 310); and art history (220, 221 plus one art history elective).
- 8 hours in art education (352, 353, 550, 551).
- 14 hours in one area of concentration as defined in the Art Major program, except art history.
- 12 hours in elective art courses, determined in consultation with the departmental adviser.

One semester of directed teaching in art, preferably in both elementary and secondary situations. All art certification students must have a permit to student teach from the art education adviser before doing directed teaching.

4 Art Minor

This program is designed to expose the student to the field of art and satisfies the minor requirements of the Liberal Arts, General, or Education curricula. The twenty-four credit hours are distributed as follows:

- 12 hours in the basic program (110, 111, 114, 115, 120, 121).
- 12 hours in art electives

All minors must be approved by the Art advisers.

5. Art Courses for Non-Art Majors or Minors

Elementary Education majors are required to take Art 150 (or a substitute, such as Art 120) except for those students in the Integrated Creative Arts minor who are required to take Art 200.

Any course with no prerequisites may be taken by non-art students, but those seeking a broadly inclusive studio experience in art are advised to take Art 130 and/or 140. The Art Survey and Art History courses are open with no prerequisites to non-art majors and can satisfy the humanities requirements alternative of the Liberal Arts and General curricula.

Basic Program—Courses required of all majors and minors in art as prerequisites to other advanced courses.

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<tr>
<th>Course</th>
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<tr>
<td>110 Drawing</td>
<td>2</td>
<td>115 Design</td>
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<tr>
<td>111 Drawing</td>
<td>2</td>
<td>120 Art Survey</td>
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<tr>
<td>114 Design</td>
<td>2</td>
<td>121 Art Survey</td>
<td>2</td>
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</tbody>
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ART DEPARTMENT COURSE OFFERINGS

110 Drawing

College of Fine Arts

111 Drawing 2 hrs. Fall, Winter
Continuation of Drawing 110 with emphasis on composition in dark and light. The exploitation of the expressive possibilities of the various drawing media oriented towards future needs of art students. Prerequisite: Art 110.

114 Design 2 hrs. Fall, Winter
The study of the elements of visual design and the principles of their organization. The mechanics of visual perception and communication. Emphasis on black and white in two dimensions.

115 Design 2 hrs. Fall, Winter
Continuation of Design 114 with emphasis on color theory and the mechanics of color organization. Prerequisite: Art 114.

120 Art Survey 2 hrs. Fall, Winter
An introduction to the language of art, art theory, aspects of art, and form analysis from a topical point of view.

121 Art Survey 2 hrs. Fall, Winter
An introduction to the philosophy of art with understanding of the aesthetic values that are reflected from key movements of art in painting, sculpture, and architecture, in comparison to contemporary art. Prerequisite: Art 120, Art major or minor only.

130 Studio Experience—(3-D) 2 hrs. Fall, Winter
A course designed for the non-art student as an enriching experience in three dimensional media; to include clay, wood, metal, and other sculptural materials. This course may not be elected by majors or minors in art or art education and does not fulfill the certification requirement for education students. It is designed primarily for the General Degree student who wishes to have some art experience.

140 Studio Experience—(2-D) 2 hrs. Fall, Winter
A course designed for the non-art student as an enriching experience in two dimensional media; to include painting and drawing and other graphic media. May not be elected by majors or minors in art or art education and does not fulfill certification requirements for teaching.

150 Art Education Workshop 3 hrs. Fall, Winter
A studio course structured to provide the classroom teacher with the opportunity to explore, experiment, and develop concepts related to art, creativity, and perception. Such concepts are explored and developed through the use of a variety of art materials and techniques. Prerequisite: For the Elementary Education Minor only. May not be taken by Integrated Creative Arts minors, nor Art Majors or Minors.

200 The Creative Process through Art 4 hrs. Fall, Winter
Individual involvement in the creative process related to human growth and development by means of exploration with many art media. Prerequisite: 230, The Nature of Creativity (Ed. 230). For the Integrated Creative Arts Minor only. This course waives the Art 150 requirement for the Elementary Education majors.

210 Life Drawing 2 hrs. Fall, Winter
The study of the essential aspects of life drawing (such as gesture, contour,
proportions, anatomy, structure, and articulation) and their synthesis into a coherent drawing attitude. Prerequisite: Basic Program.

214 Design Theory 2 hrs. Fall, Winter
Development of projects utilizing design theory. Prerequisite: 115.

215 Three Dimensional Design 2 hrs. Fall, Winter
A course stressing the definition of time and three dimensional space by use of line, plane, texture and color. Aesthetic exploration, manipulation and application of materials. Prerequisite: Basic Program.

220 History of Art 3 hrs. Fall, Winter
An historical survey of art from prehistoric ages to the Renaissance.

221 History of Art 3 hrs. Fall, Winter
An historical survey of art from the Renaissance through the contemporary period.

230 Ceramics 2 hrs. Fall, Winter
A course devoted to a survey of pottery process including hand-building, technical information and a limited experience with the potters wheel. Prerequisite: Basic Program.

231 Sculpture 2 hrs. Fall, Winter
Introduction to sculptural concepts and techniques in clay, plaster and wood. Prerequisite: Basic Program, 210 or 210 concurrently.

232 Craft Design 2 hrs. Fall, Winter
A course stressing creativity in the design of products through the use of varied materials. Prerequisite: Basic Program.

234 Textile Design 2 hrs. Fall, Winter
An introduction survey in textiles to include weaving, stitchery, block printing, stencilling, tie and dye, and batik. Prerequisite: Basic Program.

235 Multi-Media Art 2 hrs. Fall, Winter
Various forms of art that deviate from conventional media, such as light, kinetic and performance art. Prerequisite: Permission of instructor.

237 Studio Equipment 2 hrs. Fall, Winter
An introduction to the proper use and care of shop equipment to include hand and power tools. Students generally use hardware, canvas, and sheet metal in a succession of class problems but wood is the major material. Prerequisite: Basic Program.

238 Jewelry 2 hrs. Fall, Winter
A survey of jewelry processes to include cutting, soldering, casting, stonecutting, and the use of appropriate equipment. Prerequisite: Basic Program.

240 Painting I 2 hrs. Fall, Winter
An introduction to the techniques and expressive possibilities of painting. Prerequisite: Basic Program, 210 or 210 concurrently.
### 241 Printmaking
An introduction to the basic printing techniques as fine arts media. Includes intaglio and relief printing. Prerequisite: Basic Program, and Art 210 or 210 concurrently.

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<th>2 hrs. Fall, Winter</th>
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### 242 Watercolor Painting
A survey of the application, techniques, and limitations of the watercolor painting medium. Prerequisite: Basic Program.

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<th>2 hrs. Fall, Winter</th>
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### 245 Graphic Design
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.

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<th>2 hrs. Fall, Winter</th>
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### 310 Intermediate Drawing
Drawing as the study of form and as a conclusive aesthetic statement. Model available during approximately 1/2 of the class meetings. Prerequisite: 210.

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### 330 Ceramics
Continuation of 230 with opportunity for concentration in the medium. Some experiment in glazing. Prerequisite: Art 230.

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### 331 Sculpture
Figure modeling, development of sculptural form through clay, casting techniques. Prerequisite: Art 231, 310 or 310 concurrently.

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### 332 Craft Design
A continuation of Craft Design 232. Prerequisite: Art 232.

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### 334 Textiles
Advanced work in textile design allowing for specialization with a material or technique surveyed in 234. Prerequisite: Art 234.

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### 335 Multi-Media Art
Continuation of 235. Prerequisite: Permission of instructor.

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### 338 Jewelry and Metalwork
Advanced work in the jewelry processes. Prerequisite: Art 238.

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<th>3 hrs. Fall, Winter</th>
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### 339 Metalsmithing
Provides an opportunity to build metal objects of larger than jewelry scale. Offers technical instruction in moving, shaping, forming non-ferrous metals by hammering. (Sterling, brass, copper, bronze, aluminum, pewter). Prerequisite: 238.

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### 340 Painting II
Continuation of Art 240. Prerequisites: Art 240, 310 or 310 concurrently.

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<th>3 hrs. Fall, Winter</th>
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### 341 Printmaking
A continuation of printmaking 241, exploring the possibilities of one of the printing media in a more thorough manner. Includes one of the following: etching, lithography, screen printing. Prerequisites: Art 241, 310 or 310 concurrently.

| 3 hrs. Fall, Winter |
342 Watercolor 3 hrs. Fall, Winter
Advanced problems in watercolor techniques to include composition. Prerequisite: Art 242.

345 Graphic Design 3 hrs. Fall, Winter
The study and practice of graphic design for two dimensional media. Emphasis is placed on the conceptual development of geometric figurative, and decorative imagery for posters, covers, promotionals, magazine and newspaper advertising. Includes thematic development, graphic planning, comprehensive and finished art production. Prerequisite: Graphic Design 245.

352 Art Education (Majors) 2 hrs. Fall, Winter
A studio course specifically designed to familiarize the elementary art teacher with teaching philosophies and creative teaching procedures using varied media and materials. Emphasis is placed on qualitative art programming in the elementary school. Prerequisites: Basic Program and open only to art majors.

353 Art Education (Majors) 2 hrs. Fall, Winter
A studio course specifically designed to familiarize the secondary art teacher with teaching philosophies and creative teaching procedures using varied media and materials. Emphasis is placed on qualitative art programming in the secondary school. Prerequisites: Basic Program and open only to art majors.

410 Advanced Drawing 3 hrs. Fall, Winter
Continuation of Art 310. Prerequisite: Art 310.

413 Graduating Presentation 2 hrs. Fall, Winter
Preparation and presentation of graduating exhibition, portfolio and oral examination or written thesis, with the assistance of the student's major adviser. Evaluation by a departmental reviewing committee. Prerequisite: Senior standing, B.F.A. candidacy.

430 Ceramics 3 hrs. Fall, Winter
Continuation of 330 with some experience in stacking and firing procedures. Prerequisite: Art 330.

431 Sculpture 3 hrs. Fall, Winter
Continuation of 331. Emphasis on welding and sheet metal techniques. Prerequisite: Art 331, 310.

434 Textiles 3 hrs. Fall, Winter
Continuation of 334. Prerequisite: Art 334.

435 Multi-media Art 3 hrs. Fall, Winter
Continuation of 335. Prerequisite: Permission of instructor.

438 Jewelry 3 hrs. Fall, Winter
Advanced work in the jewelry processes. Prerequisite: Art 338.

439 Metalsmithing 3 hrs. Fall, Winter
Continuation of 339. Prerequisite: Art 339.
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440 Painting III 3 hrs. Fall, Winter
An intermediate course introducing a variety of contemporary techniques and media. This course emphasizes the matching of technique and medium to the characteristics of the desired image. Prerequisites: Art 310, 340.

441 Printmaking 3 hrs. Fall, Winter
Continuation of printmaking 341. Prerequisites: Art 310, 341.

442 Watercolor 3 hrs. Fall, Winter
Watercolor problems with the introduction of mixed media. Prerequisite: Art 342.

445 Graphic Design 3 hrs. Fall, Winter
A basic photography studio course designed to familiarize the graphic design student with the aesthetic, technical, and communicative potential of photography. Emphasis is placed upon the development of imagery for visual communication. Prerequisite: Graphic Design 345.

