Bulletin: Western Michigan University Undergraduate Catalog
1976-1977

Follow this and additional works at: https://scholarworks.wmich.edu/course_catalogs

Part of the Higher Education Commons

WMU ScholarWorks Citation
https://scholarworks.wmich.edu/course_catalogs/50

This Catalog is brought to you for free and open access by the Western Michigan University at ScholarWorks at WMU. It has been accepted for inclusion in Western Michigan University Course Catalogs (1904-present) by an authorized administrator of ScholarWorks at WMU. For more information, please contact wmu-scholarworks@wmich.edu.
BULLETIN

Undergraduate Catalog

1976 1977

Western Michigan University - Kalamazoo
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 Placement  
Teacher Placement, Business and Industrial Placement

Registrar  
Credits, Provisional and Permanent Certification, Transcripts, Records, Physical Space Allocation

Director of Registration  
Registration, Course Time Schedules, Student I.D.'s

Director of Honors College  
Honors' Program

Office of Student Financial Aid and Scholarships  
Scholarships, Loans and Part-time Employment

WESTERN MICHIGAN UNIVERSITY

Kalamazoo, Michigan 49008  
Telephone 616/383-1600
The provisions of this catalog are not an irrevocable contract between the student and the University. The University reserves the right to change, any provision or requirement at any time within the student's attendance. The University further reserves the right to ask the student to withdraw for cause at any time.

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

VOL. 71, NO. 4 JUNE 1976

The catalogue of Western Michigan University is published four times annually by W.M.U.: August, February, April and June. Second class postage paid at Kalamazoo, Michigan 49008. Changes in administration and instruction may be made subsequent to the date of publication.
## CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Calendar</td>
<td>5</td>
</tr>
<tr>
<td>Board of Trustees</td>
<td>7</td>
</tr>
<tr>
<td>Administrative Officers</td>
<td>9</td>
</tr>
<tr>
<td>Administrative Groups</td>
<td>10</td>
</tr>
<tr>
<td>Admission</td>
<td>14</td>
</tr>
<tr>
<td>Degrees</td>
<td>18</td>
</tr>
<tr>
<td>Degree Requirements</td>
<td>20</td>
</tr>
<tr>
<td>General Education Requirement</td>
<td>21</td>
</tr>
<tr>
<td>Student Planned Curriculum</td>
<td>25</td>
</tr>
<tr>
<td>Undergraduate Curricula and Approved Majors</td>
<td>25</td>
</tr>
<tr>
<td>Major and Minor Requirements</td>
<td>30</td>
</tr>
<tr>
<td>Teacher Certification</td>
<td>35</td>
</tr>
<tr>
<td>Student Fees</td>
<td>36</td>
</tr>
<tr>
<td>Academic Regulations</td>
<td>37</td>
</tr>
<tr>
<td>Student Academic Rights: Policies and Procedures</td>
<td>44</td>
</tr>
<tr>
<td>Student Services</td>
<td>46</td>
</tr>
<tr>
<td>Student Financial Aid and Scholarships</td>
<td>53</td>
</tr>
<tr>
<td>Buildings and Grounds</td>
<td>74</td>
</tr>
<tr>
<td>The Honors College</td>
<td>78</td>
</tr>
<tr>
<td>College of Applied Sciences</td>
<td>83</td>
</tr>
<tr>
<td>College of Arts and Sciences</td>
<td>189</td>
</tr>
<tr>
<td>College of Business</td>
<td>383</td>
</tr>
<tr>
<td>College of Education</td>
<td>411</td>
</tr>
<tr>
<td>College of Fine Arts</td>
<td>467</td>
</tr>
<tr>
<td>College of General Studies</td>
<td>521</td>
</tr>
<tr>
<td>The Graduate College</td>
<td>539</td>
</tr>
<tr>
<td>Division of Continuing Education</td>
<td>544</td>
</tr>
<tr>
<td>Faculty</td>
<td>549</td>
</tr>
<tr>
<td>Emeriti</td>
<td>588</td>
</tr>
<tr>
<td>Index</td>
<td>592</td>
</tr>
</tbody>
</table>
Western Michigan University

Founded: 1903
President: John T. Bernhard, Ph.D., LL.D.
State Assisted, 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, to assess
  the validity of the information that is presented and respond to our environment;
  to introduce the student to the world in which the educated and responsible citizen
  must live; to provide the student with a foundation for tenable values; to provide
  students with sufficient knowledge in a discipline, or a group of related disciplines,
  so they will have an understanding of its methodology, some initial competence in
  the field and an appreciation of the vastness of the knowledge still to be explored.

Academic Year: 1976-77
  Fall Semester—September 1 - December 18
  Winter Semester—January 4 - April 23
  Spring Session—May 2 - June 22
  Summer Session — June 28 - August 19
(Two sessions equal one semester)
<table>
<thead>
<tr>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1976</strong></td>
<td><strong>1977</strong></td>
<td><strong>1977</strong></td>
</tr>
<tr>
<td><strong>S M T W T F S</strong></td>
<td><strong>S M T W T F S</strong></td>
<td><strong>S M T W T F S</strong></td>
</tr>
<tr>
<td>1 2 3</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 9 10</td>
<td>9 10 11 12 13</td>
<td>8 9 10 11 12</td>
</tr>
<tr>
<td>11 12 13 14 15 16 17</td>
<td>14 15 16 17 18 19 20</td>
<td>14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>18 19 20 21 22 23 24</td>
<td>21 22 23 24 25 26 27</td>
<td>21 22 23 24 25 26 27</td>
</tr>
<tr>
<td>25 26 27 28 29 30 31</td>
<td>28 29 30 31</td>
<td>28 29 30 31</td>
</tr>
</tbody>
</table>

**April**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 9 10</td>
<td>7 8 9 10 11 12</td>
</tr>
<tr>
<td>11 12 13 14 15 16 17</td>
<td>15 16 17 18 19 20 21</td>
</tr>
<tr>
<td>22 23 24 25 26 27 28 29</td>
<td>27 28 29 30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>30 31</td>
</tr>
</tbody>
</table>

**May**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 9 10</td>
<td>8 9 10 11 12 13 14</td>
</tr>
<tr>
<td>15 16 17 18 19 20 21 22</td>
<td>19 20 21 22 23 24 25</td>
</tr>
<tr>
<td>26 27 28 29 30 31</td>
<td>26 27 28 29 30</td>
</tr>
</tbody>
</table>

**June**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>9 10 11 12 13 14 15 16</td>
<td>9 10 11 12 13 14 15 16</td>
</tr>
<tr>
<td>17 18 19 20 21 22 23 24</td>
<td>17 18 19 20 21 22 23 24</td>
</tr>
<tr>
<td>25 26 27 28 29 30 31</td>
<td>25 26 27 28 29 30 31</td>
</tr>
</tbody>
</table>

**July**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 9 10 11 12 13 14</td>
<td>8 9 10 11 12 13 14</td>
</tr>
<tr>
<td>15 16 17 18 19 20 21 22</td>
<td>19 20 21 22 23 24 25 26</td>
</tr>
<tr>
<td>27 28 29 30 31</td>
<td>27 28 29 30 31</td>
</tr>
</tbody>
</table>

**August**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 9 10 11 12 13 14</td>
<td>8 9 10 11 12 13 14</td>
</tr>
<tr>
<td>15 16 17 18 19 20 21 22</td>
<td>15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>23 24 25 26 27 28 29 30</td>
<td>23 24 25 26 27 28 29 30</td>
</tr>
</tbody>
</table>

**September**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 9 10 11 12 13 14</td>
<td>8 9 10 11 12 13 14</td>
</tr>
<tr>
<td>15 16 17 18 19 20 21 22</td>
<td>15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>23 24 25 26 27 28 29 30</td>
<td>23 24 25 26 27 28 29 30</td>
</tr>
</tbody>
</table>

**October**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>9 10 11 12 13 14 15 16</td>
<td>9 10 11 12 13 14 15 16</td>
</tr>
<tr>
<td>17 18 19 20 21 22 23 24</td>
<td>17 18 19 20 21 22 23 24</td>
</tr>
<tr>
<td>25 26 27 28 29 30 31</td>
<td>25 26 27 28 29 30 31</td>
</tr>
</tbody>
</table>

**November**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>11 12 13 14 15 16 17 18 19</td>
<td>11 12 13 14 15 16 17 18 19</td>
</tr>
<tr>
<td>20 21 22 23 24 25 26 27 28</td>
<td>20 21 22 23 24 25 26 27 28</td>
</tr>
<tr>
<td>29 30 31</td>
<td>29 30 31</td>
</tr>
</tbody>
</table>

**December**

<table>
<thead>
<tr>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
<th><strong>S M T W T F S</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>11 12 13 14 15 16 17 18 19</td>
<td>11 12 13 14 15 16 17 18 19</td>
<td>11 12 13 14 15 16 17 18 19</td>
</tr>
<tr>
<td>29 30 31</td>
<td>29 30 31</td>
<td>29 30 31</td>
</tr>
</tbody>
</table>
WESTERN MICHIGAN UNIVERSITY
UNIVERSITY CALENDAR 1976-77

Approved January 22, 1973

Fall Semester, 1976

August 31, Tuesday
September 1, Wednesday
September 6, Monday
October 15, Friday

October 16, Saturday
November 24, Wednesday
November 29, Monday
December 18, Saturday
December 18, Saturday

Final Registration
Classes Begin
Labor Day Recess
Classes Dismissed 2 p.m. Friday only (Laboratories excepted)
Homecoming
Thanksgiving Recess (12 noon)
Classes Resume
Semester Ends
Commencement (2 p.m.)

Winter Semester, 1977

January 3, Monday
January 4, Tuesday
March 7, Monday
March 14, Monday
April 8, Friday
April 23, Saturday
April 23, Saturday

Final Registration
Classes Begin
Semester Recess
Classes Resume
Good Friday Recess (12 noon)
Semester Ends
Commencement (2 p.m.)

Spring Session, 1977

April 30, Saturday
May 2, Monday
May 30, Monday
June 22, Wednesday

Final Registration
Classes Begin
Memorial Day Recess
Session Ends

Summer Session, 1977

June 27, Monday
June 28, Tuesday
July 4, Monday
August 19, Friday
August 19, Friday

Registration, All Students
Classes Begin
Independence Day Recess
Session Ends
Commencement (6 p.m.)
In all of its relationships the University prohibits any discrimination on the basis of age, race, religion, sex or national origin. Western Michigan University is an Affirmative Action/Equal Opportunity employer.

BOARD OF TRUSTEES

Mildred L. Johnson, Muskegon
Robert D. Caine, Hickory Corners
Fred W. Adams, Grosse Pointe
Charles H. Ludlow, Kalamazoo
John R. Dykema, Grosse Pointe Farms
Maury E. Parfet, Hickory Corners
Dr. Julius Franks, Jr., Grand Rapids
J. Michael Kemp, Kalamazoo
John T. Bernhard

Term Expires
December 31, 1976
December 31, 1976
December 31, 1978
December 31, 1978
December 31, 1980
December 31, 1980
December 31, 1982
December 31, 1982
Ex-Officio

John R. Dykema, Chairman
Charles H. Ludlow, Vice Chairman
Robert W. Hannah, Secretary
Robert B. Wetnight, Treasurer
Administrative Officers

President .......................................................... John T. Bernhard, Ph.D., LL.D.
Vice President for Academic Affairs ......................... Stephen R. Mitchell, Ph.D.
Assoc. Vice President for Academic Affairs ................ Philip Denenfeld, Ph.D.
Vice President for Finance ................................. Robert B. Wetnight, M.B.A., C.P.A.
Vice President for Student Services ..................... Thomas E. Coyne, M.A.
Administrative Asst. to the President .................. Robert W. Ethridge, M.A.
Assistant to the President ................................ William J. Kowalski, M.A.
Secretary, Board of Trustees ............................. Robert W. Hannah Ph.D.
Director, Information Services ......................... Martin R. Gagie, M.S.
Dean, College of Applied Sciences ...................... W. Chester Fitch, Ph.D.
Dean, College of Arts and Sciences ....................... Cornelius Loew, Ph.D.
Dean, College of Business ................................ Darrell G. Jones, Ph.D.
Dean, Continuing Education ................................. Leo C. Stine, Ph.D.
Dean, College of Education ................................. John E. Sandberg, Ed.D.
Dean, College of Fine Arts ................................. Robert Holmes, Ph.D.
Dean, College of General Studies ......................... Norman C. Greenberg, Ph.D.
Dean, The Graduate College ............................... George G. Mallinson, Ph.D.
Dean of Students ................................................. Marie L. Stevens, M.A.
Controller .......................................................... Robert Beecher, J.D.
Administrative Groups

THE FACULTY SENATE

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

Officers for 1976-77:
Donald J. Brown
Louise Forsleff
Ellen Robin
Dan Thompson
Mary Anne Bunda
Laurel Grotzinger

FACULTY SENATE COUNCILS

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

BUDGET AND FINANCE COUNCIL

<table>
<thead>
<tr>
<th>Ex Officio</th>
<th>Elected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert B. Wetnight, Chairman, Vice President for Finance</td>
<td>Nita H. Hardie 1977</td>
</tr>
<tr>
<td>Robert M. Beam, Director of Budget Office</td>
<td>Werner Sichel 1977</td>
</tr>
<tr>
<td>Robert W. Beecher, Controller</td>
<td>Vice Chairman</td>
</tr>
<tr>
<td>Robert H. Williams, Director of Physical Plant</td>
<td>Norman E. Carlson 1978</td>
</tr>
<tr>
<td>Stephen R. Mitchell, Vice President for Academic Affairs</td>
<td>George G. Lowry 1978</td>
</tr>
<tr>
<td>Tom Crowley</td>
<td>Carol P. Smith 1978</td>
</tr>
<tr>
<td>Jeff Moore</td>
<td>John T. Burke 1979</td>
</tr>
<tr>
<td></td>
<td>Adrian C. Edwards 1979</td>
</tr>
<tr>
<td></td>
<td>William A. Wickers 1979</td>
</tr>
</tbody>
</table>

Students

Tom Crowley  Fall, 1976
Jeff Moore  Fall, 1976
CAMPUS PLANNING COUNCIL

Ex Officio
William J. Kowalski, Assistant to the President
Robert H. Williams, Director, Campus Planning and Extension
William F. Hamill, Director, Plant Extension

Elected
Mary C. Brown 1977
H. Nicholas Hamner 1977
Stanley Suterko 1977
Louise Forsleff 1978
F. William McCarty 1978
Harold E. Way 1978
Lee O. Baker 1979
Henry A. Raup 1979
Charles M. Woodliff 1979

Presidential Appointees
Harold O. Bahlke, General Studies — Humanities 1976
Joseph J. Eisenbach, Head, Special Education 1976
Cornelius Loew, Dean, College of Arts and Sciences 1976

Students
Charles Houghten Fall, 1976
James F. Raubolt 1976

CONTINUING EDUCATION COUNCIL

Ex Officio
Leo C. Stine, Dean, Chairman

Presidential Appointees
Robert E. Boughner, Assistant Dean — College of Applied Sciences 1976
Richard T. Burke, Associate Dean — The Graduate College 1976
Howard R. Poole, Jr., Instructional Communications 1976

Elected
L. Michael Moskovis 1977
Louis B. Rizzolo 1977
Ted K. Kitty 1978
Ellen P. Robin 1978
Joan T. Crandall 1979
R. Mark Spink 1979

Students
Anita Watson-Phillips Fall, 1976
(A second student to be named)

EDUCATIONAL POLICIES COUNCIL

Stephen R. Mitchell, Vice President and Chairman
Norman C. Greenberg, Dean
Robert Holmes, Dean
W. Chester Fitch, Dean
Cornelius Loew, Dean
George G. Mallinson, Dean
John E. Sandberg, Dean
Carl Sachtleben, Director of Libraries
Darrell G. Jones, Dean

Elected
William W. Combs 1977
Gale E. Newell (Vice Chairman) 1977
Conner P. Otteson 1977
Joseph G. Reish 1977
Margaret S. Large 1978
John R. Lindbeck 1978
Charles V. Spaniolo 1978
Shirley Bach 1979
T. D. Argyropoulos 1979
Kenneth Dickie 1979

Students
Judy Layne Fall, 1976
Lee Hobrla 1976
Barbara Thompson 1976
Administrative Groups

GRADUATE STUDIES COUNCIL

Ex Officio
W. Chester Fitch, Dean
Cornelius Loew, Dean
George G. Mallinson, Chairman
John E. Sandberg, Dean
Stephen R. Mitchell, Vice President
Darrell G. Jones, Dean
Robert W. Holmes, Dean

Elected
Claude S. Phillips 1977
William R. Welke 1977
Peter P. Malanchuk 1978
Robert J. Ricci 1978
Carol F. Sheffer 1978
M. Joy Anderson 1979
Robert C. Nagler 1979
Herbert L. Smith 1979

Students
William Carmody Fall, 1976
Rose Marie Franklin 1976
Michael Reed 1976

RESEARCH POLICIES COUNCIL

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

Elected
Joseph DeLuca 1977
Helenan S. Lewis 1977
Shirley Ann Lukens 1977
Stanley S. Robin, Chairman 1977
J. Michael Keenan 1978
Robert Jack Smith 1978
Richard R. Williams 1978
Robert M. Brashear 1979
J. Lindsley Foote 1979

Students
Lizbeth Bassett Fall, 1976
Norman Peterson 1976
(A third student to be named)

UNIVERSITY COUNCIL

STUDENT SERVICES COUNCIL

Staff
Marie Stevens
Dean of Students
Joyce Lew
University Judiciaries

Faculty
Robert F. Hopkins 1977
Beverlee A. White 1977
William C. Morris 1978
Harriet M. Schmid 1978

Students
Lee Hobrila, Chairman 1976
Mary Jo Altese 1976
William Foster 1976
Karen Jordan 1976
Brian McKay 1976
Sally Sjoquist 1976
Kip Waltke 1976
Melinda Younkin 1976
THE ATHLETIC BOARD

Leo C. VanderBeck, Chairman and Faculty Representative, Mid-American Conference
Two Student Representatives

Presidential Appointees
Dennis Boyle, Registrar
Chauincey Brinn, Assistant to the V.P for Academic Affairs
Robert B. Wetnight, Vice President for Finance

Faculty
Janet Kanzler, Assistant Professor of Women's Physical Education
Patricia Klein, Associate Professor of Social Science
Sterling Breed, Associate Professor of Counseling

Ex Officio
Joseph T. Hoy, Director of Athletics
Fred Hansen, Director of Alumni Relations
President of "W" Alumni Club
Robert L. Culp, Secretary, Business Manager, Athletic Ticket Office.

ACCREDITATION

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

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

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

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

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

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

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

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

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

METHODS OF ADMISSION

Students may be admitted in the following ways:

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

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

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

4. Permission to take classes as a guest: One who is regularly matriculated and in good standing at another college may be granted permission to take classes as a guest student. The student assumes full responsibility for determining whether or not the courses taken at this University will apply towards the student's program of study. A guest matriculant is urged to have the courses to be taken approved in advance by the Registrar of the college or university to which the credits are to be transferred. The appropriate guest application form may be secured at the office of the Registrar at any Michigan college.

5. 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 full 15-week semester. The Committee on Readmissions is concerned with the extent to which the dismissed student, who is applying for readmission, has resolved the causes of past academic difficulty. It is recommended, therefore, that the student include a written statement with the re-entry application.
6. A student who registers and attends classes during the semester for which the initial application is made, although not attending succeeding sessions, will be eligible to register for one year following. If the student does not register for the initial semester, a new re-entry application must be submitted.

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

**APPLICATION FOR ADMISSION**

**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 at the University until such time as admissions are closed.

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

2. The application should then be returned to the high school counselor or principal for completion. The completed application will be forwarded to the University by the high school. It is not acceptable if sent directly by the student.

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

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

5. 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.

6. 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.

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

**Transfer — A Student Who Has Attended Another College**

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

1. Complete an application for degree admission.

2. Have a complete official transcript from each of the colleges attended forwarded directly to the Admissions Office, Western Michigan University. Transcripts presented by the student are not considered official and will not be accepted for admission purposes.

3. If less than thirty (30) semester hours of credit have been earned, or if the overall grade-point average is less than a "C" (2.0), have a copy of the high school transcript sent directly to the Admissions Office from the high school.

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

5. 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.

6. 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.
Admission

7. Grades and honor or quality points are not transferable to or recorded on the WMU permanent record. Courses completed at another college which are transferable will be accepted for credit only. Courses in which “D’s” or the equivalent thereof have been earned will be accepted for credit when:

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

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

Permission to Take Classes (PTC)

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

The PTC student can register for any course for which the student has met the prerequisite requirements. PTC students, at the undergraduate level, are subject to the same scholarship regulations as all other students. They may enroll in courses indefinitely as long as they meet scholarship standards. PTC students may apply for admission to a degree program anytime. They will, however, be expected to meet the existing standards of admission. They will be required, at the time that they seek degree admission, to provide all credentials required of degree seeking students.

American College Test Requirement for Freshmen

The American College Test (ACT) is required of all new freshmen. The results of this test must be on file in the Admissions Office prior to enrollment. This requirement is met only after the results are received directly from the American College Testing Program. Neither high school nor student ACT reports satisfy this requirement.

Applicants with marginal records will often be asked to submit test results before a final decision is reached relative to their admission status. Prospective applicants should take the test late in their junior year in high school or early in the senior year. While all test results recorded on an application are considered by the Admissions Staff in the evaluation process, no other achievement or aptitude tests will substitute for the ACT requirement.

Notification of Admission

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

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

Interviews

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

If a personal interview is desired, a request should be addressed to the Office of Admissions at least two weeks in advance of the desired date. The Office of Undergraduate Admissions is located in the Administration Building and is open Monday through Friday.

Campus Visits

The University encourages interested students and their parents to visit the campus as early in their high school career as possible. Qualified admissions counselors are available for consultation, and campus facilities are available for visits.

Advanced Placement Program

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

**COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)**

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

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

The General Examinations are intended to provide a comprehensive measure of undergraduate achievement in the five basic areas of the liberal arts: English Composition, Humanities, Mathematics, Natural Sciences, and Social Sciences. All five tests are 60 minutes each in length.

Thirty (30) semester hours of credit toward graduation — to be designated as General Education credit in the College of Arts and Sciences — will be awarded for scoring at the 50th percentile or above on all five CLEP General Examinations. For that achievement, the full freshman-sophomore level General Education requirement (29 semester hours) will be waived.

If a score at the 50th percentile or above is achieved on fewer than all five of the CLEP General Examinations, then for each individual examination scored at that level, graduation credit and waiver of the appropriate General Education requirement will be granted as follows:

1. If the student scores at the 50th percentile or above on the Social Sciences-History examination, six (6) hours of credit will be awarded and the six-hour Social and Behavioral Science requirement will be waived.
2. If the student scores at the 50th percentile or above on the Humanities examination, six (6) hours of credit will be awarded and the six-hour Humanities and Fine Arts requirement will be waived.
3. If the student scores at the 50th percentile or above on the English Composition examination, six (6) hours of credit will be awarded and one-half of the six-hour Humanities and Fine Arts requirement will be waived.
4. If the student scores at the 50th percentile or above on the Natural Science examination, six (6) hours of credit will be awarded and the six-hour Natural Science and Mathematics requirement will be waived.
5. If the student scores at the 50th percentile or above on the Mathematics examination, six (6) hours of credit will be awarded and one-half of the Natural Science and Mathematics requirement will be waived.

**REGISTRATION**

Advance Registration

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

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

LATE REGISTRATION FEE — See Student Fees.
Degrees

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

BACHELOR OF ARTS

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

BACHELOR OF SCIENCE

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

BACHELOR OF BUSINESS ADMINISTRATION

BACHELOR OF FINE ARTS

BACHELOR OF SCIENCE IN MEDICINE

(PHYSICIANS' ASSISTANTS)

BACHELOR OF MUSIC

BACHELOR OF SCIENCE IN ENGINEERING

(ELECTRICAL) (PAPER)

(INDUSTRIAL) (COMPUTER SYSTEMS)

(MECHANICAL) (ENVIRONMENTAL)

Students seeking one of the above degrees should refer to the particular college within the catalog for further information.

SECOND BACHELOR'S DEGREE

A student may earn a second bachelor's degree at Western Michigan University. In order to qualify for a second degree from Western Michigan University, a student must meet all Western Michigan University bachelor degree requirements and earn thirty (30) semester hours of residence credit beyond those required for the first degree. The additional hours need not be taken subsequently to completion of requirements for the first degree. The second degree may not be the same as the first and must be in a substantially different curriculum. Students who are interested in a second degree must receive written approval of their program of study from the Director of Academic Records before beginning their course work.
MASTER OF ARTS
MASTER OF BUSINESS ADMINISTRATION
MASTER OF FINE ARTS
MASTER OF MUSIC
MASTER OF OCCUPATIONAL THERAPY
MASTER OF PUBLIC ADMINISTRATION
MASTER OF SCIENCE IN ACCOUNTANCY
MASTER OF SCIENCE
MASTER OF SCIENCE IN LIBRARIANSHIP
MASTER OF SCIENCE IN STATISTICS
MASTER OF SOCIAL WORK

SPECIALIST IN ARTS

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

The School of Librarianship also offers a Specialist in Arts degree program for public school and public library administrators.

SPECIALIST IN EDUCATION

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

DOCTOR OF EDUCATION

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

DOCTOR OF PHILOSOPHY

Programs leading to the Ph.D. degree offered in Chemistry, Mathematics, Psychology, Science Education, and Sociology.
Any curriculum leading to a bachelor's degree consists of at least 122 hours of credit. The student must meet the following requirements or their equivalent:

**UNIVERSITY REQUIREMENTS**

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

b. The student must complete a major with a minimum of 24 hours and a minor with a minimum of 15 hours (30-hour subject major or 36-hour group major is required of students in Elementary and Secondary Education, with a minor or minors of at least 20 semester hours. For further details see under Curricula for Teachers). In Elementary Education the student may complete two minors or group minors of 20 or 24 hours each; or one major or group major of 30 or 36 hours; and in addition to the major or two minors, a minor in Elementary Education is required. Some students may be excused from the requirement of declaring a regular major and/or minor field if they satisfy the requirements of their curriculum as set forth in the catalog or that curriculum as modified by substitutions approved through normal channels.

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

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

e. Each student must complete two semester hours of general physical education activities classes. Freshmen are urged to arrange their schedules so that they complete their two-hour physical education requirement no later than their sophomore year. Persons 30 years of age or older at the time of graduation are not bound by this requirement. Such a waiver applies only to general physical education and not to specific curricular requirements nor to total hours required for graduation. Veterans of Military Service (minimum of one year continuing active duty) shall, upon request, be granted two hours of general physical education credit. A student limited in physical activity may receive counseling for courses suited to his/her limitation through the Medical Recommendation Procedure. (See "General Physical Education", Exceptions, #5) A maximum of eight hours of general physical education may be counted towards graduation.

f. Minimum residence requirements: All candidates must present a minimum of 30 hours through Western Michigan University. Ten of the last 30 hours must be taken through Western Michigan University. Correspondence credit and credit by examination may not be used to satisfy any of the minimum residence requirements.

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

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

*See page 86 for exception related to requirement for the Bachelors of Science in Engineering degree.
GENERAL EDUCATION REQUIREMENTS

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

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

1. The Distribution Program
The Distribution Program consists of a large number of courses offered for General Education by numerous departments throughout the University. These courses offer a variety of approaches to introduce the student to the Humanities and Fine Arts, the Social Sciences, the Sciences, and the Non-Western World. There are introductory courses for students wishing to explore new areas of knowledge and there are more advanced courses for students wishing to delve into specialized areas. Many special topic courses, for example, courses on the environment, are offered. In addition, interdisciplinary courses are offered that use the skills and techniques of study of several fields. The essential goal of the Distribution Program is to extend the undergraduate experience beyond the student's area of concentration and to provide all students with the data necessary for synthesizing their experience into an understanding of themselves and their world.

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

2. The Integrated Programs
These programs consist of courses which have been designed to provide coherence and continuity for the General Education experience. Each approaches subject matter from the viewpoint of the 3 basic areas of knowledge: the sciences, the social sciences, and the humanities. Students have a choice of two programs. In each program students deal with the inter-relationships between ways of knowing — the “integration of knowledge” — hence the name, Integrated Programs.

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

COURSES AND REQUIREMENTS FOR THE DISTRIBUTION PROGRAM

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

1. The program must total at least 35 semester hours of credit.
2. At least six semester hours must be completed satisfactorily in each of the following three areas:
   A. Humanities and Fine Arts
   B. Social and Behavioral Sciences
   C. Natural Sciences and Mathematics
3. At least one course must be completed satisfactorily in a fourth area: the Non-Western World.
4. At least two courses must be completed satisfactorily at the junior-senior (300-500) level.
5. No more than two (2) courses may be taken in any one department toward meeting the 35 hour requirement. Since the College of General Studies is not organized on a departmental basis, this restriction does not apply to General Studies courses.

*Honors College students may satisfy their general education requirements through the General Education Honor's program of the Honors College. See Honors College.
GENERAL EDUCATION DISTRIBUTION PROGRAM

AREA I  HUMANITIES & FINE ARTS:

AREA II  SOCIAL & BEHAVIORAL SCIENCES:

AREA III  NATURAL SCIENCES & MATHEMATICS:

AREA IV  NON-WESTERN WORLD:

AREA V  OPTIONAL ELECTIVES: May be used towards the 35 hrs. requirement but not to satisfy area requirements I-II-III-IV.

INTEGRATED PROGRAMS AND REQUIREMENTS

Requirements:
Either of the following Integrated Programs satisfies the General Education requirement. There are four stipulations:
1. Student course work, elected in consultation with his program coordinator, must total at least 35 semester hours of credit.
2. At least two courses must be completed satisfactorily at the junior-senior (300-500) level.
3. Every program must include an introduction to the Non-Western World.

PROGRAMS (For more complete descriptions, see listings under the College of General Studies)
Program A — The Integrating Perspective
This program is designed to provide understanding of a personal perspective that is unique for each human being; a world perspective which is generally available to all of us; and an understanding of what occurs when these two perspectives interact (the reciprocal perspective). This is accomplished by interrelating the humanities, the social sciences, and the natural sciences.

*Course may also be listed as GEOG 107, GSCI 107, or PHYS 107 in schedule of classes.
Program B — Student Planned Inquiry
This program helps the student design an integrated sequence of courses to meet the University General Education requirements. Each sequence is built around the student's special interests and may include independent study, field experience, travel courses or cooperative work assignments, in addition to regular University classes. This program helps students in learning to ask effective questions, locating appropriate sources of information and designing systematic investigations with specific goals.

**GENERAL EDUCATION REQUIREMENT FOR TRANSFER STUDENTS**

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

   The following Michigan Community Colleges have signed the MACRAO agreement, and transfer students with one of the degrees listed below are considered to have fully met all Freshman-Sophomore general education requirements at Western Michigan University. Such students need only satisfy Western's Junior-Senior General Education requirement.

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

<table>
<thead>
<tr>
<th>College</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay De Noc Community College</td>
<td>AA</td>
</tr>
<tr>
<td>Delta College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Glen Oaks Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Gogebic Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Grand Rapids Junior College</td>
<td>AA</td>
</tr>
<tr>
<td>Highland Park Junior College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Jackson Community College</td>
<td>AA</td>
</tr>
<tr>
<td>Kellogg Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Kirtland Community College</td>
<td>AA</td>
</tr>
<tr>
<td>Lake Michigan College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Lansing Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Monroe County Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Montcalm Community College</td>
<td>AA</td>
</tr>
<tr>
<td>Mott Community College (formerly Genesee Community College)</td>
<td>AA</td>
</tr>
<tr>
<td>Muskegon Community College</td>
<td>AA</td>
</tr>
<tr>
<td>North Central Michigan College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Northwestern Michigan College</td>
<td>AA</td>
</tr>
<tr>
<td>Oakland Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>St. Clair County Community College</td>
<td>AA</td>
</tr>
<tr>
<td>Schoolcraft College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Southwestern Michigan College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Wayne County Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>Washtenaw Community College</td>
<td>AA, AS</td>
</tr>
<tr>
<td>West Shore Community College</td>
<td>AA, AS</td>
</tr>
</tbody>
</table>

2. **Transfer students from other Michigan Community Colleges**

   May satisfy the General Education requirement by:

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

   B. Completion of a Distribution Program.

   C. Completion of an Integrated Program.

   In order to determine remaining General Education requirements such students should contact their curriculum advisor.

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

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

   Students from Senior (Four Year) Colleges

   May satisfy the General Education requirement by:

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

   In order to determine remaining General Education requirements such students should contact their curriculum advisor.

4. Waiver of junior-senior requirement for transfer students with advanced standing

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

WESTERN MICHIGAN UNIVERSITY

GENERAL EDUCATION EQUIVALENTS

(FOR TRANSFER STUDENTS)

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

1. Students with a MACRAO approved Associate Degree from a Michigan Community College may satisfy their requirements by successfully completing two 300-500 level General Education courses. A course in Non-Western World must be included in this coursework unless a suitable substitute was transferred.

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

   A. Humanities and Fine Arts — A minimum of six semester credits from the following fields:

      Art Appreciation or Art History
      Theatre (Introduction or History)
      Film (Appreciation or History)
      Literature (English or English translation)
      General Humanities
      Foreign Language (1st year only)
      Music (Appreciation or History)
      Philosophy (and Logic)
      Religion (non-doctrinal)

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

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

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

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

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

E. Students with less than the required course work in any of the above areas A, B, C, or D must make up deficient hours by selecting from appropriate WMU General Education courses.

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

STUDENT PLANNED CURRICULUM

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

University requirements (Bachelor's Degree) include:
1) General Education requirements.
2) University electives sufficient to meet graduation requirements.
3) An Open Curriculum — an organized plan of study created by the student with the assistance of an official University academic advisor any time before the student has completed 75 credit hours.

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

UNDERGRADUATE CURRICULA AND APPROVED MAJORS

<table>
<thead>
<tr>
<th>COLLEGE OF APPLIED SCIENCES: AAS</th>
<th>CURR:</th>
<th>Major:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR: AGR</td>
<td>Agricultural Distribution</td>
<td>EE Electrical Engineering</td>
</tr>
<tr>
<td>Major: AGR</td>
<td>Agriculture</td>
<td>EE Electrical Engineering</td>
</tr>
<tr>
<td>CURR: AUE</td>
<td>Automotive Engineering Tech</td>
<td>EGT Engineering Graphics</td>
</tr>
<tr>
<td>Major: AUE</td>
<td>Automotive Engineering Tech</td>
<td>EGT Engineering Graphics</td>
</tr>
<tr>
<td>CURR: AVE</td>
<td>Aviation Engineering Tech</td>
<td>EVE Environmental Engineering</td>
</tr>
<tr>
<td>Major: AVE</td>
<td>Aviation Engineering Tech</td>
<td>EVE Environmental Engineering</td>
</tr>
<tr>
<td>CURR: ATM</td>
<td>Aviation Tech &amp; Management</td>
<td>FAS Fashion Merchandising</td>
</tr>
<tr>
<td>Major: ATM</td>
<td>Aviation Tech &amp; Management</td>
<td>FAS Fashion Merchandising</td>
</tr>
<tr>
<td>CURR: CSE</td>
<td>Computer Systems Engineering</td>
<td>GCA General</td>
</tr>
<tr>
<td>Major: CSE</td>
<td>Computer Systems Engineering</td>
<td>GCA General</td>
</tr>
<tr>
<td>CURR: DI</td>
<td>Dietetics</td>
<td>HEC Home Economics</td>
</tr>
<tr>
<td>Major: DI</td>
<td>Dietetics</td>
<td>HEB Home Economics (Business)</td>
</tr>
<tr>
<td>CURR: DE</td>
<td>Distributive Education</td>
<td>HEE Home Economics (Education)</td>
</tr>
<tr>
<td>Major: DED</td>
<td>Distributive Teacher Education</td>
<td>HEC Home Economics (General)</td>
</tr>
<tr>
<td>CURR: FD</td>
<td>Food Distribution</td>
<td>ID Industrial Design</td>
</tr>
<tr>
<td>Major: PD</td>
<td>Petroleum Distribution</td>
<td>ID Industrial Design</td>
</tr>
<tr>
<td>CURR: DED</td>
<td>Distributive Teacher Education</td>
<td>JET Industrial Education (Teaching)</td>
</tr>
<tr>
<td>Major: DRA</td>
<td>Drafting</td>
<td></td>
</tr>
</tbody>
</table>
### College and Curricular Offerings

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>Major</th>
<th>Code</th>
<th>Subject</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELT</td>
<td>Electricity-Electronics</td>
<td>CURR: EVS</td>
<td>Environmental Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIA</td>
<td>General Industrial Education</td>
<td>CURR: EVS</td>
<td>Environmental Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRA</td>
<td>Graphic Arts</td>
<td>CURR: FRE</td>
<td>French</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MWK</td>
<td>Metalworking</td>
<td>CURR: GEG</td>
<td>Geography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POW</td>
<td>Power/Automotives</td>
<td>CURR: GEL</td>
<td>Geology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WDK</td>
<td>Woodworking</td>
<td>CURR: GER</td>
<td>German</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: IEN</td>
<td>Industrial Engineering</td>
<td>CURR: HIS</td>
<td>History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: IS</td>
<td>Industrial Supervision</td>
<td>CURR: LAT</td>
<td>Latin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: IT</td>
<td>Industrial Technology (Non-Teaching)</td>
<td>CURR: LIN</td>
<td>Linguistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: ME</td>
<td>Mechanical Engineering</td>
<td>CURR: MAT</td>
<td>Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: MFG</td>
<td>Manufacturing</td>
<td>CURR: MEV</td>
<td>Medieval Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: ME</td>
<td>Mechanical Engineering</td>
<td>CURR: PHI</td>
<td>Philosophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: MTL</td>
<td>Engineering Metallurgy</td>
<td>CURR: POL</td>
<td>Political Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: OT</td>
<td>Occupational Therapy</td>
<td>CURR: PSY</td>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: PAE</td>
<td>Paper Engineering</td>
<td>CURR: REL</td>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: PAS</td>
<td>Paper Science</td>
<td>CURR: RUS</td>
<td>Russian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: PAH</td>
<td>Pre-Architecture</td>
<td>CURR: SOS</td>
<td>Social Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: PE</td>
<td>Pre-Engineering</td>
<td>CURR: SOC</td>
<td>Sociology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: PRT</td>
<td>Printing Management</td>
<td>CURR: SOA</td>
<td>Sociology &amp; Anthropology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: VIE</td>
<td>Vocational-Technical Education (Teaching)</td>
<td>CURR: SPA</td>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: VIE</td>
<td>Vocational-Technical Education (Teaching)</td>
<td>CURR: VTE</td>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: AT</td>
<td>Aircraft Tech (Two Year)</td>
<td>CURR: VIE</td>
<td>Vocational-Technical Education (Teaching)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: DRF</td>
<td>Drafting &amp; Design Tech (Two Year)</td>
<td>CURR: VTE</td>
<td>Vocational-Technical Education (Non-Teaching)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: FT</td>
<td>Food Distribution (Two Year)</td>
<td>CURR: MTS</td>
<td>Medical Technology (Non-Teaching)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR: PT</td>
<td>Petroleum Distribution (Two Year)</td>
<td>CURR: PSW</td>
<td>Pre-Social Work</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### COORDINATE MAJORS*

- AFS: African Studies
- AIS: Asian Studies
- CLH: Classical Humanities
- CCS: Comparative/Cross-Cultural Studies
- EVT: Environmental Studies
- EUR: European Studies
- LMS: Latin American Studies

### COLLEGE OF ARTS & SCIENCES: LAS

<table>
<thead>
<tr>
<th>CURR:</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td>Arts &amp; Sciences</td>
</tr>
<tr>
<td>AMS</td>
<td>American Studies</td>
</tr>
<tr>
<td>ANT</td>
<td>Anthropology</td>
</tr>
<tr>
<td>BIO</td>
<td>Biology</td>
</tr>
<tr>
<td>BIO</td>
<td>Biomedical Sciences</td>
</tr>
<tr>
<td>CHM</td>
<td>Chemistry</td>
</tr>
<tr>
<td>CAS</td>
<td>Communication Arts &amp; Sciences</td>
</tr>
<tr>
<td>EAR</td>
<td>Earth Science</td>
</tr>
<tr>
<td>ECO</td>
<td>Economics</td>
</tr>
<tr>
<td>ENG</td>
<td>English</td>
</tr>
</tbody>
</table>

### COLLEGE OF BUSINESS: BUS

<table>
<thead>
<tr>
<th>CURR:</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAD</td>
<td>Business Administration</td>
</tr>
<tr>
<td>ACT</td>
<td>Accounting</td>
</tr>
<tr>
<td>ADS</td>
<td>Administrative Services</td>
</tr>
<tr>
<td>AGB</td>
<td>Agri-Business</td>
</tr>
<tr>
<td>ADV</td>
<td>Advertising</td>
</tr>
<tr>
<td>ECO</td>
<td>Economics</td>
</tr>
<tr>
<td>FIN</td>
<td>Finance</td>
</tr>
<tr>
<td>GBS</td>
<td>General Business</td>
</tr>
<tr>
<td>IDM</td>
<td>Industrial Marketing</td>
</tr>
<tr>
<td>College and Curricular Offerings</td>
<td>CURR: PEP</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Management</td>
<td>AQE</td>
</tr>
<tr>
<td>MGT</td>
<td>HED</td>
</tr>
<tr>
<td>Management</td>
<td>PEE</td>
</tr>
<tr>
<td>STB</td>
<td>PEE</td>
</tr>
<tr>
<td>Statistics</td>
<td>REC</td>
</tr>
<tr>
<td>CURR: PAB</td>
<td>PST</td>
</tr>
<tr>
<td>Major:</td>
<td>PSA</td>
</tr>
<tr>
<td>PAB</td>
<td>RUL</td>
</tr>
<tr>
<td>Major:</td>
<td>RUL</td>
</tr>
<tr>
<td>CURR: PAB</td>
<td>SCH</td>
</tr>
<tr>
<td>Major:</td>
<td>SCH</td>
</tr>
<tr>
<td>CURR: PAB</td>
<td>SDC</td>
</tr>
<tr>
<td>Major:</td>
<td>SDC</td>
</tr>
<tr>
<td>CURR: SPT</td>
<td>SMH</td>
</tr>
<tr>
<td>Major:</td>
<td>SMH</td>
</tr>
<tr>
<td>CURR: SPT</td>
<td>SBE</td>
</tr>
<tr>
<td>Major:</td>
<td>SBE</td>
</tr>
<tr>
<td>CURR: SPT</td>
<td>SPC</td>
</tr>
<tr>
<td>Major:</td>
<td>SPC</td>
</tr>
</tbody>
</table>

**College of Education: EDU**

<table>
<thead>
<tr>
<th>CURR: EED</th>
<th>Major:</th>
<th>EDEM Elementary Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR: MUS</td>
<td>Major:</td>
<td>MUS Music, Elementary</td>
</tr>
<tr>
<td>CURR: JHS</td>
<td>Major:</td>
<td>JHS Middle School &amp; Junior High School</td>
</tr>
<tr>
<td>CURR: CAS</td>
<td>Major:</td>
<td>CAS Communication Arts &amp; Sciences</td>
</tr>
<tr>
<td>CURR: ENG</td>
<td>Major:</td>
<td>ENG English</td>
</tr>
<tr>
<td>CURR: FRE</td>
<td>Major:</td>
<td>FRE French</td>
</tr>
<tr>
<td>CURR: GER</td>
<td>Major:</td>
<td>GER German</td>
</tr>
<tr>
<td>CURR: MAT</td>
<td>Major:</td>
<td>MAT Mathematics</td>
</tr>
<tr>
<td>CURR: RUS</td>
<td>Major:</td>
<td>RUS Russian</td>
</tr>
<tr>
<td>CURR: SCI</td>
<td>Major:</td>
<td>SCI Science</td>
</tr>
<tr>
<td>CURR: SOS</td>
<td>Major:</td>
<td>SOS Social Science</td>
</tr>
<tr>
<td>CURR: SPA</td>
<td>Major:</td>
<td>SPA Spanish</td>
</tr>
<tr>
<td>CURR: SED</td>
<td>Major:</td>
<td>SED Secondary Education</td>
</tr>
<tr>
<td>CURR: AGR</td>
<td>Major:</td>
<td>AGR Agriculture</td>
</tr>
<tr>
<td>CURR: AMS</td>
<td>Major:</td>
<td>AMS American Studies</td>
</tr>
<tr>
<td>CURR: ANT</td>
<td>Major:</td>
<td>ANT Anthropology</td>
</tr>
<tr>
<td>CURR: BIO</td>
<td>Major:</td>
<td>BIO Biology</td>
</tr>
<tr>
<td>CURR: CHM</td>
<td>Major:</td>
<td>CHM Chemistry</td>
</tr>
<tr>
<td>CURR: CAS</td>
<td>Major:</td>
<td>CAS Communication Arts &amp; Sciences</td>
</tr>
<tr>
<td>CURR: EAR</td>
<td>Major:</td>
<td>EAR Earth Science</td>
</tr>
<tr>
<td>CURR: ECO</td>
<td>Major:</td>
<td>ECO Economies</td>
</tr>
<tr>
<td>CURR: ENG</td>
<td>Major:</td>
<td>ENG English</td>
</tr>
<tr>
<td>CURR: FRE</td>
<td>Major:</td>
<td>FRE French</td>
</tr>
<tr>
<td>CURR: GEG</td>
<td>Major:</td>
<td>GEG Geography</td>
</tr>
<tr>
<td>CURR: GEL</td>
<td>Major:</td>
<td>GEL Geology</td>
</tr>
<tr>
<td>CURR: GER</td>
<td>Major:</td>
<td>GER German</td>
</tr>
<tr>
<td>CURR: HIS</td>
<td>Major:</td>
<td>HIS History</td>
</tr>
<tr>
<td>CURR: LAT</td>
<td>Major:</td>
<td>LAT Latin</td>
</tr>
<tr>
<td>CURR: MAT</td>
<td>Major:</td>
<td>MAT Mathematics</td>
</tr>
<tr>
<td>CURR: PHY</td>
<td>Major:</td>
<td>PHY Physics</td>
</tr>
<tr>
<td>CURR: POL</td>
<td>Major:</td>
<td>POL Political Science</td>
</tr>
<tr>
<td>CURR: PSY</td>
<td>Major:</td>
<td>PSY Psychology</td>
</tr>
<tr>
<td>CURR: RUS</td>
<td>Major:</td>
<td>RUS Russian</td>
</tr>
<tr>
<td>CURR: SCI</td>
<td>Major:</td>
<td>SCI Science</td>
</tr>
<tr>
<td>CURR: SOS</td>
<td>Major:</td>
<td>SOS Social Science</td>
</tr>
<tr>
<td>CURR: SOC</td>
<td>Major:</td>
<td>SOC Sociology</td>
</tr>
<tr>
<td>CURR: SPA</td>
<td>Major:</td>
<td>SPA Spanish</td>
</tr>
<tr>
<td>CURR: SPC</td>
<td>Major:</td>
<td>SPC Speech Pathology &amp; Audiology</td>
</tr>
</tbody>
</table>

**College of Fine Arts: FAR**

<table>
<thead>
<tr>
<th>CURR: ART</th>
<th>Major:</th>
<th>ART Art</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR: MUS</td>
<td>Major:</td>
<td>MUS Music, Elementary</td>
</tr>
<tr>
<td>CURR: JHS</td>
<td>Major:</td>
<td>JHS Middle School &amp; Junior High School</td>
</tr>
<tr>
<td>CURR: CAS</td>
<td>Major:</td>
<td>CAS Communication Arts &amp; Sciences</td>
</tr>
<tr>
<td>CURR: ENG</td>
<td>Major:</td>
<td>ENG English</td>
</tr>
<tr>
<td>CURR: FRE</td>
<td>Major:</td>
<td>FRE French</td>
</tr>
<tr>
<td>CURR: GER</td>
<td>Major:</td>
<td>GER German</td>
</tr>
<tr>
<td>CURR: MAT</td>
<td>Major:</td>
<td>MAT Mathematics</td>
</tr>
<tr>
<td>CURR: RUS</td>
<td>Major:</td>
<td>RUS Russian</td>
</tr>
<tr>
<td>CURR: SCI</td>
<td>Major:</td>
<td>SCI Science</td>
</tr>
<tr>
<td>CURR: SOS</td>
<td>Major:</td>
<td>SOS Social Science</td>
</tr>
<tr>
<td>CURR: SPA</td>
<td>Major:</td>
<td>SPA Spanish</td>
</tr>
<tr>
<td>CURR: SED</td>
<td>Major:</td>
<td>SED Secondary Education</td>
</tr>
<tr>
<td>CURR: AGR</td>
<td>Major:</td>
<td>AGR Agriculture</td>
</tr>
<tr>
<td>CURR: AMS</td>
<td>Major:</td>
<td>AMS American Studies</td>
</tr>
<tr>
<td>CURR: ANT</td>
<td>Major:</td>
<td>ANT Anthropology</td>
</tr>
<tr>
<td>CURR: BIO</td>
<td>Major:</td>
<td>BIO Biology</td>
</tr>
<tr>
<td>CURR: CHM</td>
<td>Major:</td>
<td>CHM Chemistry</td>
</tr>
<tr>
<td>CURR: CAS</td>
<td>Major:</td>
<td>CAS Communication Arts &amp; Sciences</td>
</tr>
<tr>
<td>CURR: EAR</td>
<td>Major:</td>
<td>EAR Earth Science</td>
</tr>
<tr>
<td>CURR: ECO</td>
<td>Major:</td>
<td>ECO Economies</td>
</tr>
<tr>
<td>CURR: ENG</td>
<td>Major:</td>
<td>ENG English</td>
</tr>
<tr>
<td>CURR: FRE</td>
<td>Major:</td>
<td>FRE French</td>
</tr>
<tr>
<td>CURR: GEG</td>
<td>Major:</td>
<td>GEG Geography</td>
</tr>
<tr>
<td>CURR: GEL</td>
<td>Major:</td>
<td>GEL Geology</td>
</tr>
<tr>
<td>CURR: GER</td>
<td>Major:</td>
<td>GER German</td>
</tr>
<tr>
<td>CURR: HIS</td>
<td>Major:</td>
<td>HIS History</td>
</tr>
<tr>
<td>CURR: LAT</td>
<td>Major:</td>
<td>LAT Latin</td>
</tr>
<tr>
<td>CURR: MAT</td>
<td>Major:</td>
<td>MAT Mathematics</td>
</tr>
<tr>
<td>CURR: PHY</td>
<td>Major:</td>
<td>PHY Physics</td>
</tr>
<tr>
<td>CURR: POL</td>
<td>Major:</td>
<td>POL Political Science</td>
</tr>
<tr>
<td>CURR: PSY</td>
<td>Major:</td>
<td>PSY Psychology</td>
</tr>
<tr>
<td>CURR: RUS</td>
<td>Major:</td>
<td>RUS Russian</td>
</tr>
<tr>
<td>CURR: SCI</td>
<td>Major:</td>
<td>SCI Science</td>
</tr>
<tr>
<td>CURR: SOS</td>
<td>Major:</td>
<td>SOS Social Science</td>
</tr>
<tr>
<td>CURR: SOC</td>
<td>Major:</td>
<td>SOC Sociology</td>
</tr>
<tr>
<td>CURR: SPA</td>
<td>Major:</td>
<td>SPA Spanish</td>
</tr>
<tr>
<td>CURR: SPC</td>
<td>Major:</td>
<td>SPC Speech Pathology &amp; Audiology</td>
</tr>
</tbody>
</table>

**Honors College**

<table>
<thead>
<tr>
<th>CURR: HNC</th>
<th>Major:</th>
<th>HNC Honors College</th>
</tr>
</thead>
</table>

**Division of Continuing Education: DCE**

<table>
<thead>
<tr>
<th>CURR: GUS</th>
<th>Major:</th>
<th>GUS General University Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR: AMS</td>
<td>Major:</td>
<td>AMS American Studies</td>
</tr>
<tr>
<td>CURR: ALT</td>
<td>Major:</td>
<td>ALT Applied Liberal Studies</td>
</tr>
<tr>
<td>CURR: EVL</td>
<td>Major:</td>
<td>EVL Environmental Studies</td>
</tr>
<tr>
<td>CURR: HTH</td>
<td>Major:</td>
<td>HTH Health Studies</td>
</tr>
<tr>
<td>CURR: SOT</td>
<td>Major:</td>
<td>SOT Social Science Studies</td>
</tr>
<tr>
<td>CURR: TAS</td>
<td>Major:</td>
<td>TAS Technical &amp; Scientific Studies</td>
</tr>
</tbody>
</table>

Students unable to select a Curriculum will be designated UNDECIDED (UND) until such a selection can be made. Students are encouraged whenever possible to select a specific curriculum.

*These are majors to be selected only along with a standard major.*
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.

Pre-Architecture

D. W. Nantz, Advisor

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

Pre-Engineering

D. W. Nantz, Advisor

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

Dentistry

Lois Gay, Assistant Director and Advisor

Although the Dental Aptitude Test is required of all applicants to any dental school, the amount and kind of academic work needed for admission varies. Therefore, a student planning to do his pre-dental work at Western Michigan University should refer to the catalogs from the schools of his choice and plan his work at Western to meet the requirements of those particular schools. A useful source handbook, “Admission Requirements of American Dental Schools” is on a 2-hour reserve in Waldo Library and many of the current dental school catalogs are available in the preprofessional advisor's office. Pre-dental students should see the preprofessional advisor in Room 2050 Friedmann Hall for curriculum suggestions, a Dental School Advisory Kit, Dental Aptitude Test application forms, centralized application service information, and Preprofessional Evaluation Committee services. In addition, pre-dental students are encouraged to join the Medical Science Association which is composed of students interested in health science careers.