500 Independent Studies 1-6 hrs. Fall, Winter
An opportunity for qualified undergraduates to elect an area of special interest and pursue it in depth. Prerequisite: Permission of department. Repeatable for credit.

510 Drawing 3 hrs. Fall, Winter
Continuation of Art 410. Prerequisite: Art 410. Repeatable for credit.

520 Independent Study in Art History 2-3 hrs. Fall, Winter
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. Fall, Winter
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. Fall, Winter
Investigation and discussion of contemporary philosophies of art and their relationship to each student's work. Prerequisite: Junior Art Major.

530 Advanced Ceramics 3 hrs. Fall, Winter
Advanced work in Ceramics including glaze calculations and experimentation. Prerequisite: Art 430. Repeatable for credit.

531 Sculpture 3 hrs. Fall, Winter
Continuation of Sculpture 331. Emphasis on bronze and aluminum casting and related techniques. Prerequisite: Art 331. Repeatable for credit.

534 Textiles 3 hrs. Fall, Winter
Continuation of 434 with advanced work in textile design. Prerequisite: Art 434. Repeatable for credit.
535 Multi-media Art 3 hrs. Fall, Winter
Continuation of 435. Prerequisite: Permission of instructor. Repeatable for credit.

538 Jewelry 3 hrs. Fall, Winter
Continuation of 438; advanced work in jewelry processes. Prerequisite: Art 438. Repeatable for credit.

539 Metalsmithing 3 hrs. Fall, Winter
Continuation of 439. Prerequisite: 439. Repeatable for credit.

540 Painting IV 3 hrs. Fall, Winter
Continuation of Painting III. Prerequisites: Art 410, 440. Repeatable for credit.

541 Printmaking 3 hrs. Fall, Winter
A continuation of printmaking, 441. Prerequisites: Art 410, 441. Repeatable for credit.

542 Watercolor 3 hrs. Fall, Winter
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: Art 442. Repeatable for credit.

545 Graphic Design 3 hrs. Fall, Winter
The fundamentals and procedures of graphic design for sequential, three-dimensional, and serial forms. Problems in design continuity, and coordination are explored through editorial, corporate identity, campaign, product, and packaging design. Incorporates investigation of graphic processes and papers. Prerequisite: Graphic Design 445. Repeatable for credit.

550 Preparation for Art Teaching (Elementary) 2 hrs. Fall, Winter
Designed to prepare elementary art education majors to realistically meet such responsibilities as working with elementary classroom teachers, selecting, organizing, and teaching art activities at each stage of development. Must precede student teaching. Prerequisite: Art 352.

551 Preparation for Art Teaching (Secondary) 2 hrs. Fall, Winter
Designed to prepare art education majors to understand the problems of the secondary art program and the responsibilities of an art consultant or supervisor. Organizing activities, teaching, budgeting, and other problems of secondary art education programs. Must precede student teaching. Prerequisite: Art 353.

581 History of Ancient Art 3 hrs. Fall, Winter
Selected topics from the art and architecture of ancient Egypt, the ancient Near East, the Aegean proto-Greek, Classical and Hellenistic Greece, Etruria, and Rome to the Early Christian period. Prerequisite: Art 220 for Art majors and minors, none for other students.

583 History of Medieval Art 3 hrs. Fall, Winter
Discussion of art and architecture from the decline of the Roman Empire through the Gothic Period (3rd-13th Centuries). Prerequisites: 220 and 221 for Art majors and minors; none for other students.
585 History of Renaissance Art 3 hrs. Fall, Winter
The development of art through the early Renaissance to the Late Renaissance and Mannerism. Some of the major artists discussed are: Giotto, Donatello, DaVinci, Michelangelo, Titian, Van Eyck, Breughel and Durer. Prerequisites: Art 220 and 221 for Art Majors and minors, none for other students.

586 History of Baroque Art 3 hrs. Fall, Winter
Art of the late 16th, 17th and early 18th centuries. Major artists and architects discussed are: Caravaggio, the Carracci, Rembrandt, Rubens, Poussin, Velasquez, Bernini, Borromini, and Neumann. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

588 History of 19th Century Art 3 hrs. Fall, Winter
Major developments, such as Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism, are discussed. Key figures whose works lie at the roots of modern art are considered in relationship to their times. Prerequisites: Art 220 and 221 for art majors and minors, none for non-art majors and minors.

589 History of 20th Century Art 3 hrs. Fall, Winter
Major developments, including Fauvism, Cubism, Non-Objective art, Expressionism, Surrealism, Abstract Expressionism, and recent art movements, are discussed. Emphasis is placed upon the roots of contemporary trends and the contributions of individuals to new modes of presentation. Prerequisites: Art 220 and 221 for art majors and minors, none for non-art majors and minors.

590 History of Prints 3 hrs. Fall, Winter
Major developments in printmaking, including origins of woodcut and engraving. Renaissance and Baroque master etchers and engravers. (Durer, Rembrandt, etc.) Lithography in the 19th century. (Delacroix, Daumier, Toulouse-Lautrec) 20th century printmaking. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

593 History of American Art 3 hrs. Fall, Winter
Art in the United States from the Colonial Period to the present. Topics discussed are: Colonial portraiture and Copley; the evolution of 19th and 20th century painting, sculpture and architecture with emphasis on the work of Stuart, Cole, Bingham, Homer, Eakins, Ryder, Sullivan, Wright, Marin, Pollock, and Smith. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

594 History of Afro-American Art 3 hrs. Fall, Winter
Painting and sculpture in the United States by Americans of African ancestry from the Colonial period to the present. Prerequisites: Art 220 and 221 for Art majors; none for other students; Junior standing required.

596 History of Architecture 3 hrs. Fall, Winter
A course intended as a general introduction to the historical development of Western architectural styles. Considers the changes and evolutions which architecture has undergone from the classical Greek period to the present.

597 History of Modern Architecture 3 hrs. Fall, Winter
Historical approach to modern architecture. Begins c. 1750 and considers the changes which take place in Western technology and architectural practices which create modern architecture. Emphasis on 19th and 20th century architecture.
Music

The Department offers courses leading to the Bachelor of Music, Bachelor of Arts, and the Bachelor of Science degrees. The Bachelor of Arts degree allows for a broad liberal arts background. The Bachelor of Science degree is an Elementary Education-Music degree. The Bachelor of Music degree is highly professional in its requirements and permits the student to do extensive work in the field of music. A Bachelor of Music degree in Music Therapy is also offered. Specific requirements relative to all music degrees are found in the Music Supplement which may be procured from the Music Office.

Those students who want both elementary and secondary teaching certification in music should work for the B.Mus. degree. Elementary certification with a music major may be secured with the B.S. degree.

Those students who want a music major without teacher certification may work for the Bachelor of Music degree in applied music, theory, composition, or music history, or for the Bachelor of Arts degree.

Education students minoring in music must complete Music Fundamentals for Music Minors 164, 165, Music Methods as counseled, Piano as counseled, Conducting 330 or 331, and Music Electives, except ensembles. Total requirement, 20 semester hours.

Those students not seeking teacher certification who wish to major or minor in music should secure major and minor slips from the Music Department counselor.

Credit from another institution in any branch of theory will be accepted only upon satisfactory completion of an examination covering the field for which the student desires transferred credit. All transferred credit is tentative and is conditioned upon the successful completion of a semester's work at Western. No credit hours exceeding the number granted for parallel work at Western will be accepted for transfer from another institution.

All music majors must be enrolled in the Music Convocation 101 as described below.

The University is a member of the National Association of Schools of Music. The requirements for entrance and for graduation as set forth in this catalog are in accordance with the published regulations of the NASM and the National Council for Accreditation of Teacher Education.
MUSIC COURSES

101 Music Convocation
No Credit Fall, Winter
A series of special musical events required of music majors. Programs include lectures and recitals by faculty, selected students, and guest artists.

120 Piano Class
1 hr. Fall, Winter
A basic course required of music majors and minors who have inadequate proficiency on piano. Opportunity is provided for some individual instruction. Recommended for piano majors to gain knowledge of piano class instruction.

121 Piano Class
A continuation of 120.

122 Voice Class
1 hr. Fall, Winter
A study of the fundamental processes of breath control and tone production, providing some individual instruction in preparing and singing standard song literature. The course is designed to benefit students interested in solo and choral singing.

123 Voice Class
1 hr. Fall, Winter
A continuation of 122. Repertoire will include early English songs and seventeenth and eighteenth century Italian songs as well as other standard literature, with a minimum of five songs to be memorized during the semester.

128 Violin Class
1 hr. Fall, Winter
This course is designed to acquaint the student with the basic problems encountered in playing the violin, including terminology and conventions of string performance. The course is intended for students with a piano or vocal major in Public School Music who are occasionally faced with the need to include string groups in the preparation of operettas, cantatas, or solo accompaniments.

129 String Class
2 hrs. Fall, Winter
A thorough examination of all string instrument performance, pedagogy, materials, methods, and maintenance. For wind and percussion majors in Public School Music.

130 Percussion Class
1 hr. Fall, Winter
Fundamentals of percussion instrument pedagogy and performance. The student is required to perform on the snare drum in an acceptable manner and to demonstrate a working knowledge of percussion 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. Fall, Winter
Fundamentals of flute pedagogy and performance.

132 Oboe Class*
1 hr. Fall, Winter
Fundamentals of oboe pedagogy, performance and reed-making.

133 Clarinet Class*
1 hr. Fall, Winter
Fundamentals of clarinet pedagogy and performance.

*For music majors only.
134 Bassoon Class*  
Fundamentals of bassoon pedagogy, performance, reed-making, and instrument maintenance.  
1 hr. Fall, Winter

135 Saxophone Class*  
Fundamentals of saxophone pedagogy and performance.  
1 hr. Fall, Winter

136 Trumpet Class*  
Fundamentals of trumpet pedagogy and performance.  
1 hr. Fall, Winter

137 French Horn Class*  
1 hr. Fall, Winter

138 Trombone Class*  
Fundamentals of trombone pedagogy and performance.  
1 hr. Fall, Winter

139 Tuba Class*  
Fundamentals of tuba pedagogy and performance.  
1 hr. Fall, Winter

140 Music for Classroom Teachers  
4 hrs. Fall, Winter
Designed for elementary education students without regard to previous musical training. Students are prepared to use music functionally and developmentally in the elementary classroom through singing, through playing the piano and informal instruments, and through responding to music rhythmically. Creative aspects and values of music are emphasized, and materials are studied in relation to their future use in the classroom.  
Students who need special help in singing are required to enroll in 141. Prerequisite: Ed. 230 for Elementary Teachers in Creative Arts minor. Otherwise no prerequisite.

141 Vocal Clinic for Non-Singers  
No Credit Fall, Winter
Students are taught to sing through the development of pitch and breath control. Prerequisite: Must be enrolled in 140.

142 Piano for Classroom Teachers  
1 hr. Fall, Winter
A beginning piano course for elementary education students who are not majors or minors in music. Emphasizes the fundamentals of music through the medium of the keyboard. Provides some opportunity for individual instruction.

160 Basic Music  
3 hrs. Fall, Winter
A study of the structure and function of the language of music through analysis and written harmony. Students with no piano facility or a limited piano background also must be enrolled in piano class (120, 121, 220, 221). Students also must be enrolled in 162. Prerequisite: Departmental acceptance as a Music Major.

161 Basic Music  
3 hrs. Fall, Winter
A continuation of 160. Students with a limited background in piano also must be enrolled in 163. Prerequisite: 160 with a grade of C or better.

*For music majors only.
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162 Aural Comprehension
Training in the basic skills of music reading and ear training. Students must also be enrolled in 160.

163 Aural Comprehension
A continuation of 162. Prerequisite: 162

164 Music Fundamentals for Music Minors
A study of the structure and function of the language of music integrated with basic skills in music reading, ear training, keyboard, and written harmony. Students with no piano facility or a limited piano background also must be enrolled in piano class (120).

165 Music Fundamentals for Music Minors
A continuation of 164. Students with a limited piano background also must be enrolled in piano class (121). Prerequisite: 164.

170 Introduction to Music Literature
This introductory course is designed to cover significant musical repertoire of the western world and stresses fundamental knowledge of music through guided listening and descriptive analysis.

190 Accompanying
Supervised experience in accompanying vocal and instrumental music, both solo and ensemble. (This course may be repeated for credit not to exceed a total of four semester hours.)

191 Accompanying
A continuation of 190. Prerequisite: 190.

220 Advanced Piano Class
A continuation of 120-121. Prerequisite: 120-121 or consent of instructor.

221 Advanced Piano Class
A continuation of 220.

227 Violin Class
A specialized course for the string major presenting the techniques and materials of the violin. Students also attend the Pedagogy lectures given in String Class 129. Prerequisite: String majors in Public School Music.

228 Cello Class
A specialized course for the string major presenting the techniques and materials of the cello. Students also attend the Pedagogy lectures given in String Class 129. Prerequisite: string majors in Public School Music.

229 String Bass Class
A specialized course for the string major presenting the techniques and materials of the string bass. Students also attend the Pedagogy lectures given in String Class 129. Prerequisite: string majors in Public School Music.
230 English and Italian Diction and Song Literature 1 hr. Fall, Winter

Required of all students whose field of concentration is voice. English and Italian diction and song literature are studied, and opportunity is provided for solo performance.

231 French Diction and Song Literature 1 hr. Fall, Winter

Required of all students whose field of concentration is voice. French diction and song literature are studied, and opportunity is provided for solo performance.

232 German Diction and Song Literature 1 hr. Fall, Winter

Required of all students whose field of concentration is voice. German diction and song literature are studied, and opportunity is provided for solo performance.

233 Major Performance Literature 2 hrs. Winter

Literature for the major performance instrument is studied, and opportunity is provided for solo performance. Required of applied music (except voice) majors during the junior or senior year. (This course may be repeated for credit not to exceed a total of four semester hours.) Piano majors in the public school music curriculum are required to take this course for two semester hours during either the sophomore or junior year.

240 General Music Methods 3 hrs. Fall, Winter

A study of the methods of teaching and an evaluation of the materials to be used in the singing, rhythmic, instrumental, creative, and listening activities in General Music classes. Special emphasis on the basic music program in the elementary schools. Prerequisite: 160-161.

244 Elementary Music Practicum 3 hrs. Fall

This course is designed to meet the needs of the elementary music teacher in the areas of theory and piano. Special emphasis is given to keyboard facility in accompaniments in the elementary classroom, harmonizations of melodies, the playing of rhythms, modulations, and a continuation of ear-training. Prerequisite: 160-161.

245 Elementary Music Practicum 3 hrs. Winter

A continuation of 244. Prerequisite: 244.

260 Basic Music 3 hrs. Fall, Winter

A study of traditional tonal music through composition and analysis. Students with a limited piano background also must be enrolled in an appropriate piano class. Prerequisite: 161 with a grade of C or better.

261 Basic Music 3 hrs. Fall, Winter

A study of contemporary (20th century) music through analysis and composition. Students with a limited background in piano also must be enrolled in an appropriate piano class. Prerequisite: 260 with a grade of C or better.

262 Composition 2 hrs. Fall

Beginning work in composition, with emphasis on the phrase, period, and double period. Attention given to melodic, rhythmic, and harmonic devices. Prerequisite: 161.
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263 Composition 2 hrs. Winter
A continuation of 262.

266 Musical Acoustics 2 hrs. Winter
A course specifically for the music student. Study includes overtone series, frequency, tone quality, wave lengths, air columns, noise and temperaments. Prerequisite: 161.

281 Introduction to Music Therapy 2 hrs. Fall

290 Recreational Music 2 hrs. Winter
Function of music in a recreation program. Fundamentals of non-symphonic instruments. Techniques and materials to be used in leading singing and other group music activities.

291 Functional Piano 1 hr. Winter
Designed to develop pianist’s ability to invent and organize musical ideas at the piano. Emphasis is placed on the use of piano in children’s rhythmic activities, the harmonization and transposition at sight of songs with appropriate accompaniment, and the improvisation of music in various forms.

292 String Technology 1 hr. Winter
An introduction to string instrument maintenance and repair, this course is designed to train the music teacher in rudimentary repairs and adjustments of an emergency nature which may arise in the teaching situation. Not intended to train repairmen.

293 Piano Technology 1 hr. Winter
An introduction to piano technology in which various aspects of the technician’s art are investigated. Important topics covered include mechanics of the musical scale, art of tuning in equal temperament, and construction of modern grand and upright pianos. The course is designed to give the student valuable insights into the field of piano technology in order that he might intelligently purchase and care for this instrument. Not intended to train tuners.

320 Advanced Piano Class 1 hr. Fall
A continuation of 220-221. Prerequisite: 221 or consent of instructor.

321 Advanced Piano Class 1 hr. Winter
Continuation of 320.

330 Choral Conducting 2 hrs. Fall, Winter
The fundamentals of choral conducting are presented, including patterns and rehearsal techniques. The student prepares and conducts choral literature with respect to tempo, nuance, phrasing, and fundamental choral techniques. The study and selection of literature is included. One class meeting per week is video taped in the television studio and viewed at the following class meeting. Control card required.
331 Instrumental Conducting
2 hrs. Fall, Winter
A beginning course in the techniques of preparing and conducting orchestral and band literature.

332 Choral Conducting
2 hrs. Winter
A continuation of 330 with added emphasis on rehearsal and choral conducting techniques, choral literature (selection, conducting), voice classification and selection. Prerequisite: 330.

340 Vocal Methods and Materials for the Junior High School
2 hrs. Fall
A study of vocal music activities in the education of the adolescent. Total sequence of musical experiences in the general music program, choir, and ensembles. Technical problems such as the changing voice and voice testing will be discussed. A presentation of rehearsal techniques, lesson plans, materials, equipment and methods of organizing and teaching music at this level. Administration, curriculum organization, programming, and interdepartmental relations. Practical experience will be gained by teaching units and songs to members of the class. Prerequisite: 240 for music majors; no prerequisite for others.

341 Vocal Methods and Materials for the Senior High School
2 hrs. Winter
A continuation of 340 with emphasis upon materials for the high school vocal program. Preparation of concerts and musicals. Library organization, budget construction, scheduling, and plans for vocal rooms. Appropriate testing procedures and interpretation is presented. Practical experience is gained by rehearsing several musical selections with members of the class. Prerequisite: 240 for music majors; no prerequisite for others.

342 Organization and Administration of Church Choral Groups
1 hr. Fall
A course designed for vocal teachers who may be involved in the directing of church choirs. A short history and philosophy of church music and an extensive survey of church music literature. Prerequisite: 240 for music majors; no prerequisite for others.

343 Teaching Strings in the Public Schools
2 hrs. Winter
A course designed to help the prospective teacher apply his knowledge of strings to the classroom situation. Special attention is given to the principles of learning and the principles of group teaching and how they apply to the elementary, the junior high, and the senior high string class and orchestra. The course also includes a study of basic repertoire at all levels with special emphasis on appropriate solo and ensemble materials. Prerequisite: 240 for music majors; no prerequisite for others.

344 Methods and Music for Teaching Band Instruments
2 hrs. Fall
The purpose of this course is to assist the prospective teacher in applying his knowledge of band instruments to the public school music classroom situation. Special emphasis is given to the principles of group teaching and how they apply to the effective teaching of music through band instruments at the elementary, the junior high, and the senior high levels. Basic literature and methods for teaching are studied and a unit in maintenance and emergency repair of wind instruments is included. Prerequisite: 240 for music majors; no prerequisite for others.

345 Administration of the Instrumental Music Program
2 hrs. Winter
An introduction to the organizational facets of an instrumental music program, to include such topics as public school organization, scheduling, student evaluation,
student records, public relations, contest and festival, public performance, music rooms and equipment, library, uniforms, inventory, tests and measurements, and finance. Prerequisite: 240 for music majors; no prerequisite for others.

**346 Marching Band Techniques** 2 hrs. Fall

An introduction to the techniques and administrative problems peculiar to the school marching band. Marching techniques, charting, show design, selection of music, and rehearsal techniques are topics included. Prerequisite: 240 for music majors; no prerequisite for others.

**347 Music in the Humanities in Secondary Schools** 2 hrs.

This course attempts to prepare the music student to participate in the teaching of humanities in secondary schools. The student learns to participate in setting the goals, content, and techniques for the humanities program. Prerequisite: 240 for music majors; no prerequisite for others.

**348 Public School Music Production** 2 hrs. Winter

A course in methods and materials for use in public school music productions with particular attention to the selection and evaluation of materials for such productions. Prerequisite: 240 for music majors; no prerequisite for others.

**360 Analysis of Basic Forms** 2 hrs. Fall, Winter

An analytical study of music in the smaller forms. Prerequisite: 261 with a grade of “C” or better.

**361 Analysis of Instrumental Forms** 2 hrs.

A continuation of 360 with special emphasis on the larger forms such as the sonata, symphony, quartet, concerto, etc. Prerequisite: 360 with a grade of “C” or better.

**362 Composition** 2 hrs. Fall

A study of the techniques of twentieth century composition with original work in vocal and instrumental forms. Prerequisite: 263.

**363 Composition** 2 hrs. Winter

A continuation of 362.

**364 Analysis of Vocal Forms** 2 hrs.

An extension of Music 360 placing special emphasis on vocal literature: lieder, opera, oratorio, etc. Prerequisite: 360.

**365 Contemporary Music Literature** 2 hrs. Winter

Survey of contemporary music literature through listening. Some study of the chronological evolution of modern structure and harmony. Special emphasis on the atonal concepts and electronic media.

**366 Instrumental Arranging** 2 hrs. Fall, Winter

A course designed to give the student experience in arranging music for instrumental groups with emphasis placed on making use of available resources. Prerequisite: 261 with a grade of “C” or better.

**367 Contemporary Techniques** 2 hrs. Winter

Recent compositional techniques including total serialization, aleatoric pro-
cedures, musique concrete, electronic and computer music. Written assignments. Prerequisite: 261.

368 Survey—Review of Basic Music 2 hrs.
A course required of transfer students who have satisfactorily completed music theory (equivalent to Basic Music 160, 161, 260, and 261 at WMU) requirements at another institution. The course consists of a review of chromatic harmony and contemporary techniques, with emphasis on correlation and reconciliation of the various terminologies used in music theory. This course may not be applied as credit earned toward the theory requirements of the Bachelor of Music degree.