The curriculum suggestions listed below assure completion of the pre-dental course requirements in two years. This sequence, however, can be altered to meet the requirements of the particular academic major and minor of the student's choice.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Biology</td>
</tr>
<tr>
<td>Biology 101, 113</td>
<td>Physics 110, 111</td>
</tr>
<tr>
<td>Chemistry 101 or 102, 120</td>
<td>Organic Chemistry 360, 361</td>
</tr>
<tr>
<td>Mathematics 120, 121 or 122,</td>
<td>General Education</td>
</tr>
<tr>
<td>123 or 200, 360</td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Third Year

General Education
Major and minor requirements
Electives
Preprofessional Curricula

Librarianship

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

Medicine and Osteopathy

Lois Gay, Assistant Director and Advisor

Although only 90 credit hours of undergraduate studies are required, most medical and osteopathic schools expect students to finish four years of college work before admission. The required Medical College Admission Test is offered at Western Michigan University each spring and fall. The advisor should be consulted as to the appropriate testing time.

A student planning to do his pre-medical work at Western Michigan University should refer to the catalogs from the medical or osteopathic schools of his choice and should plan his college work to meet their requirements. A useful source handbook, "Medical School Admission Requirements, U.S.A. and Canada", is on 2-hour reserve in Waldo Library, and many of the current medical and osteopathic school catalogs are available in the preprofessional advisor's office. Pre-osteopathic and pre-medical students should see the preprofessional advisor in 2050 Friedmann Hall for curriculum suggestions, Medical and/or Osteopathic Advisory Kits, Medical College Admission Test application forms, centralized application service forms, and Preprofessional Evaluation Committee services. In addition, pre-medical and pre-osteopathic students are encouraged to join the Medical Sciences Association which is composed of students interested in health science careers.

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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>English .......................... 8</td>
<td>Biology ...................... 6</td>
</tr>
<tr>
<td>Biology 101 and 113 ................ 7</td>
<td>Physics 110, 111 .............. 8</td>
</tr>
<tr>
<td>Chemistry 101 or 102, 120 .......... 8</td>
<td>General Education ........... 16</td>
</tr>
<tr>
<td>Mathematics 120, 121 or 122, 123 or 200, 360 .......... 8</td>
<td></td>
</tr>
<tr>
<td>Physical Education ................ 1-2</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Third Year

- Organic Chemistry 360, 361
- General Education
- Major and minor requirements
- Electives

PROFESSIONAL PREPARATION

Law

Advisors: Morrison, Batch, Bliss, Gossman, McCarty

No special college program is required or recommended by most law schools. In general, law schools urge a solid four-year program leading to a Bachelor's degree. Although it is relatively unimportant what the prospective law student uses for his major, it is most important that a high level of academic achievement be maintained. It is also important that the prospective lawyer's education be as broad as possible.

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

A freshman student should see a Pre-Law advisor during his first semester for assistance in selecting his curriculum. A transfer student should see a Pre-Law advisor as soon as possible.
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 advisers for approval of a major or minor program as soon as possible but not later than the junior year.

4. The candidate for a degree must complete a major and a minor. A candidate for the Elementary Provisional Certificate may elect instead, a major 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 Education courses may be counted toward major and minor requirements. (See Departmental requirements.)

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

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

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

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

11. Mathematics may not be combined with science (physics, geography, chemistry, or biology) for any major or minor sequence, but may be required to satisfy requirements of certain curricula.

12. Except upon formal approval, courses elected to satisfy requirements in one major and/or minor may not be counted again to satisfy requirements in another major and/or minor. Exceptions are not granted for students seeking teacher certification.

Programs Requiring Major and Minor Slips

(In All Cases Check Catalog Requirements)

<table>
<thead>
<tr>
<th>USE CODE</th>
<th>DESCRIPTION</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>Accountancy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ADS</td>
<td>Administrative Services</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ADV</td>
<td>Advertising</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>AFS</td>
<td>African Studies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>AGB</td>
<td>Agri-Business</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>AGR</td>
<td>Agriculture</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>AMS</td>
<td>American Studies</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>AMT</td>
<td>American Studies (Cont. Ed.)</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>MAJOR MINOR REQUIREMENTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAJOR SLIP REQUIRED</td>
<td>MINOR SLIP REQUIRED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANT Anthropology</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ALS Applied Liberal Studies (Cont. Ed.)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>AQE Aquatics Education</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ART Art</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>ARE Art Education</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>ARH Art History</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>AIS Asian Studies</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>AUM Auto Management &amp; Service</td>
<td>Curricular Offering</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>AUE Automotive Engineering Tech.</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVI Aviation</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ATM Aviation Tech. &amp; Management</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVE Aviation Eng. Tech.</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO Biology</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>BMS Biomedical Sciences</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>BAS Black Americana Studies</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>BED Business Education</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CER Ceramics</td>
<td>Yes</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>CHM Chemistry</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CCH Coaching</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CLH Classical Humanities</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CLO Clothing &amp; Textiles</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CAS Communication Arts and Sciences</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>CCS Comparative Cross Cultural Studies</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>CSE Computer Systems Engineering</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRA Integrated Creative Arts</td>
<td>(None)</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>CRI Critical Languages</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>DAC Dance</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>DAN Dance Education</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>DI Dietetics</td>
<td>No</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>DED Distributive Teacher Educ.</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>DRA Drafting</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>EAR Earth Science</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ECO Economics</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>EE Electrical Engineering</td>
<td>(Curricular Offering)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELT Electricity-Electronics</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>EED Elementary Education</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>EGT Engineering GraphicsTech.</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG English</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(Creative Writing Emphasis)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ENT Engineering Tech.</td>
<td>(None)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>EUR European Studies</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>EVE Environmental Engineering</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Major and Minor Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Major Code</th>
<th>MAJOR SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVS</td>
<td>Environmental Studies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>EVL</td>
<td>Environmental Studies (Cont. Ed.)</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>EVT</td>
<td>Environmental Studies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>FAS</td>
<td>Fashion Merchandising</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>FLE</td>
<td>Family Life Education</td>
<td>(None)</td>
<td>No</td>
</tr>
<tr>
<td>FIN</td>
<td>Finance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>FNA</td>
<td>Fine Arts</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>FLT</td>
<td>Flight Technology</td>
<td>Curricular Offering</td>
<td>Yes</td>
</tr>
<tr>
<td>FD</td>
<td>Food Distribution</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>FRE</td>
<td>French</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GCA</td>
<td>General Curr. — Applied Sciences</td>
<td>Curricular Offering</td>
<td>No</td>
</tr>
<tr>
<td>GBS</td>
<td>General Business</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>GIA</td>
<td>General Industrial Education</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GEG</td>
<td>Geography</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GEL</td>
<td>Geology</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GER</td>
<td>German</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GRN</td>
<td>Gerontology</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>GRA</td>
<td>Graphic Arts</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GRD</td>
<td>Graphic Design</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>HED</td>
<td>Health Education</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>HTH</td>
<td>Health Studies (Cont. Ed.)</td>
<td>Yes</td>
<td>(None)</td>
</tr>
<tr>
<td>HIS</td>
<td>History</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>HEB</td>
<td>Home Economics-Business</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>HEE</td>
<td>Home Economics-Education</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>HEC</td>
<td>Home Economics-General</td>
<td>No</td>
<td>(None)</td>
</tr>
<tr>
<td>ICE</td>
<td>Industrial-Coop Educ. (Coordination)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>IEN</td>
<td>Industrial Engineering</td>
<td>Curricular Offering</td>
<td>Curricular Offering</td>
</tr>
<tr>
<td>ID</td>
<td>Industrial Design</td>
<td>Curricular Offering</td>
<td>Yes</td>
</tr>
<tr>
<td>IDM</td>
<td>Industrial Marketing</td>
<td>Curricular Offering</td>
<td>(None)</td>
</tr>
<tr>
<td>IS</td>
<td>Industrial Supervision</td>
<td>Curricular Offering</td>
<td>No</td>
</tr>
<tr>
<td>ITD</td>
<td>Interior Design</td>
<td>(None)</td>
<td>(None)</td>
</tr>
<tr>
<td>JMS</td>
<td>Jewelry-Metalsmith</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>JNL</td>
<td>Journalism</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>LMS</td>
<td>Latin American Studies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LAT</td>
<td>Latin</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LAW</td>
<td>Law</td>
<td>(None)</td>
<td>No</td>
</tr>
<tr>
<td>LGS</td>
<td>Language Arts</td>
<td>(None)</td>
<td>Yes</td>
</tr>
<tr>
<td>LIB</td>
<td>Librarianship</td>
<td>(None)</td>
<td>No</td>
</tr>
<tr>
<td>LIN</td>
<td>Linguistics</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>MGT</td>
<td>Management</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>MFG</td>
<td>Manufacturing</td>
<td>Curricular Offering</td>
<td>Curricular Offering</td>
</tr>
<tr>
<td>MAJOR SLIP REQUIRED</td>
<td>MINOR SLIP REQUIRED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKT Marketing</td>
<td>(None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKG Marketing-General</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT Mathematics</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME Mechanical Engineering</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEV Medieval Studies</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MLS Military Science</td>
<td>(None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT Medical Technology</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTL Engineering Metallurgy</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MWK Metalworking</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MMD Multi-Media</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSC Music</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUA Music-Applied</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUC Music-Composition</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUE Music-Education</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS Music-Elementary</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUH Music-History</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUT Music-Theatre</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUY Music-Therapy</td>
<td>No (needs curr. guide) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OT Occupational Therapy</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCE Occupational Food Service</td>
<td>(None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAI Painting</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAE Paper Engineering</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAS Paper Science</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD Petroleum Distribution</td>
<td>Yes (None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHI Philosophy</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHO Photography</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHY Physics</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEC Phys. Ed.-Except. Child</td>
<td>(None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEP Physical Education</td>
<td>Yes Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEE Physical Education- Elementary Emphasis</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PES Physical Education- Secondary Emphasis</td>
<td>(None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PYA Physician's Assistant</td>
<td>Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLA Plastics</td>
<td>(None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POL Political Science</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA Political Science in Public Administration</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POW Power Automechanics</td>
<td>Yes Curricular Offering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT Printing Management</td>
<td>Yes (None) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRM Printmaking</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY Psychology</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REC Recreation</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Major Requirement</td>
<td>Minor Requirement</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>REL</td>
<td>Religion</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>RET</td>
<td>Retailing</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>RUL</td>
<td>Rural Life</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>RUS</td>
<td>Russian</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SCI</td>
<td>Science</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SCU</td>
<td>Sculpture</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SAD</td>
<td>Secretarial Admin.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SOS</td>
<td>Social Science</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SOT</td>
<td>Social Science Studies</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>(Cont. Ed.)</td>
<td></td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>SW</td>
<td>Social Work</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SWC</td>
<td>Interdisciplinary (SW)</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>Sociology</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>(Criminal Justice)</td>
<td></td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>SOA</td>
<td>Sociology-Anthropology</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SPA</td>
<td>Spanish</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SBE</td>
<td>Spec. Ed.-Blind &amp; Vis. Impaired</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SCH</td>
<td>Spec. Ed.-Crippled &amp; Homebound</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>SDC</td>
<td>Spec. Ed.-Emotionally Impaired</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SMH</td>
<td>Spec. Ed.-Mentally Impaired</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>SPC</td>
<td>Speech Pathology &amp; Audiology</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SPM</td>
<td>Sports Medicine</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>STB</td>
<td>Statistics</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>STC</td>
<td>Student Planned Curriculum</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SWM</td>
<td>Swimming</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>TEX</td>
<td>Textile Design</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>THN</td>
<td>Theatre Education</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>TEC</td>
<td>Technology</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>THR</td>
<td>Theatre</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>TRS</td>
<td>Transportation Systems</td>
<td>Curricular Offering</td>
<td></td>
</tr>
<tr>
<td>TAS</td>
<td>Technical &amp; Scientific Studies (Cont. Ed.)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>TSE</td>
<td>Traffic &amp; Safety Ed.</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>VIE</td>
<td>Vocational Industrial Ed. (Teaching)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>VTE</td>
<td>Vocational Technical Education (Non-Teaching)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>WDK</td>
<td>Woodworking</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>WLT</td>
<td>World Literature</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td>WMS</td>
<td>Women's Studies</td>
<td>(None)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
Certificates

TEACHER CERTIFICATION — PROVISIONAL

The following types of teaching certificates are granted:

1. Michigan Elementary Provisional
   This certificate qualifies the holder to teach all subjects in grades kindergarten through 8, and in major or minor fields of grade 9, as specified on the certificate in any public school in Michigan. It is valid for approximately 6 years and may be renewed once for three years provided that the applicant presents 10 semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. A second three year renewal may be granted the applicant who presents an 18 semester hour planned course of study approved by the University. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first certificate.

2. Michigan Secondary Provisional
   This certificate is valid for teaching all subjects in grades 7 and 8, and in subject matter fields in grades 9 through 12 in which the applicant has completed a major or minor. It is valid for approximately 6 years and may be renewed once for three year provided that the applicant presents 10 semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. A second three years renewal may be granted the applicant who presents an 18 semester hour planned course of study approved by the University. The candidate must meet the requirements for a degree as defined above prior to the issuance of the first certificate.

TEACHER CERTIFICATION — CONTINUING

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

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

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

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

3. The candidate must present evidence that he has completed a minimum of 18 semester hours in a planned course of study or an approved Master's degree subsequent to the issuance of the provisional certificate and the degree. This advanced course of study must be approved by the Certification Officer in the College of Education.

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

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.)

THIRTY-HOUR CONTINUING CERTIFICATE

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

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

Student fees are assessed on a credit hour basis. At press time, the exact fees were not finalized, but by action of the Board of Trustees, the following range was approved, per credit hour:

<table>
<thead>
<tr>
<th></th>
<th>General Purposes</th>
<th>Facility Fees</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Undergraduate</td>
<td>$21.00-$23.00</td>
<td>$3.00</td>
<td>$24.00-$26.00</td>
</tr>
<tr>
<td>Non-Resident Undergraduate</td>
<td>54.00-55.00</td>
<td>3.00</td>
<td>57.00-58.00</td>
</tr>
<tr>
<td>Resident Graduate</td>
<td>29.00-31.00</td>
<td>3.00</td>
<td>32.00-34.00</td>
</tr>
<tr>
<td>Non-Resident Graduate</td>
<td>68.00-71.00</td>
<td>3.00</td>
<td>71.00-74.00</td>
</tr>
</tbody>
</table>

**FACILITY FEE** — Each student is assessed as a part of total student fees, $3.00 for the retirement of bonds issued to construct various student facilities.

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

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

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

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

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

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

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

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

**AUDITORS’ FEES** — Auditors (students who register for 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 $250 to $550 per course. For a specific course fee, consult Department of Transportation Technology.

**ROOM AND BOARD** — Cost of room and board is $720 a student for each semester. The rate for room only in those residence halls which do not provide board is $260 a student for each semester. An exception is Spindler Hall, for which there are special rates of $277 for fall semester and $282 for winter semester. A first payment of $50 to be applied toward room and board payment will be required with the signed contract before a housing assignment is made.

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

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

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

REFUND SCHEDULE:

For Complete Withdrawal

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

50 Per Cent From the end of the final day for adding a course through the 5th week of classes in a semester or second week in a session. Refunds to students who made an Admission Deposit will be reduced by the $50 deposit.

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

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

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

Residency:

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

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

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

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

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

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

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

Academic 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 course work, tests, and final examinations. Grades are indicated by letters, to each of which is assigned a certain value in honor points per hour of credit, as shown in the table below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Significance</th>
<th>Honor Points 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></td>
</tr>
<tr>
<td>NC</td>
<td>No Credit</td>
<td></td>
</tr>
<tr>
<td>AUD</td>
<td>Audit (non-credit enrollment)</td>
<td></td>
</tr>
</tbody>
</table>

"I" INCOMPLETE

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

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

An instructor who assigns a grade of "I" must complete a Report of Incomplete Work on the official University form and submit a copy to the student, the Department Chairman, the Academic Records Office, and keep one copy for their own records. This Report of Incomplete Work form must be completed and distributed at the time the instructor agrees with the student that a grade of "I" is the appropriate grade for the class.

GRADE CHANGES

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

COMPREHENSIVE EXAMINATIONS

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

All credit by examination is subject to the following regulations:

1. All credit will be posted as credit only without grade or honor points. Students who do not achieve a sufficient score for credit will have no entry made.
2. Credit by comprehensive examination in courses numbered 300 or higher can be used to meet the requirement that one-half of all academic work must be completed at a four-year degree granting institution.

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

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

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

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

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

By special arrangement some course examinations may require higher fees.

**CREDIT/NO CREDIT SYSTEM**

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

1. The name of 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 approved for General Education or General Physical Education credit, as well as other courses not counting toward his major or specified in his curriculum as defined in the **University Undergraduate Catalog**.

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

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

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

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

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

**REPEATED COURSES**

Any course in which a student may have been enrolled more than once is considered a repeated course. A grade must be presented for each course. The grade and credit earned the final time in the course will count toward curricular or degree requirements. All courses taken, even if they have been repeated, will be counted in grade point averages. Grade point averages will be adjusted for repeated courses, if necessary, only at the time of graduation. A repeated course is not removed from the student's record.

**HONOR POINTS**

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

*Directed Teaching, a required course, is taken on a credit/no credit basis.*
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.
3. Official Dean's Lists are not prepared for the spring or summer sessions.

SCHOLARSHIP STANDARDS

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

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

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 session.)

Students may withdraw (Drop) from courses without academic penalty through the first Friday past mid-semester. (Initiate this action at the Records Office.) The final date for dropping will be published in the Schedule of Classes. Students may not withdraw from one class or from all classes after this date without academic penalty.

Students who believe that they must withdraw after this date without penalty because of genuine hardship must appeal to a Faculty-Student Committee. Documented justification must be presented to the Office of the Registrar on appropriate forms to be secured at the Registrar’s Office. The student is expected to follow the outlined steps in making this appeal. The action of the Committee will be final. Each student is encouraged to visit with his 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 Records Office.

CLASSIFICATION

Students at Western Michigan University are classified officially as follows:

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

COURSE NUMBERING SYSTEM

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

<table>
<thead>
<tr>
<th>Course Numbers</th>
<th>Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-89</td>
<td>Non-credit courses</td>
</tr>
<tr>
<td>90-99</td>
<td>Terminal course credit that may not be applied toward degree programs</td>
</tr>
<tr>
<td>100-199</td>
<td>Courses primarily for Freshmen</td>
</tr>
<tr>
<td>200-299</td>
<td>Courses primarily for Sophomores</td>
</tr>
<tr>
<td>300-399</td>
<td>Courses primarily for Juniors and Seniors</td>
</tr>
<tr>
<td>400-499</td>
<td>Courses primarily for Seniors</td>
</tr>
<tr>
<td>500-599</td>
<td>Courses for advanced undergraduates and graduate students</td>
</tr>
<tr>
<td>600-699</td>
<td>Courses for graduate students only</td>
</tr>
<tr>
<td>700-799</td>
<td>Graduate Seminars, Theses, Independent Research, etc.</td>
</tr>
</tbody>
</table>
Generally speaking, an even numbered third digit is the first half of the course and an odd numbered third digit is the second half of the course. Courses that terminate at the end of one semester and may not be divided into two courses in the immediate future may be assigned an odd numbered third digit to protect the system from becoming overloaded with even-numbered third digits.

EXAMINATIONS

1. All students enrolled in a course in which a final examination is given must take the examination.
2. Students may not request an examination at any other than the scheduled time.

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. Under no circumstances will any student be graduated with a class if their academic record does not show complete fulfillment of all requirements within 30 days after the commencement exercises.
HONORS

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

Recipients of honors receive their degrees:

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

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

1. All credits and honor points earned at Western Michigan University during all enrollment periods except the final enrollment period will be counted.
2. Credits and honor points earned in correspondence and extension classes will be considered toward honors.
3. No student will be eligible for honors who has not earned at least 45 semester hours of credit, of which 35 hours must be in courses with grades, at Western Michigan University during the interval mentioned in Rule 1.

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.

IDENTIFICATION

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

STUDENT CHEATING

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

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

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

(Approved by the Faculty Senate, February 8, 1962.)
Student Academic Rights: Policies and Procedures

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

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

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

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

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

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

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

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

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

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

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

7. If the Committee decides that there should be no change of grade, they will so inform the student, the faculty member, the department chairman or head and the ombudsman. If the Committee decides to recommend a change of grade, the Committee will first inform the faculty member of its intent so that he may initiate the change himself. If the faculty member prefers not to initiate the change, the Committee will do so by notifying the University Registrar.
(8) To protect all parties involved in any case, the strictest privacy consistent with the Committee's task will be maintained.

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

C. Policies and Procedures Regarding Requirements

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

ACADEMIC ADVISING

Academic advising at Western Michigan University is an institution-wide activity and responsibility. It is only by making the student aware of all the resources of the University and the specialized information available from the staff and faculty, that rational, intelligent decisions can be made regarding both the student's immediate experience and the influence higher education will have on the student’s entire lifetime.

Through the University Coordinator of Academic Advising and the individualized academic advising in each College and department, an ongoing effort will be made to maximize the identification and development of each student's unique potential. Academic advising becomes a mutually productive experience in which the University, in attempting to offer its expertise in providing meaningful advising for the student, grows and changes as it learns and responds to the needs of both the students and the University as a whole.

ACCESS TO STUDENT FILES

Students should read this section since it relates to their rights under the Family Educational Rights and Privacy Act of 1974, a federal law.

The purpose of this act is twofold - to assure students access to their educational records, and to protect the student's right to privacy by limiting the transferability of their educational records without their consent. It is and has been the intent of Western Michigan University to fully comply with this act and administrative procedures necessary to insure such compliance have been implemented, specifically including those procedures necessary to permit inspection by students of their educational records with opportunity for a hearing if a student petitions to challenge any materials in such records.

The following information may be released by the University under the title of "Directory Information."

For the purposes of this section, the term "directory information" relating to a student includes the following: The student's name, address, telephone listing, date and place of birth, curriculum and major field, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student.

By the publication of this notice, students are advised of the information which the University may release. If students wish that the University not release any or all of the above information, they may so inform the Academic Records Office in writing during the official drop/add period of each semester or session.

A file indicating location and person in charge of records within the University is located at the Registrar's Office. Inquiries concerning this act or the procedures at Western Michigan University for implementation of the act should be directed to the University Registrar.

CONDUCT AND DISCIPLINE

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

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

The Dean of Students has the overall responsibility for student conduct and discipline. It is implemented by the Office of University Judicialities. When infractions of rules and regulations occur, violators will be referred to the Office of University Judicialities 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 career exploration. They may become involved in social and personal situations which leave them feeling confused and upset. In addition, it is likely the inherent stresses of university life will cause most students, at some time, to feel emotional discomfort. The University Counseling Center, located on the main floor of the Student Services Building, exists to help students deal effectively with such concerns.

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

Individual counseling, providing students with an opportunity to discuss various concerns including career exploration, academic counseling, educational goals and personal or emotional difficulties.

Group sessions and workshops, designed to increase self-understanding, facilitate life styles and career decisions, improve relationships with others, increase leadership skills and eliminate behaviors that are self-defeating.

Career Exploration and Information 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.

Career Development Program, which aids students in the exploration of individual career possibilities and increases skills necessary for decision-making and future planning.

Training and Internship programs. The Clinical Training Program trains graduate students and interns from Psychology and Education in counseling, therapy and diagnostic techniques. An integral part of the program is a practica sequence spanning the academic year. The program includes lectures, demonstrations, case studies and supervision. Additionally, internships in administration and vocational counseling are also available through the Center.

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 7:45 a.m. and 4:45 p.m., Monday through Friday. Students unable to utilize Counseling Center services during regular hours may make arrangements for evening appointments by calling 383-1850.

INTERNATIONAL STUDENT SERVICES

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

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

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

Any foreign student interested in seeking admission to Western should contact the Office of International Student Services for an application form and instructions. To qualify for admission, a foreign student must demonstrate to the University that he is academically, financially and linguistically capable of undertaking the academic program being proposed, generally on a full-time basis. Before a prospective student can be admitted and the Form I-20 or DSP-66 issued, educational records documenting all previous secondary and post secondary schooling must be on file along with a financial statement signed and returned from a sponsor(s) showing that adequate money will be available to cover the student’s educational and living expenses for the duration of anticipated enrollment. Regarding linguistic capability, those prospective students from non-English speaking countries who have not successfully completed at least one year of full-time academic study at another U.S. institution must submit the results (scores) of a recognized English language proficiency examination prior to initial registration. If such results are not on
file, the student will be asked to sit for an on-campus administration of a University prescribed English language proficiency examination. Students whose scores indicate a need for further training in English will be advised accordingly and, in certain instances, will be required to register for appropriate developmental English courses offered by the University during the initial period of their enrollment. (See "Student Health Insurance" for the University's policy on health and accident insurance for foreign students.)

**UNIVERSITY HEALTH CENTER**

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

Each student attending the University is required to have 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 insure uniformity of records the University Health Center physical examination form is sent to each student by the Admissions Office along with the individual's notification of acceptance as a student. A student with a health problem requiring restriction of physical activity is to notify the Health Center by completing the form which accompanies the Health Center questionnaire. See also "General Physical Education," Exceptions, #5.

**ELIGIBILITY FOR CARE**

All students regularly enrolled in the University and taking seven (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.

Part time students, taking six (6) credit hours or less in a semester, or one (1) to three (3) hours in a session are charged a fee for each clinic visit. Faculty and staff employed full time and enrolled in one (1) or more courses are not considered students and are not eligible for care at the Health Center. A validated identification card must be presented when service is requested.

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.

**HOURS**

During the Fall and Winter semesters and the Spring Session Monday through Friday regular office hours are 7:45 a.m. to 4:45 p.m. During the Summer Session Monday through Friday office hours are 7:30 a.m. to 4:15 p.m. Regular hours on Saturday are from 9 a.m. to 11:30 a.m.

**APPOINTMENTS**

Students are encouraged to make appointments at the Health Center or any of the specialty clinics to insure prompt service. (Call 383-6005) If they cannot keep an appointment it is requested they be sure to call to cancel it so the time period may be used by another student.

**PSYCHIATRIC CONSULTATIONS**

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

**FEES**

During regular office hours no fee is charged the full time student for his or her visit to the Health Center, except as defined in eligibility for care above. Students are also charged conventional fees for all medications, medical supplies, x-rays and clinical laboratory diagnosis.

**SPECIALTY CLINICS**

Speciality clinics available at the Health Center include: Gynecology, Bone and Joint, Allergy and Wart Removal.

**PHARMACY**

A pharmacy is available at the Health Center for the use of students, faculty and emeriti. Its hours correspond to the regular office hours of the Health Center.
ALLERGY PATIENTS

Students, who have procured special medication or allergy vaccines at their own expense, may have these substances stored at the Health Center and 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.

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 parents. It shall not be the responsibility of the University to pay for such hospitalization or consultation.

STUDENT HEALTH INSURANCE

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

Citizens of other nations who are studying or conducting research as foreign students on a temporary U. S. visa, e.g. F-1, J-1, B-2, A-2, etc. are required to maintain health and accident insurance coverage while they are attending the University which will provide benefits in the United States. Foreign students may wish to contact the Office of International Student Services for information about desirable insurance programs.

LOCATION

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

HOUSING

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

RESIDENCE HALLS:

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

20 residence halls offering a variety of services are located in all sections of the campus. Some halls provide room-only accommodations with the individuals purchasing their meals off campus or in the University Student Center. One non-food service hall (Spindler) offers extensive cooking facilities for the resident and, in addition, is available for continuous housing throughout the year. Residents of this hall are permitted to remain during vacation periods. Inasmuch as all residence halls, except Spindler, close for the periods between semesters and sessions, residents of these halls who must remain may request a temporary assignment to Spindler where limited space may be available. A special per night charge exists for residents accommodated between semesters/sessions. Residents are permitted to remain in their assigned rooms during the Thanksgiving the March recess periods.
Most of the residence halls furnish 20 meals per week (Sunday evening excluded), with the dining rooms open from 7:00 a.m. to 6:15 p.m. six days a week, and 8:00 a.m. until 1:00 p.m. on Sunday. The food service enjoys an excellent reputation with an extensive menu developed in consultation with professional dietitians and residents. Food service residence halls are available during the fall and winter semesters and the spring session. During these periods meals usually begin the day classes start and stop the last day of classes. Meals are not served during the Thanksgiving period.

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

The residence hall offerings at Western attract nearly 7,000 students each Fall/Winter semester. The residents assigned to the halls represent individuals from all walks of life and academic interests. In addition to the majority of the students who are from all of the 50 states, many foreign countries are represented. Such a diverse group of individuals provides a stimulating atmosphere for the individual interested in learning about others.

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

FAMILY HOUSING — The purpose of family housing is to provide inexpensive housing for student families. Approximately 1,500 students, spouses and children live in 590 family apartments. There are one- and two-bedroom units in either furnished or unfurnished conditions available.

Assignments are made on the basis of application date; therefore, the earlier a person applies the better the chances are for receiving an assignment. Application may be submitted before official admission to the University. Any married couple or single parent who is a duly enrolled WMU student is eligible to live in Family Housing.

All inquiries should be made directly to the Family Housing Office, telephone, (616) 383-4970.

OFF-CAMPUS HOUSING — Approximately 70 per cent of Western's student enrollment live off-campus in privately owned housing. Thus, a unique service is provided to assist them in locating a place to live. It registers approximately 2,500 rental units ranging from modest sleeping rooms to luxurious apartment complexes. If you need assistance in off-campus housing, contact the Office of Commuter Student Services, room 3510 Student Services Building.

SORORITY/FRATERNITY HOUSES — Privately owned and operated by various fraternity organizations for their members. For information contact The Office of Student Activities, Student Services Building.

UNIVERSITY OMBUDSMAN

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

The position of University Ombudsman was created to investigate and mediate grievances and to provide justice for all members of the University community. Simple and rapid procedures have been established for the hearing of requests, complaints and grievances. The Ombudsman investigates such matters, and where he discovers a malfunction in the administrative process or an abuse of power, he assists the individual in accomplishing a quick and fair resolution of his problem. He can remedy some problems by himself, but when appropriate, he refers persons to other University members and/or offices. The Ombudsman is authorized to make thorough investigations and has direct and prompt access to all University offices and relevant records. The Ombudsman is authorized to make thorough investigations and has direct and prompt access to all University offices and relevant records. No person shall suffer any penalty because of seeking assistance from the Ombudsman. All information presented to that office by persons seeking assistance shall be considered confidential. The Ombudsman is especially alert to the chief causes for student concerns, and makes recommendations for the elimination of these causes consistent with the fundamental purpose of the University.
UNIVERSITY PLACEMENT SERVICES

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

The office is located in the Knollwood Building one block south of the corner of West Michigan Avenue and Knollwood Street, and is open from 7:45 a.m. to 4:45 p.m. Monday through Friday.

RELIGIOUS ACTIVITIES

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

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

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

The Office of Religious Activities, which is a part of University Student Services, assures equality in the University's relationships with more than 20 student religious organizations and the 14 campus ministers currently present on campus.

The Kanley Memorial Chapel facility includes an interfaith Chapel, several meeting rooms and offices. It is maintained by the University as a center for religious activities and serves as the meeting place for most student religious organizations. It is also the home of three regular Sunday worship services, and provides a popular site for student weddings. The Office of Religious Activities and 10 campus ministers have offices in the building.

In addition to Kanley Memorial Chapel, there are five student centers operated by specific denominations on or near campus.

Specific information regarding the religious groups on or near campus is available in the Office of Religious Activities.

STUDENT ACTIVITIES AND ORGANIZATIONS

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

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

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

Organizations are divided into these interest areas:

- Departmental and Professional
- Honorary
- Publications and Communication
- Religious
- Student Volunteer Information
- Clearing House
- Service Organizations
- 11 Fraternities
- 9 Sororities
- Special Interest
- Student Government
Sara Swickard Preschool

The Sara Swickard Preschool is open from 7:30 to 5:30 week days and is located on Western's campus at 1211 Knollwood. The location is convenient for student parents who wish to leave their children on the way to class. Children from 2½-6 can stay at the Preschool for a minimum of two hours to a full day session. Application to the Preschool should be made well in advance. Forms are available in the office at the Preschool on the second floor.

TESTING AND EVALUATION SERVICES

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

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

Testing and Evaluation Services has the most extensive "Test File" in this area. These files can be of assistance for class projects or general information. They are open to both students and faculty members at no cost. They may be checked out if ID is left in our office.

Information and registration assistance can be obtained on most major required admissions test such as the Graduate Record Examination, Miller Analogy Test, and the College Level Examination Program.

Testing and Evaluation Services is located at West Hillside Apartments.
Phone 383-0955.

MINORITY STUDENT SERVICES

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

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

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

The MLK Program is a unique supportive service program especially designed to assist its students in overcoming some of the obstacles they face upon entering the university community. Initiated in 1968, the program has the distinction of being the fore-runner of similar programs in universities throughout the United States.

Conducted by faculty and staff at W.M.U., this program has a threefold purpose: 1. It provides educational opportunities for a significant number of minority students. 2. It encourages marginal students to pursue higher education by providing an incentive and the necessary remedial help. 3. It expedites routine procedures and operations for admissions to the university.

Because we believe the first year is crucial, primary attention is focused on the individual students' needs or total development as they relate to the college experience.

Participants in the MLK Program begin their freshman studies during the 7th week summer session. Each student enrolls for six to nine credit hours academic coursework. They are also encouraged to attend the career seminars, special workshops, and cultural programs provided in conjunction with other departments on campus.

A continuation of the types of services provided during the summer are conducted throughout the regular school year. In addition, the program provides assistance in the selection of courses commensurate with the student's interest, abilities and university requirements. It also provides tutorial services for students who may need assistance with group or individual classwork, and offers professional counseling to students with specific problems or concerns.

Although recruitment is done primarily in schools throughout Michigan, students have, and may, come from high schools throughout the United States.

Persons interested in the MLK Program should apply through the Undergraduate Admissions Office.

STUDENT FINANCIAL AID AND SCHOLARSHIPS

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

Several sources of loans are available at Western, including long term loans under the National Direct Student Loan Program, the Federally Insured Student Loan Program, and the United Student Aid Funds, Inc.

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

The scholarship program at Western Michigan University is designed to reward academic excellence and to alleviate financial need. Students in all curricula may apply for scholarships ranging from $0.00 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.

The Scholarship application (Application for Financial Assistance) is an insert in each Admissions Application or may be obtained by writing the Office of Student Financial Aid and Scholarships.

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

Information concerning fellowships may be obtained from the Graduate College.

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

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

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

2. Complete a Western Michigan University Application for Financial Assistance. This application is an insert in each Admissions Application or may be obtained by writing directly to the Office of Student Financial Aid and Scholarships. Application deadline date is March 15.

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

SCHOLARSHIPS

Distinguished University Scholarships

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

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

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

General University Scholarship

BOARD OF TRUSTEES SCHOLARSHIPS — Students who have achieved a 3.2-3.49 G.P.A. are considered for awards from $100-$500 for the academic year. These awards are renewed automatically if the established guidelines are met.

COMMUNITY COLLEGE TRANSFER STUDENT SCHOLARSHIPS — Community College transfer students are considered for scholarships ranging from $100 to $700 per year. The amount of the award is based on the students financial need and grade point average.

UNIVERSITY SCHOLARSHIPS — Students who have achieved a 3.5-4.0 G.P.A. are considered for awards from $200-$700 for the academic year. These awards are renewed automatically if the established guidelines are met.

Distinguished Sponsored Scholarships

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.

ELIZABETH DURAND HEBBEN SCHOLARSHIP — This fund was initiated by Elizabeth Durand Hebben who, as a student at Western Michigan University, became aware of the many students with financial difficulties. The desire to help these students resulted in the continuing of this support through the generous contributions of Elizabeth and George Hebben. Consideration is given to junior and senior students with high academic standings and/or distinctive financial needs. The award can be renewed for more than one semester; the stipend is based on need and availability of funds. Selections will be made by the University Scholarship Committee.
THE RUSSELL H. SEIBERT FUND — This fund supports undergraduate research and teaching assistantships and undergraduate assistants to community leaders, artists or scholars. The fund also supports student research, internships, scholar-associates and other meritorious undergraduate academic endeavors. Stipends and other costs are funded. Applications and information may be obtained from the Honors College.

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

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

COLLEGE OF APPLIED SCIENCES

Agriculture

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

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

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

Engineering & Technology

AMERICAN FOUNDRYMEN'S SOCIETY SCHOLARSHIP — The Central Michigan Chapter offers two $250 scholarships per year. The Detroit Chapter offers a $400 William D. Innes Memorial Scholarship. Apply to the Industrial Engineering Department.

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

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

FOUNDRY EDUCATIONAL FOUNDATION SCHOLARSHIP — The Foundry Educational Foundation offers ten $350 scholarships each year to any Engineering or Technology student having a direct interest in the foundry industry. Apply directly to the Industrial Engineering Department.

H. H. HARRIS FOUNDATION — Has made funds available to students in engineering and technology with an interest in the foundry industry. As many as four awards have been made ranging from $500-$1000. Apply directly to the Industrial Engineering Department.

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

Food Distribution

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

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

Industrial Education

CLAUSING CORPORATION SCHOLARSHIP — The Clausing Corporation offers a scholarship to stimulate interest in Industrial Education. The scholarship is open to all graduating seniors in Michigan high schools who have had at least one course in Industrial Arts and who plan to enter the Industrial Education curriculum. The award is for $300 the first year and renewable for an additional three years for a total of $1200.

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

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

Military Science

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

Occupational Therapy

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

MICHIGAN OCCUPATIONAL THERAPY ASSOCIATION — An award has been established by the Michigan Occupational Therapy Association for the purpose of aiding worthy students in occupational therapy. Applicants must exhibit scholarship, show a definite need, be Michigan residents and be juniors or seniors majoring in occupational therapy. Amount of each award is $150 annually. Apply directly to the Department of Occupational Therapy.

Paper Science and Engineering

Up to 70 scholarships ranging in size from $210-$875 a semester are available to students majoring in the Paper Science and Engineering and Environmental curricula. The average grant is about $400 per semester, renewable for eight semesters. The scholarship program is supported through the Paper Technology Foundation, Inc., and individuals, and groups, as listed below.

Beginning students interested in physical science, engineering, and/or environmental 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 Foundation 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.

Conditions for renewal of the scholarships include the maintenance of a 2.75 cumulative point-hour ratio and enrollment in one of the curricula of the Department of Paper Science and Engineering.

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

Members of the Paper Technology Foundation

Albany International Corporation
Allied Paper Incorporated
Alton Box Board Company
American Can Company R & D
American Cyanamid Company
Anglo-American Clays Corporation
Appleton Papers, Inc.
Appleton Wire Works Corporation
Asten-Hill Manufacturing Company
The Bauer Brothers Company
Beloit Corporation
Benlo Chemicals
Bergstrom Foundation
The Black Clawson Company
Blandin Paper Company
Boise Cascade Corporation
Borden Chemical Company
Boxboard Research Development Association (BRDA)
Brown Company
Buckman Laboratories, Inc.
Burgess Cellulose Foundation
Named Scholarship Fund
CPC International, Inc.
The Louis Calder Foundation
Mae Munter Calligan Scholarship Fund
Olin W. Callighan Scholarship Fund
(in memoriam)
Cameron Machine, Midland-Ross Corporation
Cargill, Incorporated
Celanese Coatings & Specialties Company
Stein, Hall Products
Champion Papers
Ciba-Geigy Corporation
Clark and Vicario Corporation
Consolidated’s Civic Foundation, Inc.
Container Corporation of America
Bert Cooper
Crown Zellerbach Corporation
Cyprus Industrial Minerals Company
Diamond International Corporation
Diamond Shamrock Chemical Company, Nopco Chemical Division
Digital Equipment Corporation
Domtar Pulp and Paper, Inc.
The Dow Chemical Company
The Draper Brothers Company
Theodore W. Dunn-George C. Dunn Memorial Scholarship Fund
Eastman Kodak Company
Engelhard Minerals and Chemicals Corporation
Federal Paper Board Company, Inc.
Fox River Paper Company
Freeport Minerals Company
French Paper Company
General Mills Chemical, Inc.
Georgia Kaolin Company
Georgia-Pacific Corporation
P. H. Glatfelter Company
Philip H. Glatfelter Scholarship Fund
Gottesman-Central National Organization
Grain Processing Corporation
Hammermill Paper Company
Albert S. Harman Scholarship Fund
Hercules Incorporated
Hoerner Waldorf Corporation
Hooker Chemical Corporation
J. M. Huber Corporation
Kamyk Corporation
ITT Rayonier, Inc.
Improved Machinery, Inc.
Industrial Nucleonics Corporation
International Paper Company Foundation
Ireon, Inc.
The Johnson Corporation
Kamyk Incorporated
Knox Woolen Company
The Lindsey Wire Weaving Company
Chas. T. Main, Inc.
The Mead Corporation Foundation
Measurex Corporation
Menasha Corporation Foundation
Michigan Carton Company Scholarship Fund
Monsanto Company
Morden Machines Company
Nalco Chemical Company
The NL Industries Foundation, Inc.
The NSC Foundation, Inc.
Nekoosa-Edwards Paper Company, Inc.
Nicolet Paper Company
The Orr Felt Company
Owens-Illinois, Inc.
Oxford Paper Company
Packaging Corporation of America
PIMA-Northwestern Division
Potlatch Forest, Inc.
Raybestos-Manhattan, Inc.
Rohm and Haas Company
Rust Engineering
St. Regis Paper Company
Sandoz Foundation, Inc.
Scapa Dryers, Inc.
Scott Paper Company Foundation
Simpson Lee Paper Company
Sonoco Paper Company
Frederick W. Sutherland Scholarship Fund
W. A. Kirkpatrick
Stowe-Woodward Company
TAPPI-Kalamazoo Valley Section
Thiele Kaolin Company
Union Camp Corporation
Vicksburg Foundation (Normal Bardeen Scholarship)
S. D. Warren Company, Div. Scott Paper Company
Westvaco Foundation
Weyerhaeuser Company Foundation

Petroleum Distribution

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

CENTRAL MICHIGAN OILMEN’S CLUB — A grant for student fees and books up to a maximum of $500 per year. Available on a one year basis. Open to high school graduates and community college students interested in petroleum from Clinton, Eaton, Ingham and Jackson counties. Apply directly to the Department of Distributive Education.

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

HAROLD WRIGHT SCHOLARSHIP AWARD — A grant up to a maximum of $600 per year is available on a one year basis. Open to high school graduates and community college students from Wayne, Oakland, and Macomb counties with preference given to sons and daughters of oil families and oil company employees.

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

Printing Management

NORTHEASTERN PRINTERS, INC. — An award of $300 per year, to be divided equally between the Fall and Winter semesters, is available to students enrolled in Printing Management at W.M.U. who have completed at least one semester of courses and have earned a 2.5 GPA overall and a 3.0 GPA in graphic arts courses. The applicants must have been residents of Michigan for at least six months prior to the date of admission. This award is renewable if the recipient maintains a 2.5 GPA overall and a 3.0 GPA in graphic arts courses. Apply directly to Printing Management, Department of Industrial Education.

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

Transportation Technology

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

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

Medical Technology

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

HACKLEY HOSPITAL AUXILIARY — The Auxiliary of Hackley Hospital (Muskegon) offers a scholarship in medical technology to cover tuition at Western Michigan University for the junior college year and the senior intern year. The award is based upon need and academic merit with preference given to students intending to intern at Hackley Hospital. Apply to Director, Medical Technology Curriculum, College of Arts and Sciences.
Modern & Classical Languages

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

Political Science

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

Physics

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

COLLEGE OF EDUCATION

BEULAH AND HAROLD McKEE SCHOLARSHIP AWARD FOR EDUCATION — This scholarship is made possible through the generous support of Beulah and Harold McKee, graduates of Western Michigan University. The $500 annual scholarship award, to be divided equally between fall and winter semesters, is designed for graduates of Kalamazoo County high schools: Norrix, Central, Hackett, Christian, Comstock, Parchment, Portage Central, and Portage Northern. Primary consideration will be given to Parchment High School graduates. Applicants must be enrolled in a program with an early childhood emphasis. A minimal overall GPA of 3.0 is required. Scholarship awards may be renewed based upon performance and recommendation of committee. Contact Dr. Sara Swickard, Teacher Education Department.

COLLEGE OF FINE ARTS

Music

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

AREA SCHOLARSHIP — Area Scholarships are awarded to those students who academically distinguish themselves in their particular major (theory, performance, musicology, education, etc.). These scholarships carry a stipend of $150 per academic year. The student must be a full-time major and must carry an overall grade-point-average of 3.0

DEPARTMENT CHAIRMAN AWARD — Department Chairman Awards are presented to new students (freshmen or transfer) who demonstrate outstanding promise as music majors for their first year of study in the Department. The awards are made in the amount of $200 ($100 per semester) and are normally held in conjunction with an Area or Applied Music Scholarship.

NANCY ELLIS MEMORIAL SCHOLARSHIP — The Nancy Ellis Memorial Scholarship is awarded each year to a music therapy student who has a particularly distinguished academic record. This scholarship carries a stipend of $150 per academic year. The recipient must be a full-time music therapy major and must carry an overall grade-point-average of 3.0.
ENSEMBLE GRANT — Ensemble Grants insure the high quality of Western's bands, choirs and orchestras, and are based upon the contribution of the individual performer to the ensemble. The grants carry a stipend of $150 per academic year. The student must be enrolled in a major ensemble, must be a full-time student and maintain a minimum graduating grade-point-average.

HARPER MAYBEE SCHOLARSHIP — The Harper Maybee Scholarships recognize students in their final year of music study. The awards are made in the amount of $400 ($200 per semester) to outstanding senior music majors who carry a minimum overall grade-point-average of 3.0, and who demonstrate major evidence of accomplishment in their chosen field of music concentration. Funds for these scholarships, which honor the first chairman of WMU’s Department of Music, are contributed by music alumni and friends.

HONORS STRING QUARTET SCHOLARSHIP — Honors String Quartet Scholarships are made possible by grants from the Kalamazoo Symphony Orchestra and Western Michigan University. These awards carry a stipend of $1000 to $1200 per year, depending upon the Kalamazoo Symphony schedule. The awards are available to violin, viola and cello students entering the University as freshmen, transfer, or graduate students. Recipients must be full-time music majors, perform in the Kalamazoo Symphony, the University Symphony and an Honors String Quartet. They must carry an overall grade-point-average of 2.75.

THEODORE PRESSER FOUNDATION SCHOLARSHIP — The Theodore Presser Foundation awards $400 ($200 per semester) to a senior who is majoring in music education at Western Michigan University. The student is selected from a list of students who are nominated by the Department of Music faculty. In addition to showing outstanding promise as a public school music teacher, the recipient must carry an overall grade-point-average of 3.0.

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

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

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

MAE ARNOLD THACKER SCHOLARSHIP — The Mae Arnold Thacker Scholarships recognize students at the sophomore and junior level of music study. The awards are made in the amount of $200 ($100 per semester) to outstanding music majors who carry a minimum overall grade-point-average of 3.0, and who demonstrate major evidence of accomplishment in their music study. These scholarships are normally held in conjunction with an Area or Applied Music Scholarship or Ensemble Grant. Funds for these scholarships come from an endowment established by Nelle M. Thacker (class of 1920) to honor the memory of her mother, Maeg Arnold Thacker.

College of Business

General Scholarships Open to all Students in College of Business

AMERICAN NATIONAL BANK SCHOLARSHIP — An annual award in memory of Robert M. Rogge given to a student enrolled in any curriculum in the College of Business. The award is based upon scholarship ability and financial need. Apply directly to the College of Business.

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

I. B. McGladrey ACCOUNTANCY AWARD — An annual award given by McGladrey, Hansen, Dunn and Company C.P.A.'s in memory of I. B. McGladrey. It is open to senior students majoring in accounting who have completed or are completing their junior year. Applicants must demonstrate scholarship ability.
AL PUGNO SCHOLARSHIPS — An Endowment given in memory of Al Pugno supports these scholarships. One or more annual awards are given to students enrolled in any College of Business curriculum. The recipients must exhibit financial need. Apply directly to the College of Business.

ARNOLD E. SCHNEIDER SCHOLARSHIP AWARD — The Gamma Tau Chapter of Alpha Kappa Psi awards twice annually a Pledge Scholarship to the individual who during the semester in which he is a pledge attains the highest grade point average of any pledge. The chapter also awards twice annually an Active Member Scholarship. This scholarship is awarded to the individual member who has accumulated the highest grade point average for his last two years of work at Western Michigan University. Apply directly to Gamma Tau Chapter of Alpha Kappa Psi.

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.

DOREN, MAYHEW, GROB AND McNAMARA SCHOLARSHIP — An annual award to a senior majoring in accounting. Contact the Department of Accountancy, College of Business.

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

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

Business Education and Administrative Services

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

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

General Business

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.

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

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

**DOW MARKETING SCHOLARSHIPS** — Three scholarships in the amount of $500 each are awarded during the Winter semester for the following school year to declared marketing majors of junior class standing (56-87 hours) who are carrying a minimum of 12 semester hours and whose cumulative grade point averages are at least 2.5. Also considered are work experience, participation in University and community activities, and faculty recommendations. Awards are available in amounts of $250 per person during registration for the Fall semester and again during registration for the Winter semester, provided the minimum grade point average of 2.5 and course load of 12 semester hours are maintained. Application forms can be obtained from and should be turned in to the Marketing Department Secretary, 224 North Hall, East Campus, by February 15.

**INTER-COLLEGIATE ATHLETICS**

Physical Education

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

**GRANTS**

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

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

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

**UNION OIL GRANTS-IN-AID PROGRAM** — Two grants for two years each to sons and daughters of dealers, jobbers or employees who are high school graduates and interested in careers in petroleum. Maximum grant amounts are $500 per year. For information, contact the Chairman, Department of Distribution Education.

**STUDENT LOANS**

**LONG TERM LOANS**

**National Direct Student Loan Fund**

Through this program, formerly the National Defense Student Loan, loans are available to students who have a demonstrated financial need. Full-time undergraduates may borrow up to but may not exceed $2,500 in the first two years in college, and not exceed $5,000 as undergraduates. A graduate student may borrow up to $10,000 including loans received as an undergraduate. The actual amount borrowed may not exceed the student's demonstrated need. The interest rate of 3% and repayments start nine months after leaving college. The minimum monthly repayment is $30. Part or all of the loan is forgiven for those teaching in specified areas; under stated provisions partial cancellation is also provided for military service. Repayment may be deferred up to three years while in service in the Armed Forces, or as a volunteer in the Peace Corps or VISTA. To be considered for this program a student must submit a Parents' Confidential Statement to the appropriate address. A WMU Application for Financial Assistance must also be completed and sent to the WMU Office of Student Financial Aid and Scholarships by March 15 for Fall aid. This Application is an insert in each Admissions Application or may be obtained from the Office of Student Financial Aid and Scholarships.
Federally Insured Student Loan Program
(Guaranteed Student Loan)

The federal government guarantees loans made by private lending institutions to undergraduate and graduates up to $2,500 a year. A maximum of $10,000 may be borrowed including both undergraduate and graduate loans. These loans bear a 7% simple interest rate which is the obligation of the student borrower; however, any borrower with an adjusted family income under $15,000 is eligible for federal interest benefits during the academic period of the loan and for a nine month grace period beginning at the time the student is no longer at least a half-time student. If the adjusted family income is $15,000 or more the student must pay the interest unless a financial need analysis (conducted by the school aid officer) shows need for a loan. Applications for this program must be acquired from a student's local lending institution, (Bank, Credit Union, or Savings and Loan Association). The names of participating lending institutions can be obtained from your local high school principal or counselor or (for Michigan residents only) at WMU’s Office of Student Financial Aid and Scholarships.