369 Jazz 2 hrs.
A comprehensive study of jazz as a musical art from both a theoretical and historical perspective. Special attention to the musical contribution of black Americans, outstanding jazz composers and performers. Study of the “blues,” jazz melodic and harmonic structures, arranging for jazz ensembles, the art of improvisation and rhythmic analysis. Prerequisite: Basic Music 261.

370 Music History and Literature 3 hrs. Fall, Winter
A survey of the growth of music from the earliest times through the Medieval, Renaissance, and Baroque periods.

371 Music History and Literature 3 hrs. Fall, Winter
A continuation of 370 from the Classic period forward.

374 Graderoom Music Literature 3 hrs. Winter
Designed to meet the needs of the elementary teacher in music literature and application in the classroom. Included are: (1) works of great composers in relation to the age and culture; (2) native and foreign folk music; (3) historical development, structure, timbre, and use of instruments. Prerequisite: 140 or 240.

380 Motivational Aspects of Music 2 hrs. Fall
The psychic and physiological effect of sound on the individual, and systems of tonal relationships. The effect of music on personality and the consideration of music as a form of communication. The nature of musicality and its measurement. The nature of musical memory. The underlying bases for musical taste and for aesthetic experience in music. Prerequisite: Psychology I.

382 Influence of Music on Behavior 2 hrs. Fall
Review of the relationship between music and personality. The function of music in personality adjustment and development. A study of pertinent research methods by analysis and evaluation of published studies. Prerequisite: Psychology I.

383 Influence of Music on Behavior 2 hrs. Winter
Development of skills essential to research. An analytical survey of pertinent recent publications. Prerequisite: 382.

384 Music in Special Education 4 hrs. Fall, Winter
Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmic, and creative activities in classes for mentally and physically handicapped. The student learns functional use of piano and informal instruments. Values of musical activities for all exceptionalities are emphasized. No prerequisite. For Special Education majors only. Substitutes for 140.
460 Counterpoint (Vocal) 2 hrs. Fall
Modal counterpoint as exemplified by the composers of the sixteenth century. Practical application through the writing of two-, three-, and four-part motets and madrigals. Prerequisite: 261 with a grade of C or better.

461 Counterpoint (Instrumental) 2 hrs. Winter
Harmonic counterpoint as exemplified by the composers of the seventeenth and eighteenth centuries. Practical application through the writing of inventions, fugues, choral preludes, etc. Prerequisite: 261 with a grade of C or better.

462 Composition 2 hrs. Fall
Original work in composition with emphasis on chamber music and orchestral music. Prerequisite: 363.

463 Composition 2 hrs. Winter
A continuation of 462.

466 Theories of Musical Practice 2 hrs. Fall
The musical principles of important authors, past and present, of treatises dealing with composition, counterpoint, and harmony. Written assignments exploiting these principles. Prerequisite: 261.

467 Theories of Musical Practice 2 hrs. Winter
A continuation of 466.

468 Orchestration 2 hrs. Fall
A study of the characteristics of instruments, arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: 366.

469 Orchestration 2 hrs. Winter
A continuation of 468.

470 Classroom Procedures in Theory 2 hrs. Fall
Literature and methodology for the teaching of theory with 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. Winter
A continuation of Classroom Procedures in Theory 470.

478 Introduction to Research in Theory 2 hrs.
Individual research in music theory. Research methods and analytic discipline are stressed. Study will be focused in an area of the student’s need or interest.

480 Music Therapy Methods and Materials 2 hrs. Winter
Survey of materials available for use in music therapy programs and methods of adapting such materials to institutional use. Study of publications and techniques developed specifically for use in music therapy programs. Prerequisite: Music therapy major.

490 Undergraduate Workshop in Special Problems 1-3 hrs.
Designed for students interested in some special field of music not formally listed for instruction. All special problems must be approved by the Chairman of the Depart-
ment of Music, but may be under the direct guidance of any member of the music faculty. This course may be elected as many as three times.

530 Advanced Choral Conducting 2 hrs.
Supervised experience in conducting vocal ensembles. The complete preparation of choral music will be stressed. The student may be called upon to prepare an ensemble for public performance. Prerequisite: 330.

531 Advanced Instrumental Conducting 2 hrs.
Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: 331.

540 Elementary School Music 2 hrs. Summer
Emphasizes the place of music in the curriculum and the use of music in the day-to-day activities of the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

541 Music Supervision and Consultation 2 hrs.
A study of the structuring and implementation of a music education program in the schools, in terms of three organizational relationships: the music administrator or supervisor, the scheduled music teacher, and the unscheduled music consultant. Relation of music specialist to classroom teacher.

542 Studies in Music Education 2 hrs.
Topics to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Education Materials, and Curriculum Planning for Innovation in Music Education. This course may be repeated to an accumulation of not more than four credits.

543 Psychology of Music Education 2 hrs. Winter
Personal and social needs, motives and goals in relation to music in education. The function of musical achievement and aptitude tests in music education. Psychological aspects of behavior pattern in musical organizations. Physical, social and psychological factors involved in a developmental music program.

544 Analysis and Evaluation of Music Education Materials 2 hrs.
A study of the theoretical bases for, and practice in, analyzing and evaluating music for use in music education programs.

564 Form in Music 2 hrs.
A survey of the musical forms, large and small, used from the Baroque period to the present day. Analysis of both structure and texture of representative works of the various periods and styles. Prerequisite: 261 or consent of instructor.

570 Introduction to Musicology 3 hrs. Fall
History, purposes, scope of musicology; leading historians, past and present; modern methods of research, with special emphasis on primary sources and bibliography of the field.

571 Introduction to Musicology 3 hrs. Winter
A continuation of 570.
572 Baroque Music (1600-1750) 2 hrs.
A survey of the choral and instrumental music of the Baroque masters such as J. S. Bach and G. F. Handel. Special attention to the development of style from monody through harmonic polyphony. Prerequisite: 370-371.

573 Classical Music (1750-1800) 2 hrs.
Examination of the chief works of Mozart and Haydn, with intensive study in symphonic form and the development of the classic opera. Prerequisite: 370-371.

574 Romantic Music (1800-1910) 2 hrs.
Music of the important composers of the period beginning with Beethoven, along with the historical, cultural, and political background of the era. Special attention is given to the development of Nationalism. Prerequisite: 370-371.

575 Musicology and Research 3 hrs. Fall
Presentation of musicological material in formal writing as well as informal classroom lecture; specific research projects with emphasis on selection and qualitative judgment of materials used.

576 Musicology and Research 3 hrs. Winter
A continuation of 575.

577 Symphonic Literature 2 hrs.
A survey of music written for symphony orchestra during the Classic and Romantic periods.

578 Chamber Music Literature 2 hrs.
A survey of chamber music literature of the Classic and Romantic periods.

579 Operatic Literature 2 hrs.
A survey of opera from 1600 to the present.

580 Music Therapy Internship 2 hrs.
Six months clinical training through resident internship in an approved neuropsychiatric hospital with an established music program. Prerequisite: Completion of music therapy major and staff approval.

590 Studies in Pedagogy 1-3 hrs.
Topics to be announced. Selection will be made from the following: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. This course may be repeated for credit.

598 Readings in Music 2 hrs. Fall, Winter
Graduate students may enroll in this course after consultation with the graduate adviser.
the student's choice. A lower division hearing must be passed by the student before registering for upper division applied music. May be repeated for credit.

**300 Applied Music**

1-4 hrs.

Upper division (junior-senior level) private lessons on an instrument on which the student has passed the lower division hearing. Verification that the student has passed his upper division hearing must be in the student's file before graduation. May be repeated for credit.

Individual lessons in applied music can be elected for academic credit by any student in the University. Students who wish individual instruction in some field of applied music should contact the Department of Music to register and receive assignment of instructor. Such requests will be granted to the extent that the instructor's time and practice facilities are available beyond the needs of the music major degree candidates.

All B.Mus. degree candidates are required to have one class hour per week of individual instruction in their major performance field of concentration through the entire four-year course. Applied music requirements in fields other than the major performance area are listed in the *Music Supplement*.

Eight levels of study in the various areas of applied music are indicated in the *Music Supplement*.

- H20 through H35—Harp
- H40 through H55—Piano
- H60 through H75—Organ
- H80 through H95—Voice
- Z20 through Z35—String Instruments: Violin, Viola, Cello, String Bass
- Z40 through Z55—Brass Instruments: Cornet or Trumpet, Trombone, French Horn, Tuba, Baritone
- Z60 through Z75—Woodwind Instruments: Flute, Oboe, Bassoon, Clarinet, Saxophone
- Z80 through Z95—Percussion

**MUSIC ENSEMBLES**

All B.Mus. degree candidates are required to participate in some large music ensemble, e.g., orchestra, choir, band, wind ensemble, glee club, or chorale throughout their four years of study (Marching Band not included). It is expected that each student will take part for his first two years in a large ensemble employing his major performance area. All public school music wind and percussion majors are required to be in Marching Band through their junior year. Sometime during the student's residence he is expected to take one year of small ensemble. All music ensembles grant one hour of credit for each semester of participation. Not more than eight hours will be granted for participation in any one ensemble. Not more than twelve hours of ensemble credit will be accepted toward any degree. Students who want to participate in an ensemble should contact the director.

**LARGE ENSEMBLES**

**109 University Marching Band**

1 hr. Fall only

The University Marching Band is the major performing ensemble for Fall football activities. Positions are open only to male students who play wind or percussion instruments. Male Public School Music Education majors with a wind or percussion instrument minor are required to take this course through their junior year. Membership by audition. (May be substituted for Physical Education requirement, except that a minimum of one semester hour of credit must be earned in a general physical education course.)
110 Symphonic Band
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
The orchestra is open to all students who have had a reasonable amount of orchestra experience. Many fine compositions are studied and played during the year, and the orchestra sometimes joins with other campus organizations in programs. Instruments are available for the use of students. Membership by audition.

112 University Choir
The University Choir, open to all students, is an a cappella choir with selected membership. The ensemble seeks to develop and to perpetuate a high standard of choral singing. Each year the choir performs frequently on campus, for regional high schools, and for professional organizations. Membership by audition.

113 University Singers
University Singers is open to all students who wish to obtain a knowledge of choral music. The Singers present concerts on campus and for organizations in the area. Pass/fail only.

114 The Wind Ensemble
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.

116 Women's Chorus
Membership in the Women's Chorus is open to all women of the University and seeks to provide and develop artistic training in ensemble singing. In addition to such traditional campus appearances as the Christmas Chocolate and the Spring Concert, the group sings before a number of high schools throughout the state every year and appears before various local and civic organizations, taking an active part in the musical life of the campus and the community.

118 Campus Chorale
This choir prepares traditional choral literature for performance on campus and for area high schools. The University Choir and the Campus Chorale are joined for performance of major choral compositions. Membership by audition.

SMALL ENSEMBLES

117 Special Music Ensembles
Special instrumental or vocal ensembles may be formed with the permission of the Chairman of the Department of Music. Where a sufficient number of hours of rehearsal per week warrant it, one hour of credit will be granted. String, woodwind, brass, vocal, and percussion ensembles are regularly active.

119 Varsity Choir
A highly selective mixed vocal group which specializes in folk music, specialty numbers, and popular arrangements. The repertoire of the group is designed to please all ages and musical tastes with high quality entertainment. Quartets, dance routines, and a Dixieland Combo are included. Membership by audition.
210 Jazz Lab Band

This organization affords the student an opportunity to develop in all areas of modern jazz and dance music. Concerts may be given both on and off campus. The band may also provide music for some athletic events.

211 Studio Accompanying

A laboratory experience in accompanying solo music. This course may serve as a substitute for two semesters of the Public School Music—Keyboard majors eight semester large ensemble requirement. Students will be assigned three to four hours of studio accompanying per week. This course may be repeated for credit not to exceed a total of two semester hours.

219 Madrigal Singers

Membership is open to a limited number of students who are interested in madrigal singing. This group sings concerts on campus and for other organizations in the area. Membership by audition.

317 Opera Workshop

A production experience in the acting, singing, accompanying, and producing of musical theatre. The class is offered each semester and culminates in the performance of an opera or operatic scenes. Open to advanced singers, pianists, and persons interested in production techniques. Admission by personal interview with the instructor.

517 Collegium Musicum

Performance of early Western music. Open to all students of the University. Required of Music History majors. Additional transcription, arranging, editing, and conducting of early music is required of Music History majors. Graduate students may count not more than two hours of this course for graduation. Membership by audition.
College of General Studies

NORMAN C. GREENBERG,
Dean

OLLIN J. DRENNAN,
Associate Dean

Academic Areas:
Humanities
Science
Social Science
The College of General Studies is responsible for establishing and maintaining the program of general education at Western Michigan University. This program affects all undergraduate students regardless of the curricula in which they are enrolled.

The main purposes of general education and consequently of the General Studies program, are to open doors and present ideas, to stimulate healthy self-criticism, to introduce the student to the world in which the educated man and the responsible citizen must live, a world of pressures and changes and of endlessly varied problems, and to give him some of the most important means for coping with them. It attempts to attack rigid and prejudiced habits of thought and at the same time to provide a foundation for tenable values.

The program includes 40 hours of work: 22 hours at the Freshman-Sophomore level, 8 hours at the Junior-Senior level and 10 hours of additional “non-professional liberal arts courses.”
DESCRIPTION OF COURSES

Freshman-Sophomore Level:

It is expected that the student's program for the freshman year would include Western Civilization 100 or 101 as well as the requirement in science. Arts and Ideas 222 and the courses in social science should be taken in the sophomore year.

HUMANITIES AREA

Phillip D. Adams, Acting Chairman
Harold O. Bahlke
Lynwood H. Bartley
Pearl Baskerville
Gary P. Bergel
James Bondell
James Butterworth
Joseph M. Condie
Audrey Davidson
Doug Davies
Richard DePeaux
James Doolittle
Ellen Rozanne Elder
James M. Ferreira
Reginald Gammon
Arnold Gerstein
Bryna Graff

Richard Joyce
John Keary
Robert M. Limpus
Francis M. Littna
F. Theodore Marvin
Al D. Mazzerella
Helen McCauslin
Milo M. Meadows, Jr.
Harvey Overton
Dale H. Porter
Charles Pratt
Donald Raiche
William Routt
Stephen Schicker
Bonnie Sigren

100 Early Western Civilization 4 hrs.
A survey of Ancient, Medieval, Renaissance, and Reformation cultures, this course shows how the present is a product of the past, and how peoples, ideas, and institutions widely separated in space and time have contributed to the Western cultural tradition.

101 Modern Western Civilization 4 hrs.
An examination of Western culture from the seventeenth century, this course surveys Early Modern Europe; the era of the Enlightenment; political, industrial, and intellectual revolutions; the rise of democracy, nationalism, and imperialism; and the period of the World Wars to the present.
116 College Writing 4 hrs.
Through classroom discussion and conferences with his instructor, the student will be encouraged to think for himself and to experience the satisfaction of working with his own ideas. Through constant practice in writing, he will be expected to achieve a reasonable competence organizing a paper and writing it with clarity in the language used by literate Americans.

120 Freshman Colloquium 4 hrs.
Through reading, observing, discussing and writing, the Colloquium offers the student the opportunity to participate in an extensive examination of a currently relevant topic.

140 General Studies Reading 2 hrs.
A course in selected reading of books representing some of the best and most stimulating writing in several areas of thought. In this course the student assumes responsibility for conducting his reading program efficiently, requesting conferences with faculty advisers when it is desirable.

222 Arts and Ideas 4 hrs.
This course explores the relation between form and content in the arts of the Twentieth Century in the attempt to help students achieve a more conscious and appreciative awareness of what it means to be human in the modern Western world.

224 Non-Western Arts and Ideas 4 hrs.
An introduction to the thought and art of major non-Western civilizations through a study of their central philosophic and religious texts and an examination of their chief works of art and literature. This course is an approved alternative for Arts and Ideas 222.

SCIENCE AREA

Ollin J. Drennan, Chairman
Shirley Bach
Roger Bennet
Carl Engles
Franklin G. Fisk
Ronald Flaspohler
Dale Griffith
David Hargreave
Phillip T. Larsen
Robert H. Poel
James J. Ziegelmaier

105 Physical Geography 4 hrs.
The study of several earth sciences which give an understanding of man's environment: the form of the earth, earth-sun relationships, maps, weather and climate, soils, vegetation, the oceans, landforms and earth materials. Where possible, stress is given to the significance of environmental factors in the life of man. Students may present either this course or General Studies 112 towards their science requirements, but not both. Laboratory experiences are included.

107 Biological Science 4 hrs.
A course designed to present basic biological principles and to give the student an understanding of the operation of the world of life. Laboratory experiences are included.
College of General Studies

108 Physical Science 4 hrs.

The major objective of the course is to prepare the student for intelligent living in the nuclear age. The course is designed for students who are not planning to specialize in any of the physical sciences. Physical Science 108 is designed to provide a scientific background for understanding our rapidly changing culture. Laboratory experiences are included.

110 Aims and Achievements of Science 4 hrs.

A course designed to present to the student goals and objectives of science, the methodology of science and some of the major achievements of science through a series of scientific case studies examined historically and philosophically as well as scientifically.

112 Geological Science 4 hrs.

An introduction to physical and historical geology for students who do not plan to major or minor in geology or earth science. The importance to man of minerals, and rocks, geologic processes, and the history of the earth including the evolution of past life are emphasized. Three lectures and a two-hour laboratory period. Students may present either this course or General Studies 105 toward their science requirements, but not both.

SOCIAL SCIENCE AREA

Nita Hardie, Chairman
Syed Abedin
Theodore Bank
Robert N. Brewer
Kenneth Byerly
Do Young Chang
Donald DeLong
Thomas Dube
Dennis Floyd
Bruce Haight
David DeShon
Barbara Havira
Charles O. Houston
Bernard Kilpatrick
Patricia Klein
Larsen Kuoh
Hung Peng Lee
Barbara Lex
Minoru Mochizuki
Evan Richards
Ira A. Rutherford
Visho Sharma
Larry Tyler
Dick Williams
Karen Yinger
Bryce Zender

202 Man and Society 4 hrs.

An introduction to social science, including scientific interpretation of human nature and culture and some issues of contemporary society. Not open to students who have taken the old Basic Studies 102 or 103.

203 The Social Bases of Human Behavior 4 hrs.

An analysis of the behavioral sciences and their contributions to the understanding of man’s origin and human personality, the interaction between persons in groups, the understanding of social institutions and the function of culture. Not open to students who have taken the old Basic Studies 102 or 103.
204 Comparative Social Institutions 4 hrs.
A course showing the interaction and influence of social forces in determining the nature and function of institutions through which a society attempts to achieve its goals. Because all societies have many basic problems in common, a study is made to ascertain how different people, under differing circumstances solve these problems. Not open to students who have taken the former Basic Studies 102 or 103.

205 Race and Culture 4 hrs.
A social scientific view of the warranted knowledge and of the reciprocal problems and issues of race and culture, focusing specifically on current social issues.

INTER-AREA COURSES

240 Special Studies 1-4 hrs.
Various extra-classroom activities, including projects associated with travel of recognized educational value. Prior arrangement with faculty member and prior approval of a General Studies Area Chairman are required.

399 Field Experience 2-8 hrs.
This course is for students who wish to pursue a program of independent study combining academic work with social, civic or political field work. Prerequisites: a written outline of the student's project, approved by a faculty supervisor, and approval from the office of the Dean. Elective credit only.
Junior-Senior Level

At the Junior-Senior level the student must take Introduction to the Non-Western World 304 or approved alternatives. He must also take at least one course from the list of General Studies upper-class electives listed below:

304 Introduction to the Non-Western World 4 hrs.
A survey of the traditional cultures of certain major societies which have developed essentially apart from the stream of Western civilization. This is followed by an analysis of the Western impact on these societies and their reactions thereto, and by a study of contemporary social, economic and political problems of non-Western countries.

UPPER-CLASS ELECTIVES:

400 Human Communication 4 hrs.
A cooperative investigation of the processes by which man uses the dynamics of symbol systems, centrally concerned with both personal and cultural communication behavior.

401 Science in Intellectual History 4 hrs.
An historical study of how man's intellectual environment has molded his view of the world, and how his increasing knowledge of that world, in turn, has affected other intellectual endeavors.

402 American Culture 4 hrs.
An interdisciplinary study of some of the most significant issues of American life, past and present, as seen from the perspectives of literature, the arts, the social sciences and philosophy.

403 Criticism of Mass Media 4 hrs.
Helps students to develop critical standards for evaluating mass media content in terms of the nature, function and influence of broadcasting, press and film in our society.

404 Business and Society 4 hrs.
A systematic analysis and evaluation of the concepts and institutions, both internal and extrinsic, which shape the role of business in our society. Illustrative topics: Authority and Power, Pluralism, Competition, Freedom of Association, Innovation, Social Responsibility.

405 Molders of Thought 4 hrs.
A course in which the ideas and achievements and lives of two or three leading thinkers in various areas are studied comparatively. Different selections of topics and men will be made from time to time.
408 Social and Cultural Change 4 hrs.

An interdisciplinary study of the universal human problem of social change. Single and multifactor theories will be used to assess the question of change as "drift" and change as socially directed. Additionally, an examination of various economic, technological, political, military, ideological, ethical and religious efforts to explain change will be examined.

497 Seminar in Contemporary Issues 4 hrs.

A course in which large scale social movements and trends are examined in interdisciplinary terms for their general impact on societies. Differing selections of issues will be made from time to time.
The Graduate College

GEORGE G. MALLINSON,
Dean

RICHARD T. BURKE,
Associate Dean

SID DYKSTRA,
Associate Dean

School of Librarianship
The undergraduate curriculum in librarianship offers preparation for the teacher-librarian or for the student who expects to enter the graduate program in library science either at Western Michigan University or at some other library school. Starred courses are open to prospective teachers or others who desire a wider acquaintance with books and library materials and methods.

Students in the elementary or secondary curricula may meet certification requirements for teacher-librarianship by taking the undergraduate minor in library science and a subject-matter major. The Librarianship minor consists of the following courses: 100, 230, 510, 512, 530, and 542 or 546 and 516 if the candidate is in the elementary curriculum. School Library Experience (407) is required during the last year of work. A portion of the Directed Teaching assignment is also spent in one of the cooperating school libraries. A course in audiovisual media is highly recommended.