UNITED STUDENT AID FUND PROGRAM

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

SHORT TERM LOANS

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

A.A.U.W. GRADUATE SOCIAL WORK Fund
A.A.U.W. NURSERY EDUCATION Loan Fund
ALPHA BETA EPSILON, Xi CHAPTER, Loan Fund
ALUMNI Short-Term Loan Fund
AMERICAN BUSINESS CLUB Loan Fund
A. ROBERT ANDERSON MEMORIAL Loan Fund
ASSOCIATED WOMEN STUDENTS Loan Fund
AUSCO Loan Fund
FANNIE BALLOU MEMORIAL Fund
AMELIA BISCOMB MEMORIAL Loan Fund
WILLIAM R. AND EMMA WALES BROWN Student Loan Fund
ERNEST BURNHAM RURAL Loan Fund
CHAPMAN Student Loan Fund
COLLEGE OF APPLIED SCIENCES Loan Fund
DOROTHY DALTON Loan Fund
DELTA KAPPA GAMMA ALPHA PSI Loan Fund
DELTA SIGMA THETA Loan Fund
VLADA AND IRENE DIMAC Loan Fund
DISTRIBUTIVE EDUCATION Loan Fund
THE GORDON AND FERNE ELFERDINK Loan Fund
MICHAEL FINLEY MEMORIAL Loan Fund
FOREIGN STUDENT AID Loan Fund
JAMES GARDNER MEMORIAL Loan Fund
HARRIS-BRIGHAM Loan Fund
LEROY H. HARVEY MEMORIAL Loan Fund
EUNICE E. HERALD HOME ECONOMICS Loan Fund
DELDEE M. HERMAN FORENSIC Loan Fund
JOHN C. HOEKE Loan Fund
INTER-FRATERNITY COUNCIL Loan Fund
FREBURN W. JAMES Loan Fund
JOHN JENKINS MEMORIAL Loan Fund
WALTER LARRY JENKINS MEMORIAL Fund
KALAMAZOO AREA CHAPTER MAEDC Loan Fund
KALAMAZOO LADIES' LIBRARY ASS'N Loan Fund
MIGRANT STUDENT Loan Fund
KALAMAZOO MOTOR FREIGHT Loan Fund
JEROME E. J. KEANE Loan Fund
KIWANIS EDUCATIONAL AID Fund
THE DR. RADFORD KUYKENDALL MEMORIAL 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 CHARLES H. MAHER Loan Fund
THE R. C. MAHON FOUNDATION Loan Fund
MILDRED MALONEY MEMORIAL Loan Fund
MATHEMATICS FACULTY MEMORIAL Loan Fund
WILLIAM MC CRACKEN Loan Fund IN CHEMISTRY
MEXICAN-AMERICAN Loan Fund
MICHIGAN BROADCASTING Loan Fund
MICHIGAN INDIAN STUDENT Loan Fund
FREDERICK W. MIHOLICH MEMORIAL Loan Fund
FREDERICK W. MIHOLICH MEMORIAL Fund For SPECIAL EDUCATION
MUSKEGON COUNTY RETIRED TEACHERS ASSOCIATION Loan Fund
CHARLES S. NICHOLS MEMORIAL Loan Fund
OCCUPATIONAL THERAPY Fund
OMNIBUS Loan Fund
DR. GERALD OSBORN MEMORIAL Loan Fund
PANHELLENIC (GRAND RAPIDS) Loan Fund
PANHELLENIC (Detroit) Loan Fund
PANHELLENIC WMU COUNCIL Loan Fund
TRUMAN A. PASCOE MEMORIAL Fund
RAY C. PELLETT MEMORIAL Loan Fund
PIMA (MICHIGAN DIVISION) Loan Fund
ARCHIE S. POTTER MEMORIAL Fund
DOUGLAS V. RATCLIFFE MEMORIAL Loan Fund
HOME ECONOMICS MEMORIAL Loan Fund
NELLIE N. REID MEMORIAL Loan Fund
ROTARY Student Loan
KATHERINE SHUVER Loan Fund
SIGMA PHI OMEGA BOB HAYES MEMORIAL Fund
SIGMA TAU GAMMA MEMORIAL Loan Fund
J. TOWNER SMITH Loan Fund
THE R. FRANKLIN SMITH MEMORIAL Loan Fund
SOUTHWESTERN STATE EMPLOYEES' CREDIT UNION Loan Fund
MARION R. SPEAR OCCUPATIONAL THERAPY Fund
GEORGE SPRAU Loan Fund
KENNETH H. SQUIRES MEMORIAL Loan Fund
MR. AND MRS. J. FRED STALEY Fund
STATE D.A.R. SCHOLARSHIP Loan Fund
HELEN STATLER Fund
STONE D.A.R. Student Loan Fund
RON STRAWSER MEMORIAL Loan Fund
STUDENT Loan Fund
MARION TAMIN MEMORIAL FRENCH Loan Fund
TAPPI (KALAMAZOO VALLEY SECTION) Loan Fund
C. N. VAN DEVENTER Loan Fund
EDUCATIONAL OPPORTUNITY GRANT PROGRAMS

BASIC PROGRAM

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

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

SUPPLEMENTAL PROGRAM

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

To be considered for this program a student must submit a Parents' Confidential Statement to the appropriate address. A WMU Application for Financial Assistance must also be completed and sent to the WMU Office of Student Financial Aid and Scholarships by March 15 for Fall aid. This Application is an insert in each Admissions Application or may be obtained from the Office of Student Financial Aid and Scholarships. In addition, a student must submit to this office a photostatic copy of his/her family's last income tax statement. (Form 1040 or 1040A)

THE COLLEGE WORK-STUDY PROGRAM
(SEE STUDENT EMPLOYMENT)

LAW ENFORCEMENT EDUCATION PROGRAM

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

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

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

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

STUDENT EMPLOYMENT
THE COLLEGE WORK-STUDY PROGRAM

The College Work-Study Program is a cooperative program between the University and the Federal Government. Its purpose is to promote the employment in institutions of higher education and non-profit agencies for students, undergraduates, and graduates, who need such earnings to attend or remain in college. Priority must be given to students with the greatest financial need. Earnings under this program will not meet all of a student's educational expenses. It is anticipated that a student will need other financial aid such as a loan, a scholarship (or a grant-in-aid), and summer earnings to get through a year of college. To be considered for this program a student must submit a Parents' Confidential Statement to the appropriate address. A WMU Application for Financial Assistance must also be completed and sent to the WMU Office of Student Financial Aid and Scholarships by March 15 for Fall aid. This Application is an insert in each Admissions Application or may be obtained from the Office of Student Financial Aid and Scholarships.

OFF-CAMPUS EMPLOYMENT

Students in good health and with reasonable ambition can carry an average academic load and work from ten to twenty hours a week. Students may find work through numerous local employers in and around the City of Kalamazoo. Students looking for work can receive assistance through the Student Employment Referral Service in the Office of Student Financial Aid and Scholarships. The Student Employment Referral Service actively recruits employment opportunities for students within the Kalamazoo area. When arriving on campus, students seeking employment are encouraged to contact this office.

ON-CAMPUS EMPLOYMENT

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

AWARDS

Departmental

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

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

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

BUSINESS — Gamma Tau chapter, Alpha Kappa Psi, professional fraternity in commerce, awards annually a Scholarship Key to the senior student pursuing a degree in the College of Business, who has attained the highest scholastic average for two 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.

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

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

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

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

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

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

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

MILITARY SCIENCE — The University President's Award is presented annually to the Cadet Corps Commander. Academic and Military Achievement Awards are presented to outstanding cadets in each class year group. The Outstanding Summer Camp Award is presented to the Western Michigan University cadet achieving the highest score at the annual Advanced ROTC Summer Camp.

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

PAPER SCIENCE AND ENGINEERING — Kalamazoo Valley Section of TAPPI offers a Senior Thesis Award each year in the amounts of $100, $60, and $40.

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

PHYSICS — The Charles J. Wilcox Memorial Award, made possible by family and friends of a physics graduate student, is given annually to one or two outstanding graduating seniors majoring in physics. Also, copies of a Handbook of Chemistry and Physics are awarded annually to the best students completing the first course in calculus-physics (210, 211, 212).

POLITICAL SCIENCE — The D. C. Shilling Awards were established in honor of a distinguished scholar and teacher who was on the faculty of Western Michigan University for thirty years, and Head of the Political Science Department for seven years. These honors, which also include modest financial awards, are given to students who have demonstrated academic excellence in Political Science. The D. C. Shilling Senior Award is given to a graduating Political Science major, and the D. C. Shilling Junior Award is given to a Political Science major at the end of the junior year.

Organizational

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

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

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

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

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

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

The Academic Records Office on the third floor of the Administration Building certifies veterans under the G.I. Bill and its extensions.

The Veterans Administration maintains an office on campus at 843 Steers Avenue. The telephone number is 383-8151. The areas of assistance include, but are not limited to: veterans educational benefits, vocational rehabilitation benefits, flight training benefits and tutorial assistance. Veterans may contact this office to initiate G.I. benefits. If difficulties or problems arise in receiving benefits, the veteran is strongly advised to contact this office.

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

ALUMNI AFFAIRS AND DEVELOPMENT

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

ALUMNI

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

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

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

A 19 member Board of Directors serves as the governing body of the Alumni Association. This board conducts the business of the Association and is responsible for the promotion of Western Michigan University. The Director of Alumni Relations is the executive secretary for the Board.

DEVELOPMENT

The Development Office seeks to raise private support for academic programs, building projects, loans and scholarships. This support is received from alumni, parents, friends, business and industry, and foundations. Presently the three major areas of Development are: the Annual Fund, which, through its direct mail program and personal solicitation, seeks to enlist annual support; Planned Giving Services, which provides consultation on estate and tax planning, including wills, bequests, charitable trusts, gifts of insurance, securities and other properties; Capital campaigns, which will be conducted by the University to raise major financial support for buildings and program projects. The contributions received through these efforts help to insure financial support for students and the resources essential to continued high quality of education at the University.

ATHLETICS

INTERCOLLEGIATE

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

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

Western Michigan University is a member of the "Association for Intercollegiate Athletics for Women", the "Mid-West Association of Intercollegiate Athletics for Women" and the "State of Michigan Athletic Association for Women". These organizations set the standards and policies governing athletic competition for women and sponsor the state, regional and national tournaments.

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

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

**INTRAMURAL**

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

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

**AUDIO SERVICES**

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

**AUDIOVISUAL CENTER**

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

**FORENSICS**

**INTERCOLLEGIATE DEBATE**

Debate began at Western on an informal basis in 1916. It has been an official University-sponsored activity since 1922. Participants engage in intercollegiate competition at regional, national, and invitational tournaments. They participate in international debates with visiting foreign debaters. And, they make public service appearances before local audiences.

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

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

Persons wishing further information should contact Professor Howard J. Dooley, Director of Forensics, Humanities Area, College of General Studies (383-3838).
SPEECH AND HEARING CLINIC

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

THEATRE

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

EDUCATIONAL RESOURCES CENTER

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

UNIVERSITY LIBRARIES

The University Libraries consist of the Dwight B. Waldo (Main) Library, the Business Library, the Music Library, the Physical Sciences Library, and the Educational Resources Center Library. The collection numbers over 1,295,000 items, including books, bound periodicals, music scores, recordings, maps, documents and materials in microform. Over 12,000 periodical and serial titles and nearly 80 newspaper titles are currently received.

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

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

A microform collection of over 275,000 contains such items as the Human Relations Area File, the American Periodical Series, Early American Newspapers of the 18th and 19th centuries, the U.S. National Archives, Early English Books printed in Great Britain from 1475-1700, and ERIC documents (documents in educational research published by the Educational Resources Information Center).

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

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

2. Library holdings on South Asia is another area of special strength. Together with the Kercher African collection it helps support the University's strong commitment to area studies.
3. Another area of collection strength is the history, religion, philosophy and culture of the medieval period — holdings which help support the programs of the University's Medieval Institute.

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

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

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

7. The Map Library, a unit of Reference Services, acquired its 100,000th map during the 1972/73 fiscal year, making it the second largest academic library map collection in the State of Michigan and the third largest of all map libraries in the State. The present collection of 145,000 items includes Army and U.S. Geological Survey maps, some antique maps of special historical interest and various domestic and foreign maps which are cataloged and readily available for use. In addition to the maps, the Map Library also possesses over 900 atlases.

The Business Library, located in North Hall has a collection of some 36,000 books supplemented by special microform collections, annual reports from businesses and industries, and current subscriptions to 500 periodical and newspaper titles.

The Music Library is on the second floor of Maybee Music Hall. In addition to some 19,500 books and scores and extensive holdings in music periodicals, this branch contains a collection of 10,000 phonodiscs and tapes, and extensive listening facilities.

The Physical Sciences Library contains some 43,000 volumes in the fields of Mathematics, Astronomy, Physics and Geology, and has subscriptions to 600 periodical titles. This branch is located on the third floor of Rood Hall.

The Educational Resources Center Library in Sangren Hall comprises some 208,000 bibliographic items and receives 670 periodical titles. The Center, a cooperative venture between the University Libraries and the College of Education, combines the best facilities and practices of library and audio-visual services into a single center for the improvement of instruction and learning. Holdings in all of the University Libraries are recorded in the union card catalog in the Main (Waldo) Library; each branch maintains a special card catalog of its own holdings.

Reference collections are maintained throughout the University Libraries. At the general Reference and Information Desk in Waldo Library help is provided in using both the union card catalog and a large collection of indexes, bibliographies, handbooks and other reference tools which provide information both directly and through multiple approaches to the contents of books, magazines, reports, etc. Personal reference service is also provided at other points in Waldo Library and at each of the branch libraries.

In addition, the reference staff offers a two credit hour course, Library Resources, General Studies 241. The course is designed to introduce the student to the use of our library system, and especially to the bibliographic tools and methods necessary to find information in the various subject fields.

**MOTION PICTURE SERVICES**

Motion Picture Services produces films for educational purposes at Western. In 1972/73 Motion Picture Services received international recognition in the form of several awards for its film "Return". Facilities are also used in the training of students interested in motion picture production.

**MOTOR VEHICLES**

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

The Multiple Audio Distribution System (MAD) offers eleven channels of supplementary audio instructional material created by WMU faculty expressly for our students. Programs run twenty-seven minutes and are repeated every half-hour, 9 a.m. to midnight, seven days a week.

MAD programs are carried by cable to over 350 listening stations on campus including virtually all dormitories. Students use headphones to listen to programs. Headphones are available free for each semester from the A-V room, 2420 Dunbar Hall. A free yearly program guide may be obtained here, or from Audio Services in Hillside Apartments.

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, University Chorale, Collegiate Singers, Women's Chorus, Men's Glee Club, Varsity Vagabonds, Campus Choir, and Opera Workshop. The University also offers opportunities for participation in small ensemble groups for voices, strings, woodwinds, brass, and percussion, including Jazz Lab Band.

RADIO

WMUK is the FM voice of Western Michigan University broadcasting at 102.1 on the dial with 50,000 watts of stereo power.

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

WMUK began broadcasting in 1951, with a power of 400 watts. In 1954, a Kellogg Foundation grant made possible a power increase to 39,000 watts. And in 1973, through a federal grant, WMUK increased its effective radiated power to 50,000 watts and moved its transmission facilities off campus. WMUK now serves an area 80 miles in radius, which includes most of the southwestern quarter of the state.

WMUK is a charter member affiliate of NPR, the National Public Radio interconnected network of some 150 non-commercial radio stations across the nation.

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

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

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

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.
Buildings and Grounds

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

*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.

**R.O.T.C.**

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

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

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

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

**TELEVISION**

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

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

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

**BUILDINGS AND GROUNDS**

**EAST CAMPUS**

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

**PRINTING SERVICES** — University print shop and mimeographing service.

**NORTH HALL** — Offices and classrooms for General Business, Law, Marketing, Business Library, and offices of The Dean, College of Business.

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

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

SPEECH AND HEARING CENTER—The Department of Speech Pathology and Audiology.

WALWOOD UNION—Snack bar, meeting rooms, Department of Dance offices, and Division of Continuing Education.

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

WEST CAMPUS

ADMINISTRATION BUILDING—University Administration offices.

ARCADIA—Department of Public Safety.

BEHAVIORAL RESEARCH LABORATORY—Psychology Department.

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

WILLIS F. DUNBAR HALL—Classrooms for the Departments of History, Economics, Philosophy, Religion, Political Science, College of General Studies and Television studios.

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

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

HWILLSIDE EAST—Alumni Center, Aural Press and Public Administration program.

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

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

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

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

KNOLLWOOD BUILDING—University Placement and News Services.

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.

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

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

PAUL V. SANGREN HALL—College of Education; the Departments of Art, and Sociology; the Education Resources Center, and the Reading Center and Clinic.

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

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

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

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

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

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 classroom for aircraft technology and pilot training.

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

ATHLETIC FACILITIES

GARY PHYSICAL EDUCATION CENTER

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

2. Intramural Building:
   Includes a multipurpose gymnasium 120 feet by 235 feet which accommodates four basketball courts, six volleyball courts, ten badminton courts, four tennis courts, and a gymnastics area. An artificial surface area 140 feet by 160 feet is also included in this building. These two areas are used for intramural and recreational sports activities, physical education classes, and various intercollegiate athletic programs.

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

UNIVERSITY RECREATION BUILDING

1. Harry Lawson Ice Arena:
   Facilities include: a regular hockey rink, 85 feet by 200 feet; seating capacity 4,300; four one-wall handball courts; weight room; dressing rooms for women and men.

2. Ed Gabel Natatorium:
   Facilities include: swimming pool 120 feet by 50 feet; seating capacity of 400; movable bulkhead; two one-meter and one three-meter diving boards; classrooms; locker facilities; staff offices.

WALDO STADIUM

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

HYAMES FIELD

A collegiate baseball field with seating for 2,500. Immediately adjacent to Hyames Field is a second baseball diamond for baseball practice and physical education classes.
KANLEY FIELD
A running track with all-weather surface including a regular soccer field on the infield.

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

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

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

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

Samuel I. Clark, Director of Honors

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

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

THE GENERAL EDUCATION HONORS PROGRAM is an Honors College route toward fulfilling the general education requirements of the University. Freshmen enter the program when they first enter the University and are "provisional" members of the Honors College.

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

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

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

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

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

A variety of programs and activities are available to members of the Honors College. Independent study, interdepartmental majors, special Honors seminars, interuniversity enrollment at local colleges, and undergraduate internships in the community may be elected or arranged by Honors College students. The Russell H. Seibert fund, administered by the Honors College, provides modest financial support for a variety of worthy undergraduate endeavors: teaching and research assistantships, research projects and other creative activities. An Honors College curriculum is available to students who wish to take maximum advantage of the Honors College. The formal expectations of this curriculum are set forth in a brochure titled the "Honors College Curriculum as Preparation for Careers in . . ." which is available from the Honors College.

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

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

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

Many programs and opportunities administered by the Honors College are not limited to members of General Education Honors students or members of the Honors College. Inquiries concerning its various programs are welcome from all Western Michigan University students.
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
Continuation of Honors College 120, Humanities I.

Honors College 202 Social Science I
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
Continuation of Social Science I.

Honors College 208 Physical Properties of Nature
By treating the fundamental ideas and concepts of the physical sciences as they appeared in history, this course attempts to provide the student with an understanding of the methods and the goals of present day investigations in the physical sciences.

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

Honors College 299 Independent Study
An opportunity to explore individually, under the guidance of a member of the faculty, a topic or problem in almost any area.
UPPER LEVEL HONORS COLLEGE COURSES

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

Honors College 491 Interinstitutional Enrollment Variable Credit
This course is an administrative facility enabling students to take individual courses at Kalamazoo College, Nazareth College or Kalamazoo Valley Community College. The Honors College coordinates the Interinstitutional Study Program at Western Michigan University. Admission by permission.

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

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

The above listing of Honors courses does not include all courses available to Honors College students. Each semester a variety of Honors seminars and Departmental Honors Introductory courses are offered. Many of these are applicable to General Education Honors requirements. Descriptions of Departmental Honors Courses may be found under appropriate departmental listings elsewhere in this catalog. Honors College seminars are described in Honors College material printed each semester and titled "Information on Registration".
College of Applied Sciences

W. CHESTER FITCH, Dean
DON W. NANTZ, Assistant Dean
Director of Academic Counseling
ROBERT E. BOUGHNER, Assistant Dean
Managing Director of the Institute of Technological Studies
ELMER J. BRUNE, Director of Cooperative Education
RAYMOND A. DANNENBERG, Director of Vocational Education

Departments:

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

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

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

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

UNDERGRADUATE PROGRAMS

The College of Applied Sciences offers undergraduate programs in 37 curricula and majors leading to careers in professional and technical management, engineering and engineering technology and vocational and practical education.

Careers in
PROFESSIONAL AND TECHNICAL MANAGEMENT

Agricultural Distribution
Aircraft Technology
Aviation Technology and Management
Automotive Management and Service
Dietetics
Fashion Merchandising
Flight Technology
Food Distribution
General Curriculum
Home Economics-General Degree

Home Economics in Business
Industrial Supervision
Manufacturing
Military Science
Occupational Therapy
Paper Science
Petroleum Distribution
Printing Management
Transportation Systems
Vocational-Technical Management

Careers in
ENGINEERING AND ENGINEERING TECHNOLOGY

Computer Systems Engineering
Electrical Engineering
Environmental Engineering
Industrial Engineering
Mechanical Engineering
Paper Engineering

Automotive Engineering Technology
Aviation Engineering Technology
Engineering Graphics
Industrial Design
Engineering Metallurgy

Careers in
VOCATIONAL AND PRACTICAL EDUCATION

Agriculture
Distributive Education
Home Economics Education

Industrial Education
Technical Education
Vocational-Technical Education
GRADUATE PROGRAMS

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

Specialization in
PROFESSIONAL AND TECHNICAL STUDIES

Engineering and Technology
Occupational Therapy
Operations Research

Specialization in
SCIENCE AND RESEARCH

Home Economics
Paper Science

Specialization in
TEACHING OF TECHNICAL STUDIES

Distributive Education
Home Economics
Industrial Education

RELATED ACADEMIC PROGRAMS

Cooperative Education Program
E. J. Brune, Director

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

Students enrolled in the Engineering, 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 IEGM 300, Co-op Internship. Co-ops are paid an appropriate salary by the company.

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

Foundry Program

Any student enrolled in an Engineering or Technology curriculum and interested in a career in the metal casting industry may be admitted into the Foundry Program by his or her counselor. While engaged in this special program, the student must also meet the requirements for a B.S. degree offered by the College of Applied Sciences. The Foundry Program is designed to allow the student an opportunity to elect various specific interest courses while earning a degree in any standard curriculum.
Foundry Program students must join the student chapter of the American Foundrymen's Society and register with the Foundry Educational Foundation. Upon reaching the junior year, it is recommended that all students apply for Co-op employment. This opportunity for employment is made available through the College Office of Cooperative Education in agreement with many sponsoring industries.

Students following the Foundry Program are eligible to be considered for scholarship awards made available each semester by the Foundry Educational Foundation.

Graduation Requirements for a Bachelors of Science in Engineering

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

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

Special Policy for EET and MET graduates to obtain EE and ME degrees.

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

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

GRAND RAPIDS DEGREE PROGRAMS

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

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

ACADEMIC COUNSELING PROGRAM

Academic Planning

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

Course offerings by semester for the years 1976-80 may be obtained in the college counseling office, Room 2038, Industrial and Engineering Technology Building.
Academic Counseling

Professional Registration

State professional engineering registration is of importance to some engineering graduates. In Michigan, registration eligibility requirements have been undergoing change with increasing emphasis upon degrees from ECPD accredited programs and decreasing emphasis on work-experience. At present, graduates from programs which are not accredited may apply only after some additional work-experience. Western Michigan University graduates from the Mechanical, Electrical and Industrial Engineering programs may apply for registration after one year of acceptable work-experience, and graduates from Western Michigan University's other Engineering and Engineering Technology programs may apply after three years of acceptable work-experience. Professional registration and licensing requirements in other states may vary. Students or prospective students who have any questions concerning registration are encouraged to inquire of their counselor.

General Transfer Program

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

Engineering Transfer Programs

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

SCHOLARSHIPS

Scholarships which are available specifically for students in the college are controlled by the individual departments within the College of Applied Sciences. A listing may be found in the section headed "Student Financial Aid and Scholarships".

INTERDISCIPLINARY PROGRAMS

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

The General Curriculum

Written permission of The College of Applied Sciences' Director of Academic Counseling and Admissions is required to enroll in this curriculum beyond the Freshman year.

Pre-Engineering

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

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

TOTAL 62

Specific requirements for Michigan Technological University, Michigan State University, University of Michigan, and Wayne State University are available.
Pre-Architecture

Dr. D. W. Nantz, Advisor

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

Recommended Requirements

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

TOTAL 56

General University Studies — Technical-Industrial Studies

AAS 497 General University Studies (Variable Credit) Fall, Winter, Spring, Summer

Evaluation of work experience and/or course work relevant to the area of specialty in the Technical-Scientific area studies. Prerequisite: Permission of Director of Counseling, D. W. Nantz.

MANUFACTURING

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

A Bachelor of Science degree requires an associate degree in applied science (60 s.h.) or the equivalent plus sixty hours at Western Michigan University and two hours of Physical Education.

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

PART I: LEVEL OF ACHIEVEMENT

A. GRAPHICS: ability to make and read working drawings.
B. MATERIALS AND PROCESSING: knowledge and application of two types of processes and properties of standard materials.
C. SCIENCE: principles of chemistry and physics.
D. MANUFACTURING MANAGEMENT: principles of manufacturing management, economics, accounting, human relations and communications.

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

PART II: AREA REQUIREMENTS

A. MECHANICAL — MATERIALS — PROCESSING
   1. TECHNICAL ANALYSIS: elements of calculus, statistics, proficiency in a basic computer language, engineering mechanics for analysis of static force systems, and stresses in machinery and structures: principles of electrical circuits, machines, and electronics as applied to manufacturing.
   2. AREA OF SPECIALIZATION: a selection of courses designed to meet the student's vocational choice and meet employable standards as determined by the student and the counselor.

B. ELECTRICAL — ELECTRONICS
   1. TECHNICAL ANALYSIS: elements of calculus, statistics, proficiency in a basic computer language, analysis of static force systems, and stresses in machinery and structures: principles of circuits, electronics and machines as applied to manufacturing.
   2. AREA OF SPECIALIZATION: a selection of courses designed to meet the student's vocational choice and meet employable standards as determined by the student and the counselor.
C. SUPERVISION — MANAGEMENT

1. TECHNICAL ANALYSIS: analysis and application of mathematics, statistics, and proficiency in a basic computer language.

2. AREA OF SPECIALIZATION: a selection of courses designed to meet the student's vocational choice and meet employable standards as determined by the student and the counselor.

D. OTHER AREAS

It is possible to develop other areas of specialization similar to the areas in manufacturing.

1. A 48 semester hour program of study designed to develop a higher degree of proficiency in areas outlined in parts I and II: and development of an area of specialization selected by the student. The student in conference with his counselor will select courses to meet the degree requirements.

2. GENERAL EDUCATION

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

The program requires 60 semester hours at Western Michigan University in addition to the 60 semester hours completed in an associate degree program, yielding a total of 120 semester hours required for a Bachelor of Science degree. (Two semester hours of physical education are also required and may be completed during the associate degree program or at Western Michigan University. They are in addition to the 120 semester hours required.)

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

PROFESSIONAL AND HONORARY SOCIETIES

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

INSTITUTE OF TECHNOLOGICAL STUDIES

The Institute of Technological Studies has been established to permit the College of Applied Sciences to better serve commerce and industry in Southwestern Michigan. Services are provided in the areas of industrial engineering and cost reduction, solution to technical and product problems, and in-plant training of such diverse topics as industrial supervision, engineering economy and capital budgeting. Experimental facilities are available.

On-going programs are being conducted by the Center for Depreciation Studies and the Center for Metric Education and Studies. For information, write to Professor R.E. Boughner, Managing Director of the Institute.
Lee O. Baker, Head

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

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

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

AGRICULTURE

Agriculture

Lee O. Baker, Head

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

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

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

AGRICULTURAL DISTRIBUTION

Bachelor of Science Degree

Requirements

Candidates for the degree Bachelor of Science must complete the following program: Schedule below is an example of one leading to graduation in 8 semesters.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR COURSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGR</td>
<td>110</td>
<td>Animal Industry</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>AGR</td>
<td>111</td>
<td>Animal Industry</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>AGR</td>
<td>220</td>
<td>Agronomy</td>
<td>..</td>
<td>..</td>
<td>5</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>AGR</td>
<td>320</td>
<td>Introduction to Soils</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>AGR</td>
<td>322</td>
<td>Agriculture, Marketing Finance</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>AGR</td>
<td>330</td>
<td>Farm Organization &amp; Management</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>5</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>AGR</td>
<td>Electives</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>BUSINESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY</td>
<td>201</td>
<td>Accounting Concepts and Applications or</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>ACTY</td>
<td>210</td>
<td>Principles of Accounting</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>MGMT</td>
<td>200</td>
<td>Decision Making With Statistics or</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>BUS</td>
<td>340</td>
<td>Business Law</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>RELATED COURSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>100</td>
<td>Algebra OR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>122</td>
<td>Calculus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>200</td>
<td>Principles of Sociology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>104</td>
<td>Business and Professional Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GENERAL EDUCATION — DISTRIBUTION PROGRAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 3 ..</td>
</tr>
<tr>
<td>AREA II</td>
<td>Social Science*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 .. 3</td>
</tr>
<tr>
<td>AREA III</td>
<td>Natural Science &amp; Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 .. ..</td>
</tr>
<tr>
<td></td>
<td>(4 Hrs. Math Incl. in Curr.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AREA IV</td>
<td>Non-Western World</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 .. ..</td>
</tr>
<tr>
<td>AREA V</td>
<td>Optional Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 .. 4 ..</td>
</tr>
<tr>
<td>Writing Requirement**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 .. .. ..</td>
</tr>
</tbody>
</table>

*Writing Requirement**
Course Title

Agriculture Dept. Course No. Course Title Semester Credit Hours

PHYSICAL EDUCATION

PEGN Physical Education 1 1 .. .. .. .. ..

ELECTIVES

Approved Electives*** .. 3 3 5 6 7 9 7

TOTAL FOR GRADUATION 122 Hrs. 14 15 15 16 16 16 15

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

RECOMMENDED ELECTIVES

Chemistry 101 or 102
BIO 101, 102
BIO 323 Plant Pathology
GS 112 Geological Science

BIO 542 Entomology
BIO 234 Outdoor Science
GEOG 244 Economic Geography

COURSE DESCRIPTION

100 Agriculture Science (3-0) 3 hrs. Fall, Winter

An introduction to the scientific principles and practices of food and fiber production and agriculture's role in today's society and economy. (This course may be taken for science credit for general education requirements.)

110 Animal Industry (3-0) 3 hrs. Fall

Fundamental problems and essential general concepts of livestock production and marketing in the United States. An introduction to types, breeds, selection, feeding and management of dairy cattle, beef cattle, and swine.

111 Animal Industry (3-0) 3 hrs. Winter

A continuation of 110 with sheep, horses, and poultry being considered.

120 Practical Vegetable Gardening (2-0) 2 hrs. Spring

The basic concepts and fundamental practices of vegetable growing.

220 Agronomy (Crop Production) (6-0) 5 hrs. Fall

The principles of crop production and management, breeding, weed control and crop quality are considered as they relate to field crops.

222 Principles of Horticulture (2-2) 4 hrs. Fall, Winter

Basic principles of modern horticulture. Study includes: fruits, vegetables, flowers, ornamental trees, turf management, plant propagation and nursery culture. Greenhouse experience also.

310 Feeding and Animal Nutrition (4-0) 4 hrs. Fall

The science of feeding, caring for, and managing livestock, including the formulation of rations for beef, dairy, sheep, swine, poultry and horses.

320 Introduction to Soils (3-1) 4 hrs. Fall, Winter

The origin and development of soils as natural entities with certain inherent characteristics. Basic relationships between soils and plants and the principles involved in the practical use and conservation of the soil.
322 Landscape Gardening (3-0) 3 hrs. Winter or Spring
Care and planting of trees, flowers, and shrubs, lawn establishment and care, identification and selection of planting materials, and basic landscape design.

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

324 Land Use and Soil Conservation (3-0) 3 hrs. Winter
A study of the utilization of land by 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 (5-0) 5 hrs. Winter
The farm as a business and efficient use of all resources. Basic principles of production, management, farm accounting and related fields of agriculture science and the various organizations serving agriculture.

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

400 Independent Study 1-6 hrs. Fall, Winter, Spring
Qualified students may pursue a specific area of study on an individual basis depending upon background and need.

520 Soil Science (2-0) 2 hrs. Winter
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

Raymond A. Dannenberg, Chairman
William O. Haynes
Jack T. Humbert
Richard Neschich
Lawrence A. Williams

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

COOPERATIVE EDUCATION PROGRAMS

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

CONSULTATIVE SERVICES

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

DISTRIBUTIVE EDUCATION CURRICULUM

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

FOOD DISTRIBUTION

(DISTRIBUTIVE EDUCATION CURRICULUM)

Bachelor of Science program

Requirements

Candidates for the Bachelor of Science degree must complete the following program. Schedule below is an example of one leading to graduation in 11 semesters and sessions starting in the fall. Transfer students must consult program advisors for alternate programs.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>109</td>
<td>Industry Survey</td>
<td>123456789</td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>130</td>
<td>FD Industry</td>
<td>123456789</td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>132</td>
<td>FD Merchandising</td>
<td>123456789</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
College of Applied Sciences

### RELATED BUSINESS AND ECONOMICS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY</td>
<td>210</td>
<td>Principles of Accounting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BED</td>
<td>242</td>
<td>Business Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BUS</td>
<td>340</td>
<td>Legal Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MKTG</td>
<td>370</td>
<td>Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>300</td>
<td>Fundamentals of Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Econ (Micro)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Econ (Macro)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### CURRICULUM REQUIREMENTS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr Practices</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr Practices</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>D ED</td>
<td>302</td>
<td>Coordinated Distr Practices</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>D ED</td>
<td>302</td>
<td>Coordinated Distr Practices</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>D ED</td>
<td>500</td>
<td>Seminar In Distr Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>H EC</td>
<td>116</td>
<td>Family Foods</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION—DISTRIBUTION PROGRAM*

| AREA I | Humanities, 6 Cr. Hr. Min | 3 | 3 |
| AREA II | Social Science, 6 Cr. Hr. Min. |   |   |
|         | (6 Hr. Included Above)     |   |   |
| AREA III | Nat. Sci. & Math, 6 Cr. Hr. Min. | 3 | 3 | 3 |
| AREA IV  | Non-West World, 3 Cr. Hr. Min. | 3 | 4 | 4 |
| AREA V   | Optional Electives, No Min.  | 3 | 3 | 3 |

### PHYSICAL EDUCATION

| AREA | 1 | 1 |

### APPROVED ELECTIVES

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>122 Hrs.</th>
<th>15 16</th>
<th>3 16</th>
<th>3 15 3 16 3 15 17</th>
</tr>
</thead>
</table>

### PETROLEUM DISTRIBUTION

(DISTRIBUTIVE EDUCATION CURRICULUM)
Bachelor of Science program

**Requirements**

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>109</td>
<td>Industry Survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>120</td>
<td>Introduction to Petroleum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>140</td>
<td>Issues in Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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

Course Schedule

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
<th>Semester 9</th>
<th>Semester 10</th>
<th>Semester 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>220</td>
<td>Properties/Appl. of Pet. Prod.</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>230</td>
<td>Service Station Supervision</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>327</td>
<td>Petroleum/Jobber Operations</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>328</td>
<td>Petroleum Distr. Finance</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>380</td>
<td>Distr/Handling Petr. Prod.</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr. Practices</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>302</td>
<td>Coordinated Distr. Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>500</td>
<td>Seminar in D.E.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

CURRICULUM REQUIREMENTS

ACTY 210 Principles of Accounting
ACTY 211 Principles of Accounting
ECON 201 Principles of Econ. (Micro)
ECON 202 Principles of Econ. (Macro)
D ED 202 Coordinated Distr. Practices

MINOR: GENERAL BUSINESS

BED 242 Business Communications
BUS 340 Legal Environment
MKTG 370 Marketing
MKTG 374 Advertising
MGMT 300 Fundamentals of Management

GENERAL EDUCATION—DISTRIBUTION PROGRAM*

AREA I Humanities, 6 Cr. Hr. Min.
AREA II Social Science, 6 Cr. Hr. Min.
AREA III Nat. Sci. & Math, 6 Cr. Hr.
AREA IV Non-West World, 3 Cr. Hr. Min.
AREA V Optional Electives, No Min.

PHYSICAL EDUCATION

ELECTIVES

Total for Graduation - 122 Hrs.

*General Education Must Include 2 Courses at 300-500 level.

DISTRIBUTIVE TEACHER EDUCATION

(DISTRIBUTIVE EDUCATION CURRICULUM)
Bachelor of Science program

Requirements

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

Course Schedule

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
<th>Semester 9</th>
<th>Semester 10</th>
<th>Semester 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>120</td>
<td>Intro to Petroleum Industry</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>130</td>
<td>Food Distribution Industry</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>270</td>
<td>Salesmanship</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>302</td>
<td>Coord Distr Practices*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>370</td>
<td>Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
## FOOD DISTRIBUTION — 2 YEAR

### CERTIFICATE PROGRAM

Candidates for the certificate in Food Distribution must complete the following program. Schedule below is an example of one leading to completion in 6 semesters and sessions starting in the fall.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>109</td>
<td>Industry Survey</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>130</td>
<td>FD Industry</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>132</td>
<td>FD Merchandising</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>231</td>
<td>FD Supervision</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>232</td>
<td>FD Operations</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr Practices</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr Practices</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H EC</td>
<td>116</td>
<td>Family Foods</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*4,000 hours of work required. Work may be obtained by supervised work program or by previous work experience.*

## FOOD DISTRIBUTION — 2 YEAR

### Requirements

Candidates for the certificate in Food Distribution must complete the following program. Schedule below is an example of one leading to completion in 6 semesters and sessions starting in the fall.
### RELATED BUSINESS AND ECONOMICS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY</td>
<td>210</td>
<td>Principles of Accounting</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BED</td>
<td>242</td>
<td>Business Communications</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics (Micro)</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Economics (Macro)</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT</td>
<td>102</td>
<td>Computer Usage</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION - DISTRIBUTION PROGRAM

<table>
<thead>
<tr>
<th>AREA</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Humanities</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>Social Science (6 Hrs Incl Above)</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>Natural Science &amp; Math</td>
<td>3</td>
</tr>
<tr>
<td>V</td>
<td>Optional Elec (3 Hrs Incl Above)</td>
<td>3</td>
</tr>
</tbody>
</table>

### PHYSICAL EDUCATION

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

### APPROVED ELECTIVES

<table>
<thead>
<tr>
<th>Total for Graduation</th>
<th>61 Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

**PETROLEUM DISTRIBUTION — 2 Yr.**

### Requirements

Candidates for the certificate in Petroleum Distribution must complete the following program. Schedule below is an example of one leading to completion in 6 semesters and sessions starting in the fall.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ED</td>
<td>109</td>
<td>Industry Survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>120</td>
<td>Introduction to Petroleum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>220</td>
<td>Properties/Appl of Petr Products</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>230</td>
<td>Service Station Supervision</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr Practices</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>202</td>
<td>Coordinated Distr Practices</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ED</td>
<td>140</td>
<td>Issues in Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RELATED BUSINESS AND ECONOMICS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY</td>
<td>210</td>
<td>Principles of Accounting</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY</td>
<td>211</td>
<td>Principles of Accounting</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BED</td>
<td>242</td>
<td>Business Communications</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics (Micro)</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Economics (Macro)</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT</td>
<td>102</td>
<td>Computer Usage</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION — DISTRIBUTION PROGRAM

<table>
<thead>
<tr>
<th>AREA</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Humanities</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>Social Science</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>Natural Science and Math</td>
<td>3</td>
</tr>
<tr>
<td>V</td>
<td>Optional Electives</td>
<td>3</td>
</tr>
<tr>
<td>V</td>
<td>Optional Electives</td>
<td>1</td>
</tr>
</tbody>
</table>

### PHYSICAL EDUCATION

<table>
<thead>
<tr>
<th>ELECTIVES</th>
<th>Total for Graduation — 61 Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
</tr>
</tbody>
</table>

Certificate Program
109 Industry Survey (3-0)  
Inspection trips are made to representative businesses and industrial establishments to observe such functions as production, transportation, storage, research and marketing. Company representatives will lecture to the class on the phases listed. Written reports are to be made of the visits, and a fee for transportation is required from each student.

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

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

500 Seminar in Distributive Education (3-0)  
An intensive study of problems related to distribution and education for distribution. This seminar is especially recommended for seniors and graduates in the Distributive Education Department.

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

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

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

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

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

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

331 Food Distribution Managerial Processes (3-0) 3 hrs. Fall

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

332 Food Distribution Systems Control (3-0) 3 hrs. Fall, Spring

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.

496 Problems in Food Distribution (3-0) 3 hrs. Winter

An integrating course designed for advanced students using an analytical approach to solving problems of an internal nature in food distribution firms. This is a capstone course for Food Distribution majors using the case problem method. Open to seniors only.

498 Current Issues in Food Distribution (3-0) 3 hrs. Winter

A study of current issues external to the firm affecting the food distribution industry. It provides an opportunity for the study of relevant issues normally beyond the scope of regular departmental offerings. Open to seniors only.

**PETROLEUM**

120 Introduction to Petroleum Industry (3-0) 3 hrs. Fall, Winter

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

140 Issues in Oil (3-0) 3 hrs. Winter

This course is designed as a survey course to discuss and examine current issues in the oil industry. Such issues as oil shortage, depletion allowance, oil industry profits, and international oil companies will be studied.

220 Properties and Application of Petroleum Products (3-0) 3 hrs. Winter

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

230 Service Station Supervision (3-0) 3 hrs. Fall

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

327 Petroleum Distribution Finance (3-0) 3 hrs.

A course dealing with service station dealer finance counseling. An understanding of general finance of petroleum businesses, including retail outlets, jobber operations and major oil companies. Such topics as service station financing by major petroleum companies and jobbers, securing capital, interest, insurance and analysis of profit and loss statements are discussed. It also deals with principles of credit, and collections as it relates to the petroleum industry.
328 Petroleum Jobber Operations (3-0) 3 hrs. Fall
An overall study of petroleum jobber operations with special emphasis on heating oil, including degree day forecasting, delivery dispatching, credit and collection control, sales and cost analyses, employee productivity and operating expense accounting with the use of electronic processing.

380 Distribution and Handling of Petroleum Products (3-0) 3 hrs. Winter
A course covering the wholesale and retail distribution channels used by major and independent companies. The transportation and handling of petroleum products from the oil field to the retail outlet. The analysis of a sales territory and the selection of a service station site.

570 Organization and Operation of Distributive Education (2-0) 2 hrs. Fall
Deals with the organization and operation of distributive education in relation to the total educational program. It is concerned with preparatory, cooperative, and adult programs. Consideration is given to advisory committees and local, state and federal relationships.

572 Teaching Techniques in Cooperative Education (2-0) 2 hrs. Fall, Winter, Summer
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 (2-0) 2 hrs. Fall, Winter, Spring
This is a study of duties and responsibilities of the teacher-coordinator. The organization and establishment of training programs, supervision of trainees on the job, development of individual training programs, establishing working relationships between the school, business, and home; and participation in activities in the community, especially adapted to prospective coordinators.
The Electrical Engineering Department offers curricula in engineering designed primarily to prepare personnel for the practice of engineering at the professional level. The programs are unique in that they provide extensive laboratory experience requiring applications of engineering principles.

Cooperative Education

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

Academic Counseling

Students should contact the Electrical Engineering academic counselor as early as possible. The counselor is available to assist in individual program planning, recommend electives appropriate to a student's educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions and transfer credit must be approved by Departmental counselors. The academic counselor, Dr. Wilcox, is located in room 2038, Industrial and Engineering Technology Building.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this department may be found under the beginning of the Applied Sciences' section of the catalog.

Two-year Curriculum

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

ELECTRICAL ENGINEERING

Bachelor of Science in Engineering (Electrical) Degree

The Electrical Engineering curriculum is an engineering program designed to prepare students for gainful employment in the areas of electrical power, instrumentation, communication electronics, and industrial electronics. A Bachelor of Science degree requires 128 semester credit hours. An overall average of 2.00 must be obtained in EE courses for graduation. A minor may be secured upon approval of the Electrical Engineering Department's counselor and by completing fifteen to twenty semester hours of work. Minors for students enrolled in curricula in the Electrical Engineering Department may only be obtained from departmental offerings other than those in the Engineering, Engineering Technology and Transportation Technology curricula.
Bachelor of Science Degree

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>250</td>
<td>Logic Design</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>210</td>
<td>Electrical Circuits</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>220</td>
<td>Electronic Circuits</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>230</td>
<td>DC Machines and Transformers</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>310</td>
<td>Electrical Circuits Analysis</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>320</td>
<td>Electronic Devices</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>330</td>
<td>AC Machines</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>340</td>
<td>Electrical Measurements</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>360</td>
<td>Transmission Lines and Fields</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elect 12 Hours from the Following</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>EE</td>
<td>420</td>
<td>Industrial Electronics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>EE</td>
<td>440</td>
<td>Measurements &amp; Instrumentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>450</td>
<td>Digital Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>460</td>
<td>Communication Electronics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>470</td>
<td>Servomechanisms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>530</td>
<td>Electrical Power Systems</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>256</td>
<td>Statics</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>355</td>
<td>Dynamics</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>353</td>
<td>Strength of Materials</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>330</td>
<td>Thermo-Fluid Dynamics</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>IEGM</td>
<td>131</td>
<td>Engineering Drafting</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>310</td>
<td>Engineering Economics</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>122, 123</td>
<td>Calculus</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>272</td>
<td>Vector &amp; Multivariate Calculus</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>274</td>
<td>Intro-Differential Equations</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>306</td>
<td>Introductory Program-Fortran</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>101</td>
<td>OR 102 OR 103</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYSICS</td>
<td>210, 211, 212</td>
<td></td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

 Elect 5 hours from the following

| MATH | 230        | Linear Algebra                         | 4          |            |            |            |            |            |            |            |              |
| IEGM | 300        | Co-op Internship                       |            |            |            |            |            |            |            |            |              |

| IEGM | 102 or BED 142 or ENG 105 | (8 hrs. included in curriculum) | 3 | 3 |            |            |            |            |            |            |              |

| AREA I | Humanities and Fine Arts | 6 | 3 | 3 |
| AREA II | Social and Behavioral Science | 6 | 3 | 3 |
| AREA III | (8 hrs. included in Curr.) | 4 | 4 |
| AREA IV | Non-Western World Electives | 4 | 4 |
| AREA V | Writing Requirement       | 3 | 3 |

**GENERAL EDUCATION — DISTRIBUTION PROGRAM**

**ELECTIVES**

Total for Graduation — 128 Hrs.

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

Bachelor of Science in Engineering (Computer Systems) Degree

The objective of the Computer Systems Engineering curriculum is to provide students with the basic technical knowledge and skill required for the design, analysis, implementation, and modification of electronic digital systems. The emphasis in this program is on the "hardware" and programming aspects of minicomputer interfacing as applied to manufacturing processes and experimental research.

A Bachelor of Science degree requires 128 semester credit hours. An overall average of 2.00 must be obtained in EE courses for graduation.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>Basic Logic Circuits</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>210</td>
<td>Electrical Circuits</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>Electronic Circuits</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>Electrical Circuits Analysis</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>320</td>
<td>Electronic Devices -OR-</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>350</td>
<td>Digital Electronics</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>420</td>
<td>Industrial Electronics</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Digital Systems</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>451</td>
<td>Computer Interfacing</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CURRICULUM REQUIREMENTS:

IEGM 131 Engineering Drafting
CHEM 101 or 102 or 103
PHYSICS 210, 211
MATH 122, 123 Calculus
MATH 306 Introductory Programming
MATH 230 Elementary Linear Algebra
MATH 272 Vector and Multivariate Calculus
MATH 274 Intro-Differential Equations
MATH 362 Probability or MATH 360

GENERAL EDUCATION — DISTRIBUTION PROGRAM:

AREA I Humanities and Fine Arts
AREA II Social and Behavioral Science
AREA III (8 hrs. included in Curr.)
AREA IV Non-Western World Electives
AREA V Writing Requirement
(Recommended IEGM 102 or BED 142 or ENG 105)
(8 hrs. included in curriculum)

PHYSICAL EDUCATION

Approved Electives**

17 hours to be taken from the courses below.
At least 6 hours must be from Group I.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>256</td>
<td>Statics</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>330</td>
<td>Thermo-Fluid Dynamics</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>353</td>
<td>Strength of Materials</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>355</td>
<td>Dynamics</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPROVED ELECTIVES

GROUP I
College of Applied Sciences

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

**GROUP II**

**All EE Courses in the 200 through 500 level**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>2 3 4 5 6 7 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM 436</td>
<td>Computer Graphics</td>
<td></td>
</tr>
<tr>
<td>IEGM 419</td>
<td>Intro. Operations Research</td>
<td></td>
</tr>
<tr>
<td>ME 420</td>
<td>Computer Aided Manufacturing</td>
<td></td>
</tr>
<tr>
<td>PSE 590</td>
<td>Instrumentation and Process Control</td>
<td></td>
</tr>
<tr>
<td>PSE 591</td>
<td>Instrumentation and Process Control</td>
<td></td>
</tr>
<tr>
<td>MATH 360</td>
<td>Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>MATH 507</td>
<td>Numerical Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH 509</td>
<td>Data Structures</td>
<td></td>
</tr>
</tbody>
</table>

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

---

**COURSE DESCRIPTIONS**

**ELECTRICAL ENGINEERING**

**100 Fundamentals of Circuits and Electronics (2-3) 3 hrs. Fall, Winter, Spring**

Basic principles of electricity, magnetic devices and electronics. May not be used as prerequisite for other EE courses except 101. Cannot be used as credit in EE curriculum. Prerequisites: MATH 100 and high school physics.

**101 Fundamentals of Electronics and Machines (2-3) 3 hrs. Fall, Winter, Summer**

Basic principles, characteristics, and applications of semiconductor devices, AC machines and DC machines. May not be used as prerequisite for other EE courses. Cannot be used as credit in EE curriculum. Prerequisite: EE 100.

**210 Electrical Circuits (3-3) 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 123 (may be taken concurrently).

**220 Electronic Circuits (3-3) 4 hrs. Fall, Winter**

An introduction to analysis and design of electronic devices, circuits and systems. Rectification, large and small signal amplification, oscillators, switching and shaping circuits using tubes, semi-conductors and integrated circuits. Introduction to equivalent circuits. Prerequisite: EE 210.

**230 DC Machines and Transformers (3-3) 4 hrs. Winter, Spring**

Fundamentals of magnetism and magnetic circuits. Analysis and application of the following: DC machines, DC motor controls, single-phase transformers, and electric power circuit protective devices. Prerequisite: EE 210.

**250 Logic Design (2-3) 3 hrs. Fall, Summer**

Analysis and design of combinational and sequential logic systems. Prerequisite: MATH 100.

**310 Electrical Circuit Analysis (3-3) 4 hrs. Fall, Winter, Spring**

A rigorous treatment of steady state AC analysis including three-phase power, resonance, and important network theorems using a digital computer. Solutions of complete circuit response using differential equations. Prerequisites: EE 210, MATH 106 or 306, 274.
320 Electronic Devices (3-3)
Analysis, design and construction of modern electronic circuits using solid-state devices and integrated
circuits. Prerequisites: EE 220, 310 (EE 310 may be taken concurrently.)

4 hrs. Fall, Winter

330 AC Machines (3-3)
Analysis and application of three-phase transformers, alternators and induction motors. Analysis of
three-phase systems using per unit notation and single line diagrams. Analysis and applications of single-
phase induction motors. Prerequisite: EE 220, 310.

4 hrs. Fall, Winter

340 Electrical Measurements (3-3)
Measurement systems; statistical error analysis and the significance of data; theory, calibration and
application of electronic instruments used in the measurement and study of electrical signals and the
terminal characteristics of components. Prerequisite: EE 310.

4 hrs. Fall, Winter

350 Digital Circuits (3-3)
The electrical and logical aspects of digital integrated circuits and their applications. Prerequisites: EE
220, 250.

4 hrs. Winter, Spring

360 Transmission Lines and Fields (3-0)
Basic field theory and the study of transmission lines at radio frequencies and power frequencies.
Prerequisite: EE 310.

3 hrs. Fall, Winter

420 Industrial Electronics (3-3)
Analysis and design of industrial electronic systems, power sources, motor controls, timing and
sequencing circuits. Industrial applications of solid-state devices. Laboratory analysis of industrial
equipment. Prerequisite: EE 250, 320.

4 hrs. Winter, Spring

440 Measurements and Instrumentation (3-3)
Theory, calibration, and application of digital instruments used in the measurement of electrical,
magnetic, and non-electrical quantities. Design, construction and standardization of digital systems used in
measurement and control. Prerequisite: EE 340.

4 hrs. Fall, Winter

450 Digital Systems (3-3)
Introduction to minicomputer programming and interfacing. Prerequisites: EE 250, 320 or consent of
instructor.

4 hrs. Fall, Winter

451 Computer Interfacing (3-3)
Analysis of computer hardware systems and analog-digital conversion systems. Prerequisite: EE 450.

4 hrs. Fall, Winter

460 Communication Electronics (3-3)
Introduction to linear systems. Analysis of amplitude, angle and pulse modulation systems and noise
effects. Analysis and design of common communication circuits. Prerequisites: EE 320, 360.

4 hrs. Fall, Summer

470 Servomechanisms (3-3)
Analysis and synthesis of linear feedback systems by the use of laplace transforms, bode diagrams,
nyquish plots, nichols charts and root-locus plots. Computer-aided analysis. Prerequisite: EE 310 or ME
360.

4 hrs. Winter, Spring

490 Independent Research and Development
Individual research or special project in Electrical Engineering. Open only to juniors and seniors having
the approval of the faculty member under whom the student will work and the approval of the
Department Chairman. Students may register more than once, not to exceed 4 hrs.

1-4 hrs.

498 Readings in Electrical Engineering
A course in which advanced students may elect to pursue a program of readings in areas of special
interest. Prerequisite: permission of the instructor with whom the student wishes to work.

1-4 hrs.
499 Studies in Electrical Engineering

A program of independent study to provide advanced students with the opportunity to explore a topic of interest under the guidance of a faculty member. Prerequisite: Permission of the instructor with whom the student wishes to work.

510 Advanced Circuits (3-0)

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

530 Electrical Power Systems (3-0)

Engineering considerations of generating equipment, transmission and distribution systems, switch gear and industrial power distribution. Prerequisite: EE 330.

560 Electrical Fields (3-0)

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: EE 360.
Home Economics

Sue S. Coates, Chairman
Irene Bibza
Margaret Jane Brennan
Gail Havens
Beverly Holland
Alice Kavanaugh
Phylis Seabolt
Isabelle Smith
Nancy Steinhaus
Darrell Thomas
Florence Tooke
Donna Vanwestrienen

The Home Economics Department offers four-year programs in General Home Economics, Fashion Merchandising, Dietetics, Home Economics Teacher Education, and Home Economics in Business leading to a Bachelor of Science Degree. A student who has major in Home Economics and meets the requirements of the Department of Public Instruction will be qualified as a teacher of vocational home economics.

Major areas in Home Economics include:
- Fashion Merchandising
- Business — Foods, Textiles and Clothing
- Dietetics
- Teacher Education
- General

Minor areas in Home Economics include:
- Clothing/Textile
- Family Life
- General
- Occupational Minor — Food service
- Interior Design

Academic Counseling

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

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

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

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this department may be found under the beginning of the Applied Sciences' section of the catalog.
**FASHION MERCHANDISING**

*(FAS CURRICULUM)*
*(FAS MAJOR)*

Bachelor of Science Degree

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

Counselor: Ms. Alice Kavanaugh

**Requirements**

Candidates for the degree Bachelor of Science must complete the following program. (Third year students have the option of attending The Fashion Institute of America, New York, New York, for 1 or 2 semesters if a 3.0 G.P.A. has been maintained.)

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Year Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1  2  3  4</td>
<td></td>
</tr>
<tr>
<td>MAJOR COURSES — 38 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>100</td>
<td>Design Principles</td>
<td>3 .. .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>101</td>
<td>Textiles -or-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>207</td>
<td>Textile Products</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>206</td>
<td>Introduction to Fashion Merchandising</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>208</td>
<td>Non-Textile Products</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>301</td>
<td>Fashion Analysis</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>309</td>
<td>Fashion Promotion</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>352</td>
<td>Consumer Education</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>304</td>
<td>Consumer Problems of Clothing -or-</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>240</td>
<td>Housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>306</td>
<td>History of Costume</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>420</td>
<td>Display</td>
<td>.. .. .. 2</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>201</td>
<td>Clothing Construction</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>216</td>
<td>Textile Fabrication (1-3) -or-</td>
<td>3 .. .. ..</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>305</td>
<td>Experimental Clothing Techniques (3) -or-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>316</td>
<td>Dressmaker Tailoring (3) -or-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>400</td>
<td>Advanced Textiles (2) -or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>406</td>
<td>Tailoring (3) -or-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>504</td>
<td>Soc. and Psy. Aspects of Clothing (2) -or-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>375</td>
<td>Coordinated Field Experience</td>
<td>.. 2 6</td>
<td></td>
</tr>
<tr>
<td>RELATED COURSES — 24 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing Option</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT</td>
<td>102</td>
<td>Computer Usage</td>
<td>3 .. .. ..</td>
<td></td>
</tr>
<tr>
<td>ACTY</td>
<td>201</td>
<td>or 210 Accounting</td>
<td>3 .. .. ..</td>
<td></td>
</tr>
<tr>
<td>MGMT</td>
<td>300</td>
<td>Fundamentals of Management</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>374</td>
<td>Advertising</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>375</td>
<td>Principles of Retailing</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>476</td>
<td>Retail Merchandising and Promotion</td>
<td>.. 3 .. ..</td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>100</td>
<td>Economics</td>
<td>3 .. .. ..</td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>107</td>
<td>Chemistry</td>
<td>4 .. .. ..</td>
<td></td>
</tr>
</tbody>
</table>

**College of Applied Sciences**
**GENERAL EDUCATION — 22 Hrs.**
Meet General Education Requirements (13 hours included in curriculum) 6 6 10
Additional Electives 5 Hrs. (Acceptable College of Arts and Sciences and General Education courses) .. .. 2 3

**PHYSICAL EDUCATION — 2 Hrs.**
Meet Physical Education Requirements 1 1 .. ..

**ELECTIVES**
Approved Electives 27 Hrs. 7 6 6 8
Total for Graduation — 122 Hrs. 30 31 32 29

---

**HOME ECONOMICS IN BUSINESS**

*(HEC CURRICULUM)*

**CLOTHING/TEXTILE OPTION (HEB MAJOR)**

Bachelor of Science Degree

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

Counselor: Ms. Alice Kavanaugh

**Requirements**
Candidates for the degree Bachelor of Science must complete the following program:
The schedule below is an example of one leading to graduation in 4 years.

---

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Year Enrolled</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC</td>
<td>100</td>
<td>Design Principles</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>101</td>
<td>Textiles</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>201</td>
<td>Clothing Construction</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>301</td>
<td>Fashion Analysis</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>304</td>
<td>Consumer Problems of Clothing</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>306</td>
<td>History of Costume</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>350</td>
<td>Interior Design</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>352</td>
<td>Consumer Education</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>356</td>
<td>Demonstration Tech.</td>
<td>.. 3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>420</td>
<td>Display</td>
<td>.. 2</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>216</td>
<td>Textile Fabrication (1-3)</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>316</td>
<td>Dressmaker Tailoring (3)</td>
<td></td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>400</td>
<td>Advanced Textiles (2)</td>
<td></td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>406</td>
<td>Tailoring (3)</td>
<td></td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>408</td>
<td>Flat Pattern (2)</td>
<td></td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>HEC</td>
<td>504</td>
<td>Soc. and Psy. Aspects of Clothing (2)</td>
<td></td>
<td>.. 3 5 7</td>
</tr>
</tbody>
</table>

**MINOR COURSES**
Retailing or other acceptable minor 15 Hrs. 3 5 7
College of Applied Sciences

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MAJOR COURSES — 28 Hrs.</td>
<td></td>
</tr>
<tr>
<td>HEC</td>
<td>114</td>
<td>Food Preparation and Meal Planning</td>
<td>5</td>
</tr>
<tr>
<td>HEC</td>
<td>210</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>312</td>
<td>Quantity Foods</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>410</td>
<td>Diet and Disease</td>
<td>4</td>
</tr>
<tr>
<td>HEC</td>
<td>412</td>
<td>Community Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>510</td>
<td>Advanced Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>512</td>
<td>Institutional Management</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>518</td>
<td>Advanced and Experimental Foods</td>
<td>4</td>
</tr>
</tbody>
</table>

Dietetics

(DI CURRICULUM)
(DI MAJOR)
Bachelor of Science Degree

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

The dietitian after the internship is eligible for positions in hospitals as food administrator, therapeutic dietitian or teaching dietitian. A dietitian is also qualified for positions in commercial food establishments as restaurants, hotels, airlines, and industrial feeding, other areas open are school cafeterias, community nutrition positions and food service in the armed forces.

Counselor: Dr. Betty Taylor

Requirements

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

The schedule below is an example of one leading to graduation in 4 years.
### MINOR COURSES
See advisor for mixed science minor slip

### RELATED COURSES — 38 Hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>100</td>
<td></td>
<td>Algebra</td>
<td>4</td>
</tr>
<tr>
<td>IEGM</td>
<td>102</td>
<td></td>
<td>Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>102</td>
<td></td>
<td>Computer Usage</td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>170</td>
<td></td>
<td>Interpersonal Communication 1</td>
<td>3</td>
</tr>
<tr>
<td>PSY</td>
<td>190</td>
<td></td>
<td>Introduction to Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>200</td>
<td></td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>200</td>
<td></td>
<td>Decision Making with Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td></td>
<td>Principles of Economics*</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>220</td>
<td></td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>TEED</td>
<td>250</td>
<td></td>
<td>Human Development and Learning</td>
<td>4</td>
</tr>
<tr>
<td>MGMT</td>
<td>352</td>
<td></td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>ANTH</td>
<td>531</td>
<td></td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
</tbody>
</table>

### SCIENCE — 26 Hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM</td>
<td>101</td>
<td></td>
<td>101 or 102 Chemistry*</td>
<td>4</td>
</tr>
<tr>
<td>BIOL</td>
<td>101</td>
<td></td>
<td>Animal Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM</td>
<td>120</td>
<td></td>
<td>Qualitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>BIOL</td>
<td>240</td>
<td></td>
<td>Human Physiology*</td>
<td>4</td>
</tr>
<tr>
<td>CHEM</td>
<td>365</td>
<td></td>
<td>Organic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>BIOL</td>
<td>230</td>
<td></td>
<td>Microbiology and Man</td>
<td>3</td>
</tr>
<tr>
<td>CHEM</td>
<td>450</td>
<td></td>
<td>Biochemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION — 28 Hrs.

Meet General education requirements *(11 hours included in curriculum)*
Additional Electives — 4 Hrs. 
*(From College of Arts and Sciences or Acceptable General Education courses)*

### PHYSICAL EDUCATION — 2 Hrs.

Meet Physical Education requirements

Total for Graduation — 122 Hrs.

---

**HOME ECONOMICS IN BUSINESS**

(HEC CURRICULUM)
FOOD OPTION (HEB MAJOR)
Bachelor of Science Degree

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

Counselor: Dr. Betty Taylor

**Requirements**

Candidates for the Degree Bachelor of Science must complete the following program:
The schedule below is an example for one leading to graduation in 4 years.

### MAJOR COURSES — 35 Hrs.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100 — Design Principles</td>
<td>HEC</td>
<td>100</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 114 — Food Preparation and Meal Planning</td>
<td>HEC</td>
<td>114</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>HEC 210 — Nutrition</td>
<td>HEC</td>
<td>210</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
College of Applied Sciences

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Year Enrolled Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC</td>
<td>101</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>312</td>
<td>Quantity Foods</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>356</td>
<td>Demonstration Techniques</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>414</td>
<td>Home Equipment</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>510</td>
<td>Advanced Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>512</td>
<td>Institutional Management</td>
<td>3</td>
</tr>
<tr>
<td>HEC</td>
<td>518</td>
<td>Advanced and Experimental Foods</td>
<td>4</td>
</tr>
<tr>
<td>HEC</td>
<td>519</td>
<td>Experimental Foods</td>
<td>2</td>
</tr>
</tbody>
</table>

MINOR COURSES
Communication Arts and Sciences — 20 Hrs.
(Recommended)

RELATED COURSES — 15 Hrs.
CAS 104 Business and Professional Speech or Interpersonal Communication I Writing Option*
ECON 201 Economics*
CAS 240 Broadcast Communication
MGMT 352 Manpower Management

SCIENCE — 19 Hrs.
CHEM 101 General Chemistry*
BIOL 107 Biological Science*
CHEM 120 Qualitative Analysis
CHEM 365 Organic Chemistry
BIOL 230 Microbiology and Man

GENERAL EDUCATION — 21 Hrs.
Meet General Education requirements *(14 hours included in curriculum)
Additional Electives — 5 Hrs.
(from College of Arts and Sciences or acceptable General Education courses)

PHYSICAL EDUCATION — 2 Hrs.
Meet Physical Education Requirements

ELECTIVES
Approved Electives — 5 Hrs.
Total for Graduation — 122 Hrs.

*Recommended

HOME ECONOMICS GENERAL CURRICULUM

(HEC CURRICULUM)
(HEC MAJOR)
Bachelor of Science Degree

A student completing a Bachelor of Science degree in the Home Economics General Curriculum may pursue courses in several areas of Home Economics of one's particular own interest. This curriculum is intended for those not pursuing career preparation in a particular area of Home Economics.

Counselor: Ms. Florence Tooke, Ms. Isabelle Smith

Requirements
Candidates for the degree Bachelor of Science must complete the following program:
The schedule below is an example of one leading to graduation in 4 year.
**Department** | **Course No.** | **Course Title** | **Year Enrolled** | **Credit Hours**
--- | --- | --- | --- | ---
--- | --- | --- | --- | ---
**MAJOR COURSES — 36 Hrs.**
HEC | 100 | Design Principles | 3 | .. .. ..
HEC | 191 | Textiles | 3 | .. .. ..
HEC | 114 | Food Preparation and Meal Planning | 5 | .. .. ..
HEC | 120 | Transitions to Adulthood (3) or 298 | Mate Selection and Marriage (3) | 3 | .. .. ..
HEC | 201 | Clothing Construction | .. 3 | .. ..
HEC | 210 | Nutrition | .. 3 | .. ..
IEGM | 240 | Housing | .. 3 | .. ..
HEC | 254 | Human Growth and Development | .. 4 | .. ..
HEC | 304 | Consumer Problems of Clothing | .. .. 3 | ..
HEC | 350 | Interior Design (3) or 352 | Consumer Education (3) or 354 | Home Management (2) or 406 | Tailoring (3) | .. .. 3 | ..
HEC | 356 | Demonstration Techniques | .. .. 3 | ..
HEC | 414 | Home Equipment | .. .. 3 | ..
**MINOR COURSES — 15 Hrs.** |  |  | 6 3 6 | ..
**GENERAL EDUCATION — 35 Hrs.**
Meet General Education requirements (Hours included in curriculum) | 9 9 8 9 | ..
Additional Electives — 5 Hrs. (From College of Arts and Sciences or acceptable General Education courses) | 3 .. 2 .. | ..
**PHYSICAL EDUCATION — 2 Hrs.**
Meet Physical Education Requirements | 1 1 .. | ..
**ELECTIVES**
Approved Electives — 29 hrs. | 4 3 10 12 | ..
Total for Graduation — 122 hrs. | 31 32 29 30 | ..

**HOME ECONOMICS TEACHER EDUCATION**

(HEC CURRICULUM)
(HEE MAJOR)
Bachelor of Science Degree

Western Michigan University prepares students to qualify as teachers of Vocational Home Economics in Michigan under the provisions of the state plan for vocational education. Courses are planned in the department for a major in Home Economics and minor outside the curriculum or Family Life Education or Food Service Management minors in the department. Provision is also made for meeting the requirements for a vocational certificate in Michigan. Only persons holding this certificate can teach in the reimbursed consumer-homemaking programs in Michigan Public Schools.

Counselor: Dr. Margaret Jane Brennan

**Requirements**

Candidates for the degree Bachelor of Science must complete the following program:
The schedule below is an example of one leading to graduation in 4 years.
Students selecting this minor will be prepared to teach courses in the Occupational Food Service Cluster.

A. Designed primarily for those without previous teaching experience in the field of homemaking

1. Complete a group minor (24 semester hours) in Food Service composed of the following courses:

**Required courses**

1. Food Preparation and Meal Planning
2. Nutrition
3. Quantity Foods
4. Occupational Education (Food Services)

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

**OCCUPATIONAL EDUCATIONAL MINOR — FOOD SERVICE**

**24 SEMESTER HOURS**

**MAJOR COURSES — 45 Hrs.**

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC</td>
<td>100</td>
<td>Design Principles</td>
</tr>
<tr>
<td>HEC</td>
<td>101</td>
<td>Textiles</td>
</tr>
<tr>
<td>HEC</td>
<td>114</td>
<td>Food Preparation and Meal Planning</td>
</tr>
<tr>
<td>HEC</td>
<td>201</td>
<td>Clothing Construction</td>
</tr>
<tr>
<td>HEC</td>
<td>210</td>
<td>Nutrition</td>
</tr>
<tr>
<td>IEGM</td>
<td>240</td>
<td>Housing (3) or</td>
</tr>
<tr>
<td>HEC</td>
<td>254</td>
<td>Human Growth and Development</td>
</tr>
<tr>
<td>HEC</td>
<td>298</td>
<td>Mate Selection and Marriage</td>
</tr>
<tr>
<td>HEC</td>
<td>304</td>
<td>Consumer Problems of Clothing</td>
</tr>
<tr>
<td>HEC</td>
<td>340</td>
<td>Home Economics Education</td>
</tr>
<tr>
<td>HEC</td>
<td>352</td>
<td>Consumer Education</td>
</tr>
<tr>
<td>HEC</td>
<td>354</td>
<td>Home Management</td>
</tr>
<tr>
<td>HEC</td>
<td>356</td>
<td>Demonstration Techniques</td>
</tr>
<tr>
<td>HEC</td>
<td>414</td>
<td>Home Equipment</td>
</tr>
</tbody>
</table>

**MINOR COURSES — 20 Hrs.**

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

**RELATED COURSES — 17 Hrs.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEED</td>
<td>Teaching and Learning/Secondary</td>
</tr>
<tr>
<td>TEED</td>
<td>Seminar</td>
</tr>
<tr>
<td>TEED</td>
<td>School and Society</td>
</tr>
<tr>
<td>TEED</td>
<td>Directed Teaching</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION — 35 Hrs.**

Meet General Education requirements

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

Addition Electives 5 Hrs.

(From College of Arts and Sciences or acceptable General Education courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEED</td>
<td>Teaching and Learning/Secondary</td>
</tr>
<tr>
<td>TEED</td>
<td>Seminar</td>
</tr>
<tr>
<td>TEED</td>
<td>School and Society</td>
</tr>
<tr>
<td>TEED</td>
<td>Directed Teaching</td>
</tr>
</tbody>
</table>

**PHYSICAL EDUCATION — 2 hrs.**

Meet Physical Education requirements

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

**ELECTIVES**

**HEC 341** Methods of Occupational Education

(Recommended)

Approved Electives 4 Hrs.

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

Total for Graduation — 130 Hrs.
Home Economics

(5) Coordinated Field Experience
(6) Institutional Food Management
(7) Coordination Techniques in Cooperative Education
(8) Readings In Home Economics (Foods)

Elective Courses to Complete Total of 24 Semester Hours.
(1) Accounting Concepts and Application
(2) Personnel Management
(3) Economics
(4) Principles and Practices of Guidance
(5) Introduction to General Psychology
(6) Principles of Sociology

Elective Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 375</td>
<td>Coordinated Field Experience</td>
<td>4</td>
</tr>
<tr>
<td>HEC 512</td>
<td>Institutional Food Management</td>
<td>3</td>
</tr>
<tr>
<td>DED 573</td>
<td>Coordination Techniques in Cooperative Education</td>
<td>2</td>
</tr>
<tr>
<td>HEC 598</td>
<td>Readings In Home Economics (Foods)</td>
<td>2</td>
</tr>
<tr>
<td>ACTY 201</td>
<td>Accounting Concepts and Application</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 352</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 580</td>
<td>Principles of Guidance</td>
<td>2</td>
</tr>
<tr>
<td>PSY 190</td>
<td>Introduction to General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Completion of two years of relevant work experience in the food service area of industry for a total of 4,000 clock hours or its equivalent in a planned, supervised cooperative work experience program sponsored by the university.

B. Designed primarily for those who have had previous teaching experience in the field of homemaking.

1. Complete a food services minor (20 hrs.) composed of the following courses:

   (1) Occupational Education (Food Services)
   (2) Occupational Lab Exper - Food Services
   (3) Readings (Foods Area)
   (4) Foods For Man
   (5) Quantity Foods
   (6) Coordinated Field Experience
   (7) Institutional Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 642</td>
<td>Occupational Education (Food Services)</td>
<td>2</td>
</tr>
<tr>
<td>HEC 622</td>
<td>Occupational Lab Exper - Food Services</td>
<td>3</td>
</tr>
<tr>
<td>HEC 598</td>
<td>Readings (Foods Area)</td>
<td>2</td>
</tr>
<tr>
<td>HEC 312</td>
<td>Foods For Man</td>
<td>3</td>
</tr>
<tr>
<td>HEC 375</td>
<td>Quantity Foods</td>
<td>4</td>
</tr>
<tr>
<td>HEC 512</td>
<td>Coordinated Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>HEC 512</td>
<td>Institutional Management</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Completion of two years of recent and relevant work experience for a total of 4,000 clock hours in the food service area of industry or its equivalent as indicated by passing an occupational competency examination in the food services area.

**May be completed by means of examination.

CLOTHING/TEXTILES MINOR*

The Clothing Textiles minor is offered for the benefit of those students majoring in curricula outside the Home Economics Department. The minor consists of 15 hours with three basic courses (9 hours) required. The remaining (6 hours) will be elected according to the need of the individual. Non-teachable minor.

Counselor: Ms. Alice Kavanaugh

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100</td>
<td>Design Principles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 101</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 201</td>
<td>Clothing Construc.</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective Courses**

(1) Textile Fabrication
(2) Consumer Problems of Clothing
(3) History of Costume
(4) Dressmaker Tailoring
(5) Interior Design
(6) Demonstration
(7) Advanced Textiles
(8) Flat Pattern Design
(9) Display
(10) Socio. & Psych. Aspects of Clothing

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 216</td>
<td>Textile Fabrication</td>
<td>1-3</td>
</tr>
<tr>
<td>HEC 304</td>
<td>Consumer Problems of Clothing</td>
<td>3</td>
</tr>
<tr>
<td>HEC 306</td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td>HEC 316</td>
<td>Dressmaker Tailoring</td>
<td>3</td>
</tr>
<tr>
<td>HEC 350</td>
<td>Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>HEC 356</td>
<td>Demonstration</td>
<td>3</td>
</tr>
<tr>
<td>HEC 400</td>
<td>Advanced Textiles</td>
<td>2</td>
</tr>
<tr>
<td>HEC 406</td>
<td>Tailoring</td>
<td>3</td>
</tr>
<tr>
<td>HEC 408</td>
<td>Flat Pattern Design</td>
<td>2</td>
</tr>
<tr>
<td>HEC 420</td>
<td>Display</td>
<td>2</td>
</tr>
<tr>
<td>HEC 504</td>
<td>Socio. &amp; Psych. Aspects of Clothing</td>
<td>2</td>
</tr>
</tbody>
</table>

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

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

Counselor: Ms. Florence Tooke

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 101</td>
<td>3</td>
</tr>
<tr>
<td>HEC 201</td>
<td>3</td>
</tr>
<tr>
<td>HEC 212</td>
<td>3</td>
</tr>
<tr>
<td>HEC 298</td>
<td>3</td>
</tr>
<tr>
<td>HEC 304</td>
<td>3</td>
</tr>
<tr>
<td>HEC 352</td>
<td>3</td>
</tr>
<tr>
<td>HEC Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

FAMILY LIFE EDUCATION MINOR*

This teaching minor is offered in the Home Economics Department and is open to all students; especially those in Elementary, Secondary, and Special Education with majors in such areas as Home Economics Education, Biology, Sociology, Physical and Health Education, and Psychology. The minor consists of a minimum of 24 hours. A selected twelve hours is required, and the other twelve are elective. Due to the multidisciplinary nature of the program, students should not elect more than two courses in any one department exclusive of required courses.

COUNSELORS: Beverly Holland, Phyllis Seabolt, Isabelle Smith, Darrell Thomas

Required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 220</td>
<td>3</td>
</tr>
<tr>
<td>HEC 254</td>
<td>4</td>
</tr>
<tr>
<td>HEC 298</td>
<td>3</td>
</tr>
<tr>
<td>HEC 450</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH220</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 240</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 205</td>
<td>3</td>
</tr>
<tr>
<td>BAS 314</td>
<td>3</td>
</tr>
<tr>
<td>BAS 320</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>3</td>
</tr>
<tr>
<td>CAS 236</td>
<td>3</td>
</tr>
<tr>
<td>CP 580</td>
<td>2</td>
</tr>
<tr>
<td>HEC 120</td>
<td>3</td>
</tr>
<tr>
<td>HEC 212</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 240</td>
<td>3</td>
</tr>
<tr>
<td>HEC 352</td>
<td>3</td>
</tr>
<tr>
<td>HEC 375</td>
<td>V</td>
</tr>
</tbody>
</table>

*All transfer students should see a family life advisor regarding transfer credits.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 504</td>
<td>The Socio-Psychological Aspects of Clothing</td>
<td>2</td>
</tr>
<tr>
<td>HEC 515</td>
<td>Marriage and Family in Maturity</td>
<td>3</td>
</tr>
<tr>
<td>PSY 150</td>
<td>Introduction to Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PSY 160</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 510</td>
<td>Advanced General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 201</td>
<td>Introduction to Ethics</td>
<td>4</td>
</tr>
<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Modern Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 320</td>
<td>Introduction to Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>TEED 508</td>
<td>Parent Education</td>
<td>2</td>
</tr>
<tr>
<td>TEED 535</td>
<td>Introduction to Teaching the Disadvantaged</td>
<td>3</td>
</tr>
<tr>
<td>TEED 555</td>
<td>Alcohol Education</td>
<td>2</td>
</tr>
<tr>
<td>TEED 560</td>
<td>Practicum: Sociological and Psychological</td>
<td>2</td>
</tr>
</tbody>
</table>

**INTERIOR DESIGN MINOR — FASHION MERCHANDISING MAJOR**

**NON-TEACHABLE — 15 HOURS**

The Interior Design minor is offered for Fashion Merchandising students who desire depth in the areas of home furnishings, housing, and related areas.

**Required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 216</td>
<td>Textile Fabrication</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 240</td>
<td>Housing</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 242</td>
<td>Interior Design Graphics</td>
<td>3</td>
</tr>
<tr>
<td>HEC 350</td>
<td>Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>HEC 351</td>
<td>Period Interiors</td>
<td>3</td>
</tr>
</tbody>
</table>

**INTERIOR DESIGN MINOR — NON-DEPARTMENTAL MAJORS* — 24 HOURS**

The Interior Design minor is offered to benefit those students outside the department of home economics who wish to develop an expertise in Home Furnishings, Housing, and related areas.

**Required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 100</td>
<td>Design Principles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 101</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>HEC 216</td>
<td>Textile Fabrication</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 240</td>
<td>Housing</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 242</td>
<td>Interior Design Graphics</td>
<td>3</td>
</tr>
<tr>
<td>HEC 350</td>
<td>Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>HEC 351</td>
<td>Period Interiors</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete 24 Hrs. with following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEC 207</td>
<td>Textile Products</td>
<td>3</td>
</tr>
<tr>
<td>HEC 208</td>
<td>Non-Textile Products</td>
<td>3</td>
</tr>
</tbody>
</table>

*A methods course is required in either the major or minor.
100 Design Principles (2-2)*
Presentation and study of the principle of design, application through individual project.

101 Textiles (3-0)
A study of basic textiles; fibers, yarn construction, fabric construction, finishes, use and care.

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

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

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

201 Clothing Construction (0-6)
Basic construction techniques, pattern alteration and fitting, and design as related to the individual.

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

207 Textile Products (3-0)
Course presentation is an integration of raw materials, finished product, and usage by distributors and consumer.

208 Non-textile Products (3-0)
A study of quality, craftsmanship, and design as they relate to non-textile merchandise. Includes raw material sources, manufacturing processes and uses important to merchandising, and selection by distributor and consumer.

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

212 Food for Man (3-0)
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, (for Non-Home Economics majors.)

214 Special Food Topics (1-4)
Six five-week mini-courses, each complete in itself. Student may elect up to 6 hours of credit.

*Indicates hours of lecture and laboratory per week during each semester (lecture hours-laboratory hours).
216 Textile Fabrication (1-4) 1-3 hrs. Fall, Winter
Three Five-week mini courses, each complete in itself. Prerequisite: HEC 201 or consent of instructor.
A. Types of handwork as applied to interior accessories and clothing (Five weeks, one credit).
B. Slip covers techniques. Pillows and bolster will be included (Five weeks, one credit).
C. Draperies, curtains, and window treatments such as valances, cornices, etc. (Five weeks, one credit).

220 Sex Education—An Introduction to Human Sexuality (3-0) 3 hrs. Fall, Winter, Spring
Covers various aspects of human sexuality, trends in moral values and behavior patterns, anatomy and physiology of human reproduction and current issues in sex education.

254 Human Growth and Development (4-0) 4 hrs. Fall, Winter
A study of physical, social, emotional and intellectual growth of children and adolescents. Additional nine hours required participation in Home Economics Nursery Laboratory. (Hours to be arranged.)

298 Mate Selection and Marriage (3-0) 3 hrs. Fall, Winter, Spring
Exploration of research, literature, and practical issues involved in love, mate selection and marriage.

301 Fashion Analysis (3-0) 3 hrs. Fall, Winter
Emphasis on the elements comprising the total fashion appearance requisite to vocational preparation for men and women in fashion merchandising. HEB majors only.

304 Consumer Problems of Clothing (1-4) 3 hrs. Fall, Winter
Includes selection of appropriate clothing for individual family members. Emphasis is given to the planning and purchasing of clothing in terms of family resources and the family life cycle. Prerequisite: HEC 201.

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

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

309 Fashion Promotion (3-0) 3 hrs. Fall, Winter
Promotion of fashion merchandise involves merchandise presentation through fashion show, selling, retail advertising, and the activities of the fashion director. Prerequisite: HEC 206.

312 Quantity Foods (1-5) 3 hrs. Winter
Quantity foods preparation in a college residence hall kitchen and the school lunchroom Prerequisite: HEC 114, 210.

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

340 Home Economics Education (4-0) 4 hrs. Fall, Winter
Course designed to acquaint students with the teaching field of Home Economics. Include basic philosophy of Home Economics Education, observations, unit planning, effective teaching materials as a basis for special methods and student teaching. Planning local programs of homemaking education in high school equipment and the organization of homemaking departments, developing home experiences programs, and methods of teaching for junior and senior high schools as well as adult homemaking classes, Prerequisite: HEC 254 and TEED 301.
341 Occupational Education in Home Economics (2-0)  
2 hrs. Fall, Winter  
Designed to familiarize the student with occupational education. Skills related to Home Economics, analysis, and methods of job preparation will be emphasized. Consideration will be given to formulation of job descriptions. Stress will be on the application of techniques and methods of organizing instruction into job clusters for a functional instructional plan. Prerequisite: HEC 340.

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

351 Period Interiors (3-0)  
3 hrs. Fall  
Study of factors contributing to the organization of an interior in the concept of a particular style or period. Prerequisite: HEC 350.

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

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

356 Demonstration Techniques (1-4)  
3 hrs. Fall, Winter  
Demonstration principles and techniques as used in Home Economics teaching and business careers.

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

400 Advanced Textiles (2-0)  
2 hrs. Winter  
A study of the composition, construction, finishing and care of textiles. Prerequisite: HEC 101

406 Tailoring (1-4)  
3 hrs. Fall  
Principles and practices involved in the custom method of constructing, finishing, and pressing wool tailored suits and coats. Prerequisites: HEC 101, 201, 304.

408 Flat Pattern Design (0-4)  
2 hrs. Winter  
A study of the drafting techniques employed in the flat pattern method for designing clothing. Prerequisite: HEC 207 and 304 or permission of instructor.

410 Diet and Disease (4-0)  
4 hrs. Fall  
Study of the dietetic treatment of impaired digestive and metabolic condition. Planning of diets and reports of current research. Prerequisite: HEC 210. Dietetics major or consent of instructor.

412 Community Nutrition (2-2)  
3 hrs.  
Explores the role of nutrition in the health of a community. Field trips will emphasize professional competencies necessary for dietitians working in various community situations. Prerequisites: HEC 312, 410. Dietetics majors. (Offered every other year in, alternately, Fall or Winter Semester beginning Fall 1976.)

414 Home Equipment (3-0)  
3 hrs. Fall, Winter  
A study of principles of home equipment with applications toward the areas of Home Economics in Business and Education.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title and Description</th>
</tr>
</thead>
</table>
| 420 Display (2-0) | 2 hrs. Fall, Winter, Spring  
A study of the visual presentation of merchandise theories and techniques, HEB Majors only. |
| 450 Teaching Sex Education in the School (3-0) | 3 hrs. Fall, Winter, Spring  
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: HEC 220, or approval of the instructor. |
| 475 Field Experience | 6 hrs. Fall, Winter, Spring, Summer  
Off campus supervised field experience with merchandising establishments. FAS seniors only. |
| 502 Textile Clinic (2-0) | 2 hrs.  
A workshop type program. Specialists and visual aids will present the newest information on textiles. To be followed by a study of methods implementing the new learnings. Prerequisite: HEC 101 or permission of instructor. |
| 504 The Socio-Psychological Aspects of Clothing (2-0) | 2 hrs. Fall  
A study of the social and psychological implications of clothing for the individual and the family as well as the impact of the clothing and fashion industries on the national economy. |
| 510 Advanced Nutrition (3-0) | 3 hrs. Fall  
Study of recent developments in nutrition through readings and experiences. Prerequisite: HEC 210. |
| 512 Institutional Management (3-0) | 3 hrs. Winter  
Study of institutional administration, job analysis, labor policies, personnel problems and cost control in different types of food-service institutions. Prerequisite: HEC 210. |
| 515 Marriage and Family in Maturity (3-0) | 3 hrs. Fall  
A study of the marital and family interaction in middle and later years, including aging and death. |
| 518 Advanced and Experimental Foods (2-4) | 4 hrs. Fall  
Concentrated study of principles of food preparation. Development of experimental techniques and opportunities for individual studies. Prerequisite: CHEM 101, HEC 114. |
| 519 Experimental Foods (0-4) | 2 hrs. Winter  
Individual research in chemical and physical properties of foods. Development of research studies, writing and reporting techniques. Prerequisite: HEC 518. |
| 552 The Homemaking Center and the Equipment (2-0) | 2 hrs.  
Consideration of fundamentals in planning laboratory and living area in terms of needs with special emphasis on built-ins, furnishings and equipment. Selected problems to be chosen by the individual. |
| 598 Readings in Home Economics | Variable 1-4 hrs. Fall, Winter, Spring, Summer  
Upper level students may enroll with permission of the chairman and an instructor in a specific subject matter area: Clothing and Textiles, Foods and Nutrition, Family Life, Fashion Merchandising, and Home Economics Education. |
Industrial Education

John L. Feirer, Head
Michael B. Atkins
John L. Bendix
Phillip L. Bruce
Arvon D. Byle
Dennis Darling
Lindsay G. Farnan
Wallace F. Fillingham
W. Lloyd Gheen
Rex E. Hall

Gilbert R. Hutchings
Gordon O. Johnson
Waldemar E. Klammer
John R. Lindbeck
Erwin W. Rayford
Charles G. Risher
Walter Schwersinske
James L. Ulmer

INDUSTRIAL EDUCATION DEPARTMENT

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

PROGRAMS

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

2. Vocational-Technical Curricula are designed to prepare certificated teachers and supervisors of Vocational-Technical subjects for the secondary school, community college, and industrial training. Individuals must have a minimum of two-years relevant work experience. Students may enroll in a cooperative industrial program to secure the occupational experience or pass an appropriate competency examination.

3. Printing Management is a program designed for middle management personnel in the Graphic Arts Industry. It includes a major in Graphic Arts with options in General Business or Marketing.

4. Other Options.
   a. Industrial Technology (non-teaching) is designed to prepare an individual with a general industrial background. The exact combination of courses will be determined by the needs of the students.
   b. Manual Arts Therapy is a program designed to prepare the Industrial Education Major to work in the area of mental and physical rehabilitation in private, public and government hospitals. It includes participating (directed teaching) one semester at an approved veterans' hospital.
   c. Industrial Education Teaching Minor, students not majoring in Industrial Education, may take a General Industrial Education minor. This includes 20 hours of technical courses plus 6 hours of professional Industrial Education courses, (IED 342 and IED 344).

VOCATIONAL CERTIFICATION

Individuals desiring Vocational Certification in a technical area must complete the requirements for a degree and possess two-years relevant work experience in the technical major or minor area.

The Vocational-Technical Curriculum is designed specifically for the student who wishes to become a vocational teacher in a specific technical field. The Industrial Education curriculum offers the opportunity to teach in the several industrial areas without Vocational Certification. The Graduate may obtain Vocational Certification upon fulfillment of work experience requirements and have a minor in area to be taught.
COUNSELING

Students interested in any of the above programs should contact the College of Applied Sciences' Counseling Office telephone: 383-0545. A qualified counselor is available to help students plan their program in any of the careers described above.

TRANSFER STUDENTS

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

EMPLOYMENT OPPORTUNITIES

Even though there is an over-supply of certified teachers in many areas, the prospects for securing a teaching position in Industrial, Vocational and Technical Education remain bright. Certain specialized teaching areas including Industrial Education have retained a high index of demand.

INDUSTRIAL EDUCATION CURRICULA

Bachelor of Science Degree

Minimum hours required for this curriculum ......................................................... 122
General Education Requirements* ............................................................... 40
Technical Major in one of the following areas ................................................. 30
  General Industrial Arts
  Drafting
  Electricity-Electronics
  Graphic Arts
  Metalworking
  Power-Automechanics
  Woodworking

Technical minor in any one of the above areas other than the major (a Plastics Minor is also available) ...................................................... 20

Professional Education Courses ................................................................. 21

Hrs.
TEED 250 Human Development and Learning .............................................. 4
TEED 301 Teaching and Learning ................................................................. 3
DTCH 401 Seminar in Education ................................................................. 2
DTCH 450 School and Society ................................................................. 3
DTCH 470 Directed Teaching ................................................................. 9

Professional Industrial Education Courses ......................................................... 6

Hrs.
I ED 342 Course Construction ................................................................. 3
I ED 344 Teaching of Ind. Ed. ................................................................. 3

Physical Education ....................................................................................... 2

*3 semester hrs. of written communications and 4 semesters of MATH are required.
A. Minimum hours required for this curriculum .......................................................... 122

B. Course Requirements
1. General Education Requirements ................................................................. 40
2. Mathematics (4 hrs. of which may be counted for General Education requirements in Natural Sci & Math) ........................................ 8
3. Technical Major .................................................. 30
4. Technical Minor .................................................. 20
5. Option I (Vocational-Industrial Education leading to secondary teaching Certificate) .................................................. 27
   Professional Education Courses .................................................. 18
   TEED 250 Human Development and Learning ........................................ 4
   TEED 301 Teaching and Learning .................................................. 3
   DTCH 410 Seminar in Education .................................................. 2
   DTCH 470 Directed Teaching .................................................. 9
   Professional Industrial Education Courses .................................................. 9
   I ED 342 Course Construction .................................................. 3
   I ED 344 Teaching of Ind. Education .................................................. 3
   I ED 512 Prin. of Voc. Education .................................................. 3
6. Option II (Industrial Cooperative Education) leading to Secondary Teaching Certificate .................................................. 31
   Professional Education Courses .................................................. 18
   TEED 250 Human Development and Learning ........................................ 4
   TEED 301 Teaching and Learning .................................................. 3
   DTCH 410 Seminar in Education .................................................. 2
   DTCH 470 Directed Teaching .................................................. 9
   Professional Distributive Education Courses .................................................. 4
   D ED 572 Teaching Tech. in Coop. Education ........................................ 2
   D ED 473 Coord. Techs. in Coop. Education ........................................ 2
   Professional Industrial Education Courses .................................................. 9
   I ED 342 Course Construction .................................................. 3
   I ED 344 Teaching of Ind. Education .................................................. 3
   I ED 512 Prin. of Voc. Education .................................................. 3
7. Option III (Technical Education) without teaching certificate .................................................. 30
   I ED 342 Course Construction .................................................. 3
   CAS 104 Bus. and Prof. Speech .................................................. 3
   D ED 573 Coord. Techs. in Coop. Education ........................................ 2
   IEGM 422 Conference Leadership .................................................. 3
   IEGM 402 Supervision of Industrial Operations ........................................ 3
   I ED 512 Prin. of Voc. Education .................................................. 3
   PSYCH Psychology .................................................. 3
   Electives .................................................. 10
8. Physical Education .................................................. 2

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

Bachelor of Science Degree

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

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. General Education Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>must be met</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Includes 19 hours of courses required below)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Graphic Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I ED 150 Graphic Arts*</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>I ED 152 Letterpress Presswork</td>
<td>3</td>
<td>I ED 150</td>
</tr>
<tr>
<td>I ED 250 Typographic Design</td>
<td>3</td>
<td>I ED 150</td>
</tr>
<tr>
<td>I ED 254 Machine Composition</td>
<td>3</td>
<td>I ED 150</td>
</tr>
<tr>
<td>I ED 350 Photolithographic Techniques</td>
<td>3</td>
<td>I ED 150</td>
</tr>
<tr>
<td>I ED 351 Lithographic Presswork</td>
<td>3</td>
<td>I ED 150</td>
</tr>
<tr>
<td>I ED 450 Advanced Presswork</td>
<td>3</td>
<td>I ED 152, 351</td>
</tr>
<tr>
<td>I ED 452 Estimating</td>
<td>3</td>
<td>Upperclass</td>
</tr>
<tr>
<td>I ED 551 Halftone Photo Processes</td>
<td>3</td>
<td>I ED 350</td>
</tr>
<tr>
<td>I ED 552 Estimating</td>
<td>2</td>
<td>I ED 452</td>
</tr>
<tr>
<td>I ED 553 Printing Production Management</td>
<td>3</td>
<td>Senior Standing</td>
</tr>
<tr>
<td>PSE 550 Paper Industry Processes</td>
<td>3</td>
<td>Upperclass</td>
</tr>
<tr>
<td>C. Industrial Supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 100 Introduction to Industry -OR-</td>
<td>2</td>
<td>None</td>
</tr>
<tr>
<td>IEGM 105 Industrial Calculations</td>
<td>1</td>
<td>MATH 100 or 116</td>
</tr>
<tr>
<td>IEGM 305 Work Analysis</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>IEGM 322 Safety in Industry</td>
<td>3</td>
<td>Upperclass</td>
</tr>
<tr>
<td>IEGM 326 Production Control</td>
<td>3</td>
<td>IEGM 100 or 105, MATH 260, Not Open To IEN Majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MGMT 200 or MATH 260</td>
</tr>
<tr>
<td>D. General Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY 201 Accounting Concepts &amp; Applications</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>MGMT 200 Decision Making with Statistics</td>
<td>3</td>
<td>MATH 100 or 116</td>
</tr>
<tr>
<td>MGMT 300 Fundamentals of Management</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ECON 201 Recommended)</td>
</tr>
<tr>
<td>MGMT 102 Computer Usage</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>MGMT 555 Electronic Data Processing</td>
<td>3</td>
<td>MGMT 102</td>
</tr>
<tr>
<td>Marketing***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG 370 Marketing</td>
<td>3</td>
<td>ECON 201</td>
</tr>
<tr>
<td>MKTG 372 Purchasing Management</td>
<td>3</td>
<td>MKTG 370</td>
</tr>
<tr>
<td>MKTG 374 Advertising</td>
<td>3</td>
<td>MKTG 370</td>
</tr>
<tr>
<td>MKTG 376 Sales Administration</td>
<td>3</td>
<td>MKTG 370</td>
</tr>
<tr>
<td>MKTG 470 Industrial Marketing</td>
<td>3</td>
<td>MKTG 370</td>
</tr>
<tr>
<td>E. MATH 100 Algebra or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 116 Finite Mathematics with Applications</td>
<td>3</td>
<td>MATH 100 or 3 Yrs. College Prep. Math.</td>
</tr>
<tr>
<td>F. ECON 201 Principles of Economics</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>G. An approved writing course**</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>H. Physical Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Electives</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

*1 ED 150 graphic arts may be waived after review of high school experience.

**Includes any writing course included approved for General Education.

***Marketing minor may be elected within 20 hours of electives.
COURSE DESCRIPTIONS

DRAFTING

120 Survey of Drafting (1-5)* 3 hrs. Fall, Winter**
A survey course in General Mechanical Drawing. Emphasis placed on concepts underlying freehand perspective, flat drawing, elementary shading, technical sketching, multiview drawing, sectional views, size description, pictorial drawing, and basic graphic analysis.

226 Industrial Graphics (1-5) 3 hrs. Fall, Winter
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 (1-5) 3 hrs. Winter
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 (1-5) 3 hrs. Fall
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 (1-5) 3 hrs. Fall, Winter
A graphic study of architectural details and construction methods of frame and masonry veneer residential dwellings. Emphasis placed on residential planning and design principles. Design of a single-family dwelling including preliminary studies, floor plans, elevations, all necessary details, plot plan, and specifications required. Drawings will be reproduced. Prerequisites: I ED 120 Survey of Drafting, or equivalent, and I ED 405 Introduction to Building Practices (can be taken simultaneously).

522 Laboratory Practices in Drafting (1-3) 2 hrs. Winter, Spring
Methods and problems of teaching drafting and graphics on the secondary level. Emphasis is placed on a review of secondary and collegiate texts, resource materials, problem design, and drawings. Prerequisite: twelve hours in drafting and junior classification.

524 Commercial Architectural Design (1-3) 2 hrs. Alternate Summer
Beginning Summer 1975
Basic experience in designing light commercial structures. Emphasis placed on planning, traffic flow, exterior design, materials, and structural details. Prerequisite: I ED 520 or equivalent.

525 Architectural Perspective and Rendering (1-3) 2 hrs. Alternate Spring
Beginning Spring 1976
Intensive study of angular and parallel perspective. Emphasis placed on entourage and rendering techniques in preparing architectural presentation drawings. Prerequisite: I ED 520 or equivalent.

*Indicates periods of lecture and laboratory each week during a semester (lecture hours-laboratory hours)
**Indicates terms course offered if warranted by student planning requests.
GRAPHIC ARTS AND PRINTING MANAGEMENT

150 Graphic Arts (1-5) 3 hrs. Fall, Winter, Spring

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 (1-5) 3 hrs. Winter

This course includes cylinder and automatic platen presswork. Emphasis is placed on forms requiring special preparation such as numbering, perforating, and envelop 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 (1-5) 3 hrs. Winter

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 (1-3) 2 hrs. Spring

A study of the principles of science involved in such things as printability tests, inks, photographic chemicals, paper, etc.

254 Machine Composition (1-5) 3 hrs. Fall, Winter

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

350 Photolitographic Techniques (1-5) 3 hrs. Fall

A laboratory course designed to acquaint the student with the fundamentals of reproduction photography, darkroom techniques, photo processes, and stripping techniques, 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 (1-5) 3 hrs. Fall, Winter

Experience will be given on basic offset equipment regarding lithographic principles, press operations, mechanical adjustments, simple chemical reactions, as well as the advantages and disadvantages of lithography. Other areas to be studied are multi-color processes, inks, and papers. Prerequisite: I ED 150.

450 Advanced Presswork (1-5) 3 hrs. Winter

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

451 Printing Processes (1-3) 2 hrs. Fall

A course designed to provide Paper Science and Engineering students with a working knowledge of the various printing processes and their relation to the manufacture of paper. Open only to students enrolled in Paper Science and Engineering.

452 Estimating (3-0) 3 hrs. Fall

Study of methods used in estimating the price of printed matter before manufacture, and in the final pricing of that printed matter after manufacture. Prerequisite: Upperclass standing.

551 Halftone Photo Processes (1-5) 3 hrs. Winter

Emphasis on halftone reproduction and related photo techniques, posterization, duotones, basic color, and mechanical dropouts will be included. Prerequisite: I ED 350.
552 Estimating (2-0)  
Continuation of estimating 452. Special emphasis on use of printing industry production standards in pricing printed materials. Prerequisite: I ED 452.

553 Printing Production Management (3-0)  
Managerial procedures used in printing industries to forecast, plan, schedule and record production to control production costs. Hourly costs of printing machines will be developed by students. Prerequisite: Junior standing.

WOODWORK AND BUILDING CONSTRUCTION

100 General Woodworking (1-5)  
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.  
3 hrs. Fall, Winter Alternate  
Spring beginning Spring 1977

200 Machine Woodwork (1-5)  
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 (1-3)  
Principles of wood finishing; finishing materials and their characteristics; equipment and methods of application; finishing schedules; and finishing characteristics of different species of wood. Prerequisites: I ED 100 General Woodworking, or I ED 200 Machine Woodwork.

300 Upholstering and Woodturning (1-5)  
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 (1-2)  
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 (1-3)  
Design and production of furniture, including the development of all phases of tooling and jig and fixture design necessary for the mass production of a piece of furniture made of wood and structural plastics. Prerequisite: I ED 200.

502 Wood Technology (1-3)  
Experience in and study of the technical aspects of cellulose materials and their use in construction and manufacture. Included will be a study of the characteristics of lumber, man-made wood products, the materials related to the fabrication of wood products, applied research done by the forest products laboratory and testing of materials. Prerequisite: I ED 100.

506 Residential Building Construction (1-5)  
Covers rough framing of a residential building including prefabrication methods as well as on-site building. Classroom work and laboratory experiences familiarize students with foundations, floor, and roof framing, exterior doors, windows, roofing, siding, urethane, insulation, other synthetic materials, and preparation for interior wall coverings, trim and cabinets. Prerequisites: I ED 100 or 200, and I ED 405 (can be taken simultaneously).
507 Finish Carpentry and Cabinetmaking (1-5) 3 hrs. Winter

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: I ED 100 and/or 200.

508 Related Building Trades (1-5) 3 hrs. Alternate Spring Summer Beginning Summer 1976

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

METALS AND MACHINERY

130 General Metals (1-5) 3 hrs. Fall, Winter, Alternate Spring Summer Beginning Spring 1976

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 (1-5) 3 hrs. Fall, Winter

A basic course in modern metal machining techniques involving theory and practice in the application of machine tool metalworking principles.

235 Machine Tool Metalworking (1-5) 3 hrs. Winter

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

334 Metal Forming and Finishing (1-5) 3 hrs. Fall

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

335 Patternmaking and Foundry (1-5) 3 hrs. Spring

Basic principles, techniques, and materials used in pattern construction, theory and practice in metal casting principles and procedures using green sand, C02, investment, centrifugal, and shell processes. Prerequisites: I ED 100 and 130.

336 Hot Metalworking (1-5) 3 hrs. Winter

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., G.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 (1-5) 3 hrs. Fall

Principles and practices in art metalworking and nonconventional metalworking processes. Prerequisite: I ED 130.

538 Problems in Metalworking (1-3) 2 hrs. Spring

Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Emphasis on methods of selecting and developing course materials for junior and senior high school students. Course content adapted to meet individual needs. Prerequisite: I ED 234.
PLASTICS

174 General Plastics (1-5) 3 hrs. Fall, Winter
A study of plastics to develop an understanding of plastic materials, their properties, applications, and processes, technical information and laboratory experiences based on the cutting, shaping, forming, molding, and casting of thermoplastic and thermosetting materials. Emphasis will be placed on the application of plastics in the junior-senior high school programs.

274 Plastics Production Processing (1-5) 3 hrs. Winter
Experiences in forming processes such as injection, compression, vacuum and rotational molding. Effects of mold design on flow and stress characteristics, heat and pressure on dimensional accuracy, and process of product function and economy. Prerequisite: I ED 174.

578 Plastics Technology (1-3) 2 hrs. Summer
Comprehensive study of plastic materials and processes, and applications of thermoplastic, thermosetting, and selected synthetic materials, product development emphasizes vacuum forming, compression, extrusion, injection, blow molding, lamination, casting, reinforcing, foaming, coating, and general fabrication.

POWER-AUTO*

180 Power Mechanics (1-5) 3 hrs. Fall, Winter, Alternate Spring
Summer Beginning Spring 1977
Deals with energy sources, power production and transmission. Emphasis on small otto cycle engines.

280 Applied Energy and Power (1-5) 3 hrs. Winter
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 (1-5) 3 hrs. Fall
Advanced laboratory course for high school and community college automotive teachers. Emphasis on instructional materials and evaluation instruments. Prerequisites: I ED 342, TRAN 121, TRAN 124, and TRAN 224.

582 Applied Fluid Power (1-3) 2 hrs. Winter
Deals with fluid power development transmission and control systems. Laboratory experience requires application of fluid power to a manual or electrically powered machine.

584 Automotive Technology for Teachers (1-5) 3 hrs. Summer
Deals with recent technical developments, and current practices in automotive instruction.

585 Advanced Automotive Technology for Teachers (1-5) 3 hrs. Summer
Designed for automotive teachers and advanced undergraduates. Deals with advanced technical developments, and practices and problems unique to automotive instruction.

586 Laboratory Practices in Automechanics (1-5) 3 hrs. Summer
Designed for technical school and/or community college transfer students, emphasis on course development, teaching and evaluation methods, instructional materials and equipment selection. Includes laboratory practice applying teaching techniques. Prerequisites: I ED 384 and I ED 585 or equivalent.

588 Power Laboratory Techniques (1-3) 2 hrs. Summer
Advanced course treating recent applications of energy and power. Emphasis on laboratory planning and equipping, and instructional material evaluation and application to instruction. Prerequisite: I ED 180, or consent.

*Courses in Auto Mechanics can be obtained from the transportation technology department or by transfer from community colleges.
ELECTRICITY-ELECTRONICS*

160 Basic Electricity (1-5)  3 hrs. Fall, Winter, Alternate Spring
Summer Beginning Spring 1977

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 (1-5)  3 hrs. Winter

A course designed to round out technical competencies of students to service electronic equipment. Laboratory problems will point toward fundamental applications of electronic test instruments in diagnosing malfunctions and servicing radio, TV, and other electronic devices. Also included are fundamentals of ham radio. Prerequisite: 3 hrs. of electricity-electronics.

460 Laboratory Practices in Electricity-Electronics (1-5)  3 hrs. Fall

Designed for laboratory teachers of electricity-electronics. Emphasis will be placed on textbook selections, course materials, methods, and instructional devices. Laboratory practice will be provided in applying techniques and developments to teaching.

560 Electricity-Electronics for Teachers (1-3)  2 hrs. Summer

Designed for junior and senior high school laboratory teachers of electricity and electronics. Emphasis placed on new methods and materials. Laboratory practice will apply new techniques and develop teaching projects for electricity and electronics instruction.

*Note: Additional courses in electricity-electronics can be obtained from the Electrical Engineering Department or by transfer from community colleges.