A departmental laboratory containing books and other materials in library science and related fields is provided in the School of Librarianship.

**PRE-PROFESSIONAL CURRICULUM**

*Bachelor of Arts or Bachelor of Science Degree*

Candidates in the College of Arts and Sciences who enroll in the Librarianship Curriculum must fulfill the requirements for the B.A. or the B.S. degree including: (1) general studies; (2) a major in a subject field; and (3) a minor in librarianship.

A typical pre-professional library science program of studies follows:

**Course Requirements:**

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

1. General Studies requirements

2. Humanities

   Modern Language ................................................................. 8
   English electives ............................................................. 8
   Communication Arts & Sciences 130 .......................................... 3
   Elective ................................................................. 3

3. Sciences

   Electives ................................................................. 3

4. Social Sciences

   Government elective ......................................................... 3
   History elective ............................................................ 3
   Sociology 200 ............................................................. 3
   Elective ................................................................. 3
5. Librarianship
   Librarianship as a Profession: Introduction 100 .................. 2
   Fundamentals of Library Organization 230 .......................... 3
   Building Library Collections 510 .................................... 3
   Reference Service 512 ............................................. 3
   Introduction to Classification and Cataloging 530 ................. 3
   Reading Interests of Young Adults 548 or
   Storytelling 546 or Teacher Ed. 548 .................................. 2-3

6. Physical Education .......................................................... 2

7. Electives and Departmental Requirements for Subject Major
DESCRIPTION OF COURSES

Undergraduate

100 Librarianship as a Profession: Introduction* 2 hrs. Fall, Winter
An introductory survey to acquaint students with the various types of services offered in the modern library as a social, cultural, and educational institution. Students will have opportunity to observe, and in some cases, to participate in the work performed in school, public, county or regional, college and special libraries. Open to freshmen and sophomores who may wish to explore the profession of librarianship as a career.

230 Fundamentals of Library Organization 3 hrs. Fall, Winter
A study of the practical methods for acquisition, processing and circulation of books and other materials and the maintenance of essential business records. Emphasis on simple organization of library materials for effective use in schools and small public libraries.

407 School Library Experience 3 hrs. Fall, Winter
An introduction to library activities and services through assignment to a selected school library. A minimum of 90 hours of observation and participation under supervision of the cooperating school librarian and a library school faculty member is required. Grades on a credit-no credit basis. Must be completed before Directed Teaching.

*Courses open to students in other departments.
Upperclassmen and Graduate Students

506 Introduction to Computers 1 hr. Fall, Winter
Flow charts and computer programs will be prepared in the BASIC LANGUAGE to be run on a digital computer. Prerequisite: 1½ yrs. h.s. algebra or Math 100.

510 Building Library Collections 3 hrs. Fall, Winter

512 Reference Service 3 hrs. Fall, Winter
Study and evaluation of basic reference and bibliographic sources. Critical examination of the publications of governmental agencies, societies and institutions, especially as reference courses. Attention given to organization and methods of reference services in the library.

516 Elementary School Library Materials* 3 hrs. Fall, Winter
Problems in the evaluation, selection and utilization of print and non-print materials with special emphasis on the content areas in the elementary school curriculum. Prerequisite: English 282.

530 Introduction to Classification and Cataloging 3 hrs. Fall, Winter
Introduction to basic cataloging and classifying principles and procedures. Includes theoretical study and practical application of descriptive cataloging, rules for determining main and secondary entries, subject cataloging, and classifying according to the Dewey Decimal Classification scheme. Processing non-book materials and the development, use and maintenance of library catalogs are included. Laboratory experience is required.

542 Reading Interests of Young Adults* 3 hrs. Fall, Winter
Study of the fields of literature suited to the interests of young people. Students are given opportunity through wide reading to develop principles and standards for the selection of the book collection. Includes an introduction to methods of stimulating broader reading interests and conducting group book discussions with young people.

546 Storytelling* 3 hrs. Fall, Winter
Underlying principles of the art of storytelling; techniques; content and sources of materials. Practice in telling stories before groups of children is provided. Planning the story hour program for various ages as a means of developing appreciation of literature and stimulating an interest in reading.

598 Readings in Librarianship 1-3 hrs. Fall, Winter
Offers a program for the advanced student for independent study in a special area of interest. Arranged in consultation with the adviser.

*Open to students in other departments.
Faculty

WESTERN MICHIGAN UNIVERSITY

LIST OF FACULTY 1972-73

Abedin, Syed Z., 1970, Assistant Professor of Social Science
B.A., M.A., Aligarh Muslim (India); M.A., Pennsylvania

Adams, David W., 1956, Professor of Teacher Education
B.A., Ohio Wesleyan; M.A., Ed.D., New York

Adams, Ethel G., 1946, Professor of Music
B.A., Ball State; M.A., Columbia

Adams, Phillip D., 1964, Assistant Professor and Area Chairman of Humanities
B.A., Western Michigan; M.A., Ph.D., Ohio

Adams, Richard G., 1970, Assistant Professor of Social Work
B.A., Omaha; M.S.W., Nebraska

Adams, Sam B., 1946, Associate Professor of Music
B.A., Kentucky; M.A., Columbia

Alavi, Yousef, 1958, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Albert, Elaine A., 1965, Assistant Professor of English
B.A., Western College for Women; M.A., Middlebury

Allen, Francis W., 1953, Associate Professor, Library
B.S., Colby; B.A.L.S., M.A.L.S., Michigan

Allen, Teri, 1971, Instructor in Occupational Therapy
B.S., Western Michigan

Allen, Virginia, 1971, Instructor in English
B.A., Lawrence; M.A., Michigan

Allgood, William T., 1969, Assistant Professor of Music
B.M., East Carolina; M.M., Illinois

Alm, Brian R., 1971, Instructor in English
B.A., Augustana College; M.A., The University of Chicago

Alvarez, Elsa, 1964, Assistant Professor of Spanish
M.A., Iowa; Ph.D., Havana; Ph.D., Michigan State

Anderson, Mardell B., 1968, Instructor in Women's Physical Education
B.S., M.A., Western Michigan

Anderson, Robert H., 1957, Associate Professor of Chemistry
B.A., Baker; M.A., Ph.D., Columbia

Ansel, James O., 1949, Professor of Teacher Education and Director of Rural Education
B.A., Western Michigan; M.A., Northwestern; Ed.D., Columbia
Comer, Charles D., 1968, Instructor in Men's Physical Education  
B.S., Bowling Green State; M.A., Western Michigan

Condic, Joseph M., 1966, Assistant Professor of Humanities  
B.A., St. Joseph's; M.A., Chicago

Cooke, Dean W., 1966, Associate Professor of Chemistry  
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Cooley, John, 1968, Assistant Professor of English  
B.A., M.A., Syracuse; Ph.D., Massachusetts

Cooney, Seamus, 1971, Assistant Professor of English  
B.A., University College (Dublin); M.A., Indiana; Ph.D., California (Berkeley)

Copps, John A., 1959, Professor of Economics  
B.S., Ph.D., Wisconsin

Cordier, Mary, 1967, Instructor in Teacher Education  
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Cordier, Sherwood S., 1956, Associate Professor of History  
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B.S., M.A., Western Michigan

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Coutant, Victor, 1966, Professor of German and Classics  
B.A., M.A., Ph.D., Columbia

Cowden, David J., 1969, Assistant Professor of Teacher Education  
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Coyne, Monique Y., 1969, Instructor in French  
B.A., M.A., Western Michigan

Coyne, Thomas E., 1962, Vice President for Student Services  
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Crane, Loren D., 1965, Associate Professor of Communication Arts and Sciences  
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Crowell, Ronald A., 1966, Assistant Professor of Teacher Education  
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Cudney, Milton R., 1964, Professor, Counseling Center  
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Cummings, John W., 1962, Associate Professor of Transportation Technology  
B.S., Lewis; M.A., Chicago Teachers College
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   B.S., Western Michigan; M.A., Miami

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   B.S., Stout State; M.A., Ball State; Ph.D., Michigan State

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Davis, Charles, Jr., 1967, Associate Professor of Engineering and Technology
   B.S.E.E., Michigan State; M.S.E.E., Michigan

Davis, Richard A., 1965, Associate Professor of Geology
   B.S., Beloit College; M.A., Texas; Ph.D., Illinois

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   Mines; P.E.

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  B.A., Northeast Missouri State Teachers; B.S., Missouri Valley; M.S.,
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B.A., Cedar Crest; M.A., Chicago

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B.S., New York State; M.S., Iowa State University of Science and Technology, Ames

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Fisher, John M., 1969, Assistant Professor of Paper Science and Engineering
B.S., Louisiana State; B.S., Purdue

Fisher, Stephanie, 1971, Assistant Professor of English
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B.S., M.S., Ph.D., Kansas

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B.S., Montana State; M.S., Ph.D., Iowa State; P.E.

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B.A., M.S.T., Missouri, Ph.D., Michigan

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B.A., B.S., M.A., Minnesota; Ph.D., Michigan State

Floyd, Dennis S., 1970, Instructor in Social Science
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B.A., M.S.W., Michigan; D.S.W., Denver

Foote, J. Lindsley, 1965, Associate Professor of Chemistry
B.S., Miami; Ph.D., Case Institute of Technology

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B.S., M.A., Western Michigan

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B.S., M.A., Western Michigan

Frattallone, Joseph A., 1965, Associate Professor of Art
B.A., Cincinnati; M.A., Miami
Faculty

Freeman, Caryl P., 1970, Assistant Professor of Business Education and Administrative Services
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B.S., Western Michigan; M.A., Michigan

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B.S., LaCrosse Wisconsin State; M.S., Illinois State Normal

Friedman, Stephen B., 1966, Associate Professor of Biology
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Fritscher, John J., 1967, Associate Professor of English
B.A., Pontifical College Josephinum; M.A., Ph.D., Loyola (Chicago)

Frurip, James F., 1970, Instructor, Division of Instructional Communications
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Fuller, Paul R., 1970, Professor of Psychology
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Fulton, Ann K., 1969, Instructor in Home Economics
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B.M., Western Michigan; M.M., Eastman School of Music

Furbay, Albert L., 1970, Associate Professor of Communication Arts and Sciences
B.A., Taylor; M.A., Ph.D., Wayne State

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B.S., Eastern Michigan; M.A., Western Michigan

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B.A., Swarthmore; M.A., Columbia; Ph.D., Pennsylvania

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B.S., Alabama College; M.A., North Carolina

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Philadelphia Museum College of Arts; Stella Elkins Tyler School of Fine Arts

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B.A., Stanford; M.A., Ph.D., Colorado

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B.A., Doane; M.S., Ph.D., Wisconsin

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Appel, William C., 1965, Associate Professor of Music
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B.A., William Jewell

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B.S., M.F.A., Michigan

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B.S., Northwestern

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B.S., Clarion State; M.Ed., Ed.D., Pennsylvania State

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B.S., Kentuckly; M.S., Ph.D., Purdue

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B.S., M.S., East Texas State; Ed.D., Texas A & M

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B.A., Wellesley; M.A., Radcliffe; Ph.D., Harvard