PROFESSIONAL INDUSTRIAL EDUCATION

342 Course Planning and Construction (3-0)  3 hrs. Fall, Winter, Spring

Principles of analyzing, selecting and arranging instructional materials for instruction purposes. (Lesson plans, unit plans and complete courses of study.) Prerequisites: Junior and 10 hours in technical courses.

344 Teaching of Industrial Education (2-2)  3 hrs. Fall, Winter, Spring, Summer

This course deals with the many aspects of teaching the practical subjects. Included will be the role of the teacher, instructional material, lesson presentation, evaluation and classroom and lab management and administration. Prerequisite: I ED 342.

345 Plan and Organization of a School Shop (2-0)  2 hrs. (Continuing education only)

This is a course to help teachers plan and organize the school shop. Topics include physical needs, selection of activities, shop layout, purchasing equipment, establishing a supply routine, planning personnel organization, and shop management. Prerequisite: Junior and consent.

444 Independent Study in Industrial Education  1-4 hrs. Fall, Winter

Open to advanced students in the industrial education area with good scholastic records. An independent study arranged in consultation with a study supervisor. Approval of study program required prior to registration. Prerequisite: 9 hrs. of major area and instructor's permission.

540 Technical Education Methods (3-0)  3 hrs. Spring

545 Safety Education for Industrial Teachers (2-0) 2 hrs. Summer
Fundamentals of accident prevention in Industrial Education laboratories. Treating legal responsibility of teachers safety requirements in relation to equipment, safe guarding, and safe operation.

598 Readings in Industrial Education 2-4 hrs. Fall, Winter, Spring, Summer
Directed individual or small group study of topics or areas not otherwise treated in departmental courses. Graduate standing and Head of Department consent required.

VOCATIONAL

The following courses are designed for professional preparation in all Vocational-Technical Education programs including those in Agriculture, Distributive Education, Home Economics Education, Vocational-Technical Education, and Business Education Teaching curricula.

312 Industrial/Field Experience 3 hrs. Fall, Winter, Spring
A cooperative education program involving a semester of full-time (or part-time equivalent) planned and supervised industrial/field experience. A written report of industrial/field activities is required. May be re-elected for a total of twelve hours credit.

510 Organization and Administration of Vocational Clubs (2-0) 2 hrs. Summer
Individual or small group study of the organization and administration of vocational youth organizations at the national, state, and local levels. Uses of youth organizations as public relations and/or teaching tools are emphasized.

511 Field Experiences in Vocational Clubs (0-3) 1 hr. Summer
Individual or small group study of the organization and administration of vocational youth organizations at the national, state, and local levels. Uses of youth organizations as public relations and/or teaching tools are emphasized. Prerequisite: IED 510/concurrent.

512 Principles of Vocational Education (3-0) 3 hrs. Fall, Winter, Alternate Summer Beginning Summer 1977
The place and function of the practical arts and vocational education in the modern school; fundamental principles upon which this work is based. For teachers of agriculture, business, distributive education, home economics, industrial subjects, office subjects, and administrators, for upperclassmen and graduate students.

GENERAL INDUSTRIAL

170 Industrial Crafts Techniques (1-5) 3 hrs. Fall, Winter, Alternate Spring Beginning Spring 1976
An introductory course for teachers in the crafts area, including art metal, leather, lapidary, and plastics. Applications and procedures will be stressed.

190 Industrial Arts for Elementary Teachers (1-5) 3 hrs. Fall, Winter, Spring, Summer
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.

192 Related Arts and Crafts (1-5) 3 hrs. (continuing education only)
A general course in arts and crafts including work in leather, plastic, wood, and other related craft activities.
193 Related Arts and Crafts (1-5) 3 hrs. (continuing education only)
A course in arts and crafts including work in graphic arts, art metal, basketry, and other crafts not previously included.

195 Applied Arts and Crafts (0-2) 1 hr. Fall, Winter, Spring
This course is intended as a supplementary course for the practical application of Industrial Arts for the Elementary Teacher, 190. Involves supervised teaching experience in local elementary school classrooms. Concurrent with I ED 190 enrollment.

198 O.T. Woodworking (1-5) 3 hrs. Fall, Winter
A basic course in shop fundamentals, including the use of hand tools and machines, construction design, fastening devices, and finishing. Limited to students enrolled in the Occupational Therapy curriculum.

276 Industrial Arts Design (1-3) 2 hrs. Fall, Winter, Spring
A laboratory course dealing with functional, material, and visual requirements for products. Emphasis is upon design practices as they relate to projects and products in a variety of natural and synthetic materials.

370 Modern Manufacturing (1-3) 2 hrs. Fall, Winter, Spring
A study of the essentials and elements of industry as they pertain to modern manufacturing. Related issues of man and his relationships to technology and ecology are also examined. Laboratory experiences include the development and production of school related product.

570 Arts and Crafts Techniques (1-3) 2 hrs. Spring, Summer
Advanced laboratory experiences in internal plastic carving, leather work, model work, and related crafts in conjunction with a study of current technical literature in these areas. Written reports will be required. Course content adapted to individual needs.

572 Metric Conversion (3-0) 3 hrs. Fall
Study of origins and development of the modern metric system; and of problems involved in change-over from customary inch-pound system to the metric system of measurement. Course includes application with base ten system, and basic and derived units of the modern international metric measuring system.

573 Mechanics and Conditioning of Equipment (1-3) 2 hrs. Spring, Summer
Study of principles of machining wood, metal, and synthetic materials. Practice in installation, adjustment, preventive maintenance and conditioning of power equipment included. Emphasis on relationship between proper installation and condition to efficient machine operation.

575 General Industrial Arts Laboratory Organization (1-3) 2 hrs. Spring
Practical experience in drawing and planning, woodworking, metalworking, electricity, and craftwork required. Includes selection, development and preparation of materials and instructional media for multiple activity instruction at junior and senior high school levels. Prerequisite: I ED 342 and I ED 344.

590 Industrial Arts for the Elementary Schools (1-3) 2 hrs. (continuing education only)
Deals with problems of organizing, correlating and teaching constructional activities in elementary grades. Course materials, techniques, and materials in the industrial and craft areas emphasized through development of teaching unit.

592 Aerospace for Classroom Teachers (1-3) 2 hrs. (continuing education only)
Deals with educational, social, economic, and political implications of aerospace in the modern world. Study of basic aerospace materials and activities appropriate for different grade levels. Consideration given to aerospace literature and visual aids, opportunities provided for participation and aerospace experiences. Open to elementary and secondary education students.
593 Arts and Crafts for Special Education Teachers (1-3)  2 hrs. Fall, Winter, Spring Summer

Covers craft techniques in sketching, leather, wood, and related experiences. Emphasis on teaching procedures, methods, and materials. No credit for Industrial Education majors or minors or TIE students.

596 Consumer Automobile Principles (1-2)  2 hrs. Winter

A course in the methods and problems of providing automobile users with basic information on selecting, purchasing, and maintaining a personal motor vehicle. Designed primarily for driver education and highway safety instructors. Not open to students with credit in I ED 384, 584, 585, or 586; TRAN 121, 221, 222, 224, 322, 326 or 421.
Industrial Engineering

Charles L. Proctor, Chairman

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

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

A student may not graduate from any of the Industrial Engineering Department curricula having received the grade of "D" in more than two required subjects or having less than a "C" average in the technical requirements.

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

Cooperative Education

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

Grand Rapids Degree Programs

The Department of Industrial Engineering offers complete degree programs in Industrial Engineering, Industrial Supervision, and selected Manufacturing curricula in Grand Rapids. The programs are offered primarily in the evening, so as to be convenient to the individual that is also working full-time.

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

Academic Counseling

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

The following academic counselors are located in Room 2038, Industrial and Engineering Technology Building:

- Engineering Graphics
- Engineering Metallurgy
- Industrial Design
- Industrial Engineering and
- Industrial Supervision

Dr. W. A. Wichers

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this department may be found in the beginning of the College of Applied Sciences' section of the catalog.

The following curricula are offered:

- Four Year Curricula — B.S. Degree
  1. Industrial Design
  2. Industrial Engineering
  3. Industrial Supervision
  4. Engineering Graphics
     (2-year Certificate-Drafting and Design Technology)
  5. Engineering Metallurgy

*A minor in Industrial Engineering is available only to students majoring in Mathematics with a Statistics Option.
INDUSTRIAL ENGINEERING

Robert E. Boughner
W. Chester Fitch
Roy W. Groulx
Carl R. Lindenmeyer

Charles L. Proctor
Leo S. Rayl
Bob E. White
Frank K. Wolf

Bachelor of Science in Engineering (Industrial) Degree

The Industrial Engineering curriculum provides the essential foundation, experience and understanding in science, mathematics, humanities and engineering so that graduates may find employment in production, health, service, and utility industries. This program is also a basis for graduate study. The Industrial Engineer is particularly responsible for the improvement and development of engineering management, production planning and control, plant organization, technical design related to manufacturing processes, inspection, plant safety and employee and employer relations.

A Bachelor of Science in engineering degree requires 128 semester hours

Requirements

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Credit Hours</td>
</tr>
<tr>
<td><strong>MAJOR ENGINEERING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>305</td>
<td>Work Analysis</td>
<td>.. .. .. 3 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>310</td>
<td>Engineering Economy</td>
<td>.. .. .. 3 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>318</td>
<td>Statistical Quality Control</td>
<td>.. .. .. 3 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>402</td>
<td>Supervision of Industrial Operations</td>
<td>.. .. .. 3 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>405</td>
<td>Work Systems Design</td>
<td>.. .. .. 3 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>416</td>
<td>Operations Control in Industry</td>
<td>.. .. .. 4 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>404</td>
<td>Materials Handling and Plant Layout</td>
<td>.. .. .. 4 .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>419</td>
<td>Intro. to Operations Research</td>
<td>.. .. .. 3 .. .. ..</td>
</tr>
<tr>
<td><strong>ENGINEERING SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>170</td>
<td>Metallurgy</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>ME</td>
<td>256</td>
<td>Statics</td>
<td>.. 3 .. .. .. .. ..</td>
</tr>
<tr>
<td>EE</td>
<td>210</td>
<td>Electrical Circuits</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>EE</td>
<td>220</td>
<td>Electronic Circuits</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>ME</td>
<td>353</td>
<td>Strength of Materials</td>
<td>.. 3 .. .. .. .. ..</td>
</tr>
<tr>
<td>ME</td>
<td>355</td>
<td>Dynamics</td>
<td>.. 3 .. .. .. .. ..</td>
</tr>
<tr>
<td>ME</td>
<td>330</td>
<td>Thermo-fluid Dynamics</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>372</td>
<td>Chemical Metallurgy or</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>373</td>
<td>Physical Metallurgy</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td><strong>BASIC SCIENCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MATHEMATICS</strong></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>122</td>
<td>Calculus I</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>MATH</td>
<td>123</td>
<td>Calculus II</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>MATH</td>
<td>272</td>
<td>Vector and Multivariate Calculus</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>MATH</td>
<td>230</td>
<td>Elementary Linear Algebra</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>MATH</td>
<td>360</td>
<td>Statistical Methods</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td><strong>SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>103</td>
<td>General Chemistry</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>PHYS</td>
<td>210</td>
<td>Mechanics and Heat</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>PHYS</td>
<td>211</td>
<td>Electricity and Light</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
<tr>
<td>PHYS</td>
<td>212</td>
<td>Atomic and Nuclear Physics</td>
<td>.. 4 .. .. .. .. ..</td>
</tr>
</tbody>
</table>
**Industrial Engineering**

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TECHNICAL COURSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IEGM 131 Engineering Drafting</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACTY 201 Accounting Concepts</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATH 106 Introduction to Computers</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IEGM 418 Report Preparation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IEGM Elective (Approved)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GENERAL EDUCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AREA I Humanities**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AREA II ECON 201 Principles of Economics</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AREA III Natural Science &amp; Math</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AREA IV Non-Western World</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AREA V IEGM 102 Technical Communications</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PHYSICAL EDUCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total for Graduation — 128 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

*Process Elective
A three-hour elective (one course) from the courses listed below is required.

IEGM 280 Metal Casting
ME 120 Machining Metals
ME 121 Manufacturing Processes
ME 221 Industrial Welding

**General Education Electives**
Two courses to be taken in the 300-500 level courses in Area I

**INDUSTRIAL SUPERVISION**

Elmer J. Brune
Roy S. Klein
Leo S. Rayl

Robert F. Schultz
Frank S. Scott
William A. Wichers

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 used by industry when dealing with people. The Industrial Supervisor may direct production employees working on line operations or may direct staff personnel specifically assigned to assist the line in meeting its objectives.

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

A Bachelor of Science degree requires 128 semester hours.

**Requirements**

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

The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.
### Course Selections

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>100</td>
<td>Introduction to Industry</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>305</td>
<td>Work Analysis</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>326</td>
<td>Production Control</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>328</td>
<td>Industrial Quality Control</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>322</td>
<td>Safety in Industry</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>405</td>
<td>Work Systems Design</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>402</td>
<td>Supervision of Indust Operations</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>404</td>
<td>Material Handling and Plant Layout</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>422</td>
<td>Conference Leadership</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>403</td>
<td>Industrial Labor Relations</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>420</td>
<td>Modern Industrial Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Spring term of Senior Year)</td>
</tr>
</tbody>
</table>

### RELATED ENGINEERING

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM</td>
<td>130</td>
<td>Technical Drafting</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>170</td>
<td>Metallurgy</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>280</td>
<td>Metal Casting I</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>121</td>
<td>Manufacturing Processes</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MATHEMATICS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>100</td>
<td>Algebra</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>106</td>
<td>Introduction to Computers</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>200</td>
<td>Analysis and Applications</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>260</td>
<td>Elementary Statistics</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SCIENCE

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM</td>
<td>110</td>
<td>General Physics</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>111</td>
<td>General Physics</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ARTS AND SCIENCE — BUSINESS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>104</td>
<td>Business and Prof. Speech</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY</td>
<td>210</td>
<td>Principles of Accounting</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUS</td>
<td>340</td>
<td>Legal Environment</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSY</td>
<td>540</td>
<td>Industrial Psychology</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Technical Electives Requirements

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

### Course Selections

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>
| GROUP A — LINE SUPERVISION — MANUFACTURING

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM</td>
<td>310</td>
<td>Engineering Economy</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S.H.</td>
</tr>
<tr>
<td>IEGM</td>
<td>380</td>
<td>Metal Casting II</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>220</td>
<td>Production Tooling</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>221</td>
<td>Industrial Welding</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>320</td>
<td>Pressworking of Metals</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>100</td>
<td>Fundamentals of Circuits &amp; Electronics</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>101</td>
<td>Fund. of Electronics &amp; Machining</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| GROUP B — STAFF SUPERVISION — MANAGEMENT

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM</td>
<td>310</td>
<td>Engineering Economy</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S.H.</td>
</tr>
<tr>
<td>IEGM</td>
<td>505</td>
<td>Advanced Methods Engineering</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>508</td>
<td>Advanced Quality Control</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY</td>
<td>211</td>
<td>Principles of Accounting</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT</td>
<td>300</td>
<td>Fundamentals of Management</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>270</td>
<td>Salesmanship</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>370</td>
<td>Marketing</td>
<td>3</td>
<td>S.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**GENERAL EDUCATION — DISTRIBUTION PROGRAM**

<table>
<thead>
<tr>
<th>AREA</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Humanities*</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>Natural Science and Math (8 hrs. included)</td>
<td>3</td>
</tr>
<tr>
<td>IV</td>
<td>Non-Western World</td>
<td>4</td>
</tr>
<tr>
<td>V</td>
<td>Optional Electives (8 hrs. included)</td>
<td>3</td>
</tr>
</tbody>
</table>

**PHYSICAL EDUCATION**

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGN</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electives</td>
<td></td>
<td>3 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total for Graduation</td>
<td></td>
<td>128</td>
</tr>
</tbody>
</table>

*(Includes 6 hrs. to be taken during spring term)*

*Four hrs. to be taken in 300-500 level courses in either AREA I or II.*

**ENGINEERING GRAPHICS**

Henry J. Beukema  
Douglas D. Gruntman  
George K. Stegman  
Charles F. Woodward

Bachelor of Science Degree

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

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

A Bachelor of Science Degree requires 128 semester hours.

**Requirements**

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM</td>
<td>131</td>
<td>Engineering Drafting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>136</td>
<td>Descriptive Geometry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>330</td>
<td>Machine Drafting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>236</td>
<td>Graphical Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>331</td>
<td>Production Drafting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>332</td>
<td>Design of Production Tooling I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>333</td>
<td>Design of Production Tooling II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>438</td>
<td>Industrial Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>436</td>
<td>Computer Graphics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>434</td>
<td>Technical Illustrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>431</td>
<td>Industrial Drafting Practices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**College of Applied Sciences**

**Dept.**  | **Course No.** | **Course Title** | **Semester** | **Credit Hours**
--- | --- | --- | --- | ---
**RELATED ENGINEERING**
ME | 120 | Machining Metals | 3 | .. .. .. .. .. .. .. ..
ME | 121 | Manufacturing Processes | .. | 3 .. .. .. .. .. .. ..
ME | 256 | Statics | .. | 3 .. .. .. .. .. .. ..
ME | 220 | Production Tooling | .. | .. .. 3 .. .. .. ..
ME | 353 | Strength of Materials | .. | .. .. 3 .. .. .. ..
ME | 321 | Numerical Control of Production | .. | .. .. 3 .. .. .. ..
ME | 453 | Product Engineering | .. | .. .. .. .. .. .. ..
EE | 100 | Fundamentals of Circuits and Electronics | .. | 3 .. .. .. .. .. ..
EE | 101 | Fundamentals of Electronics and Machines | .. | .. .. 3 .. .. .. ..
IEGM | 280 | Metal Casting I | .. | .. .. 3 .. .. .. ..
IEGM | 422 | Conference Leadership | .. | .. .. 3 .. .. .. ..
IEGM | 402 | Supervision of Industrial Operations | .. | .. .. 3 .. .. .. ..
IEGM | 418 | Report Preparation | .. | .. .. .. .. .. .. ..
**MATHEMATICS**
MATH | 100 | Algebra or Math 122 — Math I | 4 | .. .. .. .. .. .. .. ..
MATH | 200 | Analysis & Application or Math 123 — Math II | .. | 4 .. .. .. .. .. .. ..
MATH | 106 | Introduction to Computers | .. | 1 .. .. .. .. .. .. ..
MATH | 306 | Introduction to Computer Language (Fortran) | .. | 2 .. .. .. .. .. .. ..
**SCIENCE**
CHEM | | | | .. .. .. .. .. .. .. ..
PHYS | 110 | General Physics | .. | .. .. .. .. .. .. ..
**ARTS AND SCIENCE — BUSINESS**
CAS | 104 | Business and Professional Speech | 3 | .. .. .. .. .. .. .. ..
**GENERAL EDUCATION REQUIREMENTS — DISTRIBUTION PROGRAM**
AREA I | Humanities* | .. | 3 .. 4 .. .. .. ..
AREA II | Social Sciences* | .. | .. .. 3 .. .. .. ..
AREA III | Natural Sciences and Mathematics | (8 hrs. included in curr.) | .. | .. .. .. 4 .. .. .. ..
AREA IV | Non-Western World | | .. | .. .. .. .. .. .. ..
AREA V | Optional Electives | (8 hrs. included in curr.) | Writing Requirement** | .. | 3 .. .. .. .. .. .. ..
**PHYSICAL EDUCATION**
PEGN | Physical Education | 1 | 1 .. .. .. .. .. .. ..
**ELECTIVES**
| 2 | 2 | 3 | 4 | 3 | 3 |

**Total for Graduation** 128 hrs. 16 15 16 17 15 17

*Four hours to be taken in the 300-500 level courses in either AREA I or AREA II.
**ENG 105 or BED 142 or IEGM 102.

**INDUSTRIAL DESIGN**

Bachelor of Science Degree

The curriculum in Industrial Design is a careful blend of technology, business, art, and general studies with courses in mechanical design, drafting, illustration, equipment studies, design philosophy and practices. The resulting Bachelor of Science Degree in Industrial Design will produce designers with the aesthetic and technical potential to set new directions in product development and design, knowing full well the materials, processes, quality and production standards needed to comply with what government and consumer interest groups and our economy will be requiring in products.
Requirements

Candidates for the degree Bachelor of Science must complete the proposed program. The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Dept.</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM 238</td>
<td>Studio in IND Design</td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 131</td>
<td>Drafting</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 136</td>
<td>Descriptive Geometry</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 330</td>
<td>Machine Drafting</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 236</td>
<td>Graphical Solutions</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 331</td>
<td>Production Drafting</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 434</td>
<td>Tech Illustration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 438</td>
<td>Industrial Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM 538</td>
<td>Product Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IEGM 436</td>
<td>Computer Graphics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ME 121</td>
<td>Manufacturing Processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 271</td>
<td>Elect &amp; Mech Prop of Materials</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 260</td>
<td>Elementary Statistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>IEGM 305</td>
<td>Work Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PSY 542</td>
<td>Human Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HEC 520</td>
<td>Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 106</td>
<td>Intro. to Computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUS 340</td>
<td>Legal Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MKTG 375</td>
<td>Principles of Retailing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MGMT 451</td>
<td>Administration Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ART 110</td>
<td>Drawing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART 114</td>
<td>Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART 111</td>
<td>Drawing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART 115</td>
<td>Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART 245</td>
<td>Graphic Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART 248</td>
<td>Photography</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART 445</td>
<td>Graphic Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ART</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHYSICAL EDUCATION — (2 Cr. Hrs.)</td>
<td>PEGN</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GENERAL STUDIES — (35 Cr. Hrs.)

AREA I: Humanities & Fine Arts
6 Cr. Hr. Min.

AREA II: Social & Behavioral Sciences
6 Cr. Hr. Min.

AREA III: Natural Sciences & Math
6 Cr. Hr. Min.

AREA IV: Non-Western World
3 Cr. Hr. Min.

AREA V: Optional Electives
Semester Totals
16 16 17 16 17 16 16
Curriculum Total — 130 Cr. Hrs.

*Four hours to be taken in the 300-500 level courses in either AREA I or AREA II.
**ENG 105 or BED 142 or IEGM 102.
Students may receive a two-year certificate in drafting and design by completing 62 semester hours of approved courses. This program is designed specifically to train persons for industrial drafting careers in layout, detailing and engineering design activities. Upon successful completion students may transfer into the four-year Engineering Graphics program and work toward a Bachelor of Science Degree.

### ENGINEERING METALLURGY

Robert B. Day  
Roy S. Klein  
Arden Pridgeon  
Roger R. Urich

The Engineering Metallurgy curriculum is a program of applied engineering in the areas of foundry and materials engineering involving process control, product development, production, and supervision. This program prepares students for leadership roles in metal casting and other metal fabricating industries.

A Bachelor of Science Degree requires 128 semester credit hours.

#### Requirements

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

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

<table>
<thead>
<tr>
<th>Course Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
<th>Semester 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR ENGINEERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>170</td>
<td>Metallurgy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>280</td>
<td>Metal Casting I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>372</td>
<td>Chemical Metallurgy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>373</td>
<td>Physical Metallurgy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td></td>
<td>Metallurgy or Foundry Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>470</td>
<td>Metal Fabrication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td></td>
<td>Metallurgy or Foundry Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RELATED ENGINEERING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>105</td>
<td>Industrial Calculations</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>131</td>
<td>Engineering Drafting</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>322</td>
<td>Safety in Industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>402</td>
<td>Supervision of Industrial Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>100</td>
<td>Fund. Circuits and Electronics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>256</td>
<td>Statics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>221</td>
<td>Industrial Welding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>353</td>
<td>Strength of Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>330</td>
<td>Thermo-Fluid Dynamics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>354</td>
<td>Testing of Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>122</td>
<td>Mathematics I</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>123</td>
<td>Mathematics II</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>106</td>
<td>Intro. to Computers</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCIENCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>110</td>
<td>or 210 Physics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>111</td>
<td>or 211 Physics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GENERAL EDUCATION REQUIREMENTS — DISTRIBUTION PROGRAM

AREA I Humanities* ................................................................. 3 .. 4 .. .. .. .. ..
AREA II Social Sciences* ...................................................... 3 .. 3 .. 3 .. .. .. ..
AREA III Natural Science and Math (8 hrs. included in curr.) ........ 3 .. 3 .. .. .. .. ..
AREA IV Non-Western World .................................................. 4 .. .. .. .. .. ..
AREA V Optional Electives (8 hrs. included in curr.) ...................... 5 .. 5 .. 5 .. .. .. ..
Writing Requirement** .......................................................... 3 .. .. .. .. .. ..

PHYSICAL EDUCATION REQUIREMENTS
PEGN Physical Education ....................................................... 1 .. 1 .. .. .. .. ..
Electives .................................................................. 2 2 3 5 3 4
Total for Graduation — 128 Hrs. ........................................... 16 16 16 16 16 16 16

*Four hours to be taken in the 300-500 level courses in either AREA I or AREA II.
**ENG 105 or BED 142 or IEGM 102.

COURSE DESCRIPTIONS

(Course descriptions in italics are approved for general education purposes.)

GENERAL ENGINEERING

102 Technical Communications (3-0) ........................................... 3 hrs. Fall, Winter, Spring

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

105 Industrial Calculations (1-0) ................................................. 1 hr. Fall, Winter, Spring

Methods of calculation used in industry, approximations, slide rule, calculator, and computers in relation to industrial calculations. Slide rule instruction. Prerequisite: MATH 100 or H.S. Trig. and Logarithms.

300 Co-op Internship (Arr.) ...................................................... 3 hrs. Fall, Winter, Spring Summer

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

378 Development of American Technology (4-0) ......................... 4 hrs. Winter

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

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

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

498 Readings in Engineering (Arr.) ........................................... 1-6 hrs. Fall, Winter, Spring, Summer

Independent readings in Engineering. Open only to juniors and seniors having the approval of the faculty member under whom the student will work and the approval of the department chairman. Students may register more than once, not to exceed 6 hrs.
305 Work Analysis (3-0) 3 hrs. Fall, Spring
Methods engineering and measurement of human work systems. Techniques for operation analysis, work measurement and work sampling. Predetermined basic motion-time systems and standard data development are introduced.

310 Engineering Economy (3-0) 3 hrs. Winter, Spring
Application of principles of engineering economy for establishment of equipment and system feasibility. Interest, equivalence, taxes, depreciation, uncertainty and risk, incremental and sunk costs, and replacement models. Prerequisite: MATH 123 or 200.

318 Statistical Quality Control (3-0) 3 hrs. Winter
Methods of applying statistics and probability theory to control production processes, application of computer programs to analyze quality control problems. Prerequisites: Math 106, 360.

404 Material Handling and Plant Layout (4-0) 4 hrs. Fall, Winter
Comprehensive design of an industrial production system, problems involved in, and the interrelationship of, plant location, product analysis, process design, equipment selection, materials handling and plant layout, assignments include projects designed to include the application of previous Industrial Engineering courses. Prerequisites: IEGM 405; 326 or 416.

405 Work Systems Design (2-3) 3 hrs. Fall, Winter
Concepts and strategies for the design and improvement of work systems in public and private organizations. Advanced techniques for systems analysis and the management of improvement programs. A supervised team project is required. Prerequisite: IEGM 305: 418 or 422.

410 Senior Seminar (1-0) 1 hr. Fall
A seminar for senior Industrial Engineering and Supervision students. Topics for discussion will be centered about the role of the industrial engineer and supervisor at his place of work and his obligation to society. Prerequisite: Senior standing.

416 Operations Control in Industry (3-3) 4 hrs. Fall
The function of production and inventory operations. Control of manufacturing production systems, modeling. Prerequisites: MATH 106, MATH 360, IEGM 310.

418 Report Preparation (2-3) 3 hrs. Winter
Techniques and procedures used as a basis for preparing a report, planning, conducting, analyzing and communicating the results of a useful project. Prerequisites: IEGM 102 or equivalent.

419 Introduction to Operations Research (3-0) 3 hrs. Winter
The development of mathematical concepts and models concerned with industrial engineering problems. Topics include linear programming, queuing theory, game theory, and simulation. Prerequisite: MATH 360.

505 Advanced Methods Engineering (3-0) 3 hrs. Winter
Synthesis of effective work methods using a predetermined basic motion time system. Methods-time measurement, standard data system development and administration. Prerequisite: IEGM 305.
508 Advanced Quality Control (3-0) 3 hrs. Fall
Analysis and application of new concepts in the fields of quality control. Tests of significance, probability studies and other uses of statistics as applied to quality control. Prerequisite: IEGM 318 or IEGM 328.

518 Engineering Valuation and Depreciation (3-0) 3 hrs. Winter
A study of the valuation of industrial property with emphasis on methods of estimating depreciation. Topics include concepts on value, the courts and valuation, property and other accounting records, cost indexes, estimation of service life, and methods of estimating depreciation. Prerequisite: IEGM 310 or equivalent.

545 Health Care Systems Improvement (3-0) 3 hrs. Fall, Spring
The work simplification philosophy and strategy as applied to health care systems. Techniques for systems and methods improvement. A field/clinical systems improvement project is required. Prerequisite: Upperclass standing; Not open to students with credit in IEGM 305.

INDUSTRIAL SUPERVISION

100 Introduction to Industry (2-0) 2 Hrs. Fall
The anatomy of manufacturing industries, operational responsibilities and relationships in companies of various sizes and using various processes, includes a foundation in basic analytical methods.

322 Safety in Industry (3-0) 3 hrs. Fall, Winter, Spring
Importance of safety in industry, cost of accidents, fundamentals of accident prevention; elements of effective safety programs, accident investigation, and OSHA. Prerequisite: Upperclass standing.

326 Production Control (3-0) 3 hrs. Fall, Summer
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. Prerequisites: IEGM 100 or 105, MATH 260. Not open to industrial engineering majors.

328 Industrial Quality Control (3-0) 3 hrs. Fall, Spring
Techniques of controlling quality in manufacturing systems, topics include organization of quality, methods of measurement and basic statistical tools. Prerequisite: MATH 260 or MGMT 200. Not open to Industrial Engineering majors.

402 Supervision of Industrial Operations (3-0) 3 hrs. Fall, Winter, Spring
Supervisory duties and responsibilities of foremen, engineers, and technicians in industrial operations. Prerequisite: Junior standing.

403 Industrial Labor Relations (3-0) 3 hrs. Fall, Winter, Summer
Relationships between government agencies, labor organizations and management. Emphasis on development of collective bargaining procedures. Prerequisite: Senior standing.

420 Modern Industrial Practices (4-6) 6 hrs. Spring
Students will observe and analyze actual supervisory and managerial functions in industrial and service establishments. Conference procedures will be used in exploring many facets of supervisory and managerial practices and procedures. A charge of $30 for transportation is required. Prerequisite: IEGM 318, 326, 402, 403, 404, 405, or consent.

422 Conference Leadership (3-0) 3 hrs. Fall, Winter
Basic methods of planning and presenting an industrial conference. Techniques of leadership with opportunity for practical application of these techniques. Prerequisite: CAS 104, upperclass.
500 Labor Management Relations (3-0) 3 hrs. Winter
Interplay among government agencies, labor organizations, and management. Particular emphasis is placed on collective bargaining procedures, issues, and applications through case studies. Not open to students with credit in IEGM 403.

502 Industrial Supervision (3-0) 3 hrs. Fall
The supervisor's duties, obligations and responsibilities in his industrial role. The practical application of behavioral science principles to the industrial environment. Not open to students with credit in IEGM 402.

**ENGINEERING GRAPHICS**

130 Technical Drafting (1-3) 2 hrs. Fall, Winter, Summer
Basic principles and techniques of engineering drafting as related to industrial manufacturing processes. Open only to students having had no drafting in high school.

131 Engineering Drafting (2-3) 3 hrs. Fall, Winter, Summer
Essentials of drafting-lettering, instrument usage, applied geometry, sketching, orthographic projections, auxiliaries and sections, dimensioning practice, detail and assembly drawing, and standard drafting practices. Pictorial drawing, charts and graphics. Prerequisite: IEGM 130 or equivalent.

136 Descriptive Geometry (3-3) 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: IEGM 131.

236 Graphical Solutions (2-2) 2 hrs. Winter

238 Studio in Industrial Design (0-3) 4 hrs.* Winter must be taken in proper sequence.
*(1 hr/year in sequence as shown below)

**Studio in Industrial Design (1) IEGM-238-A (1 hr.)**
Readings in industrial design. Philosophy of industrial design with visits to design studios and visits by practicing designers.

**Studio in Industrial Design (2) IEGM-238-B (1 hr.)**
Sketching, rendering and model building, skill development.

**Studio in Industrial Design (3) IEGM-238-C (1 hr.)**
Design methods, information gathering, storing and retrieval. Design decision making and implementation procedures.

**Studio in Industrial Design (4) IEGM-238-D (1 hr.)**
Package, display and project presentations.

240 Housing (3-0) 3 hrs. Fall
A course designed to give an overview of basic principles, planning, financial and sociological aspects, zoning ordinances, building codes, and methods and materials used in residential building construction. Not for IED majors or minors.

242 Interior Design Graphics (2-3) 3 hrs. Spring
Development of basic skills and techniques used in developing various types of interior design presentations. Emphasis on freehand perspective, pencil and pen techniques, color mediums, shadows, and interior elevations.
Industrial Engineering

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

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

332 Design of Production Tooling I (2-2) 2 hrs. Fall
Principles of tooling practice. Elements of jigs and fixtures and their applications to product component manufacturing. Fixturing for numerical control onmi-directional machining operations. Prerequisite: ME 121, 220; IEGM 330.

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

431 Industrial Drafting Practices (2-0) 2 hrs. Winter or Spring
Organization, administration, procedures and methods involving personnel, planning, equipping, and systematizing an industrial drafting department. Prerequisite: IEGM 331. (Offered alternate Winter/-Spring)

434 Technical Illustration (3-3) 3 hrs. Spring
Techniques of illustrating for technical publications such as engineering reports, technical and service manuals and parts catalogs. Prerequisite: IEGM 131. (Offered alternate Springs)

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

438 Industrial Design (3-3) 3 hrs. Winter
A study of the various aspects of industrial design. Materials, methods, human factors and other elements of product design and development will be considered. Models, mock-ups and prototypes will be constructed of students' designs. Prerequisite: IEGM 131. (Offered alternate Winters)

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

ENGINEERING METALLURGY

170 General Metallurgy (3-3) 4 hrs. Fall, Winter, Summer
Mechanical properties of metals. Effect of geometry of loading, strain rate, and fatigue on the behavior of metals. Selection and heat treatment of alloys with emphasis on the ferrous based alloys.

271 Electrical and Mechanical Properties of Materials (2-3) 3 hrs. Winter
Principles of Physical Metallurgy emphasizing electrical and magnetic properties of materials.
280 Metal Casting I (2-3) 3 hrs. Fall, Spring
Introduction to cast metals technology and laboratory experience in industrial casting processes. Prerequisite: IEGM 170 or IEGM 271 or IEGM 371.

371 Metallurgy and Materials Failure (3-3) 4 hrs. Fall, Winter, Spring
Physical metallurgy, applications, and analysis of service of ferrous metals and high strength alloys used in the aviation industry.

372 Chemical Metallurgy (4-0) 4 hrs. Fall
Introduction to chemical thermodynamics. Thermodynamic properties of the solid state, extractive metallurgy, solidification of alloys, solid state diffusion, oxidation and corrosion of metals. Prerequisites: Chemistry 103, MATH 123.

373 Physical Metallurgy (3-3) 4 hrs. Winter
Introduction to the defect structure of metals and alloys, and simple theories of deformation and fracture. Structure insensitive properties of metals are considered relative to the defect structure of metals. Prerequisites: Chemistry 103, MATH 123, and Physics 110.

380 Metal Casting II (2-3) 3 hrs. Fall
Theory and application of the metallurgy of casting alloys, gray iron, ductile and malleable iron, steel, brass, bronze and aluminum alloys. Melting, casting and heat treating processes will be analyzed for each alloy. Basic theory of the solidification of metals. Prerequisite: IEGM 280.

470 Metal Fabrication (3-0) 3 hrs. Winter
Fundamentals of elasticity, plasticity and the mechanical forming methods and industrial processes of metal fabrication: rolling, forging, extrusion, drawing and powder metallurgy. Prerequisites: IEGM 373 and ME 354.

485 Die Casting (2-3) 3 hrs. Winter
Production of die casting, including design, melting, casting and finishing processes emphasizing production of quality castings economically. Prerequisite: IEGM 280.

572 X-Ray Diffraction (2-3) 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 Engineering Materials (3-0) 3 hrs. Spring
Material selected for resistance to both load and environment. Design parameters for material selection and various metal systems. Corrosion, service failures and mechanical behavior of engineering alloys at high and low temperatures. Prerequisite: IEGM 373. (Offered alternate Springs)

584 Casting Design (2-3) 3 hrs. Winter
Engineering design of castings based on stress analysis and capabilities of production casting processes. Prerequisites: IEGM 280, ME 356.

589 Studies in Cast Metals Technology (Arr.) 1-3 Hrs. Fall, Winter, Spring
Metallurgy of ferrous casting and melting. Solidification, risering, gating, ferrous castings, control and sand cases. Prerequisite: Consent of instructor.
The Mechanical Engineering Curriculum is a program that is structured to provide the necessary engineering expertise in the following fields: Manufacturing, Product Development, Energy Conversion, and Construction. Electives may be used to broaden the program to include an area such as Supervision/Administration, Industrial Marketing, Testing and Development.

A Bachelor of Science Degree requires 128 semester credit hours. A "C" average or better must be earned in the required technical courses.

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

Coop-Education

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

Grand Rapids Degree Program

The Department of Mechanical Engineering offers in Grand Rapids a complete program leading to a degree in Mechanical Engineering. Courses are offered primarily in the evening, so as to be convenient to the individual who is working full-time.

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

Academic Counseling

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

The academic counselor, W. J. Stiefel, is located in Room 2038, Industrial and Engineering Technology Building.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this department may be found in the catalog under the College of Applied Sciences.

Manufacturing

A student interested in the Manufacturing area of Mechanical Engineering who already possesses an Associate Degree may obtain a Bachelor of Science Degree in Manufacturing with an additional 60 academic credit hours. For more information on this curriculum, see the program listed under the College of Applied Sciences in the catalog.
Candidates for the degree Bachelor of Science in Engineering (Mechanical) must complete the following program:

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAJOR ENGINEERING</strong></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>220</td>
<td>Production Tooling</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>256</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>Manufacturing Area Elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>353</td>
<td>Strength of Materials</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>332</td>
<td>Thermodynamics I</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>361</td>
<td>Engineering Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>354</td>
<td>Testing of Materials</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>430</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>355</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>431</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>358</td>
<td>Mechanism Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>435</td>
<td>Mechanical Engineering Lab</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>360</td>
<td>Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>ME Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>ME Design Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>453</td>
<td>Product Engineering</td>
<td>3</td>
</tr>
<tr>
<td><strong>RELATED ENGINEERING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>131</td>
<td>Engineering Drafting</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>170</td>
<td>Metallurgy</td>
<td>4</td>
</tr>
<tr>
<td>EE</td>
<td>210</td>
<td>Electrical Circuits</td>
<td>4</td>
</tr>
<tr>
<td>EE</td>
<td>220</td>
<td>Electronic Circuits -OR-</td>
<td>4</td>
</tr>
<tr>
<td>EE</td>
<td>230</td>
<td>DC Machines &amp; Transformers</td>
<td>4</td>
</tr>
<tr>
<td>IEGM</td>
<td>330</td>
<td>Machine Drafting</td>
<td>3</td>
</tr>
<tr>
<td><strong>MATHEMATICS</strong></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH</td>
<td>106</td>
<td>Introduction to Computers</td>
<td>1</td>
</tr>
<tr>
<td>MATH</td>
<td>122</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>123</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>274</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td><strong>SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>210</td>
<td>Approved Chemistry Course</td>
<td>4</td>
</tr>
<tr>
<td>PHYS</td>
<td>210</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS</td>
<td>211</td>
<td>Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>GENERAL EDUCATION — DISTRIBUTION PROGRAM</strong></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities*</td>
<td>3 4</td>
<td></td>
</tr>
<tr>
<td>AREA II</td>
<td>Social Science*</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>AREA III</td>
<td>Natural Science and Math</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8 hrs. included in curr.)</td>
<td>3 3</td>
<td></td>
</tr>
<tr>
<td>AREA IV</td>
<td>Non-Western World</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AREA V</td>
<td>Optional Electives</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8 hrs. included in curr.)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Writing Requirement**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>PHYSICAL EDUCATION</strong></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PEGN</td>
<td></td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>ELECTIVES</strong></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Free Electives</td>
<td>3 6</td>
<td></td>
</tr>
</tbody>
</table>

Total for graduation — 128 Hrs.

*2 courses to be taken at 300-500 level.
**ENG 105, or BED 142, or IEGM 102.
Engineering Elective Sequence

An elective sequence of at least 6 credit hours must be chosen in one of the following areas. (The 9 hours of “free” electives may also be used to strengthen an elective sequence or provide a blend of several areas.)

**I. DESIGN**
- ME 521 Welding Design Analysis
- ME 553 Advanced Product Design
- ME 555 Mechanism Synthesis
- ME 558 Mechanical Vibrations
- ME 559 Sound, Noise and Vibration Control

**II. ENERGY SYSTEMS**
- ME 432 Thermodynamics II
- ME 433 Air Conditioning
- ME 454 Air Pollution Control Systems
- ME 533 Industrial Ventilation

**III. MANUFACTURING**
- ME 221 Industrial Welding
- ME 320 Pressworking of Metals
- ME 321 Numerical Control of Production
- ME 420 Computer Aided Manufacturing
- ME 521 Welding Design Analysis
- IEGM 280 Metal Casting I
- IEGM 380 Metal Casting II

**IV. FOUNDRY**
- IEGM 280 Metal Casting I
- IEGM 373 Physical Metallurgy
- IEGM 380 Metal Casting II
- IEGM 485 Die Casting
- IEGM 584 Casting Design
- IEGM 589 Studies in Cast Metals Technology

**V. ENVIRONMENTAL STUDIES MINOR OR COORDINATE MAJOR**
- ME 432 Thermodynamics II
- ME 433 Air Conditioning
- ME 454 Air Pollution Control Systems
- ME 533 Industrial Ventilation
- ME 559 Sound, Noise and Vibration Control

For complete details of this program, see the Environmental Studies program under the College of Arts and Sciences. With the cooperation of the EVS and ME counselors, appropriate courses may be elected which will satisfy both the humanistic-social electives and free electives in the ME curriculum and the EVS minor or coordinate major.

### COURSE DESCRIPTIONS

**120 Machining Metals (2-3)**  
3 hrs. Fall, Winter, Spring

Theory and laboratory experience in the basic techniques used in metal removal. Introduction to layout, measurement, machine use and cutting tool geometry. Consideration of numerical control and electro discharge machining.

**121 Manufacturing Processes (2-2)**  
3 hrs. Fall, Winter, Spring

Analysis of processes and controls used in manufacturing products of various materials. Laboratory experience and field trips.

**220 Production Tooling (2-3)**  
3 hrs. Fall, Winter

Design and fabrication of jigs, fixtures and gauges used in production, methods, processing and cost considerations in relation to production tooling. Prerequisites: IEGM 130, ME 120.
College of Applied Sciences

221 Industrial Welding (2-2) 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 (3-0) 3 hrs. Fall, Winter, Spring, Summer
Mathematical and graphical techniques for ascertaining the magnitude of forces acting on structural bodies under static loads. Concepts of vectors, free body analysis and centroids. Prerequisites: MATH 122 or 200.

320 Pressworking of Metals (2-3) 3 hrs. Fall, Winter
Standard pressworking methods are analyzed in the construction and use of dies for blanking, shaving, bending, forming and stamping metals in standard power presses and brakes. Prerequisite: ME 220.

321 Numerical Control of Production (2-3) 3 hrs. Winter, Spring
Use-oriented approach to the majority of the point-to-point processes used in industry. Problems in efficient processing, programming and computer applications. Prerequisite: ME 220.

330 Thermo-Fluid Dynamics (4-0) 4 hrs. Winter, Summer
Fundamentals of fluid mechanics, thermodynamics, and heat transfer using a unified approach. Prerequisite: MATH 123. (Not open to Mechanical Engineering majors.)

332 Thermodynamics I (3-0) 3 hrs. Fall, Winter, Spring
Fundamental laws of thermodynamics, including gas and vapor processes, both non-flow and steady-flow, and thermodynamic cycles. Prerequisite: MATH 123.

338 Energy, Resources, and Pollution (3-0) 3 hrs. Fall, Winter
An insight into the problems of thermal pollution and energy resources for General Studies and Environmental programs is provided. Not open to students with credit in a Thermodynamics course. Prerequisite: Junior standing.

353 Strength of Materials (3-0) 3 hrs. Fall, Winter, Spring, Summer
Compression, tension, shear, torsion, and bending forces in structural members, including distribution of stress, deflections, buckling, and fatigue on engineering materials. Prerequisites: ME 256 and MATH 123 or 200.

354 Testing of Materials (2-3) 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: ME 353.

355 Dynamics (3-0) 3 hrs. Fall, Winter, Spring
Kinematics and kinetics of rectilinear and curvilinear motion. Rigid bodies in plane motion and about a fixed axis. Prerequisites: ME 256 and MATH 123.

358 Mechanism Analysis (3-0) 3 hrs. Fall, Winter
Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis. Prerequisites: ME 256 and MATH 123.

360 Control Systems (3-0) 3 hrs. Fall, Winter, Spring
Theory and analysis of linear closed-loop control systems containing electronic, electro-magnetic, and mechanical components. Prerequisites: EE 100, ME 256, and MATH 123.

361 Engineering Analysis I (3-0) 3 hrs. Fall, Winter
Advanced mathematical methods as applied to engineering problems. Prerequisite: MATH 274.
420 Computer Aided Manufacturing (2-3)  3 hrs. Winter
A study and application of computer programming for machine tools. Prerequisites: ME 120 or 121, MATH 122.

430 Fluid Mechanics (3-0)  3 hrs. Fall, Winter, Spring
Static fluids and hydrostatic pressure on plane and curved surfaces. Analysis of the flow of fluids based on Bernoulli’s Theorem. Flow orifices, pipe systems, and open channels. Prerequisites: ME 256 and Math 123.

431 Heat Transfer (3-0)  3 hrs. Fall, Winter, Summer
Steady state and transient conduction, radiation functions, radiation networks, natural and forced convection, and design of heat exchangers. Prerequisites: ME 332 and 360.

432 Thermodynamics II (3-0)  3 hrs. Winter
Advanced topics including gas-vapor mixtures, combustion, and compressible flow. Prerequisite: ME 332, 430.

433 Air Conditioning (2-2)  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: ME 332.

435 Mechanical Engineering Laboratory (2-3)  3 hrs. Fall, Winter, Spring
Principles of measurement, testing and evaluation of Mechanical Engineering systems. Prerequisites: ME 332, 353, and 430. Two of these courses may be taken concurrently with the laboratory.

453 Product Engineering (3-3)  4 hrs. Fall, Winter, Spring
The application of engineering concepts to technical design, scope of design, analysis and synthesis of design parameters, evaluation of performance, and other factors related to product development. Prerequisites: IEGM 131, ME 353.

454 Air Pollution Control Systems (3-0)  3 hrs. Fall, Winter
The nature of air pollution and the methods of monitoring and controlling emissions, sampling and analysis techniques and devices are studied. Prerequisite: PSE 251.

490 Independent Research and Development  1-4 hrs. Fall, Winter, Spring, Summer
Individual research or special project in Mechanical Engineering.

498 Independent Readings  1-6 hrs. Fall, Winter, Spring, Summer
An independent readings assignment, the description and purpose of which will be set forth on a form available at the departmental office.

499 Independent Studies  1-6 hrs. Fall, Winter, Spring, Summer
An independent studies assignment, available only by special arrangement with an instructor and approved by the Department Chairman.

521 Welding Design Analysis (3-0)  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: ME 221.

533 Industrial Ventilation (3-0)  3 hrs. Winter
Design and testing of systems to control air quality in industrial plants. Prerequisite: Approval of instructor.
College of Applied Sciences

553 Advanced Product Design (3-0) 3 hrs. Fall
An engineering design project from concept to adoption. Static and dynamic analysis. Mechanical systems design and layout. Prerequisites: ME 360, 453. (Offered alternate years.)

555 Mechanism Synthesis (3-0) 3 hrs. Fall
Type, number and dimensional synthesis of planar mechanisms by graphical and analytical methods. Computer design using optimization methods. Prerequisite: ME 358. (Offered alternate years.)

558 Mechanical Vibrations (3-0) 3 hrs. Winter
A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Prerequisites: ME 355 and 360 or MATH 223.

559 Sound, Noise and Vibration Control (3-0) 3 hrs. Fall
The effects of acoustical energy on the environment, methods of measurement, and governmental regulations are studied. No prerequisites.

560 Engineering Analysis II (3-0) 3 hrs. Fall
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ME 360 or equivalent.

597 Advanced Studies in Mechanical Engineering 1-3 hrs. Fall, Winter, Spring, Summer
An independent study program arranged in consultation with a faculty advisor.
Military Science

LTC Ronald L. Kushman, Head
MAJ Thomas R. Wolf
CPT Roy M. Capozzi
CPT Donald W. Doty
CPT Grant Lorenz
CPT Donald Madison
SGM Richard L. Waters
CPT Michael J. O'Shea
MSG Joseph D. Pilon
SSG Steve Anderson
SSG Robert O. Paige

The Department of Military Science offers all male and female students courses intended to develop leadership and managerial skills and to broaden students' knowledge of the role of the military in society. Selected Advanced Course students become officers in the Army of the United States upon completion of the program. Students enrolled in this program are eligible for a 1D draft deferment, ROTC scholarships, membership on the Smallbore Rifle Team, Orienteering Team and Western's Rangers. Advanced Course students are eligible for flight training during the senior year (student must pass required written and physical examinations) and a commission as a second lieutenant in the United States Army, either on active duty or in the Reserves.

The Head of the Department and all instructors are officers of the United States Army assigned to the University by permission of the University. They administer the Military Science Program and conduct all classes offered by the Department. The government provides uniforms and textbooks for all students, with financial assistance for those in the last two years of the program (Advanced Course).

An activity fee of $2.00 per semester is charged for support of Military Science activities such as field training exercises and orientation visits.

Minors in Military Science are available as shown here.

MILITARY SCIENCE MINORS

A. Military Science 300, 301, 401, 420 .................................................. 11
Management 352 or Communication Arts & Sciences 335 ....................... 3
History 319 395 or 594 (MLSC 400) ..................................................... 3
Elective* ..................................................... 3

B. All Military Science** ................................................................. 23
A Department minor slip is required.

*An elective of three or more hours will be chosen by the student from any one of the following areas: Anthropology, Geography, Sociology, or Political Science. This elective must have a course number of 200 or higher and be approved by the student's minor advisor.

**This minor is open only to those students interested in pursuing a career in the military as a commissioned officer, and who have evidenced superior academic and leadership performance prior to the time they request admittance into this program. A minimum grade point average of 2.75 in department subjects must be maintained.
FOUR YEAR PROGRAM

The four year Military Science program is divided into a Basic Course (first two years) and an Advanced Course (last two years). Students who participate in BASIC COURSE instruction are under NO OBLIGATION TO SERVE IN THE ACTIVE ARMY OR THE RESERVES.

BASIC COURSE

The Basic Course is designed to furnish a background of basic military subjects necessary to pursue the classes offered in the Advanced Course, and to provide a general knowledge of military affairs to those students who do not enter the Advanced Program. Freshmen who wish to participate as Cadets must take Military Fitness I (PEGN 175) and either MLSC 100 or MLSC 101 or MLSC 102. Sophomore Cadets take Military Fitness II (PEGN 175) and MLSC 200 during the Fall and MLSC 201 during the Winter. Exceptions may be approved by the Professor of Military Science. Students who wish to participate as Cadets are expected (1) to be physically qualified, (2) be of good moral character, and (3) sign an oath of loyalty to the United States. Students who have had three years of Junior R.O.T.C. (high school R.O.T.C.), or more than one year of active military service may substitute their prior training for the first two years of classes by securing the approval of the Professor of Military Science. Students who have completed the Basic Summer Camp are not required to attend Basic Course classes. Students thus excused will normally begin the Advanced Course classes at the start of their junior year. Records of students transferring from other institutions who have started either Army or Air Force Military Science programs will be reviewed by the Professor of Military Science to determine proper placement in the Military Science Program.

(Course descriptions in italics are approved for General Education purposes.)

100 Contemporary Roles of National Defense (3-0) 3 hrs. Fall
The study of foundations of defense and subjects of current national military implication and interest. Subject material involves leadership, military involvement around the world, and other topics of current U.S. Military/Civilian interest.

101 Military Aspects of National Power (2-0) 2 hrs. Winter
A study of the factors contributing to national and international power; an introduction to the principles of warfare and the causes of international conflict.

102 Basic Leadership (2-0) 2 hrs. Fall, Spring
A study of leadership principles and methods of instruction. Includes a study of the evolution, purpose and organization of the military.

110 Military Career Opportunities (1-0) 1 hr. Summer
An examination of all branches of the Service and the wide variety of careers available to military personnel.

120 Military Fitness I (2-0) 1 hr. Winter, Spring
Classes which combine physical and leadership training. Cadets will have an opportunity to present instruction and lead physical training exercises. Includes personal health, physical fitness, drill, and hiking and back packing. This course is taught in conjunction with the General Physical Education department and must be registered for under PEGN 175 Special Activities. (see current Schedule of Classes.)

200 Principles of Cartology (2-0) 2 hrs. Fall, Spring
Topographical map reading, aerial photographs, & land navigation techniques. Emphasis is placed upon developing student's ability to apply principles learned in the classroom to practical work in the field. (GEOG 365 may be substituted.)

201 Human Behavior and Fundamentals of Tactical Employment (3-0) 3 hrs. Winter
A study of 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.
220 Military Fitness II (2-0)  
1 hr. Fall

A continuation of Military Fitness I. Emphasis is placed on military related physical activities such as riflery, orienteering, and survival training. This course is taught in conjunction with the General Physical Education department and must be registered for under PEGN 175 Specqal Activities. (See current Schedule of Classes). Should be taken in conjunction with MLSC 200.

ADVANCED COURSE

The selection of students for enrollment in the Advanced Course is on a competitive basis. Special attention is given to maintenance of high standards of conduct and academic achievement both before and after enrollment in the Advanced Course. The major emphasis of the Advanced Course is on the development of individual leadership and a sense of responsibility. For admittance to the Advanced Course for purpose of attainment of a commission, a student must have completed either the Basic Course or Basic Summer Camp, be selected by the Professor of Military Science, be 25 years of age or under at time of enrollment, execute a contract with the government to finish the course, attend a six week summer camp, and accept a commission if tendered. Students who have had one or more years active service with one of the Armed Forces and students who are transferring from another institution with credit for the Basic Course may be authorized to register for the Advanced Course in phase with their collegiate academic standing. Students accepted for the Advanced Course receive payment of $100 per month. Students attending summer camp are fed and quartered at the expense of the government, paid at the rate of approximately $330.00 monthly while in camp, and are given a travel allowance to the summer camp and return.

A program of flight instruction in connection with R.O.T.C. is of special interest to the Advanced Course student. Under this plan the Army will pay for flight training of selected seniors who request such instruction and pass required written and physical examinations. Completion of this training may qualify the student for the award of an FAA pilot's license. It further qualifies the Advanced Course student upon receiving his commission for advanced Army flight training.

One overnight field training exercise will be conducted each semester. The training will be a practical exercise emphasizing previous classroom instruction.

300 Advanced Leadership and Management (3-0)  
3 hrs. Fall

Studies of authority and responsibility, span of control, planning, coordinating, and decision making with emphasis on practical application to military situations. Prerequisite: Permission of Professor of Military Science (PMS).

301 Advanced Concepts of Tactical Employment (3-0)  
3 hrs. Winter

A study of tactical situations. Development of planning and coordination sequences applicable to the employment of military resources, communications as a means of control in both conventional and unconventional warfare. Prerequisite: MLSC 300 or consent.

390 Advanced Military Leadership (4-0)  
4 Hrs. Spring

A six-week training session designed to supplement campus instruction by providing the cadet practical experience and instruction in tactical and technical subjects with specific emphasis on leadership training in the form of problem analysis, decision making and troop-leading experience.

400  
3 hrs. Winter

Students will enroll in either History 319 (America and War), History 594 (War in the Modern World), or History 395 (History of War). Note: Students must enroll in 420.

401 Command and Staff (4-0)  
4 hrs. Fall

A comprehensive course in the fundamentals of military administrative management, military law, intelligence, and counterintelligence. Prerequisite: MLSC 300-MLSC 400 or permission of PMS.

420 Practicum in Leadership (1-0)  
1 hr. Winter

A study of the functions of the staff and its relationship to the commander. Students are placed in actual positions to supervise the Cadet Corps. Must be taken in conjunction with 400.
TWO YEAR PROGRAM

For the students transferring into the University and currently enrolled students who have not taken Military Science classes because of class conflicts, work schedules, etc., a Two Year Program is available. Students enter this program by applying for attendance at a Basic Summer Camp of 6 weeks duration. Attendance and successful completion of this Basic Summer Camp then is substituted for the Basic Course classes; therefore, the student has only to complete the Advanced Course classes while he is finishing his overall degree requirement in order to be eligible for a commission. The Two Year Program student is eligible for scholarships, financial assistance ($100 per month), draft deferments, and free textbooks for Military Science classes. See the paragraph on the Advanced Course for further information.

While at the Basic Summer Camp the student will be trained, fed and housed at the expense of the government. He or she will also receive travel pay plus a salary of approximately $344.00 per month. See the Professor of Military Science for details of this program.

R.O.T.C. SCHOLARSHIPS

R.O.T.C. scholarships that provide for tuition, fees, books, and an allowance of $100 per month are available. See Military Science in the Scholarships portion of this catalog.
The curriculum is designed to prepare students to treat clients in various disability areas and to complete requirements of accreditation established by the American Medical Association in cooperation with the American Occupational Therapy Association. It includes a minimum of six months of supervised field work experience in selected agencies providing experience with clients with a wide range of physical and psychosocial dysfunction.

Admission Procedure:

The Occupational Therapy Department has established a maximum enrollment number for each academic level. Consequently, this department in conjunction with the Admissions Office has established a selections procedure. Criteria for selection are essentially based on: I) academic standing, 2) knowledge and interest in occupational therapy, and 3) participation in human service experiences. The application process includes the completion of the appropriate University application form plus the completion of an Admissions Questionnaire forwarded to all applicants requesting admission to the Occupational Therapy Curriculum. An “equal consideration date” (deadline) for receipt of application forms and Admission Questionnaires for the 1977 Fall Semester will be set for the middle of February, 1977 for all new freshmen and transfer applications.

The primary enrollment period is the Fall Semester with the number of new admissions split about evenly between freshmen and junior level transfer students who have completed a minimum of 55 semester hours or its equivalent. Intra-University change of curriculum applicants will be processed each Winter Semester. Students should contact the Occupational Therapy Department for information regarding intra-University change of curriculum procedures.

The student will apply for admission to the field work experience early in the semester in which he will have earned credits equal to 55 semester hours. Applications are made in the departmental office. To enroll for field work the student must hold a point hour ratio of 2.00 or above with no grade less than a "C" in courses in the major sequence. In addition, the students shall receive satisfactory recommendations from departmental faculty as to physical and emotional health, academic and general competency.

Transfer students with 55 or more credit hours or students holding Baccalaureate degrees will apply for their field work assignment before the end of the first month in the curriculum.

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 MAJOR SEQUENCE.

The following courses are offered on a credit/no credit basis only: OT 236, 440, 441, 450.

OCCUPATIONAL THERAPY
Bachelor of Science Degree

A. Minimum Hours required for this curriculum

B. Course Requirements:
1. General Education Requirements
2. Behavioral Science
   PSY. 150 Introduction to Human Behavior
   PSY. 160 Child Psychology
   O.T. 225 Growth, Development, and Aging
College of Applied Sciences

3. Science ................................................................. 17 Hrs.
   *BIO 101 Animal Biology ........................................... 4
   BIO 240 Human Physiology ....................................... 4
   O.T. 221 Gross Human Anatomy .................................. 6
   O.T. 320 Kinesiology ................................................ 3

4. Practical Arts .......................................................... 9
   O.T. 103 Ceramics ..................................................... 3
   O.T. 110 General Crafts ............................................. 3
   I.ED 198 OT Woodworking ........................................... 3

5. General Pathology ...................................................... 7
   O.T. 322 Psychiatric Conditions .................................. 3
   O.T. 324 Medical and Orthopedic Conditions .................... 4

6. Occupational Therapy ................................................ 39
   O.T. 111 Therapeutic Media I ...................................... 2
   O.T. 210 Therapeutic Media II .................................... 3
   O.T. 235 Developmental Assessment ............................... 3
   O.T. 323 Clinical Neurology ......................................... 3
   O.T. 330 Psychosocial Dysfunction-Theory ....................... 3
   O.T. 331 Psychosocial Dysfunction-Techniques .................. 2
   O.T. 333 Clinical Instruction in Psychiatry ...................... 2
   O.T. 410 Application in Physical Dysfunction-Techniques ........ 4
   O.T. 430 Organization for Patient Services ...................... 3
   O.T. 440 Field Work Experience ................................... 3
   O.T. 441 Field Work Experience ................................... 3
   O.T. 442 Application in Physical Dysfunction – Treatment ....... 4
   O.T. 443 Clinical Instruction in Physical Disabilities .......... 2
   O.T. 450 Senior Seminar ............................................... 2

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

8. Electives to make 128 hours

*Biology 101 may be used in this curriculum to satisfy 4 hours of Area III Science required in the Distribution Program of the General Education Requirements.

**COURSE DESCRIPTIONS**

103 Ceramics (1-5)*
   3 hrs. Fall, Winter
   Basic course in ceramic methods-covering pinch pots, slabs, tall pots, decorative slabs, simple sculpture, basic underglaze techniques, molds, glazing methods, kiln preparation, stacking and firing.

110 General Crafts (1-5)
   3 hrs. Fall, Winter
   To acquaint students with a wide variety of media applicable in the field of O.T. for treatment assignments with patients/clients. Emphasis on understanding of the basic techniques involved in each craft area.

111 Therapeutic Media I (1-2)
   2 hrs. Fall, Winter
   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 (2-2)
   3 hrs. Fall, Winter
   Introduces student to the decision making process and affords the student the opportunity to use the process to select and to evaluate various therapeutic media and therapeutic processes. Students will participate in both laboratory and community experiences.

*Indicates hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).
### Occupational Therapy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>221 (321)</td>
<td>Gross Human Anatomy (5-4)</td>
<td>6 hrs.</td>
<td>Fall, Winter, Spring</td>
<td>A study of the structure and function of the various systems of the body. Lecture and laboratory. Prerequisites: Biology 101 or equivalent, Occupational Therapy major.</td>
</tr>
<tr>
<td>225</td>
<td>Growth, Development, and Aging (3-0)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
<td>A study of physical, mental, emotional, and social patterns of growth, development, and aging. Aspects to be given special emphasis for the occupational therapy student will be motor development, physiology of aging, growth patterns, and functional development in any of the above aspects. Prerequisites: Psychology 150, 160.</td>
</tr>
<tr>
<td>235</td>
<td>Developmental Assessment (2-2)</td>
<td>3 hrs.</td>
<td>Fall, Winter, Summer</td>
<td>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: O.T. 225, Occupational Therapy major.</td>
</tr>
<tr>
<td>236</td>
<td>Independent Practicum</td>
<td>2 hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
<td>Participation in a health service or agency to provide experience with hospital procedure and an orientation to patient groups. A daily log is required. Student must submit a proposal for the course for departmental approval prior to registration. Occupational Therapy major.</td>
</tr>
<tr>
<td>320</td>
<td>Kinesiology (3-0)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
<td>An investigation of prerequisites and characteristics of normal voluntary movement, kinesiology of normal and abnormal upper extremity function, posture and gait, range of motion and muscle strength evaluation, activity analysis and an introduction to therapeutic exercise. Prerequisites: BIO 240, OT 221.</td>
</tr>
<tr>
<td>322</td>
<td>Psychiatric Conditions (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>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: PSY 150, 160; O.T. 225 or concurrently; Occupational Therapy major.</td>
</tr>
<tr>
<td>323</td>
<td>Clinical Neurology (3-0)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
<td>Regional neuroanatomy and functional neurophysiology are presented. Emphasis is upon clinic signs that indicate neuropathology. Student will participate in a group paper presentation of a neurological disorder and will take part in a neurological exam. BIO 240, OT 221.</td>
</tr>
<tr>
<td>324</td>
<td>Medical and Orthopedic Conditions (4-0)</td>
<td>4 hrs.</td>
<td>Fall, Winter</td>
<td>A series of lectures providing an overview of medical and orthopedic conditions. Psychosocial aspects of disease and disability are discussed and an introduction to occupational treatment goals is provided. Prerequisite: BIO 240.</td>
</tr>
<tr>
<td>330</td>
<td>Psychosocial Dysfunction-Theory (3-0)</td>
<td>3 hrs.</td>
<td>Fall, Winter, Summer</td>
<td>A study of the philosophical and theoretical basis for the application of occupational therapy principles and techniques as a means of enhancing psychosocial functioning. Lecture, discussion, demonstration, student projects, resource people, movies, video tape and participatory experiences will be used in instruction. Prerequisite: OT 322 or concurrent.</td>
</tr>
<tr>
<td>331</td>
<td>Psychosocial Dysfunction-Techniques (1-3)</td>
<td>2 hrs.</td>
<td>Fall</td>
<td>A laboratory class designed to develop skill in the use of techniques and media used in the practice of occupational therapy as a means of enhancing psychosocial functioning. Participatory experiences such as role playing, task groups, student demonstrations, and independent projects will be utilized in instruction as well as film and video tapes. Prerequisite: OT 330.</td>
</tr>
<tr>
<td>333</td>
<td>Clinical Instruction in Psychiatry (0-4)</td>
<td>2 hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
<td>Clinical experiences designed to develop skill in application of evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Prerequisite: OT 331 or concurrent.</td>
</tr>
</tbody>
</table>
College of Applied Sciences

410 Application in Physical Dysfunction-Techniques (2-4) 4 hrs. Fall, Winter
The objectives of occupational therapy in general medicine and rehabilitation serve as a basis for studying treatment techniques. Prerequisites: OT 235, 320, 323, 324. Must be taken concurrently with OT 442.

430 Organization for Patient Services (3-0) 3 hrs. Fall, Winter
An analysis of occupational therapy services and programming to meet client needs. Includes enabling activities at national and state levels, as well as within the individual delivery system. Prerequisites: Senior level, OT major.

436 Independent Study in Occupational Therapy 2-4 hrs. Fall, Winter, Spring, Summer
Designed to allow outstanding students to work independently under faculty supervision. Consent of Department Chairman.

440 Field Work Experience 3 hrs. Fall, Winter, Spring, Summer
A three month affiliation in hospitals or agencies providing the student experience in designated areas of occupational therapy. Departmental consent only. Prerequisite: OT 331, 333, or 442, 443.

441 Field Work Experience 3 hrs. Fall, Winter, Spring, Summer
A three month affiliation in hospitals or agencies providing the student experience in designated areas of occupational therapy. Departmental consent only. Prerequisite: Completion of all academic work.

442 Application in Physical Dysfunction — Treatment (4-0) 4 hrs. Fall, Winter
Emphasis is placed on the process of evaluation, interpretation, planning and implementation as applied to occupational therapy. Prerequisites: OT 235, 320, 323, 324. Must be taken concurrently with OT 410.

443 Clinical Instruction in Physical Disabilities (0-4) 2 hrs. Fall, Winter, Spring
Clinical experiences designed to develop skill in evaluation and treatment techniques to patients and clients in local hospitals and community agencies. Prerequisite: OT 442 or concurrent.

450 Senior Seminar (2-0) 2 hrs. Fall, Winter
The primary objective of the seminar is to serve an integrative function, bringing together knowledge and skills the student has developed during his or her professional program for analysis evaluation and solution of health problems.

470 Functioning of the Older Adult (3-0) 3 hrs. Winter
The objective of this course is to provide understanding of the basic psychological and physiological changes characteristic of human aging and pathological conditions which have consequences for function and behavior.

510 Arts and Crafts for Rehabilitation Teachers of the Blind (1-3) 2 hrs. Winter, Summer
Includes methods and techniques of teaching needlework, ceramics, and leatherwork to visually handicapped adults. Prerequisite: Occupational Therapy majors must have consent of Department Chairman.
Paper Science and Engineering

Raymond L. Janes, Head
John M. Fisher
James E. Kline

The Department of Paper Science and Engineering offers three B.S. and M.S. programs which provide extensive foundational scientific and technical education to prepare graduates for professional employment in the research and development, technical-manufacturing, and technical-marketing areas of the paper, pulp, environmental, and related fields. The breadth and depth of the programs are such that a significant number of graduates have progressed into management positions and into graduate school in the sciences.

The academic programs leading to B.S. degrees are intended to challenge students with interest and aptitude in engineering, science, and mathematics as applied to the third fastest growing industry in the U.S. Three programs are offered so that the student may select one during or following his sophomore year.

The PAPER SCIENCE program meets the needs of students desiring to major in a science (Chemistry) and who may seek careers in research, development, and eventually research administration. This program may be selected by those who want to study for advanced degrees in Chemistry or Paper Science.

The PAPER ENGINEERING program provides a background in engineering, with less emphasis on Chemistry than Paper Science. This program will serve those students seeking to enter industry in the operational areas of manufacturing, technical service, process control and, eventually industrial management.

The ENVIRONMENTAL ENGINEERING programs are designed to develop engineering and scientific skills in graduates so that they may serve society and industry to reduce, control and eliminate pollution of water, air, and land. Three options are available: Paper Industry Processes (water, solid waste, and air pollution), Thermal-Energy (thermal pollution, energy resources, and noise), and Environmental Management (industrial engineering and management).

COMPARISON OF TYPICAL PROGRAMS

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Paper Science</th>
<th>Paper Engineering</th>
<th>Environmental Engineering (Paper Industry Processes Option)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Science</td>
<td>33 hrs.</td>
<td>33 hrs.</td>
<td>11 hrs.</td>
</tr>
<tr>
<td>Chemistry</td>
<td>34</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Engineering &amp; Related</td>
<td>8</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Environmental</td>
<td>3</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Mathematics</td>
<td>19</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Tech-prof Electives</td>
<td>10</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>General Education</td>
<td>19*</td>
<td>19*</td>
<td>19*</td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL FOR GRADUATION:</td>
<td>136 hrs.</td>
<td>136 hrs.</td>
<td>130 hrs.</td>
</tr>
</tbody>
</table>

*Additional hours within curriculum to total 35 hours.
**Thermal-Energy & Environmental Management options also may be selected.
WORK EXPERIENCE — Industrial experience in all three programs is provided through employment by paper or related companies for at least one of the three summers, as well as through operation of the outstanding pilot plant papermaking and coating machines of the department. The pilot plant and laboratory facilities are among the best in the world.

SCHOLARSHIPS — An extensive scholarship program is made possible through the membership of the Foundation. Scholarships from the Foundation are available for the following three programs: Paper Science, Paper Engineering, and Environmental Engineering (Paper Industry Processes Option only). Close cooperation with the paper industry is maintained through committees of the Paper Technology Foundation, Inc. Information about these scholarships may be found in the scholarship section of this catalog.

COUNSELING — Students should contact a Paper Science academic counselor as early as possible. The counselors assist in individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and help solve academic problems. Substitutions, transfer credit and electives must be approved by Department Chairman.

A MAJOR in Paper Science, Paper Engineering, or Environmental Engineering may be earned only meeting all the requirements of one of the three programs.

A MINOR in Paper Science may be earned by completing the following 19 semester hours of departmental courses: 100, 202, 305, 333, and 442. A MINOR in Paper Engineering may be earned by completing the following 17 semester hours: 100, 202, 305, 442, and 590. Prerequisites for the above courses must be completely satisfied except minors only may substitute Physics 106 for 210 and Organic Chem 365 for 360 and 361.

**PAPER SCIENCE**

Bachelor of Science Degree

**REQUIREMENTS**

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPER SCIENCE — 33 hrs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE 100</td>
<td>Introduction to Pulp and Paper Manufacture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSE 202</td>
<td>Paper Manufacture</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 203</td>
<td>Pulp Manufacture</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 305</td>
<td>Mechanics and Optics of Fiber Systems</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 310</td>
<td>Summer Mill Practice</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PSE 442</td>
<td>Coating and Converting of Paper</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 440</td>
<td>Current Topics in Pulp and Paper</td>
<td>1 1 3</td>
<td></td>
</tr>
<tr>
<td>PSE 470</td>
<td>Senior Thesis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSE 471</td>
<td>Senior Thesis</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>IED 451</td>
<td>Printing Processes</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CHEMISTRY — 34 Hrs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 120</td>
<td>General Chemistry (101 or 102)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 360</td>
<td>Organic Chemistry</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 361</td>
<td>Organic Chemistry</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 222</td>
<td>Quantitative Analysis</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 333</td>
<td>Chemistry of Wood and Pulp</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 530</td>
<td>Polymer Chemistry</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CHEM 430</td>
<td>Physical Chemistry</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 431</td>
<td>Physical Chemistry</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
### Paper Science

#### REQUIREMENTS

Candidates for the Degree Bachelor of Science must complete the following program:
Schedule below is an example of one leading to graduation in 8 semesters beginning Fall.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPER SCIENCE — 30 hrs.</td>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>PSE</td>
<td>100</td>
<td>Intro. to Pulp and Paper Mfg.</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>202</td>
<td>Paper Manufacture</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>203</td>
<td>Pulp Manufacture</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>251</td>
<td>Intro. Environ. Engr.</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>305</td>
<td>Mechanics and Optics of Fiber Systems</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>310</td>
<td>Summer Mill Practice</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>442</td>
<td>Coating and Converting of Paper</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>440</td>
<td>Current Topics in Pulp and Paper</td>
<td></td>
</tr>
<tr>
<td>IED</td>
<td>451</td>
<td>Printing Processes</td>
<td></td>
</tr>
<tr>
<td>Course No.</td>
<td>Course Title</td>
<td>Semester Credit Hours</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>BASIC SCIENCES — 20 hrs.</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>CHEM 120</td>
<td>General Chemistry 101 or 102</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 365</td>
<td>Qualitative Analysis</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 333</td>
<td>Organic Chemistry or</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHYS 210</td>
<td>Chemistry of Wood and Pulp</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHYS 211</td>
<td>Mechanics and Heat</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>ENGINEERING SCIENCES — 28 hrs.</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PSE 306</td>
<td>Process Engineering I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSE 307</td>
<td>Process Engineering II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ME 256</td>
<td>Statics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ME 353</td>
<td>Strength of Materials</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 355</td>
<td>Dynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EE 210</td>
<td>Electrical Circuits</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EE 230</td>
<td>DC Machines &amp; Transformers</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EE 250</td>
<td>Logic Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>MATHMATICS — 16 hrs.</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 106</td>
<td>Introduction to Computers</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MATH 274</td>
<td>Introduction to Differential Equa.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 360</td>
<td>Statistical Methods</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>ENGINEERING DESIGN, SYNTHESIS &amp; SYSTEMS — 15 hrs.</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>PSE 470</td>
<td>Senior Thesis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSE 471</td>
<td>Senior Thesis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSE 590</td>
<td>Instru &amp; Process Control</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSE 591</td>
<td>Instru &amp; Process Control</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 419</td>
<td>Intro to Operations Research</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>TECHNICAL-PROFESSIONAL</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electives*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>GENERAL EDUCATION — DISTRIBUTION PROGRAM — 19 hrs.</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AREA II</td>
<td>Social Science**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AREA III</td>
<td>Natural Sci. &amp; Math.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AREA IV</td>
<td>Non-Western World**</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AREA V</td>
<td>Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8 hrs. incl. in curr.)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Writing Requirements**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>PHYSICAL EDUCATION</em></td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 hrs.</td>
<td>1 1 1 1 2 2 2 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total for Graduation — 136 hrs.</td>
<td>7 16 16 16 17 18 2 17 17</td>
<td></td>
</tr>
</tbody>
</table>

*Select from Paper Science, Chemistry, Engineering, Mathematics or Business courses with approval of Paper Science and Engineering Department Head.

**Two courses at 300-500 level.

***Select from IEGM 102, BED 142, or ENG 105.
ENVIRONMENTAL ENGINEERING
Bachelor of Science in Engineering (Environmental) Degree

REQUIREMENTS
Candidates for the degree Bachelor of Science must complete the following program:
Schedule below is an example of one leading to graduation in 8 semesters beginning Fall.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPER SCIENCE — 7 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>100</td>
<td>Intro. Pulp &amp; Paper Mfg.</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>202</td>
<td>Paper Manufacture</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>ENVIRONMENTAL ENGINEERING — 11 hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>251</td>
<td>Introduction to Industrial Environmental Engineering</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>353</td>
<td>Waste Water Treatment Systems</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>451</td>
<td>Environmental Process Design</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>ENGINEERING — 26 hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>131</td>
<td>Engineering Drafting</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>256</td>
<td>Statics</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>590</td>
<td>Instrumentation &amp; Process Control</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>306</td>
<td>Process Engineering I</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>353</td>
<td>Strength of Materials</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>360</td>
<td>Control Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>591</td>
<td>Instrumentation &amp; Process Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>435</td>
<td>Mechanical Engineering Lab</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>307</td>
<td>Process Engineering II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>330</td>
<td>Thermo-Fluid Dynamics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>310</td>
<td>Engineering Economy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEMISTRY — 12 hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>120</td>
<td>Qualitative Analysis</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>365</td>
<td>Introduction to Organic Chem</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PSE</td>
<td>333</td>
<td>Chemistry of Wood &amp; Pulp</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PHYSICS — 8 hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>210</td>
<td>Mechanics and Heat</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>211</td>
<td>Electricity &amp; Light</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>MATHEMATICS — 16 hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>106</td>
<td>Introduction to Computers</td>
<td>1</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>122</td>
<td>Calculus I</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>123</td>
<td>Calculus II</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>274</td>
<td>Differential Equations</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>360</td>
<td>Statistical Methods</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>GENERAL EDUCATION — DISTRIBUTION PROGRAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities*</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>AREA II</td>
<td>Social Science*</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>AREA III</td>
<td>Natural Sci. &amp; Math (8 hrs. incl. in curr.)</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>AREA IV</td>
<td>Non-Western World*</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>AREA V</td>
<td>Optional Electives (8 hrs. included in curr.)</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Writing Requirement**</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL EDUCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 hrs.</td>
<td>1</td>
<td>1</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td></td>
</tr>
</tbody>
</table>
College of Applied Sciences

TECHNICAL-PROFESSIONAL

Group Electives***  
29 hrs. ... 7 3 ... 9 6 4
Total for Graduation — 130 hrs.  
16 16 17 17 18 16 16 14

*At least two courses must be 300-500 level courses.
**Select from one of three courses available (IEGM 102, BED 142, ENG 105).
***Elect one of the three groups of electives. Courses shown with plus are recommended. Elect additional credits from same group to make a total of 29 credits.

TECHNICAL ELECTIVE GROUPS***

GROUP A — PAPER INDUSTRY PROCESSES

PSE 350 Water Quality and Microbiology .................................. 3+
PSE 352 Fiber Resource Conservation & Recycling .......................... 3+
PSE 450 Solid Waste Treatment ............................................. 2+
PSE 203 Pulp Manufacture .................................................. 4+
CHEM 222 Quantitative Analysis ............................................ 4+
ME 454 Air Pollution Control Systems ..................................... 3+
PSE 470 Senior Thesis ....................................................... 3
PSE 471 Senior Thesis ....................................................... 3
ME 360 Control Systems ........................................................ 3
ME 559 Sound Noise and Vibration Control .............................. 3
ME 338 Energy, Resources and Pollution ................................. 3
BUS 311 Ecology and the Law ............................................... 3
IEGM 402 Supervision of Industrial Operations ........................... 3

GROUP B — THERMAL ENERGY

ME 338 Energy, Resources and Pollution .................................. 3+
ME 431 Heat Transfer .......................................................... 3+
ME 433 Air Conditioning ...................................................... 3+
ME 360 Control Systems ...................................................... 3+
ME 559 Sound, Noise and Vibration Control ............................. 3+
PSE 350 Water Quality and Microbiology ................................. 3
PSE 352 Fiber Resource Conservation & Recycling ..................... 3
PSE 450 Solid Waste Treatment ............................................. 2
ME 454 Air Pollution Control Systems ..................................... 3
CHEM 222 Quantitative Analysis ............................................ 4
IEGM 402 Supervision of Industrial Operations ........................... 3
BUS 311 Ecology and the Law ............................................... 3
IEGM 416 Operations Control in Manufacturing ........................... 3

GROUP C — ENGINEERING MANAGEMENT

IEGM 416 Operations Control in Manufacturing ............................ 3+
IEGM 419 Introduction to Operations Research ........................... 3+
ACTY 210 Principles of Accounting ........................................ 3+
GEOG 350 Principles of Conservation & Environmental Management 3+
ME 338 Energy, Resources and Pollution ................................. 3+
IEGM 402 Supervision of Industrial Operations ........................... 3
IEGM 418 Report Preparation ................................................ 3
PSCI 330 Introduction to Public Administration .......................... 3
BUS 311 Ecology and the Law ............................................... 3
IEGM 318 Statistical Quality Control ...................................... 3

+These electives are strongly recommended.
**COURSE DESCRIPTIONS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Introduction to Pulp and Paper Manufacture (2-3)*</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>A lecture-laboratory consideration of the fundamentals of papermaking processes and equipment. Some time will also be spent on coating, printing and other uses of paper. In this the student should acquire a basic understanding of the nature and scope of the paper industry. Prerequisites: high school chemistry, CHEM 101 or 102 concurrent.</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>Environmental Engineering Fundamentals (3-3)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>Designed for non-science majors to present the major concepts and tools of environmental control as they relate to industrial and municipal air, water, and solid waste problems. Topics covered include nature and effects of pollution, reduction of effluents, processes of treatment, measuring of characteristics, governmental regulations and economics.</td>
<td></td>
</tr>
<tr>
<td>202</td>
<td>Paper Manufacture (3-4)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>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: PSE 100.</td>
<td></td>
</tr>
<tr>
<td>203</td>
<td>Pulp Manufacture (3-4)</td>
<td>4 hrs.</td>
<td>Fall</td>
<td>An advanced study of various pulping processes, pulp bleaching, heat, and chemical recovery, and by-product use in made from the chemical and engineering standpoint. Lecture studies are augmented by laboratory exercises. Prerequisites: Organic Chemistry 360 or 361, PSE 100.</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>Introduction to Industrial Environmental Engineering (3-0)</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>Broad coverage of the causes, controls, and solutions of water, air, and land pollution problems of industry and municipalities. Chemical and biological evaluation of water and air effluents is introduced in the laboratory. Legal and economic implications are reviewed.</td>
<td></td>
</tr>
<tr>
<td>305</td>
<td>Mechanics and Optics of Fiber Systems (3-3)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>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: PSE 202 and PHYS 210.</td>
<td></td>
</tr>
<tr>
<td>306</td>
<td>Process Engineering I (3-3)</td>
<td>4 hrs.</td>
<td>Fall</td>
<td>An introduction to engineering principles as applied in the physical and chemical processes of pulp and paper manufacturing. Emphasis is on material and energy balance problem solving. Prerequisites: PSE 203, MATH 123, CHEM 102, MECHANICS and HEAT 210.</td>
<td></td>
</tr>
<tr>
<td>307</td>
<td>Process Engineering II (3-3)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>A continuation of 330 with concentration on concepts and calculations of fluid mechanics, heat transfer, evaporation, drying, humidification, and other unit operations. Prerequisite: PSE 306.</td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>Summer Mill Practice</td>
<td>2 hrs.</td>
<td>Spring and/or Summer</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>333</td>
<td>Chemistry of Wood and Pulp (3-4)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>A combined lecture-laboratory consideration of the chemistry of wood, pulp, and pulping by-products. Included topics are cellulose, lignin, accessory carbohydrates, extractives, and spent liquor utilization. Prerequisites: CHEM 360, 361 or 365 (concurrent).</td>
<td></td>
</tr>
</tbody>
</table>

*Indicates hours of lecture & laboratory per week during each semester (lecture hours — lab hours)
350 Water Quality and Microbiology (2-3) 3 hrs. Fall
A study of the physical, chemical and biological characteristics of water resources. Topics stressed include hydrology, treatment of water, water quality, evaluation, and the microbiology of water.

352 Fiber Resource Conservation and Recycling (2-3) 3 hrs. Winter
Consideration of the recovery of waste paper and other fiber sources for use in the manufacture of paper and paperboard. Topics include waste fiber collection, contaminant removal, implant reuse, effect on the processes and the product, and the economics involved.

353 Waste Water Treatment Systems (3-3) 4 hrs. Fall
A study of the fundamental principles, design considerations, and use of the unit processes and operations employed in waste water treatment. Physical, physiochemical, and biological treatments are considered.

440 Current Topics in Paper and Pulp (1.5-0) 1 hr. Fall, Winter
This course will be handled on a seminar basis using guest speakers, University staff, and students. Its purpose is to add depth and breadth to the background of students.

442 Coating and Converting of Paper (3-4) 4 hrs. Fall
A lecture-laboratory course dealing with the fundamentals of pigmented and functional coating of paper, coating rheology, folded and corrugated carton manufacture and packaging. Laboratory study involves preparation, application, and evaluation of various coatings, and printing evaluation. Prerequisites: PSE 202 and 305.

450 Solid Waste Treatment (1-3) 2 hrs. Winter
Includes study of the practices, technology, and economics of solid waste generated by industry and by waste water treatment plants. Stressed are treatments of sludges, their disposal and utilization back in-process, and their conversion to by-products.

451 Environmental Process Design (2-6) 4 hrs. Winter
A laboratory study of the design and operational factors of a number of unit processes and operations used in pollution control. The principles acquired in previous courses will be used to design selected segments of environmental control systems.

470 Senior Thesis (0-6 min.) 3 hrs. Fall, Winter, Spring, Summer
This course is designed to increase the student’s ability to develop a research or technical problem; to critically analyze the available information on this problem; to use this analysis to plan an experimental investigation; to carry out the experiments, and, finally, to present the completed program effectively both in writing and orally. About one-half of the semester is spent on developing the problem and completing the literature search. The second half is devoted to planning and initiating the experimental work.

471 Senior Thesis (0-6 min.) 3 or 4 hrs. Fall, Winter, Spring, Summer
A continuation of 470, including completion of the laboratory work and preparation of the final typed paper in triplicate. Oral presentation will be arranged.

499 Independent Studies (0-6) 1-6 hrs. Fall, Winter, Spring, Summer
Offers Paper Science and Engineering majors with good scholastic records a program of independent study in an area arranged in consultation with the instructor. One to three hours credit per semester, cumulative to six hours.

530 Polymer Chemistry (2-0) 2 hrs. Fall
A study of the molecular structure and polymerization reactions of high molecular weight compounds in relation to mechanical and rheological behavior and chemical properties, methods for characterization of bulk and solution properties of polymers are considered in detail. Prerequisite: CHEM 361 or 365.
550 Paper Industry Processes (2-2) 3 hrs. Winter

Offered primarily for students in graphic arts and printing management programs in order to provide a basic understanding of the major aspects of the science and technology of pulping, papermaking, coating, and evaluation of materials, especially as they relate to printing.

560 Advanced Topics in Pulp and Paper Engineering (2-1) 3 hrs. Fall

A unified consideration of the pulp and paper plant and its sub-systems stressing operating efficiencies from the engineering viewpoint. Includes design considerations, material and energy balances, power distribution, evaluation of equipment performance, and typical operating costs. Prerequisites: PSE 202, 203 and 307.

590 Instrumentation and Process Control (3-0) 3 hrs. Fall

A detailed consideration of the theory and practice of electronic and pneumatic sensing instruments and process control. Simulation of process dynamics and computer application will be emphasized.

591 Instrumentation and Process Control (3-0) 3 hrs. Winter

Continuation of course PSE 590.
Transportation Technology

Harley D. Behm, Chairman
John W. Cummings
Thomas L. Deckard
Herbert E. Ellinger
Arthur W. Hoadley
Forrest O. Hutchins
Laverne M. Krieger
Herman W. Linder
Terry Michmerhuizen
Ronald L. Sackett
Pat D. Schiffer
Curtis N. Swanson
James Vandepolder

The Department of Transportation Technology offers programs designed to provide graduates with the background necessary to successfully assume a variety of positions in transportation-related industries. Bachelor of Science degree curricula are offered in Automotive Engineering Technology, Automotive Management and Service, Aviation Engineering Technology, Aviation Technology and Management, Flight Technology, and Transportation Systems. A two-year curriculum in Aircraft Technology is also available. The combination of specialized and general training is intended to allow employment flexibility, although most graduates are placed in the automotive or aviation industries.

A Bachelor of Science degree in the curricula listed on the following pages can be earned only by completing one of the curricula offered by the department. A student may not graduate from any Transportation Technology curriculum having received the grade of "D" in more than two required subjects in the curriculum. This requirement is in addition to University grade-point requirements.

A minor may be secured upon approval of the department counselor and by completing fifteen to twenty semester hours of work. Students enrolled in curricula in the Transportation Technology Department may not obtain minors in offerings of engineering curricula or Transportation Technology curricula.

Flight and Aircraft Technology courses are offered under Technical School and Airman Agency Certification by the Federal Aviation Administration (FAA). All of the Aviation curricula permit students to qualify for the FAA Airframes and Powerplants license with some additional course work. The equivalent of the Aircraft Technology curriculum must be completed prior to taking the FAA examination.

Enrollment in flight courses is subject to a waiting list which is maintained at the aviation building and administered according to departmental policy.

Students will be permitted to enroll in advanced flight courses on the basis of results of the department's pilot profile analysis program. Participation in this program is required of all flight students.

Cooperative Education

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

Academic Counseling

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

The following academic counselors are located in Room 2038, Industrial and Engineering Technology Building:

Automotive Curricula
Aviation Curricula
Transportation Systems

L. M. Krieger
John Cummings
Harley D. Behm
Additional Costs

Special lab fees are in effect for flight courses to cover the cost of airplane operation. The fee varies from $250 to $550, depending on the course.

Each student is required to have his own tools for aviation courses in airframes and powerplants. A basic set of required tools may be purchased for less than $100.

Class related charges are assessed for some laboratory courses to help cover cost of materials.

Additional Information

General information regarding counseling, scholarships and special programs of interest to students in this department may be found at the beginning of the College of Applied Sciences' section of the catalog.

AUTOMOTIVE ENGINEERING TECHNOLOGY
Bachelor of Science Degree

The Automotive Engineering Technology curriculum offers career preparation for design, development, testing, manufacturing, or service engineering positions within automotive-related industries.

Requirements

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN 124</td>
<td>Automotive Engines</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>TRAN 121</td>
<td>Automotive Chassis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TRAN 221</td>
<td>Automatic Transmissions</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TRAN 224</td>
<td>Auto, Carburetion &amp; Electricity</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>TRAN 222</td>
<td>Fuels and Lubricants</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TRAN 325</td>
<td>Automotive Testing</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>TRAN 423</td>
<td>Auto. Engineering Problems</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ME 120</td>
<td>Machining Metals</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 256</td>
<td>Statics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 332</td>
<td>Thermodynamics I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 353</td>
<td>Strength of Materials</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 354</td>
<td>Testing of Materials</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 355</td>
<td>Dynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 435</td>
<td>Mech. Engineering Lab</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ME 430</td>
<td>Fluid Mechanics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 105</td>
<td>Industrial Calculations</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EE 100</td>
<td>Fund. of Circuits &amp; Electronics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EE 101</td>
<td>Fund. of Electronics &amp; Machines</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 131</td>
<td>Engineering Drafting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IEGM 170</td>
<td>Metallurgy</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IEGM 330</td>
<td>Machine Drafting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics (Micro)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics (Macro)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 123</td>
<td>Calculus II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 106</td>
<td>Introduction to Computers</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEM 103</td>
<td>Chemistry</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHYS 210</td>
<td>Mechanics and Heat</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHYS 211</td>
<td>Electricity and Light</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
GENERAL EDUCATION — DISTRIBUTION PROGRAM*

AREA I Humanities .................................................. 3
AREA II Social Science  (6 hrs. included above) ................. 3
AREA III Natural Science & Mathematics (8 hrs. included above) 4
AREA IV Non-Western World ........................................ 4
AREA V Optional Electives (8 hrs. included above) ............... 4
Writing Requirement** ..............................................
Physical Education ...................................................
Approved Electives ...................................................
Total for Graduation — 128 hrs ...................................

*General Education must include 2 courses at the 300-500 level.
**ENG 105 or BED 142 or IEGM 102.

AUTOMOTIVE MANAGEMENT AND SERVICE

Bachelor of Science Degree

The Automotive Management and Service curriculum prepares students for positions in supervision or management, sales, and service where technical knowledge of automobile construction and operation is necessary.

Requirements

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN</td>
<td>121</td>
<td>Automotive Chassis</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>124</td>
<td>Automotive Engines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>224</td>
<td>Auto Carburetion and Electricity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>221</td>
<td>Automatic Transmissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>222</td>
<td>Fuels and Lubricants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>322</td>
<td>Auto. Service Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>326</td>
<td>Automotive Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>421</td>
<td>Automotive Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>105</td>
<td>Industrial Calculations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>130</td>
<td>Technical Drafting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>100</td>
<td>Fund. of Circuits &amp; Electronics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>101</td>
<td>Fund. of Electronics &amp; Machines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>121</td>
<td>Manufacturing Processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>318</td>
<td>Statistical Quality Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>104</td>
<td>Business &amp; Professional Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BED</td>
<td>242</td>
<td>Business Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>402</td>
<td>Supervision of Industrial Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEGM</td>
<td>422</td>
<td>Conference Leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTY</td>
<td>201</td>
<td>Accounting Concepts and Applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics (Micro)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Economics (Macro)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT</td>
<td>300</td>
<td>Fundamentals of Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>370</td>
<td>Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTG</td>
<td>374</td>
<td>Advertising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Aviation Engineering Technology curriculum offers preparation for careers in the aircraft industry in manufacturing, product development, technical sales, and other areas requiring application of technical skills and knowledge.

### Requirements

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

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

### Transportation Technology

#### Course

<table>
<thead>
<tr>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
<th>Semester 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN</td>
<td>110</td>
<td>Introduction to Aviation</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>113</td>
<td>Airframe Construction and Repair</td>
<td>..</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>114</td>
<td>Reciprocating Powerplants</td>
<td>..</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>213</td>
<td>A/F Hydraulic, Pneumatic &amp; Auxiliary Systems</td>
<td>..</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>230</td>
<td>Powerplant Systems</td>
<td>..</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>231</td>
<td>Powerplant Systems Lab</td>
<td>..</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>232</td>
<td>Powerplant Evaluation &amp; Testing</td>
<td>..</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>233</td>
<td>Powerplant Troubleshooting Lab</td>
<td>..</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>313</td>
<td>Airframe Electrical Systems</td>
<td>..</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN</td>
<td>315</td>
<td>Aircraft Turbine Powerplants</td>
<td>..</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Mechanical Engineering

<table>
<thead>
<tr>
<th>Dept.</th>
<th>No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
</tr>
<tr>
<td>ME</td>
<td>256</td>
<td>Statics</td>
</tr>
<tr>
<td>ME</td>
<td>353</td>
<td>Strength of Materials</td>
</tr>
</tbody>
</table>

*General Education must include 2 courses at the 300-500 level.
**ENG 105 or BED 142 or IEGM 102.
College of Applied Sciences

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester 1 2 3 4 5 6 7 8 Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME</td>
<td>332</td>
<td>Thermodynamics I</td>
<td>........................................</td>
</tr>
<tr>
<td>ME</td>
<td>354</td>
<td>Testing of Materials</td>
<td>........................................</td>
</tr>
<tr>
<td>ME</td>
<td>355</td>
<td>Dynamics</td>
<td>........................................</td>
</tr>
<tr>
<td>ME</td>
<td>430</td>
<td>Fluid Mechanics</td>
<td>........................................</td>
</tr>
<tr>
<td>ME</td>
<td>435</td>
<td>Mechanical Engineering Lab</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RELAT E D ENGINEERING</td>
<td>........................................</td>
</tr>
<tr>
<td>IEGM</td>
<td>105</td>
<td>Industrial Calculations</td>
<td>1 ......................................</td>
</tr>
<tr>
<td>IEGM</td>
<td>131</td>
<td>Engineering Drafting</td>
<td>........................................</td>
</tr>
<tr>
<td>EE</td>
<td>100</td>
<td>Fund. of Circuits &amp; Electronics</td>
<td>........................................</td>
</tr>
<tr>
<td>EE</td>
<td>101</td>
<td>Fund. of Electronics &amp; Machines</td>
<td>........................................</td>
</tr>
<tr>
<td>IEGM</td>
<td>330</td>
<td>Machine Drafting</td>
<td>........................................</td>
</tr>
<tr>
<td>IEGM</td>
<td>371</td>
<td>Metallurgy &amp; Material Failure</td>
<td>........................................</td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics (Micro)</td>
<td>........................................</td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Economics (Macro)</td>
<td>........................................</td>
</tr>
<tr>
<td>MATH</td>
<td>122</td>
<td>Calculus I</td>
<td>4 ......................................</td>
</tr>
<tr>
<td>MATH</td>
<td>123</td>
<td>Calculus II</td>
<td>........................................</td>
</tr>
<tr>
<td>MATH</td>
<td>106</td>
<td>Introduction to Computers</td>
<td>........................................</td>
</tr>
<tr>
<td>CHEM</td>
<td>103</td>
<td>Chemistry</td>
<td>........................................</td>
</tr>
<tr>
<td>PHYS</td>
<td>210</td>
<td>Mechanics and Heat</td>
<td>........................................</td>
</tr>
<tr>
<td>PHYS</td>
<td>211</td>
<td>Electricity and Light</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M A T H E M A T I C S AND SCIENCE</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GENERAL EDUCATION — DISTRIBUTION PROGRAM*</td>
<td>........................................</td>
</tr>
<tr>
<td>AREA I</td>
<td></td>
<td>Humanities</td>
<td>........................................</td>
</tr>
<tr>
<td>AREA II</td>
<td></td>
<td>Social Science</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6 hrs. included above)</td>
<td>........................................</td>
</tr>
<tr>
<td>AREA III</td>
<td></td>
<td>Natural Science and Math</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8 hrs. included above)</td>
<td>........................................</td>
</tr>
<tr>
<td>AREA IV</td>
<td></td>
<td>Non-Western World</td>
<td>........................................</td>
</tr>
<tr>
<td>AREA V</td>
<td></td>
<td>Optional Electives</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8 hrs. included above)</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing Requirement**</td>
<td>3 ......................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Education</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved Electives</td>
<td>........................................</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total for Graduation — 128 hrs.</td>
<td>15 17 16 15 16 16 17 16 ........</td>
</tr>
</tbody>
</table>

*General Education must include 2 courses at the 300-500 level.
**ENG 105 or BED 142 or IEGM 102.

AVIATION TECHNOLOGY AND MANAGEMENT

Bachelor of Science Degree

The Aviation Technology and Management curriculum offers preparation for careers in the business and operations facets of the aviation industry as well as for supervision or management positions where technical knowledge of aircraft construction, operation and repair is an asset.
Requirements

Candidates for the degree Bachelor of Science must complete the following program:
The schedule below is an example of one leading to graduation in 8 semesters beginning with Fall.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN</td>
<td>110</td>
<td>Introduction to Aviation</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>113</td>
<td>Airframe Construction and Repair</td>
<td>5</td>
</tr>
<tr>
<td>TRAN</td>
<td>114</td>
<td>Reciprocating Powerplants</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>213</td>
<td>A/F Hydraulic, Pneumatic &amp; Auxiliary Systems</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>230</td>
<td>Powerplant Systems</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>231</td>
<td>Powerplant Systems Lab</td>
<td>2</td>
</tr>
<tr>
<td>TRAN</td>
<td>232</td>
<td>Powerplant Evaluation &amp; Testing</td>
<td>2</td>
</tr>
<tr>
<td>TRAN</td>
<td>313</td>
<td>Airframe Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>315</td>
<td>Aircraft Turbine Powerplants</td>
<td>4</td>
</tr>
<tr>
<td>IEGM</td>
<td>130</td>
<td>Technical Drafting</td>
<td>2</td>
</tr>
<tr>
<td>IEGM</td>
<td>105</td>
<td>Industrial Calculations</td>
<td>1</td>
</tr>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>121</td>
<td>Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>EE</td>
<td>100</td>
<td>Fund. of Circuits &amp; Electronics</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>371</td>
<td>Metallurgy &amp; Material Failure</td>
<td>4</td>
</tr>
<tr>
<td>IEGM</td>
<td>318</td>
<td>Statistical Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>326</td>
<td>Production Control</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>402</td>
<td>Supervision of Industrial Operations</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>422</td>
<td>Conference Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics (Micro)</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Economics (Macro)</td>
<td>3</td>
</tr>
<tr>
<td>ACTY</td>
<td>201</td>
<td>Accounting Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>300</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG</td>
<td>370</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>200</td>
<td>Analysis and Applications</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>106</td>
<td>Introduction to Computers</td>
<td>1</td>
</tr>
<tr>
<td>MATH</td>
<td>260</td>
<td>Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM</td>
<td>103</td>
<td>Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>PHYS</td>
<td>106</td>
<td>Elementary Physics</td>
<td>4</td>
</tr>
<tr>
<td>AREA I</td>
<td>Humanities</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AREA II</td>
<td>Social Science</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AREA III</td>
<td>Natural Science and Math</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>AREA IV</td>
<td>Non-Western World</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>AREA V</td>
<td>Optional Electives</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(4 hrs. included above)</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Writing Requirement**</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Education</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Approved Electives</td>
<td></td>
<td>3 2 2 6 3</td>
</tr>
<tr>
<td>Total for Graduation — 128 hrs.</td>
<td></td>
<td>16 16 16 16 16 16 16 16</td>
<td></td>
</tr>
</tbody>
</table>

*General Education must include 2 courses at the 300-500 level.
**ENG 105 or BED 142 or IEGM 102.
FLIGHT TECHNOLOGY

Bachelor of Science Degree

This professional pilot program is oriented toward career-pilot positions in general aviation. Appropriate electives allow preparation for careers in fields such as aviation operations & business, aviation education, or as a pilot/mechanic.

Requirements

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

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

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN</td>
<td>110</td>
<td>Introduction to Aviation</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>117</td>
<td>Aircraft Engines</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>118</td>
<td>Aircraft Structures</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>205</td>
<td>Aviation Safety</td>
<td>2</td>
</tr>
<tr>
<td>TRAN</td>
<td>230</td>
<td>Powerplant Systems</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>222</td>
<td>Fuels and Lubricants</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>300</td>
<td>Navigation Systems and Weather</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>301</td>
<td>Commercial Flight I</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>213</td>
<td>A/F Hydraulic, Pneumatic and Auxiliary Systems</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>232</td>
<td>Powerplant Evaluation &amp; Testing</td>
<td>2</td>
</tr>
<tr>
<td>TRAN</td>
<td>303</td>
<td>Commercial Flight II</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>305</td>
<td>Commercial Flight III</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>344</td>
<td>Air Transportation</td>
<td>3</td>
</tr>
<tr>
<td>TRAN</td>
<td>400</td>
<td>Aerodynamics &amp; Flight Principles</td>
<td>2</td>
</tr>
<tr>
<td>TRAN</td>
<td>313</td>
<td>Airframe Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>315</td>
<td>Aircraft Turbine Powerplants</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved Electives (28 hours)</td>
<td>3 2 2 5 4 12</td>
</tr>
</tbody>
</table>

(See Elective Sequence Listed Below)

ENGINEERING AND TECHNOLOGY

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>100</td>
<td>Fund. of Circuits and Electronics</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>105</td>
<td>Industrial Calculations</td>
<td>1</td>
</tr>
<tr>
<td>IEGM</td>
<td>130</td>
<td>Technical Drafting</td>
<td>2</td>
</tr>
<tr>
<td>IEGM</td>
<td>371</td>
<td>Metallurgy and Material Failure</td>
<td>4</td>
</tr>
</tbody>
</table>

ECONOMICS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON</td>
<td>201</td>
<td>Principles of Economics (Micro)</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>202</td>
<td>Principles of Economics (Macro)</td>
<td>3</td>
</tr>
</tbody>
</table>

MATHEMATICS AND SCIENCE

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>106</td>
<td>Introduction to Computers</td>
<td>1</td>
</tr>
<tr>
<td>MATH</td>
<td>200</td>
<td>Analysis and Applications</td>
<td>4</td>
</tr>
<tr>
<td>PHYS</td>
<td>106</td>
<td>Elementary Physics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM</td>
<td>103</td>
<td>Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>GEOG</td>
<td>105</td>
<td>Our Physical Environment</td>
<td>4</td>
</tr>
<tr>
<td>GEOG</td>
<td>225</td>
<td>Intro. to Meteorology and Climatology</td>
<td>4</td>
</tr>
</tbody>
</table>
### GENERAL EDUCATION — DISTRIBUTION PROGRAM*

<table>
<thead>
<tr>
<th>AREA</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Humanities</td>
<td>1 2 3 4 5 6 7 8</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>Social Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6 hrs. included above)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Natural Science and Math</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8 hrs. included above)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Non-Western World</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Optional Electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8 hrs. included above)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Writing Requirement**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total for Graduation — 128 hrs.**</td>
<td>16 16 16 17 16 16 15</td>
<td></td>
</tr>
</tbody>
</table>

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

**ENG 105 or BED 142 or IEGM 102.

***Elective Sequence III requires a total of 134 hours for graduation.

### Elective Sequences

One of the following sequences of courses must be completed in conjunction with foregoing requirements.