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B.S., M.S., Michigan

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Brawer, Milton J., 1960, Professor of Sociology and University Ombudsman
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B.B.A., M.B.A., Western Michigan

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Matura, Reaglegymnasium Knittelfeld and Vienna VII; Ph.D., Vienna;
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Matura, Oberschule fuer Maidchen, Vienna IV; M.L.S., Western Michigan;
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B.A., Western Michigan; M.A., Michigan

Brown, Alan S., 1955, Professor of History
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B.A., Westminster; M.A., Ph.D., Wisconsin

Brown, Donald J., 1960, Associate Professor of Chemistry
B.A., Ph.D., Syracuse

Brown, Helen, 1947, Associate Professor of Women's Physical Education
B.S., M.A., Northwestern

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Brown, Russell W., 1951, Associate Professor of Music
B.P.S.M., Oklahoma State; M.Mus.Ed., Notre Dame

Bruce Phillip L., 1963, Associate Professor of Industrial Education
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Brune, Elmer J., 1956, Associate Professor of Engineering and Technology
B.S., M.A., Western Michigan

Brunhumer, Walter J., 1957, Professor of History
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Buckley, Joseph T., 1970, Associate Professor of Mathematics
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Faculty

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  B.M.E., M.M., Colorado

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  B.S., John Carroll; M.S.W., Boston College; Ph.D., Chicago

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  B.S., Carroll; M.A., Ph.D., Michigan State; C.P.A., State of Wisconsin

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  B.S., M.S., Illinois State

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  American Conservatory of Music; Eastman School of Music;
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  B.A., Witwatersrand; M.A., Fordham; D.Litt. et Phil., South Africa

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Carley, David D., 1964, Associate Professor of Physics
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Carlson, Theodore L., 1947, Professor of Economics
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Carlson, William A., 1966, Professor of Counseling and Personnel

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B.S., Oklahoma College for Women; M.S., Smith; Ph.D., Texas Woman’s
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B.S., Eastern Michigan

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 Clysdale, J. Patrick, 1958, Associate Professor of Men’s Physical Education and Assistant Director of Athletics  
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Kapoor, S. F., 1967, Assistant Professor of Mathematics
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Karsten, David, 1967, Assistant Professor of Communication Arts and Sciences
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B.A., Bethel; M.A., Chicago; Ph.D., University of Chicago Divinity School

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B.S., Wisconsin; M.A., Ph.D., American
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Kaul, R. Dean, 1967, Associate Professor of Physics
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Keely, Charles B., 1970, Assistant Professor of Sociology
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Keenan, J. Michael, 1962, Professor and Chairman, Department of Management
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Kelemen, Joseph A., 1968, Associate Professor of Engineering and Technology
B.S. (E.E.); M.S. (E.E.); St. Louis

Keller, Fred S., 1968, Adjunct Professor of Psychology
B.S., Tufts; M.A., Ph.D., Harvard

Kent, Louise M., 1967, Adjunct Assistant Professor of Psychology
B.A., M.A., Indiana; Ph.D., Iowa

Kent, Neil D., 1965, Professor of Psychology
B.A., M.A., Baylor; Ph.D., Indiana

Kercher, Dorotha, 1966, Assistant Professor, Library
B.A., M.A., Western Michigan

Khaled, Chafic, 1966, Instructor in History
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Kiewiet, Maureen E., 1971, Adjunct Assistant Professor of Business Education and Administrative Services
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B.A., King; M.A., Vanderbilt; Ph.D., Stanford

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B.S., M.A., Western Michigan

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B.A., St. Olaf; M.A., Western Michigan

Klammer, Waldemar E., 1956, Associate Professor of Industrial Education
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Klein, Diane M., 1971, Instructor in Speech Pathology and Audiology
B.A., Central Michigan; M.A., Western Michigan

Klein, George, 1958, Associate Professor of Political Science
B.A., M.A., Ph.D., Illinois

Klein, Patricia, 1967, Assistant Professor of Social Science
B.A., M.A., Illinois

Klein, Roy S., 1967, Assistant Professor of Engineering and Technology
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Lyceum Stidles (Portugal, Brazil, Goa, England, France); M.A., Loyola; Ph.D., Loyola

Kline, James E., 1963, Assistant Professor of Paper Science and Engineering
B.S., M.S., Western Michigan

Kohrman, George E., 1951, Dean, College of Applied Sciences and Professor of Industrial Education
B.S., M.A., Ed.D., Missouri

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ABITUR, Goethegymnasium Karlsruhe (Germany); B.A., M.A., Western Michigan
Faculty

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B.A., M.A., Wisconsin; Ph.D., Minnesota

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B.S., Washington State; M.S., Ph.D., Montana

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B.A., B.Ed., Washington State; Ph.D., Northwestern

Kyriazis, John P., 1969, Instructor in History
B.A., M.A., Colorado

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Lambe, Cameron W., 1962, Professor of Teacher Education
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B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Landis, Joseph B., 1969, Assistant Professor of Sociology
B.A., Wooster; M.A., Ph.D., Yale

Large, Margaret S., 1949, Professor of Women’s Physical Education
B.A., Toronto; M.A., Wayne State; Ph.D., Michigan

Large, Wilda F., 1964, Associate Professor of Social Science, Liberal Arts
B.A., M.A., Western Michigan

Larsen, Philip T., 1970, Assistant Professor of Natural Science
B.A., Rutgers; M.Ed., Ph.D., Pennsylvania State

Larsen, Ronald M., 1971, Instructor in Accountancy
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Lawrence, Jean McVay, 1959, Associate Professor of Biology
B.A., Yankton; M.A., Wellesley; Ph.D., Northwestern

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B.D., M.A., Ph.D., Chicago

Leader, Alan H., 1963, Professor of Management
B.S., M.S., Rochester; D.B.A., Indiana

Lee, Carleton L., 1969, Professor and Director, Black Americana Studies
B.A., Talladega College; M.A., Ph.D., Chicago

Lee, Hung Peng, 1970, Assistant Professor of Social Science
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B.A., Northern Michigan; M.S., Michigan

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Lewis, David M., 1962, Professor of Sociology
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B.A., M.A., Ph.D., Michigan State

Lex, Barbara W., 1970, Assistant Professor of Anthropology and Social Science
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Lick, Don Raymond, 1965, Associate Professor of Mathematics
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Lindemeyer, Carl, 1969, Assistant Professor of Engineering and Technology
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Livingston, William, 1964, Assistant Professor of Communication Arts and Sciences
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Lloyd, Bruce A., 1967, Professor of Teacher Education
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B.A., Elmhurst; B.D., S.T.M., Union Seminary; Ph.D., Columbia

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B.A., Vienna; Ph.D., Johannes Gutenberg

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Lowe, James J., 1965, Associate Professor, Counseling Center
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Lowrie, Jean E., 1951, Professor and Director, School of Librarianship
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Lyon, David O., 1963, Associate Professor of Psychology
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B.A., M.A., Western Michigan

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Maher, Robert F., 1957, Professor of Anthropology
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Maier, Paul L., 1959, Professor of History
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Makowski, Captain Eugene E., 1970, Assistant Professor of Military Science
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B.S., M.A., New York State; Ph.D., Michigan

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B.A., Kalamazoo; M.A., Michigan

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Maloney, Harold J., 1968, Lecturer in Blind Rehabilitation
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Malott, Richard W., 1966, Associate Professor of Psychology
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B.Sc., M.A., Agra (India); D. Lib.S., Banaras Hindu (India); M.L.S., Western Michigan

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Halvas, Earl E., 1971, Assistant Professor of Business Education and Administrative Services
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B.S., Miami; M.A., Ohio State; Ed.D., Colorado State

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B.A., Hope; M.S., Ph.D., Purdue

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B.S., M.A., Ph.D., Ohio State
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B.A., Kent; Ph.D., Ohio State

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B.A., M.A., Ph.D., Michigan State

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B.S., M.A., Western Michigan; Ph.D., Southern Illinois

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B.S., National Taiwan (Formosa); M.S., Ph.D., Minnesota

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Faculty

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   B.S., William Penn; M.A., Missouri; Ph.D., State University of Iowa

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   B.S., M.S., Stout State; Ed.D., Bradley

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   B.A., Western Michigan; M.A., Michigan; Ed.S., Western Michigan

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   B.S., M.A., Western Michigan; Ph.D., Ohio State

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   B.S., Wisconsin State; O.T. Certificate, Illinois

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   B.A., Alma; M.A., Michigan

Nobes, Leon D., 1966, Assistant Professor of Communication Arts and Sciences
   B.A., M.A., Western Michigan

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   B.A., M.A., Ph.D., Northwestern

Nodel, Emanuel, 1961, Associate Professor of History
   B.A., Brooklyn College; M.A., Ph.D., Indiana

Northan, Jack I., 1968, Adjunct Associate Professor of Mathematics
   B.A., New York; M.A., Michigan State

Null, Thomas W., 1945, Associate Professor of Business Education and Administrative Services
   B.A., Ottawa; M.A., Iowa

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   B.A., Michigan; M.A., Western Michigan

O'Connor, Arthur J., 1964, Director of University Information
   B.S., Detroit

Odom, Sue K., 1970, Instructor in History
   B.A., M.A., North Texas State

Olenchak, Frank R., 1966, Assistant Professor of Teacher Education
   B.M., Madison; M.Ed., Pennsylvania State; C.A.S.E., Johns Hopkins
Olsen, Ronald W., 1970, Assistant Professor of Biology
  B.S., Utah; M.S., Ph.D., Wisconsin

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  B.S., Michigan

Olton, Roy, 1957, Professor and Chairman, Department of Political Science
  B.A., Ohio Wesleyan; M.A., Ph.D., Fletcher School of Law and Diplomacy

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  B.S., Schools of Mines and Metallurgy (Missouri); M.S., Ph.D., Wisconsin

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  B.A., Lafayette; M.A., Columbia; Ph.D., Michigan

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Otteson, Connor P., 1964, Professor of Marketing
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  B.S., Purdue; M.A.T., Indiana; Ph.D., Oklahoma State

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  B.A., Western Michigan; M.A., Ph.D., Michigan

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  B.S., San Fernando State; M.S., Long Beach State; Ph.D., Ohio State
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Ross, Martin H., 1966, Associate Professor of Sociology  
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Ross, Myron H., 1961, Professor of Economics  
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Rossi, Ernest E., 1966, Associate Professor of Political Science  
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Rutherford, Ira A., 1970, Instructor in Social Science  
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Ryan, Alexander Boggs, 1962, Associate Professor of Music  
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B.S.M.E., Tri-State; M.S.M.E., Toledo; P.E.