**S.H.**

#### I. Aviation Operations and Business

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY 201</td>
<td>Accounting Concepts</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Business Statistics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CAS 104</td>
<td>Business and Professional Speech</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IEGM 422</td>
<td>Conference Leadership</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 402</td>
<td>Multi-Engine Flight</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

#### II. Aviation Education

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN 403</td>
<td>Flight Instructor Fundamentals</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 404</td>
<td>Instrument Flight Instructing</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PSYC 194</td>
<td>General Psychology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TEED 506</td>
<td>Teaching in Adult Education</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TEED 301</td>
<td>Teaching and Learning</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CAS 104</td>
<td>Business and Professional Speech</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IEGM 422</td>
<td>Conference Leadership</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

#### III. Pilot/Mechanic

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>*TRAN 114</td>
<td>For TRAN 117 Aircraft Engines</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>*TRAN 113</td>
<td>For TRAN 118 Aircraft Structures</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>TRAN 116</td>
<td>Aircraft Propellers</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>TRAN 231</td>
<td>Powerplant Systems Lab</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>TRAN 233</td>
<td>Powerplant Troubleshooting Lab</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>TRAN 211</td>
<td>Powerplant Servicing</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>TRAN 214</td>
<td>Aircraft Welding</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TRAN 218</td>
<td>Aircraft Servicing</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>TRAN 319</td>
<td>F.A.A. Maintenance Regulations</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>ME 120</td>
<td>Machining Metals</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EE 101</td>
<td>Fundamentals of Electronics &amp; Machines</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

*Substitute
AIRCRAFT TECHNOLOGY

Two-Year Certificate Curriculum
FAA Approved Technical School No. 3304
FAA Approved Airman Agency No. CE-08-01

The Aircraft Technology curriculum is intended for students who wish to qualify for the Federal Aviation Administration Airframe and Powerplant Mechanics license. Students may transfer into a B.S. degree program upon completion of this curriculum and the recommendation of his academic counselor. Note: Some of the courses listed below are offered only during Spring or Summer sessions — it is essential that planning be done with the assistance of the aviation counselor.

Requirements

Candidates for the two-year certificate must complete the following program:
The schedule below is an example of one leading to a two-year certificate beginning with Fall.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN</td>
<td>110</td>
<td>Introduction to Aviation</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>113</td>
<td>Airframe Construction and Repair</td>
<td>5</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>114</td>
<td>Reciprocating Powerplants</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>116</td>
<td>Aircraft Propellers</td>
<td>2</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>213</td>
<td>A/F Hydraulic, Pneumatic and Auxiliary Systems</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>230</td>
<td>Powerplant Systems</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>231</td>
<td>Powerplant Systems Lab</td>
<td>2</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>232</td>
<td>Powerplant Evaluation &amp; Testing</td>
<td>2</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>233</td>
<td>Powerplant Troubleshooting Lab</td>
<td>2</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>211</td>
<td>Powerplant Servicing</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>214</td>
<td>Aircraft Welding</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>222</td>
<td>Fuels and Lubricants</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>313</td>
<td>Airframe Electrical Systems</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>315</td>
<td>Aircraft Turbine Powerplants</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>218</td>
<td>Aircraft Servicing</td>
<td>5</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>TRAN</td>
<td>319</td>
<td>FAA Maintenance Regulations</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
</tbody>
</table>

ENGINEERING AND TECHNOLOGY

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>100</td>
<td>Fund. of Electric Circuits and Electronics</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>EE</td>
<td>101</td>
<td>Fund. of Electronics &amp; Machines</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>102</td>
<td>Technical Communication</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>130</td>
<td>Technical Drafting</td>
<td>2</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>ME</td>
<td>120</td>
<td>Machining Metals</td>
<td>3</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>IEGM</td>
<td>371</td>
<td>Metallurgy and Material Failure</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
</tbody>
</table>

SCIENCE AND MATHEMATICS

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS</td>
<td>106</td>
<td>Elementary Physics</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>CHEM</td>
<td>103</td>
<td>General Chemistry</td>
<td>4</td>
<td>.. .. .. ..</td>
</tr>
<tr>
<td>MATH</td>
<td>100</td>
<td>Algebra</td>
<td>2</td>
<td>.. .. .. ..</td>
</tr>
</tbody>
</table>

General Education Elective | 2 |
Physical Education | 1 |
Total for Graduation — 87 hrs. | 16 16 15 15 9 |

TRANSPORTATION SYSTEMS

Bachelor of Science Degree

The Transportation Systems curriculum provides a broad background related to transportation and allows skill development for specific career areas such as traffic safety, transit planning, and traffic engineering. Blocks of approved technical electives allow concentration in engineering design or operations, planning, systems analysis, or management.
Requirements

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

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

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Dept.</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANALYSIS AND SYSTEMS</td>
<td>MATH 122 Calculus I</td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 123 Calculus II</td>
<td></td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 230 Elementary Linear Algebra</td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 272 Vector &amp; Multivariate Calculus</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 360 Statistical Methods</td>
<td></td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 106 Introduction to Computers</td>
<td></td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MATH 306 Intro. to Computer Lang.-Fortran</td>
<td></td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>IEGM 310 Engineering Economy</td>
<td></td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM 419 Intro. to Operations Research</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TRAN 370 Traffic Engineering</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TRAN 470 Transportation Systems Design</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TRAN 474 Transportation Engineering</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TRAN 498 Studies-Transportation Technology</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Approved Technical Electives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMMUNICATIONS</td>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing Requirement*</td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CAS 104 Business and Professional Speech</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM 131 Engineering Drafting</td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM 418 Report Preparation</td>
<td></td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IEGM 422 Conference Leadership</td>
<td></td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>POLICY, ECONOMICS, AND PLANNING</td>
<td>TRAN 270 Transportation in the U.S.</td>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SOC 200 Principles of Sociology</td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 201 Principles of Economics (Micro)</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 202 Principles of Economics (Macro)</td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 319 Environmental Economics</td>
<td></td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 445 Economics of Transportation &amp; Public Utilities</td>
<td></td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>GEOG 544 Studies in Economic Geography-Transportation</td>
<td></td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GEOG 556 Studies in Land Use Planning</td>
<td></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. Urban Planning</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>B. Regional Planning</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PSCI 504 Making of Public Policy in U.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GENERAL EDUCATION — DISTRIBUTION PROGRAM**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AREA I Humanities</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AREA II Social Science</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AREA III Natural Science &amp; Math</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AREA IV Non-Western World</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AREA V Optional Electives</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Physical Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approved Electives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total for Graduation — 128 hrs.</td>
<td></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

*IEGM 102 or ENG 105 or BED 142 (counts toward general education requirement)
**General Education must include 2 courses at the 300-500 level.
### COURSE DESCRIPTIONS

#### GENERAL INTEREST COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>183</td>
<td>Principles of Auto Maintenance (2-0)*</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>A course to help the consumer become aware of automobile maintenance which can help him minimize the cost and maximize the dependability and service life of his automobile. Not open to Automotive Engineering Technology (AUE) curriculum majors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>Fuels and Lubricants (2-2)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>270</td>
<td>Transportation in the United States (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>A survey of transportation in the U.S. including ground, air, and sea transport systems, historical origins, current status and problems, and alternatives for the future are discussed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>370</td>
<td>Traffic Engineering (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>Traffic characteristics and their measurement, engineering analysis of transportation objectives, intersection and interchange designs, traffic control and intersection control. Prerequisites: MATH 106, 123.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>399</td>
<td>Field Experience</td>
<td>2-8 hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td></td>
<td>A program of practical experience and independent study to supplement and enrich classroom experiences. Written reports are required. May be repeated to a maximum of eight semester credit hours. Departmental approval required prior to registration.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>470</td>
<td>Transportation Systems Design (3-0)</td>
<td>3 hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td></td>
<td>A review of planning considerations including demand forecasting, network analysis and evaluation of alternatives. Study of transportation network design with examples of current technology. Prerequisites: MATH 306, TRAN 270, IEGM 419.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>474</td>
<td>Transportation Engineering (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>The design of streets, highways, and railways, pipelines, air transportation facilities and water transportation facilities. A familiarization with specific procedures and design criteria will be included. Prerequisites: TRAN 370, ME 330, 353.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>498</td>
<td>Studies in Transportation Technology</td>
<td>1-4 hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates hours of lecture and laboratory per week during a semester (lecture hours-lab hours).
124 Automotive Engines (3-4)  4 hrs. Fall, Winter
The design, dynamic characteristics, elementary thermodynamics, and basic service techniques for automotive engines. Theory is supplemented with laboratory work involving disassembly, visual and mechanical inspection of parts, plotting charts and graphs of engine characteristics, performing service operations, assembly, and engine operation. Prerequisite: MATH 100 or equivalent.

221 Automatic Transmissions (2-2)  3 hrs. Fall, Winter
Torque converters, pumps, controls, gear trains, and holding devices used in automatic transmissions. Emphasis will be placed on principles of design, operation, application, and service of major components as well as limitations and requirements relating to lubrication, sealing and bearings. Laboratory work will involve disassembly, inspection, service operations, calculation of torque capacities, and plotting of test results on an operating unit. Prerequisite: PHYS 106.

224 Automotive Carburetion and Electricity (3-4)  4 hrs. Fall, Winter
Theory and practice in diagnosing, adjusting and tuning modern automotive engines and electrical accessories. Laboratory practice is provided using oscilloscopes, distributor testers, generator test benches, and other engine and electrical testing equipment. Prerequisite: EE 100 and 101.

322 Automotive Service Management (2-0)  2 hrs. Winter
Principles involved in management of automotive repair shops including establishing objectives, organizational problems, controls, personnel management, merchandising, pricing, and customer relations. Prerequisite: Junior standing.

325 Automotive Testing (3-4)  4 hrs. Fall
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, 124, 221, 222, 224; MATH 122, 106.

326 Automotive Diagnosis (2-3)  3 hrs. Fall
Procedures and techniques used in evaluating performance and identifying malfunctions in automotive systems. Laboratory equipment as well as service shop test equipment will be used in diagnostic procedures. Prerequisites: TRAN 121, 124, 221, 222, 224.

421 Automotive Analysis (2-2)  3 hrs. Winter
Analysis of current designs of major automotive systems concentrating on rationale for various design approaches and combinations used when considering engineering parameters such as standards, operating limitations, manufacturing restrictions, and repairability. Prerequisite: TRAN 326.

423 Automotive Engineering Problems (1-8)  4 hrs. Winter
Individual and group design projects will be selected on subjects relating to automotive testing, development, or modification. The student will design, build, test, develop and evaluate his project. Written reports including project request, progress reports, and final reports are required. Prerequisite: TRAN 325.

AVIATION

110 Introduction to Aviation (3-0)  3 hrs. Fall, Winter, Summer
A first course in aviation including a review of aviation history, theory of flight and elementary aerodynamics, weight and balance, powerplants, structures, and helicopter theory. Corequisite: PHYS 106.

113 Airframe Construction and Repair (2-8)  5 hrs. Fall, Winter, Spring
Theory and laboratory experience relating to fabric and metal covered structures, honeycomb construction, and plastics. Prerequisite: TRAN 110 concurrently.
College of Applied Sciences

114 Reciprocating Powerplants (2-6) 4 hrs. Fall, Winter, Spring, Summer
Study of aircraft reciprocating powerplants. Classroom and laboratory experiences involving principles of operation, nomenclature, inspection, and overhaul procedures. Prerequisite: TRAN 110.

116 Aircraft Propellers (1-3) 2 hrs. Fall, Winter
Theory, operation, troubleshooting, and servicing of aircraft propeller systems for reciprocating and turbine engines. Prerequisite: TRAN 110.

117 Aircraft Engines (2-1) 3 hrs. Fall, Winter
Reciprocating aircraft engine principles, their design and operation, laboratory work involving disassembly, visual and mechanical inspection, reassembly and operation. Prerequisite: TRAN 110.

118 Aircraft Structures (2-2) 3 hrs. Fall, Winter
Airframe structures and coverings, including fabric, sheet metal, honeycomb, plastics, and hardware. Laboratory practice in preventive maintenance and inspection. Prerequisite: TRAN 110.

200 Private Pilot Ground School (3-0) 3 hrs. Fall, Winter
A beginning course for students engaged in primary flight instruction or interested in such instruction. Topics include flight theory, Federal air regulations, aviation weather, navigation, performance factors, and weight and balance. Upon completion, the student may take the Federal Aviation Administration written examination for private pilots. Prerequisite: TRAN 110.

201 Introduction to Flight (0-3) 2 hrs. Fall, Winter, Spring, Summer
A course for any full-time University student. Familiarization with the airplane and its control in all flight situations and maneuvers necessary for solo flight, basic instrument and introductory cross-country flying experience. Approximately 20 hours of flight time. Prerequisites: Third-class medical certificate prior to enrollment and completed TRAN 200 or taking concurrently. Enrollment subject to waiting list.

203 Primary Flight (0-4.5) 3 hrs. Fall, Winter, Spring, Summer
Continuation of 201 with emphasis on developing skill in executing flight maneuvers and cross-country flying. Successful students will qualify for the FAA private pilot license. Approximately 40 hours of flight time. Prerequisites: Faculty approval, TRAN 200 and 201.

205 Aviation Safety (2-0) 2 hrs. Fall, Winter
Physiological and psychological factors relating to flight safety emphasizing cause and effect of airplane accidents and related problem-solving processes. Includes a systems approach to safety program development and management. Prerequisite: Private pilot license or departmental approval.

211 Powerplant Servicing (1-8) 4 hrs. Spring, Summer
Principles and practices covering powerplant inspection and related FAA forms, regulations, and maintenance procedures. Designed to reinforce skills and knowledge acquired in previous powerplant courses. Prerequisite: TRAN 232.

213 Airframe, Hydraulic, Pneumatic and Auxiliary Systems (2-4) 4 hrs. Fall, Winter, Spring
Classroom and laboratory study of aircraft hydraulic and pneumatic components and systems, air conditioning and pressurization, fire detection and extinguishing systems and other auxiliary systems. Prerequisite: TRAN 110.

214 Aircraft Welding (1-6) 3 hrs. Fall, Winter
Welding theory and practice involving steel and aluminum structural parts. Practice in completing repairs in a manner approved by the FAA using oxyacetylene, electric arc, and shielded arc welding processes.

218 Aircraft Servicing (2-10) 5 hrs. Spring, Summer
Provides the student with an opportunity to conduct 100-hour and annual inspections, routine and preventative maintenance, minor repairs on certificated flying aircraft, and a review of FAA publications. The student will also have the opportunity to learn servicing techniques for aircraft. Required for all students who plan to qualify for the FAA Airframe and Powerplant Mechanics certificate. Prerequisites: TRAN 113, 114, 214, 230, 232.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>Powerplant Systems (3-0)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Basic principles of aircraft reciprocating engine carburetion and induction systems including theory of operation and servicing of float type and pressure type carburetors. Direct fuel injection, and superchargers. Prerequisites: TRAN 110, 114 or 117.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>231</td>
<td>Powerplant Systems Laboratory (0-6)</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Practical laboratory work in fuel metering, induction and ignition systems, including inspections, overhaul and installation of float and pressure carburetors, fuel injection, supercharger and magneto. Prerequisite: TRAN 230 or taking concurrently.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>Powerplant Evaluation and Systems (2-0)</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Theory and application of engine operation, performance evaluation and testing. Instrumentation, dynamometers and other test equipment is used to evaluate engine performance and efficiencies. Prerequisites: TRAN 230, MATH 106, IEGM 105.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>233</td>
<td>Powerplant Troubleshooting Lab (0-6)</td>
<td>2 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>A study of and laboratory practices covering engine ground operation, diagnosis and troubleshooting with extensive use of engine analyzers, test equipment and recorders to isolate engine malfunction. Prerequisite: TRAN 231, 232.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>Navigation Systems and Weather (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>Advanced navigation systems and equipment including area navigation, pictorial displays, flight directors, airborne radar application and interpretation, aviation weather analysis and interpretation, relationship of weather patterns to aircraft accidents. Prerequisites: TRAN 205, or private pilot license.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>Commercial Flight I (0-5.5)</td>
<td>3 hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td></td>
<td>Initial flight and ground instruction in aeronautical skills and knowledge necessary for commercial flying application. Includes introduction to high performance aircraft and instrument flight. Prerequisite: Private pilot license and second class medical certificate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>303</td>
<td>Commercial Flight II (0-5.5)</td>
<td>3 hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td></td>
<td>Continuing flight/ground instruction in aeronautical skills, knowledge, and experience pursuant to commercial-instrument pilot certification. Particular emphasis upon use of air traffic control facilities and airways in visual as well as instrument environment. Prerequisite: TRAN 300, 301.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>305</td>
<td>Commercial Flight III (0-5.5)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Completion of instruction and experience requirements for commercial and instrument pilot certification. Includes flight and ground preparation for federal tests and licensing. Prerequisite: TRAN 303.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>313</td>
<td>Aircraft Electrical Systems and Components (2-6)</td>
<td>4 hrs.</td>
<td>Fall, Winter, Spring</td>
</tr>
<tr>
<td></td>
<td>A review of basic electricity and study and laboratory practice in aircraft electrical components and systems, electrical instrumentation, and auto pilot systems. Prerequisites: TRAN 110, EE 100.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>Aircraft Turbine Powerplants (3-3)</td>
<td>4 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Reaction engine principles, gas turbine engine construction, design, operation and testing jet aircraft powerplant systems and their operation. Prerequisites: MATH 106, 200, TRAN 232.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>319</td>
<td>FAA Maintenance Regulations (4-0)</td>
<td>4 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>Designed to prepare students for the A &amp; 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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
340 Airport Management (3-0)  3 hrs. Winter
An introduction to airport operation and the duties of the airport manager. Topics studied will include the relationship between airport and community; legislation affecting airports; planning, organizing, financing, and developing programs and services. Prerequisite: Junior standing in aviation curricula or approval of instructor.

344 Air Transportation (3-0)  3 hrs. Fall
Regulation, organization, and operations peculiar to the air transport industry. Includes a study of legal aspects of air transportation and fundamentals of the air traffic control system.

400 Aerodynamics and Flight Principles (2-0)  2 hrs. Winter
Aerodynamics and flight principles related to airplane operation and performance. An advanced course for pilots to enable them to understand and predict airplane performance in a wide range of flight applications. Prerequisites: TRAN 303, MATH 200.

401 Instrument Flight (0-4.5)  3 hrs. Fall, Winter, Spring, Summer
Basic instrument flying, cross-country navigation and communication and instrument approach procedures. Successful completion will qualify the student for an instrument rating. Approximately 30 hours flight time. Prerequisites: TRAN 303, 400.

402 Multi-Engine Flight (0-1.3)  1 hr. Fall, Winter, Spring, Summer
Principles of flight in multi-engine airplanes. Provides transition from complex single-engine airplane to procedures and techniques peculiar to multi-engine operation. Approximately 10 hrs. flight time and 10 hours observing. Prerequisites: TRAN 303, 401.

403 Flight Instructor Fundamentals (0-5.5)  3 hrs. Fall, Winter, Spring, Summer
A study of performance skills, flight maneuvers, critical situations, and airplane type differences emphasizing instructional methods and techniques, includes approximately 25 hours of flight, 85 hours ground instruction and individual study, and 15 hours of supervised participation as a flight instructor. Prerequisites: TRAN 205, 305, TEED 301.

404 Instrument Flight Instructing (0-1.5)  1 hr. Fall, Winter, Spring, Summer
Techniques of flight instruction applied to instrument flying. Includes flight planning, enroute procedures, approaches and landings, emergencies, and critical weather analysis. Approximately 14 hrs. flight time. Prerequisites: TRAN 401, 403.
College of Arts and Sciences

CORNELIUS LOEW, Dean

TILMAN C. 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

School of Social Work
Black Americana Studies
Institute of Public Affairs
Interdisciplinary Programs
International and Area Studies Programs
The Medieval Institute
AIMS OF THE COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences at Western Michigan University offers undergraduate courses and programs in the humanities, the social and behavioral sciences, and the physical, biological, and mathematical sciences. The goals of the College for the undergraduate student can be seen as liberal, professional, pre-professional or vocational, depending on the student's motivation for enrolling in a particular course or program. In addition to providing specialization in its many disciplines the College contributes to the basic knowledge and the general education of students throughout the University.

The College of Arts and Sciences expects that its students will develop self-confidence through what they learn as well as a proper awareness of the extent of the knowledge they do not yet possess. It provides students with the tools to explore and master knowledge in areas beyond their present grasp. Thus it hopes to encourage the growth of persons who are competent, humane, and sensitive to the human condition, and who therefore will make effective and substantial contributions to society.

CURRICULA — COLLEGE OF ARTS AND SCIENCES

<table>
<thead>
<tr>
<th>CURRICULUM ASC</th>
<th>ARTS AND SCIENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majors:</td>
<td></td>
</tr>
<tr>
<td>AMS</td>
<td>American Studies</td>
</tr>
<tr>
<td>ANT</td>
<td>Anthropology</td>
</tr>
<tr>
<td>BIO</td>
<td>Biology</td>
</tr>
<tr>
<td>BMS</td>
<td>Biomedical Sciences</td>
</tr>
<tr>
<td>CHM</td>
<td>Chemistry</td>
</tr>
<tr>
<td>CAS</td>
<td>Communication Arts and Sciences</td>
</tr>
<tr>
<td>EAR</td>
<td>Earth Science</td>
</tr>
<tr>
<td>ECO</td>
<td>Economics</td>
</tr>
<tr>
<td>ENG</td>
<td>English</td>
</tr>
<tr>
<td>FRE</td>
<td>French</td>
</tr>
<tr>
<td>GEG</td>
<td>Geography</td>
</tr>
<tr>
<td>GEL</td>
<td>Geology</td>
</tr>
<tr>
<td>GER</td>
<td>German</td>
</tr>
<tr>
<td>HIS</td>
<td>History</td>
</tr>
<tr>
<td>LAT</td>
<td>Latin</td>
</tr>
<tr>
<td>LIN</td>
<td>Linguistics</td>
</tr>
<tr>
<td>MAT</td>
<td>Mathematics</td>
</tr>
<tr>
<td>MEV</td>
<td>Medieval Studies</td>
</tr>
<tr>
<td>PHI</td>
<td>Philosophy</td>
</tr>
<tr>
<td>PHY</td>
<td>Physics</td>
</tr>
<tr>
<td>POL</td>
<td>Political Science</td>
</tr>
<tr>
<td>PSY</td>
<td>Psychology</td>
</tr>
<tr>
<td>REL</td>
<td>Religion</td>
</tr>
<tr>
<td>RUS</td>
<td>Russian</td>
</tr>
<tr>
<td>SOS</td>
<td>Social Science</td>
</tr>
<tr>
<td>SOC</td>
<td>Sociology</td>
</tr>
<tr>
<td>SOA</td>
<td>Sociology and Anthropology</td>
</tr>
<tr>
<td>SPA</td>
<td>Spanish</td>
</tr>
</tbody>
</table>

| Co-ordinate Majors* | | |
|---------------------| | |
| AFS                 | African Studies |
| AIS                 | Asian Studies   |
| CLH                 | Classical Humanities |
| CCS                 | Comparative/Cross-Cultural Studies |
| EVT                 | Environmental Studies |
| EUR                 | European Studies |
| LMS                 | Latin American Studies |

<table>
<thead>
<tr>
<th>CURRICULUM LA Major:</th>
<th>LIBERAL ARTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Must elect major and minor from the Arts and Sciences Curriculum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CURRICULUM EVS Major:</th>
<th>ENVIRONMENTAL STUDIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVS</td>
<td>Environmental Studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CURRICULUM MT Major:</th>
<th>MEDICAL TECHNOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>Medical Technology</td>
</tr>
</tbody>
</table>

*These are majors to be selected only along with a standard major.
PRE-PROFESSIONAL CURRICULA

PD Pre-Dentistry
   Major: Must elect major from the Arts and Sciences Curriculum

PM Pre-Medicine and Pre-Osteopathy
   Major: Must elect major from the Arts and Sciences Curriculum

PPL Pre-Professional Librarianship
   Major: Any Undergraduate Major

PSW PRE-SOCIAL WORK
   Major: Pre-Social Work

PSN PRE-SPEECH PATHOLOGY AND AUDIOLOGY (Non-Teaching)
   Major: Pre-Speech Pathology and Audiology

PAP PUBLIC ADMINISTRATION
   Major: Political Science in Public Administration

SW SOCIAL WORK
   Major: Social Work

SPN SPEECH PATHOLOGY AND AUDIOLOGY (Non-Teaching)
   Major: Speech Pathology and Audiology

STC STUDENT PLANNED
   Major: Student Planned

PTC PERMISSION TO TAKE CLASSES
   Major: Permission to Take Classes
The Arts and Sciences Curriculum

Bachelor of Arts or Bachelor of Science degree

The Arts and Sciences Curriculum requires a minimum of 122 hours and an academic major in one of the departments in the College of Arts and Sciences. The more specific requirements of the curriculum are as follows:

I. A major in the College of Arts and Sciences (see opposite page).
II. A minor in any of the Colleges of the University.
III. Eight hours of a foreign language or two years of a foreign language in high school (for B.A. degree only).
IV. General Education Requirement, see page 21 of this catalog (one of the following options).
   a. General Studies Program
   b. Distribution Program
   c. Integrated Program
V. Two hours of physical education.
VI. Electives and/or additional cognates required by major or minor to make a total of 122 hours (minimum).

Liberal Arts Curriculum

for a B.A. or a B.S. degree

I. Seventy (70) hours in the College of Arts and Sciences.
II. One course in Science or Mathematics.
   One course in Social Sciences.
   One course in the Humanities (excluding language courses).
   One course in the Fine Arts.
   (These requirements are in addition to the General Education requirements.)
III. Major and Minor in the College of Arts and Sciences.
IV. A minimum of fifty (50) hours of 300, 400, or 500 level courses.
V. Sixteen (16) hours of a foreign language or proficiency by exam.
VI. General Education requirement thirty-five (35) hours. Consult the curriculum adviser.
VII. Two (2) hours of Physical Education.
VIII. Electives and/or cognates required by major or minor to make a total of 122 hours.
OTHER CURRICULA

For the other curricula offered by the College of Arts and Sciences see the respective programs on the following pages. Advice regarding these programs may be obtained from the appropriate curriculum adviser listed with each program.

ALL COLLEGE COURSE

399 Field Experience (Community Participation) 2-8 hrs.

A program of independent study combining academic work with social, environmental, civic or political field work. May be used as elective credit only. Prerequisites: A written outline of the student’s project, approved by a faculty supervisor, with approval from the office of the dean.

The Academic Advising Office of the College of Arts and Sciences

Paul E. Holkeboer Director
George H. Demetrakopoulos, Assistant Director
2060 Friedmann Hall
383-6122

Students in the Arts and Sciences Curriculum and the Liberal Arts Curriculum should see a college adviser to plan their degree program. The staff of the College of Arts and Sciences Advising Office also advises students concerning General Education requirements and helps students set up their General Education program. An appointment with an adviser should be scheduled early in a student’s academic career in order to obtain information regarding requirements.

Transfer students in the Arts and Sciences and Liberal Arts Curricula, after they have received their credit evaluation forms from the Admissions Office, should have their transfer courses evaluated for credit toward the University General Education requirements.

The staff of the Academic Advising Office will also provide introductory information about the programs, majors and minors available within the College of Arts and Sciences and will make referrals to other advising facilities, such as departmental advisers, etc. Students seeking exploratory information about the programs and curricula of the College also are encouraged to visit this office.

Students may stop by or call 383-6122 for an appointment.
Inter-Disciplinary Programs

1. American Studies Program
2. Black Americana Studies
3. Classical Humanities Program
4. Environmental Studies Program
5. Gerontology Minor
6. Integrated Language Arts Minor
7. International and Area Studies Programs
   African Studies
   Asian Studies
   Comparative/Cross-Cultural Studies
   European Studies
   Latin American Studies
8. The Medieval Institute
9. Women's Studies Minor
10. World Literature Minor
11. Medical Technology
12. Physicians' Assistants Program
13. Group Majors and Minors
14. Foreign Studies Seminars
American Studies Program

Peter Schmitt, Director
4011 Friedmann Hall

This is an interdepartmental program bringing to bear insights of literature and the social sciences on the problems of American life. It provides an excellent background for students planning careers in journalism, politics, public relations, teaching, the foreign service, mass communications, or library work. A 3.00 g.p.a. is generally considered a prerequisite.

Students majoring in American Studies are expected to complete:
1. At least 36 hours in five approved fields.
2. At least 18 hours in courses numbered 300 or above.
3. At least 12 hours in one participating Department.
4. An interdisciplinary course dealing with basic issues in American Culture.

A list of approved courses is available in 4011 or 4013 Friedmann Hall.

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

501 Studies in American Culture 3 hrs.
An interdisciplinary study of perennial issues in American life. The materials for this course are drawn from literature, the arts, the social sciences, and philosophy.

Black Americana Studies

LeRoy R. Ray, Jr., Director
814 Sprau Tower
(616) 383-8015

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

A minor will consist of the four undergraduate courses (Black Americana Studies 200, 300, 500, and 314 or 320) and at least 8 hours of departmental courses. A teaching minor will require at least 12 hours of departmental courses. The student will select both the general minor and a teaching (or group) minor in consultation with the Director of Black Americana Studies and an adviser in the student's major. Black Americana Studies core courses 200 Black Presence and 300 Black Experience have been approved for General Education credit.

200 Black Presence 3 hrs.
A survey of the impact of the physical presence of people of African ancestry and descent in the European colonies of the Western Hemisphere from the earliest days of the age of exploration to the present. Historically oriented, the course is designed to be interpretive rather than chronological; to deal with Black presence as party to the expansion of Western Europe in the New World; as active participation in settling and developing the colonies; as a people apart or of contrast. How did the presence of Africans influence the development of the life and institutions of the country in Colonial, National and later years.
210 Black Nationalism in America

An interdisciplinary study of Black Nationalism as an important, persistent and substantive ideology of Black America. This course analyzes and explores ideas and programs of Black leaders.

300 Black Experience

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.

314 The Black Community

An investigation of the social forms and structures within the Black community from the unique Black perspective. The course will focus on the sociological, political, economic, psychological, and physical aspects of community building by a subordinated group.

320 Ecology and the Black Community

Ecology and the Black Community will be a serious investigation of the relationships between human beings (local residents) and their social and physical environment. The course will focus on the determination of the individual's status in the community by an examination of the social, political, economic and physical aspects of the environment as influenced by the social order of the American society and philosophy.

350 Blacks in Michigan

A survey of the significance of Blacks in the making of Michigan history. We will trace the movement of Blacks into Michigan, investigate patterns of settlement, reactions to the émigrés, and the development of the Black families and church as principal forces in the Black community. We will study the political, social, and economic implications of being Black in Michigan, both in urban and rural areas from 1790 to the present. The student will be introduced to the varieties of historical sources available for such study.

500 Black Humanism

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

598 Independent Study

This course is designed to allow undergraduate or graduate students to work independently under staff supervision in a research or reading project dealing with an aspect of the Black community, Black experience, or the achievement of a Black individual. Approval of the instructor involved and the chairperson of the department must be secured prior to registration.
**DEPARTMENTAL COURSES**

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

<table>
<thead>
<tr>
<th>Department</th>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>220 Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>331 Art and Culture</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>335 Cultures of Africa</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>532 Culture and Personality</td>
<td>3</td>
</tr>
<tr>
<td>Art</td>
<td>594 History of Afro-American Art</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>201 Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>202 Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>410 Labor Problems</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>223 Black American Literature</td>
<td>4</td>
</tr>
<tr>
<td>History</td>
<td>314 History of the American Negro</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>386 Introduction to African History and Civilization</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>514 Black History: Impact of Black People on American Thought and Life</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>587 Ancient and Medieval Africa</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>588 Modern Africa</td>
<td>3</td>
</tr>
<tr>
<td>Political Science</td>
<td>204 Politics of Race</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>304 Political Perspectives of Black America</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>341 African Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>304 African Religions</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>311 Myth and Ritual</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>321 The History of the Study of Religion</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>500 Historical Studies in Religion (Religion of Black America)</td>
<td>2-4</td>
</tr>
<tr>
<td>Sociology</td>
<td>200 Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>314 Ethnic Relations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>355 Social Structure of Black America</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>371 Dynamics of Contemporary Social Change</td>
<td>3</td>
</tr>
</tbody>
</table>
Classical Humanities Program

Advisers: Elizabeth Giedeman
George Osmun

The Classical Humanities program is designed to offer undergraduate students a coordinated program of studies which are an integral part of the whole liberal humanistic tradition.

The program seeks to stimulate students' intellect and to broaden their perspectives by presenting courses in the Classical languages and literatures and in those closely-correlated Historical-Humanistic fields which reveal the enduring influence of the earlier civilizations and culture on the Western world. These courses are fundamental to man's timeless quest for a better life: mentally, philosophically, esthetically, politically, religiously, and socially.

Thus, for students interested in understanding the present as a result of the composite past and hence as basic to careers in areas such as law, theology, librarianship, journalism, medicine, the fine arts, foreign service or intelligence areas, this program is designed.

Program Objectives for Undergraduates:

A. In Arts and Sciences: To serve as a second major or minor for those whose primary major is in one of the following areas: 1) Anthropology, 2) Art, 3) English, 4) History, with a specialization in Ancient or Medieval History, 5) Linguistics, 6) Medieval Studies, 7) Modern Languages, 8) Music, 9) Philosophy, 10) Political Science, or 11) Religion.

B. In Education: To serve as a primary major or minor or as a second major or minor for those who are interested in teaching Classical Humanities.

Program Design:

A. All students entering the program for a major or minor must satisfy a language requirement at the intermediate level: Latin 200-201, 8 hours (students in Education curriculum must also take Latin 324 and 557 (or other methods course) as majors; 324 as minors). (All students may also take Greek 100-101 and receive 4 hours credit toward a major.)

B. The remaining hours of the Classical Humanities major or minor program must be taken from the two groups of courses listed below.

1. For a major, at least three of the courses must be chosen from each group to complete the 30 hours (36 for students in Education curricula).
2. For a minor, at least two of the courses must be chosen from each group to complete the 20 hours (24 for students in Education curricula).

Remaining hours for completion of the major or minor program must be satisfied by courses from either group.

Under advisement, students may elect those courses which they have not previously used to satisfy other requirements, e.g. in their majors or minors. They will be advised to broaden their areas of interest in the humanities scope.

Classical Studies Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Basic Greek</td>
</tr>
<tr>
<td>101</td>
<td>Basic Greek</td>
</tr>
<tr>
<td>100</td>
<td>Basic Latin</td>
</tr>
<tr>
<td>101</td>
<td>Basic Latin</td>
</tr>
<tr>
<td>200</td>
<td>Intermediate Latin (Vergil)</td>
</tr>
<tr>
<td>201</td>
<td>Intermediate Latin (Lyric Poetry)</td>
</tr>
<tr>
<td>250</td>
<td>Ancient-Modern Studies</td>
</tr>
<tr>
<td>324</td>
<td>Latin Literature (Selections from Prose and Poetry)</td>
</tr>
<tr>
<td>350</td>
<td>Classical Archaeology of the Aegean World</td>
</tr>
<tr>
<td>360</td>
<td>The Role of Women in Ancient Greece and Rome</td>
</tr>
<tr>
<td>375</td>
<td>Classical Drama in English Translation</td>
</tr>
<tr>
<td>450</td>
<td>Greek and Roman Mythology</td>
</tr>
<tr>
<td>550</td>
<td>Independent Study</td>
</tr>
<tr>
<td>557</td>
<td>Teaching of Latin</td>
</tr>
<tr>
<td>560</td>
<td>Medieval Latin</td>
</tr>
</tbody>
</table>

*The Classical Humanities program is not yet approved as a teaching major or minor. The request for state certification is in process.
## Historical-Humanistic Cognate Courses

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Number</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>210</td>
<td>Introduction to Archeology</td>
<td>3</td>
</tr>
<tr>
<td>Art</td>
<td>220</td>
<td>History of Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>581</td>
<td>History of Ancient Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>596</td>
<td>History of Architecture</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>332</td>
<td>English Renaissance Literature</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>Special Topics in Literature**</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>534</td>
<td>Neo-Classical Literature</td>
<td>4</td>
</tr>
<tr>
<td>History</td>
<td>100</td>
<td>The Early Western World</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>306</td>
<td>Main Currents of Early Western Thought</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>Ancient Greece</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>351</td>
<td>Ancient Rome</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>551</td>
<td>Imperial Rome (The First Century)</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics</td>
<td>100</td>
<td>The Nature of Language</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>201</td>
<td>Introduction to the Study of Language</td>
<td>4</td>
</tr>
<tr>
<td>Music</td>
<td>270</td>
<td>Music History and Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>347</td>
<td>Music in the Humanities in Secondary Schools</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>351</td>
<td>Music Literature: Western Art Music</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>579</td>
<td>Operatic Literature</td>
<td>2</td>
</tr>
<tr>
<td>Philosophy</td>
<td>301</td>
<td>History of Modern Philosophy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>Historically Oriented Studies — Variable Topics**</td>
<td>4</td>
</tr>
<tr>
<td>Political Science</td>
<td>360</td>
<td>Introduction to the History of Political Theory I</td>
<td>3</td>
</tr>
<tr>
<td>Religion</td>
<td>301</td>
<td>Protohistoric Religions: Ancient Near East, Greece and Rome, Meso-America</td>
<td>4</td>
</tr>
</tbody>
</table>

**Courses may be taken when topics are especially applicable to the Classical Humanities program.**
Environmental Studies

Robert Kaufman, Director

Michael Tenenbaum, Advisor
118 Moore Hall
Phone (616) 383-3983

The Environmental Studies Program (EVS) was designed by students and faculty to respond to a critical need for concern and action about the earth's environment and to place more emphasis on the quality of life.

The EVS Program offers the student a choice of a
1. Bachelor's Degree in Environmental Studies;
2. Co-ordinate major with a disciplinary or program major in any College of the University;
3. Minor program; or
4. Teacher Certification in Environmental Studies for Elementary and Secondary Education.

The Program seeks to provide students with a variety of intellectual and practical experiences designed to provoke thought about man and his relationship to society and to the natural environment.

The objectives of the Program are:
1. To define, analyze and evaluate the environmental quandary;
2. To suggest an individual responsibility to help in the amelioration of environmental problems;
3. To equip students to make professional contributions in resolving environmental problems;
4. To prepare leaders for environmental education and action;
5. To develop in students the habit of critical thinking about existing social institutions; and
6. To develop ability in students to devise creative solutions to problems.

The student-faculty cooperation which marked the origin of the EVS Program has continued in the development and governance of the Program. The Program is guided by an Executive Committee made up of faculty and students. The students continue to make important contributions to the development and evaluation of the Program.

Environmental Studies is interested in developing stimulating field trips for students in the Program. Many field trips are available through courses approved for the EVS Program. Such trips vary in length from several hours to a day or two. A few courses in which all of the work is done in the field are also available. A list of such courses may be obtained from the EVS office.

ENVIRONMENTAL STUDIES CURRICULUM

45-hour Degree Major

This degree program is reserved for those students committed to a professional career in environmental areas. Though not designed to train specialists in a specific area, it is necessary for a student, with the aid of the advisor, to develop a course sequence with greater emphasis in one or two disciplines.

Students may enroll in the Program if they can demonstrate how this inter-Disciplinary degree will assist them in qualifying for graduate programs leading to advanced degrees, advanced training, career opportunities or a professional position.

Those who wish to enroll in the EVS Curriculum are required to make this intention known to the Program Advisor no later than the first semester of the sophomore year (preferably sooner) and before courses used to satisfy this Program are taken. Records of participants are maintained by the Program Advisor and verified by the Director of the EVS Program. Students successfully completing this curriculum will be awarded a Bachelor of Arts or Bachelor of Science degree. Requirements for the Curriculum are the successful completion of:

A. An Environmental Studies concentration consisting of no less than 45 semester hours to include:
1. Two required courses (See Program Structures below for descriptions):
   a. Introduction to Environmental Studies
   OR
   b. Fundamentals of Environmental Studies
   PLUS
   c. Senior Seminar in Environmental Studies

   ENVS 109 .............................................. 1
   ENVS 110 .............................................. 3
   ENVS 400 .............................................. 3
Environmental Studies

2. Three of the following six core course offerings (See Program Structures below for descriptions):
   a. Man in Evolutionary Perspective ANTH 100 .................................................. 3
   b. Environmental Chemistry CHEM 140 ................................................................. 4
   c. Physics and the Environment PHYS 102 ............................................................ 3
   d. Principles of Conservation and Environmental Management GEOG 350 ............. 3
   e. Environmental Biology BIOL 105 ................................................................. 3
   f. Explorations in Urban Environmental and Ecological Studies GSSC 360 ........... 4

3. Remaining hours selected in consultation with the Program Advisor, from the list of EVS approved undergraduate electives, to make a minimum of 45 hours. At least one-third of these 45 hours must be taken at the 400-500 level. (See EVS electives course list below).

B. A disciplinary major chosen at the discretion of the student in any College of the University.

C. Eight (8) hours of a foreign language or two years of a foreign language in high school (for a B.A. degree only).

D. General Education requirements as described in the General Information Section of this bulletin.

E. At least two hours of physical education.

F. Electives and/or additional cognates required by major or minor to make a total of 122 hours (minimum).

GENERAL UNIVERSITY STUDIES (GUS) CURRICULUM
CONTINUING EDUCATION
EVS AREA OF CONCENTRATION

Please see page 544 of this bulletin.

CO-ORDINATE MAJOR PROGRAM

The co-ordinate major is designed for students interested in broadening their perspectives and conceptualizations of environmental knowledge beyond the framework of their selected disciplinary major. Exposure to concepts and methodologies from interdisciplinary coursework and activities, focused on environmental issues, will assist students interested in pursuing graduate education, and/or careers in industry, education, government, or the professions.

Students intending to enroll as co-ordinate majors should see the Program Advisor. Participants are encouraged to enroll in the Program no later than the first semester of the sophomore year (preferably sooner) and before courses used to satisfy this Program are taken. Records of participants are maintained and utilized for advising and counseling.

A. The EVS co-ordinate major may serve as a second major to a disciplinary major in any of the curricula of the University.

B. The EVS co-ordinate major will consist of no less than 30 semester hours to include:

1. Two required courses (See Program Structures below for descriptions):
   a. Introduction to Environmental Studies ENVS 109 .................................................. 1
      OR
   b. Fundamentals of Environmental Studies ENVS 110 .............................................. 3
      PLUS
   c. Senior Seminar in Environmental Studies ENVS 400 ............................................ 3
2. Three of the following six core course offerings (See Program Structures below for descriptions):
   a. Man in Evolutionary Perspectives  ANTH 100 ................................................. 3
   b. Environmental Chemistry  CHEM 140 ................................................................. 4
   c. Physics and the Environment  PHYS 102 ............................................................. 3
   d. Principles of Conservation and Environmental Management  GEOG 350 ...................... 3
   e. Environmental Biology  BIOL 105 ................................................................. 3
   f. Explorations in Urban Environmental and Ecological Studies  GSSC 360 .................. 4

3. Remaining hours selected in consultation with the Program Advisor from the list of EVS approved undergraduate electives.

MINOR PROGRAM
TEACHING AND NON-TEACHING

The Minor concentration in EVS is intended for those students who are unable to pursue the major though still interested in obtaining interdisciplinary insights into environmental quandaries. The scope of exposure may range from the global implications of resource depletion to the social and physical effects of local urbanization. Such knowledge of physical, social, economic and political dimensions to a variety of environmental issues would be of considerable aid to those seeking graduate positions and/or careers in industry, government, the professions, or education.

The twenty semester hour Non-Teaching Minor and the twenty-four hour Teaching Minor (for students enrolled in elementary or secondary Education curricula) may be earned through the successful completion of

1. Two required courses for four to six hours (ENVS 109 or 110, 400);
2. Three courses, for nine to eleven hours, from the six core course offerings;
   and
3. The remaining hours needed to fulfill the required 20 or 24 hours, selected in consultation with the Program Advisor, from the list of EVS approved undergraduate electives.
   (See Program Structure below for descriptions of the above courses.)

PROGRAM STRUCTURE

A student, in developing any Environmental Studies Program, is required to take the following courses:

Required Courses

Environmental Studies 109: Introduction to Environmental Studies  1 hr.

This course is designed to introduce majors and minors in EVS to the wide range of knowledge affecting our environment. Introductory attention will be given the orienting concepts of ecology, evolution and culture. The environmental movement will be described and analyzed and the attention will be directed to the importance of planning for future environments. The course provides for discussion of ideas from lectures, films, readings and from students.

OR

Environmental Studies 110: Fundamentals of Environmental Studies  3 hrs.

This is a formal interdisciplinary introduction to the study of the environment. "Fundamentals of Environmental Studies" is offered to students taking a major or minor in Environmental Studies. The concepts of ecology, evolution and culture will be used as integrating ideas crossing disciplinary lines. A survey of environmental topics will include: conservation principles and natural resources, population pressures, sources of energy, air, water and land pollution, and land-use planning. Type of instruction is primarily lecture and discussion.
Environmental Studies 400: Senior Seminar in Environmental Studies  
3 hrs.
A team taught integrated seminar in which the subject material will be built around the orienting ideas of ecology, evolution and culture. Students will develop a project which demonstrates ecological relationships.

Core Courses

In addition to the required courses, the student must select three core courses from the following list. (Course selection should be complementary to other academic pursuits of the students; i.e., a biology major would take ANTH 100, GEOG 350, and GSSC 360.)

Anthropology 100: Man in Evolutionary Perspective  
(not required of Anthropology majors or minors)  
The nature, causes and prospects of being human as seen through an examination of the events and processes of biocultural evolution.  
3 hrs.

Biology 105: Environmental Biology  
(not required of Biology majors or minors)  
A study of the relationships of living organisms including man to their environment and to one another. Designed for non-major students. Approved for General Education. No prerequisite and not repeatable for credit.  
3 hrs.

Chemistry 140: Introductory Environmental Chemistry  
(not required of Chemistry majors or minors)  
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.  
4 hrs.

General Studies 360: Explorations in Urban Environments and Ecological Studies  
EVS students may only elect 4 hours of academic credit  
Cultural and human ecologies of urban environments; a study of man in his total environment from the humanistic perspective, particularly the urban experience and its environmental implications; and exploration of the variety of alternative life styles and adjustments that are possible in the urban environment. Lectures and seminars with a block of time (1-4 weeks) devoted to field projects in urban environments.  
4-8 hrs.

Geography 350: Principles of Conservation and Environmental Management  
(not required of Geography majors or minors)  
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.  
3 hrs.

Physics 102: Physics and the Environment  
(not required of Physics majors or minors)  
The objective of this course is to provide the student with an understanding of some of the physical principles which underlie selected environmental problems. Topics covered include the physical aspects of air pollution, the energy problem, and radioactivity. The course consists of three lectures per week. No previous training in physics is required. The course may not be applied towards either a major or minor in Physics.  
3 hrs.

Elective Courses

The following is a list of courses which may be taken as electives for the Environmental Studies Program. They have been categorized into the following areas: Environmental Studies, Humanities, Sciences, Social Sciences, Applied Sciences and Professional.
In selecting electives, students should choose courses from those sections other than their major area of interest. For example, a geography major would fall within the Science area. Therefore, the elective courses of this student would be chosen from any of the other four areas. The only exception to this is the Environmental Studies area, the courses of which may be applied as electives for anyone in the EVS Program, regardless of major. After choosing elective courses, students should confer with the Program Advisor prior to actual registration. This is to insure that program guidelines are met and that any program problems are properly resolved.

Environmental Studies 398: Readings in Environmental Studies 1-4 hrs.
This course is designed as an interdisciplinary reading course for students majoring or minoring in Environmental Studies. It will permit students to study in depth some aspects of their environmental specialization while under the direction of a faculty member. They may work alone or with a small group. Prerequisite: Approval of the instructor and the Director of the Environmental Studies Program must be secured in advance of registration.

Environmental Studies 550: Contemporary Environmental Projects 1-4 hrs.
“Contemporary Environmental Projects” is designed for students who wish to carry on advanced interdisciplinary work in Environmental Studies under the direction of a faculty member. Work will be geared to a single project in which there is outside investigation, research, field experiences, and/or workshop experiences. Students selecting this course will work on projects especially designed for their programs. The goal of this course is to identify a problem, outline the approach to study, and to consider paths to solving the problem. The course is repeatable for up to eight hours of academic credit. Prerequisite: Consent of instructor.

I. Environmental Studies 109, 110, 398, 400, 550
II. Humanities
   English - 111*, 410*
   General Studies (Humanities) - 409
   Philosophy - 201*, 301*, 310*, 314*, 322*, 323*
   Religion - 333, 530*
III. Science
   Agriculture - 100, 220, 222, 320, 322, 323, 324
   Biology - 101, 102, 103, 105, 107, 111, 209, 220, 225, 234, 301, 300*, 500*, 502, 509, 527, 530, 538, 539, 542, 547, 548, 549, 551, 552, 553, 555, 557, 558
   Chemistry - 101, 102, 103, 105, 109, 120, 140, 222, 360, 365, 430, 431, 450, 509*
   General Studies (Science) - 130, 133, 433, 434
   Geography - 100, 105, 204, 205, 206, 225, 226, 244, 350, 361, 540, 543, 544, 553, 554, 555, 556, 557, 560, 570, 580, 582
   Geography (Regional) - 309*, 311*, 380*, 412*, 566*
   Geology - 100, 130, 131, 300, 301, 312, 339*, 444, 532, 536,
   Mathematics - 106, 260, 360, 366
   Physics - 102, 104, 105, 120
IV. Social Science
   Anthropology - 100, 210, 220, 325, 340, 536,
   Black Americana Studies - 314, 320, 500
   Economics - 100, 201, 202, 319, 419, 447, 545
   General Studies (Social Science) - 123, 256, 360, 422, 460
   History - 105, 315
   Political Science - 330, 370, 506*, 552*
   Sociology - 250, 353, 354, 553
V. Applied Sciences and Professional
   General Business - 311
   Home Economics - 210, 212
   Industrial Engineering - 240
   Management - 102, 200, 250, 300, 400, 420, 430, 564
   Marketing - 190
   Mechanical Engineering - 338, 559
   Paper Science and Engineering - 150, 251, 350, 353, 450, 451, 454
   Physical Education - 106, 133, 270, PEW 370
   Social Work - 533, 562
   Transportation Technology - 126, 270, 470, 474
*Indicates courses containing rotating topics; available as an elective only when the topic is environmentally related.
Gerontology Minor

Advisers:
Billye Cheatum
Women's Physical Education
Geraldine Richardson
Occupational Therapy
Ellen Robin
Sociology
Dan Thompson
Social Work

Gerontology, the study of the aging process and of old age, is offered as a multidisciplinary minor at Western Michigan University. Gerontology includes the study of aging through a disciplinary perspective, as well as that medical specialty known as geriatrics.

Interest in gerontology has burgeoned in the United States with the recognition that currently our population includes over 22,000,000 persons beyond age 65—and that population segment is growing. Universities have responded through research and teaching to increase the understanding of the older portion of our population and to provide trained personnel to work with older persons.

The minor in gerontology is well-designed to supplement formal training in other fields such as Sociology, Social Work, Occupational Therapy, Physical Education and Recreation, Blind Rehabilitation and Speech Pathology. It cannot, however, be used for teacher certification. Knowledge and understanding gained from formal courses in the gerontology minor is supplemented by direct work with older persons through field experience. Study of gerontology not only can lead to vocational interests in services to older persons but can prepare one for graduate and professional work, can enrich awareness of the society in which one lives, and can allow the thoughtful and intelligent personal planning of one's own middle and later years.

The minor consists of twenty or more hours from the courses listed below, of which four are required courses. Courses must be selected in consultation with one of the advisers. Exceptions to the program specified, such as the inclusion of independent studies through departmental readings courses, may be made with the approval of the adviser.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociology 352: Introduction to Social Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>Social Work 464: Social Work Practice in Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>Occupational Therapy 470: Functioning of the Older Adult</td>
<td>3</td>
</tr>
<tr>
<td>Field Education: Either Social Work 412: Special Projects in Social Work</td>
<td>4</td>
</tr>
<tr>
<td>Or a practicum in a participating department</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind Rehabilitation 599: Gerontology</td>
<td>2</td>
</tr>
<tr>
<td>Business Education 292: Consumer Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>Business, General 326: Investments</td>
<td>3</td>
</tr>
<tr>
<td>Economics 313: Poverty and Economic Security</td>
<td>3</td>
</tr>
<tr>
<td>Economics 318: Economics of Medical Care</td>
<td>3</td>
</tr>
<tr>
<td>Home Economics 515: Marriage and Family in Maturity</td>
<td>3</td>
</tr>
<tr>
<td>Physical Ed. — Women 572: Recreation for the Aging</td>
<td>2</td>
</tr>
<tr>
<td>Social Work 563: Concepts in Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>Social Work 572: Community Agency Resources</td>
<td>2</td>
</tr>
<tr>
<td>Sociology 122: Death: Dying and Bereavement</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 373: Sociology of Health and Illness</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 552: Sociology of Aging</td>
<td>3</td>
</tr>
<tr>
<td>Speech Path. and Aud. 552: Communication Problems of the Aged</td>
<td>3</td>
</tr>
</tbody>
</table>
This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of language learning. This program satisfies the guidelines of the Michigan Department of Education for competency based programs and provides opportunities for a wide variety of individual interests and alternative learning styles.

The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each semester. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each semester is team taught by an interdisciplinary faculty, and will focus on a particular aspect of language development which will be presented through a balance of lectures, discussions and workshops together with opportunities for student initiated learning.

Students can enter the program in the second semester of their sophomore year and should plan for four sequential semesters. In general, Human Development and Learning, TEED 250 (or its equivalent) is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Office of the College of Arts and Sciences or the Teacher Education Department and from the Integrated Language Arts (ILAM) Coordinator.

PROGRAM

This 24-hour interdepartment minor for elementary education students consists of four sequential semesters as follows:

Semester I

ILAM 360 Children and Their Language 8 hrs.