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B.A., Valparaiso; B.S.L.S., Western Reserve; M.A., Washington University
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B.A., Antioch; M.A., Ph.D., Minnesota

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B.A., Taylor; M.A., Eastern Michigan

Sanders, Neill, 1969, Professor of Music
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Schmitt, Peter, 1965, Associate Professor of History
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Schubert, Richard C., 1969, Associate Professor of Engineering and Technology
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B.S., M.A., Western Michigan

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B.A., Western Michigan; M.A., Ph.D., Michigan

Seber, Robert C., 1956, Professor of Mathematics  
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Sechler, Robert E., 1959, Associate Professor of Mathematics  
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B.A., Wooster; M.A., Chicago; Ph.D., Ohio State

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Sellin, Donald F., 1969, Professor of Special Education  
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B.A., M.A., Illinois State

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B.S., Valparaiso; M.S., Indiana

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B.A., Michigan; M.A., Harvard; M.A., Wisconsin; Ph.D., Michigan

Shamu, Robert E., 1967, Associate Professor of Physics  
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Faculty

Sharma, Visho B. L., 1967, Professor of Social Science and Sociology

Shaw, John F., 1970, Assistant Professor of Men's Physical Education
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Sheppard, John D., 1965, Associate Professor of Accountancy
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   B.A., Western Michigan; M.A., Michigan

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   B.M., M.M., Northwestern

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   B.S., Northwestern; M.A., Western Michigan

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   B.S., M.A., Houston; Ph.D., Wisconsin

Smith, Isabelle L., 1968, Assistant Professor of Home Economics
   B.S., Wayne State; M.A., Western Michigan

Smith, Kathleen M., 1966, Associate Professor of English
   B.A., Mount St. Mary; M.A., Boston; Ph.D., Fordham

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   B.A., Kent State; M.A., Ohio; Ph.D., Wisconsin

Smith, Robert Jack, 1963, Associate Professor of Anthropology
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   B.S., M.A., Bowling Green State; Ph.D., Michigan State

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Stroupe, John H., 1965, Associate Professor of English
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  B.S., Michigan State; M.S., Connecticut
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   B.S., Wisconsin State; M.S., Ed.D., Northern Illinois

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   B.A., M.A., Western Michigan

Teichert, Herman U., 1972, Assistant Professor of German
   B.S., M.E., Kent State; Ed.D., Georgia

Thomas, Darrell B., 1969, Assistant Professor of Home Economics
   B.S., M.S., Brigham Young

Thomas, Nancy L., 1954, Assistant Professor of Teacher Education
   B.S., M.A., Western Michigan

Thompson, William N., 1971, Assistant Professor of Political Science
   B.A., M.A., Michigan State

Tillema, Irene K., 1971, Instructor, Library
   B.A., Calvin; M.A.L.S., Indiana

Timian, Captain Robert C., 1971, Assistant Professor of Military Science
   B.S., Wisconsin

Tooke, Florence, 1964, Assistant Professor of Home Economics
   B.S., M.S., Illinois State

Trader, Robert B., 1951, Professor and Head, Department of Marketing
   B.S., Indiana; M.S., Pittsburgh; Ed.D., Michigan State

Travers, Robert M. W., 1965, Distinguished University Professor, College of Education
   B.Sc., London; Ph.D., Columbia

Trimitsis, George, 1969, Assistant Professor of Chemistry
   B.Sc., American University in Cairo (Egypt); Ph.D., Virginia Polytechnic Institute

Triplett, Ajac, 1971, Instructor in Men's Physical Education
   B.S., M.A., Western Michigan

Turansky, Isadore, 1960, Associate Professor of Special Education
   B.S., Edinboro; M.Ed., Pittsburgh

Turner, Walter W., 1963, Associate Professor of Mathematics
   B.S., M.S., Ph.D., Michigan State

Tydeman, James E., 1958, Associate Professor, Library
   B.A., B.S.I.S., Minnesota; M.A., Chicago

Tyler, Larry L., 1970, Assistant Professor of Social Science
   B.A., Kansas State; M.A., Ph.D., Missouri

Tyndall, Dean R., 1955, Associate Professor and Chairman, Department of Occupational Therapy
   B.S., M.A., O.T. Certificate; Western Michigan

Ulmer, James L., 1959, Associate Professor of Industrial Education
   B.S., M.S., Kansas State (Pittsburg)

Ulrich, Roger E., 1965, Research Professor, Psychology
   B.S., North Central College; M.A., Bradley; Ph.D., Southern Illinois
Underwood, James R., 1968, Instructor in French
   B.A., Mount Union; M.A., Middlebury (Paris)

Upjohn, William John, 1971, Adjunct Associate Professor of Management
   B.A., Hobart College

Urbick, Thelma, 1968, Assistant Professor of Counseling and Personnel
   B.A., M.A., Western Michigan; Ph.D., Michigan

Urich, Roger R., 1967, Associate Professor of Engineering and Technology
   M.S.M.E., Michigan Technological

Val Dez, Mabel A., 1967, Assistant Professor of Occupational Therapy
   B.S., Illinois; M.A., Nebraska

Van Den Berg, Lois E., 1950, Assistant Professor of Teacher Education
   B.S., Western Michigan; M.A., Michigan

VanDePolder, James, 1967, Instructor in Transportation Technology
   B.S., M.A., Western Michigan

VanderBeek, Leo C., 1956, Professor of Biology
   B.A., Western Michigan; M.S., Ph.D., Michigan

VanderKooi, Lambert R., 1970, Associate Professor of Engineering and Technology
   B.S.E., Calvin; M.S.E., Ph.D., Michigan

VanderMeulen, Kenneth, 1970, Assistant Professor, Reading Center and Clinic
   and Teacher Education
   B.A., M.A., Western Michigan

VanDeventer, Clarence N., 1955, Associate Professor of Transportation Technology
   B.S., Winona State; M.A., Purdue

VanDeventer, William C., 1953, Professor of Biology
   B.A., Central Methodist College; M.A., Ph.D., Illinois

VanRiper, Charles, 1936, Distinguished University Professor
   B.A., M.A., Michigan; Ph.D., Iowa; LL.D., Northern Michigan

VanVoorhees, Frank L., 1963, Associate Professor of Political Science
   B.S., M.A., Western Michigan

vanWestrienen, Donna, 1970, Instructor in Home Economics
   B.S., M.A., Western Michigan

VanZee, Gertrude, 1952, Associate Professor, Library
   B.A., Hope; B.A.L.S., M.A.L.S., Michigan

Varble, Dale L., 1970, Assistant Professor of Marketing
   B.S., M.S., Southern Illinois; Ph.D., Arkansas

Vashishta, Priya, 1971, Assistant Professor of Physics
   M.S., Aligarh (India); Ph.D., Indian Institute of Technology (Kanpur)

Viall, William P., 1963, Professor of Educational Leadership
   B.S., New York State; M.A., Ed.D., Columbia

Vivian, Marjorie E., 1966, Assistant Professor, Library
   B.A., Michigan; M.S.L.S., Columbia; M.A.L.S., Michigan

Vorce, Barrett M., 1969, Director, Grand Rapids Regional Center and
   Associate Professor of Teacher Education
   B.A., Michigan; M.A., Michigan State
Faculty

Vuicich, George, 1968, Professor of Geography  
B.A., M.A., Ph.D., University of Iowa

Wagenfeld, Morton, 1966, Associate Professor of Sociology  
B.S., City College of New York; M.A., Brooklyn; Ph.D., Syracuse

Wait, Robert F., 1971, Assistant Professor of Sociology  
B.S., M.A., Indiana

Walizer, Michael H., 1970, Assistant Professor of Sociology  
B.S., Ed.M., State University of New York at Buffalo; Ph.D., Florida State

Walker, Edward, 1970, Assistant Professor of Transportation Technology  
B.S., Hampton Institute; M.Ed., Wayne State

Walker, Jess Morgan, 1965, Associate Professor of Teacher Education  
B.S., M.A., Utah

Walker, Lewis, 1964, Associate Professor of Sociology  
B.A., Wilberforce; M.A., Ph.D., Ohio State

Wallace, Roger L., 1966, Assistant Professor of Management  
B.B.A., M.B.A., Western Michigan; Ph.D., Michigan State

Walsh, J. Michael, 1970, Instructor in General Business  
B.S., M.B.A., M.A., Xavier University

Walton, Eleanor, 1965, Associate Professor of Communication Arts and Sciences  
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Wangberg, Franklin, 1965, Assistant Professor of Teacher Education  
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Warren, Eugene H., Jr., 1971, Instructor in Economics  
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Warren, H. Dale, 1963, Assistant Professor of Chemistry  
B.A., Rice Institute; M.S., Idaho; Ph.D., Oregon State

Washington, Earl M., 1970, Instructor in Communication Arts and Sciences  
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Watson, Archie E., 1970, Assistant Professor of Teacher Education  
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Way, Harold E., 1971, Instructor, Library  
B.S., South Dakota State; M.L.S., Western Michigan

Weaver, Constance, 1965, Assistant Professor of English  
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Weaver, Donald C., 1961, Professor of Educational Leadership  
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Webb, Gene E., 1968, Associate Professor of Social Work  
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Weingarten, Roger, 1970, Instructor in English
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Welke, William R., 1967, Professor of Accountancy

Wend, Jared S., 1955, Associate Professor of Economics
B.A., Middlebury; M.A., Ph.D., Michigan

West, Stanley A., 1970, Assistant Professor of Anthropology and Consultant,
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B.S., Syracuse

Westphal, Dale L., 1962, Associate Professor of Philosophy
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Westley, Robert J., 1964, Associate Professor of Special Education
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Wetnight, Robert B., 1951, Vice President for Finance and Professor
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White, Beverlee A., 1966, Instructor, Counseling Center
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  and Professor of Physics
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College of Education, Dean ..................................... John E. Sandberg, Ed.D.
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College of Fine Arts, Dean ..................................... Robert W. Holmes, Ph.D.
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Chief Accountant and Assistant Controller ............................ Gerald Schwemmin, B.B.A., C.P.A.
Auxiliary Enterprises, Business Manager .................................. John G. Hungerford, M.A.
Bursar ........................................................................... Harry Miller, B.A.
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Management Services, Director .................................... James M. Stephenson, B.A.
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Purchasing Agent ........................................................ Maxel D. Kerby, B.A.
Auxiliary Enterprises, Director ....................................... Thomas J. Carr, M.A.
Printing Services, Director ........................................... Lawrence J. Brink, M.A.
Campus Bookstore, Director ......................................... Joseph T. MacLean, B.S.
Residence Hall Food Service, Director ............................... James McKellin, B.S.
Residence Halls, Manager ............................................. Robert Peterson, M.A.
Miller Auditorium, Manager ......................................... Jack Pheneger, B.A.
University Student Center, Director ................................ Rodger Pruis, B.A.
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Frank J. Hinds, M.A.
Ada Hoebke, M.A.
Elizabeth Householder, M.A.

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Assistant Professor of Business Education
Associate Professor of English
Associate Professor of Teacher Education
Associate Professor of Biology
Associate Professor of Education
Professor of Mathematics
Professor of Biology
Professor of Mathematics
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Professor of Music
Professor of Music
Assistant Professor of Engineering and Technology
Assistant Professor of Education
Assistant Professor, Campus School
Associate Professor of Physical Education
Associate Professor of Chemistry
Professor of English
Professor of School Services
Assistant Professor of English
Assistant Professor of Education
Professor of Mathematics
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Associate Professor of Counseling
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Associate Professor of Physics
Assistant Professor of Education
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Professor of Education
Associate Professor of Distributive Education
Associate Professor of Biology
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Associate Professor of Education
Assistant Professor of Education
Associate Professor of Geography
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Associate Professor of Music
Head and Professor, Department of Home Economics
Assistant Comptroller
Professor of Biology
Assistant Professor of Language
Social Director, University Student Center

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Emeriti

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