An introduction to the interrelated nature of the language arts with emphasis on the linguistic and social-cognitive development of the child. Topics to be covered are: social-cognitive development, language acquisition, speaking and listening, literature for the young child and the teacher's acquisition and use of observation skills.

Semester II

ILAM 361 Oracy and Literacy in the Early Elementary School 6 hrs.

An in-depth continuation of Semester I which emphasizes the relationship of oral language with writing and reading, and the interrelationships within the language arts, and the development of thinking processes through language. A field experience with early elementary children will be included.
International Studies

Semester III
ILAM 362 Oracy and Literacy in the Later Elementary/Middle School 6 hrs.
An in-depth continuation of Semester II, the emphasis will be on reading, oral language, children's writing and literature, and the development of thinking processes through language. Field work with later elementary/middle school children will be included.

Semester IV
ILAM 460 Studies in the Integrated Language Arts 4 hrs.
This semester is designed by the student, in consultation with the advising faculty, for pursuing in-depth the development, implementation and integration of the language arts program. Attendance at periodic seminars to discuss projects and individual conferences to assess progress, along with related field experiences are important and integral features of this semester.

International and Area Studies Programs

The International and Area Studies Programs were established by the Trustees and Administration of Western Michigan University as interdisciplinary programs devoted to the study of cultures located geographically outside the continental United States. In general, the programs coordinate activities of an international character sponsored by Western Michigan University.

There are numerous programs which should be of great interest to undergraduate students; a detailed description of each will be found on the following pages of this catalog. In broad outline, these programs of study fall within two categories: (1) undergraduate minors of 20 semester hours and (2) undergraduate co-ordinate majors permitting more intensive study of 30 semester hours. Students who enroll in any of these co-ordinate majors must also enroll in a standard major.

Four area-related programs and one comparative/cross-cultural program have been established to design and to coordinate curricular offerings; these are:
- African Studies — Alan Jacobs, Adviser
- Asian Studies — David Dickason, Adviser
- Comparative/Cross-Cultural Studies — Charles Houston, Adviser
- European Studies — George Klein, Adviser
- Latin American Studies — Leila Bradfield, Adviser

Students should consult the appropriate adviser for the development of a program of study and for each registration, if necessary.

The International and Area Studies Programs are a joint endeavor by faculty and students at Western Michigan University designed to provide members of this academic community with a curricular framework within which to examine, analyze and — hopefully — understand the peoples and institutions of the world in cross-disciplinary perspective.

The programs seek to provide students with a broad variety of intellectual and experiential stimuli designed to promote an understanding of areas — their history, literature and fine arts, social institutions, political processes, major intellectual currents, geography, economic problems, linguistic heritage — and the relationship of these factors to the role of these nations in the world community.

The International and Area Studies Programs are designed for those undergraduate students who plan to pursue careers in education, industry, government, or the professions in which success would be enhanced by an understanding of peoples whose values, traditions, customs and institutions differ markedly from those with which most of us are familiar.

These programs seek to promote the following educational objectives:
1. To assist Western Michigan University students achieve a better understanding of other peoples and institutions.
2. To explore, analyze and evaluate the impact of specific areas on the course of world events.
3. To stimulate acquisition of foreign language skills by Western Michigan University students.
College of Arts and Sciences

4. To provide a forum for the exchange of views between students and faculty concerned with contemporary world affairs.

5. To encourage cross-disciplinary research and study by both students and faculty of issues affecting the contemporary world.

The International and Area Studies Programs hope to develop and promote opportunities for students enrolled in these programs to study and travel in foreign countries — thereby acquiring a first-hand understanding of contemporary conditions while further developing facility in one or more foreign languages. Academic credit earned as a result of study or research undertaken abroad may be accepted toward completion of requirements for the Co-ordinate Major or Minor.

AFRICAN STUDIES CO-ORDINATE MAJOR

Adviser: Alan H. Jacobs (Anthropology)
102 Moore Hall
383-4059

In consultation with the program Adviser, a student in the African Studies concentration selects at least 30 semester hours from the list of African Studies Core and Cognate courses; no less than 20 of the 30 hours must be selected from the list of African Studies Core courses and in each case include four of the following five courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 335 Cultures of Africa</td>
<td>3</td>
</tr>
<tr>
<td>Geography 386 Sub-Saharan Africa: Man, Environments, Resources</td>
<td>3</td>
</tr>
<tr>
<td>History 386 Introduction to African History and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 341 African Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>Sociology 535 Changing Social Systems — Sub-Saharan Africa</td>
<td>3</td>
</tr>
</tbody>
</table>

N.B. The African Studies Committee strongly recommends the study of African languages or European languages widely spoken on the continent, e.g. French; up to 8 hours of language study may be included in the African Studies concentration.

Advisement

Students enrolled in this program will be aided in the selection of African Studies Core courses by the Adviser; those who wish to enroll in the African Studies Co-ordinate Major are required to make this intention known to the Advisor by no later than the first semester of their junior year — and preferably earlier.

AFRICAN STUDIES MINOR

Adviser: Alan H. Jacobs

Twenty semester hours (24 for students enrolled in Education curricula) taken from the list of African Studies Core and Cognate courses are required for completion of a Minor in African Studies.

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

Students who enroll in the African Studies Minor must elect at least three of the following five courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 335 Cultures of Africa</td>
<td>3</td>
</tr>
<tr>
<td>Geography 386 Sub-Saharan Africa; Man, Environments, Resources</td>
<td>3</td>
</tr>
<tr>
<td>History 386 Introduction to African History and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 341 African Political Systems</td>
<td>4</td>
</tr>
<tr>
<td>Sociology 535 Changing Social Systems — Sub-Saharan Africa</td>
<td>3</td>
</tr>
</tbody>
</table>
AFRICAN STUDIES CORE COURSES

Anthropology 335, *500, *545, 598
Arts and Sciences 504
Economics 585, 598
English 312, *519, 598
General Studies: GHUM 303, 413
Geography *309, 386, 387, 598
History 386, *502, 587, 588, 598
Linguistics 301 (Swahili, Arabic) 302, 501, 502, 507, 508, 509, 572
Political Science 341, *549, 598
Religion 307, *500, 598
Social Science *506
Sociology *371, *430, *534, 535, 598

AFRICAN STUDIES COGNATE COURSES

Anthropology 240, 534, 539
Black Americana Studies 200, 210, 300, 310, 320, 500
Economics 588
Geography 361
Linguistics 552
Political Science 542, 544, 545, 560, 563
Sociology 354, 556

*May be included in student's program when the course deals with Africa.

ASIAN STUDIES CO-ORDINATE MAJOR

Adviser: David G. Dickason (Geography)
343 Wood Hall
383-1834

Undergraduate students strongly interested in Asian affairs and culture, or who hope to pursue an Asia-related career, may choose an interdisciplinary co-ordinate major in Asian Studies. This is a double major program. Not only is a disciplinary major in any college of the university required, but also the co-ordinate major in Asian Studies requires 30 credit hours of approved Asian Studies courses. (A student must, of course, complete all other requirements in his or her respective college.) At least one-half of any student’s Asian Studies courses (15 credit hours) must be selected from courses listed as “Disciplinary Courses on Asia” — category one in the list of approved Asian Studies courses below. Further, at least one course should be taken from each of the following groups of disciplines: 1) Geography & History; 2) the Humanities; 3) the Social Sciences.

An Asian language is not required for this major. However, any student planning the study of Asia at the graduate level or the pursuit of an Asia-related career should obtain as much fluency in an Asian language as possible as an undergraduate. To avoid studying an Asian language only makes the successful pursuit of an Asia-related career more difficult. In this and other matters, the student’s program should be defined jointly by the student and the Asian Studies adviser.

ASIAN STUDIES MINOR

Adviser: David G. Dickason

Undergraduate students in any college of the University may choose an interdisciplinary minor in Asian Studies. A minimum of 24 credit hours of approved Asian Studies courses is required. At least one-half of any student’s Asian Studies courses (12 credit hours) must be selected from courses listed as “Disciplinary Courses on Asia” — category one in the list of approved Asian Studies courses below. The minor in Asian
ASIAN STUDIES COURSES

I. Disciplinary Courses on Asia.
History 381, 581, 583, 584, 585, 349, 380, 389, *598
English *312, *519, *598
Economics 587, *598
Political Science 342, 345, 346, 370, 548, *549, *598
Sociology 336, *531, *534, *598
Philosophy 306

II. Integrative Courses on Asia.
Arts & Sciences *504, *505
Business *504

III. Integrative Cognate Courses.
Anthropology 220, 534, 539, 540
Economics 480, 484, 588
Geography 205, 244, 361, 544
General Studies 304, 471
Linguistics 552
Political Science 250, 542, 545
Religion 301
Sociology 430
Physical Education 130, 131, 165

*May be included in a student's program when the course deals with Asia.

COMPARATIVE/CROSS-CULTURAL STUDIES

CO-ORDINATE MAJOR

Adviser: Charles Houston (General Studies)
233 Moore Hall
383-3985

A student who enrolls for the Co-ordinate Major in Comparative/Cross-Cultural Studies must also have a disciplinary major in any College of the University.

The Comparative/Cross-Cultural Studies concentration consists of no less than 30 semester hours selected from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 100: Man in Evolutionary Perspective</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 220: Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 325: Social Structure</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 370: Language in Culture</td>
<td>3</td>
</tr>
<tr>
<td>Linguistics 201: Introduction to the Study of Language</td>
<td>4</td>
</tr>
</tbody>
</table>

(Substitute ONLY for ANTH 370)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 100</td>
<td>Contemporary Economics Problems</td>
<td>3</td>
</tr>
<tr>
<td>Economics 319</td>
<td>Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>Geography 100</td>
<td>World Ecological Problems and Man</td>
<td>4</td>
</tr>
<tr>
<td>Geography 205</td>
<td>Our Human World</td>
<td>3</td>
</tr>
<tr>
<td>Geography 244</td>
<td>World Patterns of Economic Activity</td>
<td>3</td>
</tr>
<tr>
<td>Geography 361</td>
<td>Population: The Crowding World</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 250</td>
<td>International Relations</td>
<td>4</td>
</tr>
<tr>
<td>Political Science 552</td>
<td>Studies in International Relations</td>
<td>3-4</td>
</tr>
<tr>
<td>Sociology 171</td>
<td>Social Impacts of Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 531</td>
<td>Studies in Social Change: Designated Areas</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 532</td>
<td>Introduction to Comparative Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

**COMPARATIVE/CROSS-CULTURAL STUDIES MINOR**

Advisor: Charles O. Houston

Twenty semester hours (24 semester hours for students enrolled in any curriculum in the College of Education), taken from the above list of courses, are required for completion of a Minor concentration in Comparative/Cross-Cultural Studies.

Students wishing to enroll in this minor program should consult the Advisor before registering. The advisor maintains records of those in the Minor in order that it may be verified before graduation.

**EUROPEAN STUDIES CO-ORDINATE MAJOR**

Adviser: George Klein (Political Science)
5017 Friedmann Hall
383-0494

I. A minimum of 30 hours will be required for the completion of the Co-ordinate Major in European Studies.

II. The European Studies Co-ordinate Major will be offered in the following options:
   - British Studies
   - Germanic Studies
   - Romance Studies
   - Slavic Studies
   - General Option

III. Each regional option will require eight hours of an appropriate language. Language study can be undertaken in the Department of Modern and Classical Languages or in the Department of Linguistics. Students with the knowledge of an appropriate language may have their requirement waived.

IV. Candidates for a coordinate major degree must select three courses appropriate to their area of interest from among the core courses listed below.

V. The remaining hours are elective with the requirement that they have relevance to the European area and are to be selected in consultation with the student's advisor. Students who elect the general option of the coordinate major must select an advisory committee. The committee shall consist of the European Studies advisor, the British Studies advisor or an advisor pertinent to the student's general option, and a third member to be jointly agreed upon by the student and the European Studies Advisor.
EUROPEAN STUDIES MINOR

Advisor: George Klein

Twenty semester hours (24 hour Slavic minor for students enrolled in Education curricula) taken from the list of European Studies courses are required for completion of a Minor concentration in European Studies. Eight hours of language and one course, drawn from each of two disciplines listed in the core area, will be part of the requirement. The language requirement can be waived only by written approval of the European Studies Advisor. In case the student obtains permission to waive language, the required hours will be drawn from an appropriate list of core courses by the European Studies Advisor.

Required Courses

GEOG 383 Western and Southern Europe ........................................... 3 hrs.
GEOG 384 Soviet Peoples and Landscapes ........................................... 3 hrs.
HIST 341 The Soviet Union ........................................................... 3 hrs.
HIST 563 Europe Since 1945 ........................................................... 3 hrs.
PSCI 340 Western European Political Systems .................................... 4 hrs.
PSCI 344 Soviet and East European Political Systems ....................... 4 hrs.

EUROPEAN STUDIES COURSES

Anthropology: 520, *545, *598
Art: 220, 221, *520, 521, 585, 586, 588, 589, 590, 597
Arts and Sciences: 504, 505
Business: 504, 521, 543, 575
Economics: 380, 480, 484, 580, *598
French: 200, 201, 316, 317, 320, 322, 328, 329, 375, 544, 550, 551, 552, 560
Geography: 383, 384, 550, *598
German: 200, 201, 316, 317, 326, 327, 375, 510, 528, 529, 550, 552, 553, 559, 560
Music: 270, 271, 351, 573, 574, 575, 579, 579,
Philosophy: 301, 303, 307, 498, 570, *598
Religion: 305, 330, 498, 500, 510, 520, *598,
Russian: 104, 200, 201, 310, 316, 317, 328, 550, 552, 560
Spanish: 200, 201, 316, 317, 322, 328, 550, 552, 560

*Courses marked with an asterisk may be included in the student's program when concentrating on Western Europe or Eastern Europe and the Soviet Union — and with approval of the Advisor.

LATIN AMERICAN STUDIES CO-ORDINATE MAJOR

Adviser: Leila Bradfield (Sociology)
2513 Sangren Hall
383-1736

The Latin American Studies Co-ordinate Major is designed for those undergraduate students seeking a liberal education who anticipate careers in government, industry, education or the professions success in which would be enhanced by a fairly comprehensive understanding of Latin America, and for those who plan to enter graduate programs which offer opportunities for Latin American concentration. Students enrolled in this Co-ordinate Major must select at least 30 hours from the Core and Cognate Courses listed below. Students must demonstrate intermediate-level proficiency in Spanish or Portuguese.

Students electing a co-ordinate major must also have a disciplinary major.
Advisement

Students enrolled in the Latin American Studies Co-ordinate Major will be assisted in the selection of appropriate Latin American Studies Core and Cognate courses by the Latin American Studies Adviser. Students wishing to enroll in the Latin American Studies Co-ordinate Major are required to make this intention known to the Latin American Studies Adviser by no later than the first semester of their junior year — and preferably earlier.

HONORS CERTIFICATE PROGRAM

A Certificate in Latin American Studies will be awarded from Western Michigan University on graduation to those who have completed the 30 hour Co-ordinate Major requirements as well as an oral and written examination by three members chosen from the Latin American Studies Committee. A grade point average of 3.50 and intermediate level proficiency in Spanish is a prerequisite in this program. The Certificate is designed for students whose interest in Latin America go beyond the usual academic programs. The program is flexible, involving independent studies, seminar classes, and is above all, tailored to each individual's interest.

LATIN AMERICAN STUDIES MINOR

Adviser: Leila Bradfield

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

Students wishing to enroll in this Minor concentration are required to make this desire known to the Latin American Studies Adviser before courses employed to satisfy this program are taken; records of the Minor are maintained and verified by the Latin American Studies Adviser.

LATIN AMERICAN STUDIES CORE COURSES

Arts and Sciences 504
Economics 589, 598
Geography *309, 381, 382, *550, 598
History 370, 371, 571, 598
Linguistics 301 (Brazilian Portuguese), 302, 501, 502, 507, 508, 509
Political Science 343, *549, 598
Social Science 310
Sociology 531, *534, 598
Spanish 316, 317, 323, 528, 529, 560

*May be included in student's program when the course deals with Latin America.

LATIN AMERICAN STUDIES COGNATE COURSES

Anthropology 534
Economics 588
Geography 361
Linguistics 510, 552
Political Science 542, 544, 545, 560, 563
Sociology 354, 371, 430, 556
The Medieval Institute

John R. Sommerfeldt, Director and Adviser
Otto Gründler, Associate Director
E. Rozanne Elder, Associate Director

Knowledge of medieval and Renaissance culture is being increasingly recognized as essential to an understanding of modern culture. The Medieval Institute was established by the University to develop and coordinate interdisciplinary programs in medieval and Renaissance studies. In addition to an undergraduate major and minor, the Institute offers a graduate program leading to an M.A. in Medieval Studies.

Western Michigan University has library resources and faculty to provide a good academic environment for the study of the Middle Ages and Renaissance. The Institute hosts an annual Conference on Medieval Studies which has brought the University wide recognition throughout the world. Studies in Medieval Culture, a publication which includes many of the best papers presented at these conferences, also has gained an enviable reputation here and abroad. In addition, the Institute sponsors a lecture series each year on campus on medieval and Renaissance culture and civilization.

The headquarters of the Medieval Institute is in the Hillside West Building.

MAJOR PROGRAM

Students with an undergraduate major must elect thirty hours, to include the following:

1. One history course chosen from the approved list, or another history course chosen with the approval of the adviser.
2. One literature course chosen from the approved list, or another literature course chosen with the approval of the adviser.
3. One course in intellectual history, philosophy, or theology chosen from the approved list, or a similar course chosen with the approval of the adviser.
4. One course in fine arts chosen from the approved list, or another fine arts course chosen with the approval of the adviser.
5. One independent research course
6. Electives from the approved list (or others with the approval of the adviser).
7. The student must also demonstrate competence in a foreign language (normally four semesters or the equivalent).

MINOR PROGRAM

Students with an undergraduate minor must elect twenty hours, to include the following:

1. One history course chosen from the approved list, or another history course chosen with the approval of the adviser.
2. One literature course chosen from the approved list, or another literature course chosen with the approval of the adviser.
3. One course in intellectual history, philosophy, or theology chosen from the approved list, or a similar course chosen with the approval of the adviser.
4. Electives from the approved list (or others with the approval of the adviser).
COURSE DESCRIPTIONS
(215 The Birth of the Modern World)

An interdepartmental course in selected topics crucial to an understanding of the ways in which the Middle Ages and the Renaissance have made Western culture what it now is. Faculty from two or more departments will deal with the semester's topic as seen from the viewpoints of the fields of study they represent, such as art, music, history, philosophy, literature, religion, etc. Emphasis is upon showing the interrelatedness of various aspects of knowledge and the arts. Typical topics are: Ideas and Institutions of the Year 1200; Man, Woman and Marriage in Medieval and Renaissance Literature and Art.

---

500 Interdisciplinary Studies in Medieval Culture

An interdisciplinary course organized around selected topics in medieval and Renaissance studies. The focus may be in a specific period (The Twelfth Century), a religious movement (Monasticism), a political structure (Venice — A Renaissance city-state), or the social fabric (Medieval Man: Image and Reality). In each case faculty from several departments will approach the semester's topic from the perspective and with the methodological tools of their respective disciplines, such as art, history, literature, music, philosophy, political science, and religion.

The overall aim of the course is to demonstrate to students why one needs to acquire a variety of disciplines to understand a single complex problem, and how to put traditional building blocks together in new ways. The course may be repeated for credit with a different topic.

---

APPROVED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>145</td>
<td>The Birth of the Modern World</td>
<td>3-4 hrs.</td>
</tr>
<tr>
<td>500</td>
<td>Interdisciplinary Studies in Medieval Culture</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>220</td>
<td>History of Art (to the Renaissance)</td>
<td>3</td>
</tr>
<tr>
<td>520</td>
<td>Independent Study in Art History</td>
<td>2-3</td>
</tr>
<tr>
<td>583</td>
<td>History of Medieval Art</td>
<td>3</td>
</tr>
<tr>
<td>585</td>
<td>History of Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>504</td>
<td>Foreign Studies Seminar: Social Sciences</td>
<td>1-6</td>
</tr>
<tr>
<td>505</td>
<td>Foreign Studies Seminar: Humanities</td>
<td>1-6</td>
</tr>
<tr>
<td>598</td>
<td>Readings in Economics</td>
<td>1-3</td>
</tr>
<tr>
<td>252</td>
<td>Shakespeare</td>
<td>4</td>
</tr>
<tr>
<td>332</td>
<td>English Renaissance Literature</td>
<td>4</td>
</tr>
<tr>
<td>372</td>
<td>Development of Modern English</td>
<td>4</td>
</tr>
<tr>
<td>410</td>
<td>Special Topics: Norse Literature and Mythology</td>
<td>4</td>
</tr>
<tr>
<td>452</td>
<td>Shakespeare Seminar</td>
<td>4</td>
</tr>
<tr>
<td>529</td>
<td>Medieval English Literature</td>
<td>4</td>
</tr>
<tr>
<td>530</td>
<td>Medieval Continental Literature in English Translation</td>
<td>4</td>
</tr>
<tr>
<td>531</td>
<td>Chaucer</td>
<td>4</td>
</tr>
<tr>
<td>532</td>
<td>Sixteenth Century Literature</td>
<td>4</td>
</tr>
<tr>
<td>543</td>
<td>Elizabethan and Jacobean Drama</td>
<td>4</td>
</tr>
<tr>
<td>554</td>
<td>Milton</td>
<td>4</td>
</tr>
<tr>
<td>555</td>
<td>Dante</td>
<td>4</td>
</tr>
<tr>
<td>598</td>
<td>Readings in English</td>
<td>1-4</td>
</tr>
</tbody>
</table>

---

History

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>306</td>
<td>Main Currents of Early Western Thought</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>
</tr>
<tr>
<td>470</td>
<td>Independent Research in History</td>
<td>2-3</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>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>553</td>
<td>Life in the Middle Ages</td>
<td>3</td>
</tr>
<tr>
<td>554</td>
<td>The Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>555</td>
<td>The Reformation</td>
<td>3</td>
</tr>
<tr>
<td>587</td>
<td>Ancient and Medieval Africa</td>
<td>3</td>
</tr>
<tr>
<td>592</td>
<td>Historical Literature</td>
<td>3</td>
</tr>
<tr>
<td>598</td>
<td>Independent Reading in History</td>
<td>2-3</td>
</tr>
<tr>
<td></td>
<td><strong>Languages, Modern and Classical</strong></td>
<td></td>
</tr>
<tr>
<td>French</td>
<td>550 Independent Study in French</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>560 Studies in French Literature (Medieval)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>560 Studies in French Literature (Renaissance)</td>
<td>3</td>
</tr>
<tr>
<td>German</td>
<td>528 Survey of German Literature (early)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>550 Independent Study in German</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>559 History of the German Language</td>
<td>3</td>
</tr>
<tr>
<td>Latin</td>
<td>450 Greek and Roman Mythology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>550 Independent Study in Latin</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>560 Medieval Latin</td>
<td>3</td>
</tr>
<tr>
<td>Russian</td>
<td>550 Independent Study in Russian</td>
<td>1-3</td>
</tr>
<tr>
<td>Spanish</td>
<td>322 Life and Culture of Spain</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>550 Independent Study in Spanish</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>560 Studies in Spanish Literatures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Linguistics</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>420 History of Language</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>598 Readings in Linguistics</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>598 Basic Old English</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Medieval Studies</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>145 The Birth of the Modern World</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>500 Interdisciplinary Studies in Medieval Culture</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Music</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>270 Music History and Literature (early)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>517 Collegium Musicum</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>598 Readings in Music</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td><strong>Philosophy</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>350 Historically Oriented Studies</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>498 Independent Study</td>
<td>2-4</td>
</tr>
<tr>
<td></td>
<td>598 Readings in Philosophy</td>
<td>2-4</td>
</tr>
<tr>
<td></td>
<td><strong>Political Science</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>360 Introduction to the History of Political Theory I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>598 Studies in Political Science</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td><strong>Religion</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500 Historical Studies in Religion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Christian Theology to 1500)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>500 Historical Studies in Religion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Theology of the Renaissance and Reformation)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Theatre</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>325 (CAS 325) Costume, I</td>
<td>3</td>
</tr>
</tbody>
</table>
Women's Studies Minor

Advisor: Laura Manis, Counseling Center

Change in the role of women, whether in response to the reawakening of feminism or the pull of new technology, is a significant element in our current period of social flux. The challenge this poses has implications which few individuals can avoid dealing with either at a personal or intellectual level. The definition of self, and interpersonal and institutional relationships are all extensively affected by the move away from tradition.

The Women's Studies minor is designed to aid students in the area of personal growth by fostering the development of their capacity to make intelligent choices in considering their own adjustments to life and its demands.

The program seeks to provide students an expanded view of their cultural heritage, enhancing their capacity for objective and critical thinking through the examination of previously unexamined assumptions and knowledge about themselves and their past history. In so doing, the student is better prepared to deal in a creative fashion with the content and methodology of the various disciplines.

Additionally, the Women's Study minor is designed to enhance career preparation by preparing students to deal with others in non-stereotypic fashion in their future professions.

The Women's Studies Minor may be used in all Curricula other than Education. Students must select courses to be used in the minor in consultation with the adviser. Exceptions, such as the inclusion of independent studies through departmental reading courses, may be made with the approval of the adviser. For specific descriptions of the courses consult the departmental sections of the catalog.

The minor consists of 20 hours from the following:

**College of Arts & Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 345</td>
<td>Topics: Women and Culture</td>
<td>3</td>
</tr>
<tr>
<td>Medieval Institute 145</td>
<td>Man, Woman, and Marriage in Medieval and Renaissance Literature and Art</td>
<td>4</td>
</tr>
<tr>
<td>Classics 360</td>
<td>The Role of Women in Ancient Greece and Rome</td>
<td>3</td>
</tr>
<tr>
<td>English 111</td>
<td>Contemporary Topics: Man and Woman in Literature</td>
<td>4</td>
</tr>
<tr>
<td>English 410</td>
<td>Special Topics: Women in Literature</td>
<td>4</td>
</tr>
<tr>
<td>History 303</td>
<td>Women in the Western World</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 314</td>
<td>Philosophical Themes: Toward a Rational Feminism</td>
<td>4</td>
</tr>
<tr>
<td>Political Science 270</td>
<td>Political Topics: Women in Politics</td>
<td>1</td>
</tr>
<tr>
<td>Religion 510</td>
<td>Femininity as a Religious Form</td>
<td>4</td>
</tr>
<tr>
<td>Sociology 190</td>
<td>Men and Women in Contemporary Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**College of General Studies**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General 222</td>
<td>Status of Women</td>
<td>4</td>
</tr>
<tr>
<td>Humanities 411</td>
<td>Women: Past, Present and Future</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences 225</td>
<td>Alternate Life Styles</td>
<td>4</td>
</tr>
<tr>
<td>Social Science 423</td>
<td>Role Portrayal in Mass Media</td>
<td>4</td>
</tr>
</tbody>
</table>
World Literature Minor

Advisers: Larry Syndergaard, English Department
Joseph Reish, Department of Modern and Classical Languages

This is an interdepartmental program administered jointly by the English Department and the Department of Modern and Classical Languages.

Studying the literature of other peoples of the world is one of the best ways to begin to know them. A great body of the world’s literature is available for study in English translation in a variety of courses and departments at Western Michigan University. The World Literature Minor grows out of and is based on these courses.

This minor should be of value to students who have a general interest in literature and are curious about the world, especially that major part which does not have English as its literary language.

Any student, including those majoring or minoring in English or Modern and Classical Languages, may elect the World Literature Minor. The minor should be of obvious value to students preparing to teach humanities or literature (at any of several levels), but Education curricula students should understand that this minor is not yet a teaching minor.

The World Literature Minor can provide useful backgrounds to students interested in foreign affairs, law, politics, journalism, mass communication, and theatre. It should also be of interest to students in business, scientific, and engineering curricula who wish to do a minor outside their main field.

The minor should interest students who, whatever their career plans or major, wish the varied view and mixture of experiences of an interdepartmental program. Also, the wide range of electives possible should make the minor attractive to students who would like the opportunity to help shape their own programs.

Prerequisites listed for any of the courses offered in this minor will be waived. However, students with questions about the advisability of taking courses for which there are prerequisites should consult one of the minor advisers.

Transfer students should consult the minor adviser to determine the applicability of courses taken at other colleges.

Minor slips are required. Both the English and the Modern and Classical Languages Departments have World Literature Minor advisers with regular office hours, either one of whom may issue minor slips. For information, stop at or call the English Department office (620 Sprau: 383-1684) or the Department of Modern and Classical Languages office (416 Sprau: 383-1739).

REQUIREMENTS

Twenty hours, with the following distribution:

I) One of the options of English 312 World Literature:
   Variable Topics ........................................................................... 4
   A. Western World Literature
   B. Asian Literature
   C. African Literature

II) Two courses selected from the following list:

   English 110 Literary Interpretation ........................................... 4
   English 210 Film Interpretation ................................................ 4
   English 252 Shakespeare .......................................................... 4
   English 312 World Literature: Variable Topics — another option
      than the one to meet Requirement (I) .................................... 4
   English 315 The English Bible as Literature ............................... 4
   English 410 Special Topics in Literature (if the topic is appropriate it may be approved by the
      minor adviser. A regularly offered approved topic is Introduction to Folklore.) .................. 4
   English 442 Modern Drama ...................................................... 4
   English 519 Non-Western Literature in Translation .................... 4
   English 530 Medieval Continental Literature in English Translation .... 4
   English 538 Modern Literature ............................................... 4
   English 555 Studies in Major Authors (if the authors studied are appropriate, this course may
      be approved by the minor adviser.) ........................................... 4
English 598 Readings in English: Independent Study
(with the approval of the minor adviser) .......................................................... 1-4

III) Three courses selected from the following list:

French 375 French Literature in English Translation ........................................ 3
German 375 German Literature in English Translation ..................................... 3
Russian 375 Russian Literature in English Translation .................................. 3
Spanish 375 Spanish-American Literature in English Translation .................. 3
Classics 350 Classical Archaeology of the Aegean World .......................... 3
Classics 360 The Role of Women in Ancient Greece and Rome ...................... 3
Classics 375 Classical Drama in Translation .................................................. 3
Classics 450 Classical Greek and Roman Mythology ................................. 3

PERMISSIBLE SUBSTITUTIONS FOR REQUIRED COURSES

With the approval of a minor adviser, students may

1. Substitute one of the following courses for one course listed above in either Requirement II or Requirement III:
   - Religion 312 Religious Forms in Modern Literature ............................. 4
   - Religion 331 The Religious Quest in Modern Literature......................... 4
   - Theatre 370 Theatre Backgrounds ...................................................... 3
   - Theatre 570 Development of Theatre Arts ......................................... 3
   or

2. Substitute an advanced literature course in a foreign language for one of the courses listed above in either Requirement II or Requirement III.
   or

3. Substitute a course or courses (maximum of 4 hours), not presently listed in the catalogue, which may be offered as a special or temporary course and which is deemed by the advisers appropriate to the World Literature Minor.
Medical Technology

Lois Gay, Assistant Director and 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 School of Medical Technology accredited by the American Society of Clinical Pathologists (ASCP), preferably one affiliated with Western Michigan University. The curriculum fulfills the minimum requirements of the ASCP as well as their recommendations for a strong program. A major is allowed in Medical Technology with 30 hours credit for the year of internship. This credit is allowed only if the internship is preceded by the required work in Chemistry and Biology and is taken at an accredited hospital. Minors are required in both Biology and Chemistry.

The hospitals with which Western Michigan University is affiliated are: Borgess Hospital and Bronson Hospital in Kalamazoo; Blodgett Memorial Hospital, Butterworth Hospital and St. Mary's Hospital in Grand Rapids; McLaren Hospital and Flint Osteopathic Hospital in Flint; Wayne County General Hospital in Eloise; Hackley Hospital in Muskegon; Pontiac General Hospital; Munson Medical Center in Traverse City; Burns Clinic-Little Traverse Hospital in Petoskey; St. Joseph's Hospital, and The Lutheran Hospital in Fort Wayne, Indiana; William Beaumont Hospital in Royal Oak; St. Lukes Hospital in Saginaw; The Elyria Memorial Hospital in Elyria, Ohio; St. Mary's Hospital in Quincy, Illinois; St. Elizabeth Hospital Medical Center in Lafayette, Indiana; St. Vincent Hospital in Indianapolis, Indiana; Good Samaritan Hospital in Lexington, Kentucky; and St. Francis Hospital in Blue Island, Illinois.

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.

B. Course Requirements

1. General Education Requirements
2. Science and Mathematics
   (Suggested course sequence)
   First Year
   Biology 101 — Animal Biology ................................. 4
   Chemistry 101 or 102 — General Chemistry ......... 4
   Biology 113 — Cell Biology .................................. 3
   Chemistry 120 — Qualitative Analysis ................. 4
   Mathematics 100 or 120 or 122 or 200 .......... 4
   Second Year
   Biology 200 — General Biomedical Sciences Laboratory .... 3
   Chemistry 365 — Organic Chemistry ................. 4
   Biology 250 — General Genetics ..................... 3
   Chemistry 222 — Quantitative Analysis ............. 4
   Physics 106 — Elementary Physics ................... 4
   Third Year
   Biology 312 — Microbiology .................................. 4
   Biology 350 — Animal Physiology ..................... 4
   Biology 330 — Clinical and Pathogenic Microbiology ........ 3
   Chemistry 452 — Introductory Biochemistry .... 5

3. Medical Technology 435 .......................... 30
4. Physical Education ............................. 2-8

C. Degree Requirements must be met.

435 Medical Technology Internship .......................... 15 hrs. Fall, Winter

A course in clinical laboratory methods with instruction in a hospital School of Medical Technology approved by Western Michigan University. This course is taken for twelve months and registration is required in the Fall and Winter at Western Michigan University. Each hospital selects its own interns from the group of students who have applied for its available internships.
Physicians' Assistants Program

A Physician's Assistant is a skilled person qualified by academic and practical training to provide patient services under the supervision and direction of a licensed physician or osteopath. This program is designed to prepare assistants to primary care physicians in order to extend their capabilities in the diagnostic and therapeutic management of patients. Funded under a federal grant from the Department of Health, Education, and Welfare, a major goal of this program is the expansion of quality health care and services particularly in underserved inner-city and rural areas.

Western Michigan University is a member of the Southwestern Michigan Area Health Education Center, a corporation which is responsible for the operation of medical education and training programs in Southwestern Michigan. Borgess Hospital, Bronson Methodist Hospital, Michigan State University and the University of Michigan are also members of the corporation.

Student Rotations are scheduled at the following hospitals: Berrien General, Berrien Springs; Borgess Hospital, Kalamazoo; Bronson Methodist Hospital, Kalamazoo; Kalamazoo State Hospital, Kalamazoo; Lee Memorial Hospital, Dowagiac.

Two major prerequisites for entry are: 60 hours of transferable college credit as applicable toward meeting the program requirements and a minimum of one year of patient contact. Graduates are awarded a Bachelor of Science Degree in Medicine at the completion of the 24-month program.

The Western Michigan University Physicians' Assistants Program is approved by the Council on Education of the American Medical Association and graduates are eligible to take the examination prepared by the National Board of Medical Examiners for certification as Physician's assistants. Now in its third year, the curriculum is undergoing constant evaluation and, as a result, changes are sometimes necessary after the catalog has gone to press. The program presented below generally indicates the course included, however, revisions for 1976-77 are in process. For current information on the curriculum, the admission requirements and procedures write to:

Office of Undergraduate Admissions
Administration Building
Western Michigan University
Kalamazoo, Michigan 49008

**PHYSICIANS' ASSISTANTS**

Bachelor of Science Degree in Medicine

---

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Minimum hours required for this curriculum</td>
<td>151</td>
</tr>
<tr>
<td>B. Students are advised to obtain a grade of “C” or better in each course or they may jeopardize their position in the program.</td>
<td></td>
</tr>
<tr>
<td>C. Students are required to successfully pass a comprehensive examination in Medical Terminology prior to the start of Fall Semester of their Junior Year.</td>
<td></td>
</tr>
<tr>
<td>D. Course Requirements</td>
<td></td>
</tr>
<tr>
<td>1. General Education Requirements</td>
<td></td>
</tr>
<tr>
<td>2. Program Courses</td>
<td></td>
</tr>
<tr>
<td>BIO 103 Human Biology for P.A.'s</td>
<td>4</td>
</tr>
<tr>
<td>BIO 319 Clinical Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 401 Microbiology of Infectious Diseases</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 206 Integrated Chemistry for P.A.'s</td>
<td>5</td>
</tr>
<tr>
<td>MDSC 302 Medical &amp; Surgical Emergencies I</td>
<td>4</td>
</tr>
<tr>
<td>MDSC 304 Patient Evaluation I</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 306 Pathology I</td>
<td>2</td>
</tr>
<tr>
<td>MDSC 307 Introduction to Clinical and Community Psychology</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 310 Clinical Nutrition</td>
<td>3</td>
</tr>
</tbody>
</table>
MDSC 311 Gross Human Anatomy .................. 4
MDSC 312 Medical & Surgical Emergencies II .......... 4
MDSC 314 Patient Evaluation II .................. 3
MDSC 316 Pathology II ............................. 2
MDSC 317 Clinical Medicine I .................. 2
MDSC 324 Patient Evaluation III .................. 3
MDSC 327 Clinical Medicine II .................. 2
MDSC 334 Patient Evaluation IV .................. 3
MDSC 407 Allergy .................................. 1
MDSC 408 Dermatology ............................. 1
MDSC 410 Pharmacology ............................. 4
MDSC 422 Pediatrics Rotation .................. 6
MDSC 423 Obstetrics & Gynecology .................. 6
MDSC 424 Internal Medicine Rotation I .................. 6
MDSC 425 General Surgery Rotation .................. 6
MDSC 426 Psychiatry Rotation .................. 6
MDSC 427 Family Medicine Rotation .................. 6
MDSC 434 Internal Medicine Rotation II .................. 6

E. Degree Requirements must be met.

COURSE DESCRIPTIONS

BIO 103 Human Biology for P.A.’s
A basic course for Physicians’ Assistants students. Emphasis is placed upon the physical and chemical properties of life systems, their organization into cells, tissues, organs and organ systems. The evolution of organic similarities and diversities is included. Weekly three one-hour lectures and one two-hour laboratory.

BIO 319 Clinical Physiology
A study of the functioning and regulation of the organ systems and the application of this knowledge to an understanding of their malfunctions. The molecular and cellular mechanisms involved are emphasized.

CHEM 206 Integrated Chemistry for P.A.’s
A non-theoretical survey of general, inorganic, organic and physiological chemistry. Emphasis is on buffer systems, blood chemistry, and the major metabolic pathways. The course also serves both as a background for pharmacology and physiology and for interpreting biochemical parameters in the didactic medical course.

MDSC 302 Medical & Surgical Emergencies I
A course in the diagnosis and management of acute medical and surgical emergencies, presented in lecture format by physicians from several specialties. Students are assigned to emergency rooms to gain exposure to medical and surgical emergencies.

MDSC 304 Patient Evaluation I
MDSC 314 Patient Evaluation II
MDSC 324 Patient Evaluation III
MDSC 334 Patient Evaluation IV
This series of courses provides instruction in the systematic evaluation of patient problems through history taking and physical examination. Emphasis is placed on proper interviewing and examination techniques, which are taught by lecture, demonstration, student examination of selected patients, and critique of those examinations. Units on the art and science of medicine including medical ethics are interspersed within these courses.

MDSC 306 Pathology I
A course in human pathology, emphasizing basic pathologic processes through the study of fresh and preserved organs, plastic imbedded materials, color photographs, and a series of microscopic slides.
MDSC 307 Introduction to Clinical and Community Psychology
This course is designed to acquaint the physician's assistant student with the practical aspects of clinical psychology and with the role of the clinical psychologist as a member of the clinical team. Emphasis is placed on the identification and treatment of various psychologic pathological disorders and the identification and utilization of available community resources in the treatment of these disorders. Methods of crisis intervention and brief psychotherapeutic counseling will be discussed. Clinical visits will be arranged for observation of and/or participation in these counseling techniques.

MDSC 310 Clinical Nutrition
A course covering basic nutrition and modification of diets used in the treatment of impaired digestive and metabolic conditions.

MDSC 311 Gross Human Anatomy
This course is designed to help the physicians' assistant student to achieve a sound understanding of the structure of the human body through lectures, discussions and cadaver dissection. Topographical and regional anatomy are stressed.

MDSC 312 Medical & Surgical Emergencies II
A continuation of MDSC 302.

MDSC 316 Pathology II
A continuation of MDSC 306. This portion of the course will deal with the pathology of organ systems and closely correlates clinical and laboratory findings with pathologic processes.

MDSC 317 Clinical Medicine I
A course designed to provide the student with useful clinical information prior to his/her advancement into the clinical year. This will include the legal aspects of medicine, medical ethics and codes of conduct, as well as, the general areas of clinical technique such as medical terminology, operative technique, ward procedures, office procedures, etc.

MDSC 327 Clinical Medicine II
A continuation of MDSC 317. This portion of the course will cover the specialty areas of primary care, surgery, internal medicine, obstetrics/gynecology and pediatrics. The aim of this course is to correlate the academic work of the junior year with the clinical material in the senior year to provide the student with a data base that will make easier the transition from the academic atmosphere to the clinical atmosphere.

MDSC 407 Allergy (Lecture)
This course covers the basic theoretical and proven concepts of allergy and immunology. Emphasis will be placed on the clinical recognition of allergic symptoms, the importance of accurate etiologic diagnosis, the relationship between pathophysiologic changes and their corrections by proper therapy.

MDSC 408 Dermatology (Lecture)
This course provides an introduction to the general field of Dermatology including the normal structure and function of the skin, technique of history taking and examinations, recognition of common skin diseases and basic concepts of treatment.

MDSC 410 Pharmacology
This course emphasizes the general principles of pharmacology as a basis for the rational clinical use of drugs. The course is comprehensive but pragmatic. Factors affecting drug action, such as rates of absorption, metabolism and excretion will be discussed. Mechanism of action will be covered when known. However, the main thrust will be to acquaint the student with the drugs commonly used in therapy, their side effects and toxic manifestations.

MDSC 411 Microbiology of Infectious Diseases
This course includes the common diseases, how they present and some of the commonly accepted treatments. Emphasis will be placed upon the significance of laboratory finds in diagnostic processes.
Beginning in the Fall Semester of the Senior Year and continuing for a period of 12 months, the student will rotate through the following areas. These rotations will consist of patient evaluation, ward rounds, grand rounds, clinical-pathological conferences, patient presentations, and lectures, for which a total of 42 semester hours of credit will be given.

MDSC 422 Pediatrics Rotation
MDSC 423 Obstetrics-Gynecology Rotation
MDSC 424 Internal Medicine Rotation
MDSC 425 General Surgery Rotation
MDSC 426 Psychiatry Rotation
MDSC 427 Family Medicine Rotation

It is a requirement for graduation that students successfully complete a Comprehensive Examination which covers all courses taken during the Senior Year.
Group Majors and Minors

GROUP SCIENCE MAJORS AND MINORS

Departmental major and minor requirements are listed under the individual Science Departments (Biology, Chemistry, Geography, Geology, Mathematics, Physics, and Psychology), and students must consult departmental advisers concerning them. Group majors and minors are intended for students in Elementary and Junior High School Education curricula. Group Science minors are also available for students in Special Education and Dietetics. Group science programs will not ordinarily be approved for students in other curricula, except in rare cases with special permission of the Group Science Advisor, Robert C. Nagler (3342 McCracken Hall).

I. For the Group Science Minor with the Elementary Education Curriculum, a minimum of one course must be completed from each of the following six groups to total at least 24 credit hours. Courses indicated with an asterisk are recommended for the Minor.

The group Science Major for the Elementary Education Curriculum requires in addition, a minimum of a second course from each of the "B" groups listed below and a total of at least 36 credit hours.

For specific descriptions of the courses consult the departmental sections of the catalog.

<table>
<thead>
<tr>
<th>Biological Science</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. BIOL 101 Animal Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 102 Plant Biology</td>
<td>4</td>
</tr>
<tr>
<td>*BIOL 107 Biological Science for El. Ed.</td>
<td>4</td>
</tr>
<tr>
<td>B. BIOL 105 Environmental Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 220 Applied Botany</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 225 Plants of Southwestern Michigan</td>
<td>3</td>
</tr>
<tr>
<td>*BIOL 234 Outdoor Science</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 403 Elementary School Science</td>
<td>4</td>
</tr>
<tr>
<td>(not with GSCI 131)</td>
<td></td>
</tr>
<tr>
<td>BIOL 530 Environmental Education</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earth Science</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. GEOG 100 World Ecological Problems and Man</td>
<td>4</td>
</tr>
<tr>
<td>*GEOG 105 Our Physical Environment</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 107 Planetary Science in El. Ed.</td>
<td>4</td>
</tr>
<tr>
<td>(not with PHYS 104) (also listed as GEOG 107 and PHYS 107)</td>
<td></td>
</tr>
<tr>
<td>GEOG 130 Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>B. GEOG 225 Intro. to Meteorology and Climatology</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 350 Conservation and Environmental Management</td>
<td>3</td>
</tr>
<tr>
<td>*GEOL 130 Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 131 Earth History and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 300 Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 301 Minerals and Rocks</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Science</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. CHEM103 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>GSCI 130 The Nature of the Physical World</td>
<td>4</td>
</tr>
<tr>
<td>*GSCI 131 Physical Science in El. Ed</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 106 Elementary Physics</td>
<td>4</td>
</tr>
<tr>
<td>B. CHEM109 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>*CHEM140 Introductory Environmental Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>*PHYS 104 Intro. Astronomy</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 105 General Astronomy</td>
<td>4</td>
</tr>
</tbody>
</table>

*Recommended for Group Science minor.
2. The Group Science major for the Junior High School Education Curriculum will include 12-13 hours of Biological Science, 11-12 hours of Earth Science and 12 hours of Physical Science. A total of 36 hours is required. The following courses are recommended:

12-13 hours Biological Science

- **BIOL 101, and 102** 8
- One of the following: 3-4
  - **BIOL 210 Mammalian Anatomy** 4
  - **BIOL 220 Applied Botany** 4
  - **BIOL 234 Outdoor Science** 4
  - **BIOL 250 General Genetics** 3
  - **BIOL 301 Ecology** 3
  - **BIOL 541 Invertebrate Zoology** 3

11-12 hours Earth Science

- **GEOG 105 or 226** 3-4
- From the following: 7-8
  - **PHYS 104 Descriptive Astronomy** 4
  - **GEOL 130 Physical Geology** 4
  - **GEOL 131 Earth History and Evolution** 4
  - **GEOL 300 Oceanography** 3
  - **GEOL 301 Minerals and Rocks** 3
  - **GEOG 225 Intro. to Meteorology and Climatology** 4
  - **GEOG 350 Principles of Conservation and Environmental Management** 3

12 hours Physical Science

- **PHYS 106, 110 or GSCI 130** 4
- **CHEM 101, 102, 103, or 140** 4
- One of the following: 4
  - **CHEM 109 General Chemistry** 4
  - **PHYS III General Physics** 4
  - **PHYS 104 or 105 Astronomy** 4
- Minimum Total: 36

3. Related Course Offerings

203 Teaching of Elementary Science 3 hrs.

This course covers important subject matter of the physical and biological sciences with methods for its effective presentation in the classroom. Extension only.

308 Teaching of Physical Science 2 hrs.

Study of problems of teaching high school chemistry, physics, and physical science. The main emphasis is on effective methods of instruction. Practical methods of apparatus ordering, maintenance and planning of laboratories are also considered. Prerequisite: One year of college chemistry and one year of college physics.

501 Higgins Lake Field Course 1 hr.

A one-week course offered in cooperation with Eastern Michigan University, Central Michigan University and the Michigan Department of Natural Resources. Students may concentrate in one of four areas of study — Conservation, Game Bird Ornithology, Botany of Flowering Plants, and the Natural History of Michigan Mammals. The one-week course in Conservation is acceptable towards a major or minor in Geography, Biology, and Group Science. The course may be repeated provided there is no repetition in the area of specialization.

510 Studies in Space Science 3 hrs.

The properties, structure, and evolution of stars will be emphasized in this course. Topics covered will also include: tools and methods of investigation, galaxies, cosmogony, and cosmological theories. Prerequisites: Physics 106, or Physics 110 and Physics 111, or equivalent, Astronomy 104 or equivalent.
SOcial SCIENCE MAJOR AND MINOR

In addition to majors and minors in the individual Social Science departments (Anthropology, Economics, History, Political Science, and Sociology), a major and a minor in Social Science are offered. Requirements for the departmental majors may be found under the departmental listings. Students planning to major or minor in Social Science should consult with William Fox (1402 Sangren Hall). Major and minor programs should be arranged in conference with the Adviser indicated above by the fourth semester of the student's college career.

1. Requirements for the Major in Social Science
   a. At least 36 hours credit in the Social Science departments listed above. Courses listed under "General Studies" may not be counted toward the major in Social Science.
   b. The following basic courses must be completed. They may be applied towards either the Social Science major or a minor in one of the departments.*

   - Anthropology 240 or 210
   - History 210 and 211
   - Economics
   - Political Science 200
   - Sociology 200
   - 201 & 202 for Sec. Educ. & others
   c. A total of 9 hours credit in 300 to 500 level courses.
   d. No more than 16 hours credit in any one Social Science Department may be used to apply to the required total of 36 hours.
   e. Majors in Secondary and Elementary Education Curricula may include up to 2 courses in Geography in their major program, provided such courses are not specified for "science credit."
   f. In addition to the above, majors in the Secondary Education Curriculum must elect Social Science 300 (Teaching of Social Studies in Secondary Schools).

2. Requirements for the Minor in Social Science
   a. The Social Science minor in the Secondary Education Curriculum, is open only to students who are majoring in English, Geography, or one of the Social Sciences 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 to 500 level courses
   d. In the event that the major is in one of the listed Social Science departments, the minor in Social Science must include courses in all the other listed departments.

3. Related Course Offering.

Additional Social Science Programs

Two additional interdisciplinary Social Science programs are available through the Division of Continuing Education listed under General University Studies. The first is Social Science Studies — Interdisciplinary, the second is Social Studies — Criminal Justice — Interdisciplinary. The latter program is designed for students possessing an Associates Degree in Criminal Justice, Law Enforcement, Police Science or Public Safety from a community college who desire the Bachelor's Degree in this field.

For more detailed information see a description of these programs in the undergraduate catalog under the heading "Division of Continuing Education" (or contact one of the Western Michigan University Regional Centers in Battle Creek, Benton Harbor, Grand Rapids or Muskegon), (or contact the adviser indicated above).

300 Teaching of Social Studies in Secondary Schools

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.

*Elementary Education majors may satisfy this requirement by completing the specified courses in four of the five departments listed.
310 Latin America: Development and/or Domination 3 hrs.
An interdisciplinary inquiry into the predominant approaches to the problem of growth and development in Latin America and attempt to assess the consequence — Development and/or Domination as viewed from alternate frames of reference. Prerequisite: Consent of instructor.

500 Data Processing for Behavioral Scientists 3 hrs.
An introduction to data processing for students of the behavioral sciences. Emphasis to be placed upon computer programming in one general purpose computer language and individual projects involving a behavioral problem selected by each student. In addition, there will be a survey of a number of computer techniques which show promise for research in the behavioral sciences. Intended solely for persons in the behavioral sciences. No special mathematical background required. Prerequisite: Consent of instructor.

510 Studies in Teaching Social Science: Variable Topics 3 hrs.
A specialized course for Social Studies teachers, dealing with an examination of selected areas of concern not intensively covered in survey courses. Specific topic will be designated in course title when scheduled. Specific topics may include: Simulation Games, Social Science Course Objectives & Accountability, Measurement & Evaluation. May be repeated for credit with a different topic. Prerequisite: Teaching Methods.

Foreign Studies Seminars

DESCRIPTION OF COURSES

Students may receive up to six hours credit in any combination of departments as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the College of Arts and Sciences.

Arts and Sciences 504 Foreign Studies Seminar 1-6 hrs.
Seminars in the Social Sciences conducted outside the U.S. Students who complete such a seminar may receive credit in the departments of Anthropology, Economics, Geography, History, Political Science or Sociology if the credit is approved by the chairperson of the department prior to registering for the seminar. May be repeated for credit.

Arts and Sciences 505 Foreign Studies Seminar 1-6 hrs.
Seminars in the Humanities conducted outside the U.S. Students completing such a seminar may receive credit in the departments of Communication Arts and Sciences, English, Languages (Modern and Classical), Linguistics, Philosophy, Religion and the departments of the College of Fine Arts if the credit is approved by the chairperson of the department prior to registering for the seminar. May be repeated for credit.
Courses are designed to (1) give students a better understanding of the nature of humanity; (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 of anthropology courses and must include Anthropology 210, 240 and 250.

A minor in Anthropology consists of a minimum of 20 hours of anthropology courses, Anthropology 210, 240 and 250 being required.

Though not required, it is recommended that at least 6 additional hours of elective work be taken in appropriately related fields, such as Black Americana studies, biology, economics, environmental studies, geology, geography, history, linguistics, philosophy, religion, psychology, sociology or social work.

A combined major in Sociology and Anthropology consists of a minimum of 30 hours, which includes Anthropology 210, 240 and 250, and Sociology 200, 300 and 382 with at least 12 hours in each of the two fields, Sociology and Anthropology.

All major and minor programs must be approved by one of the Department's Undergraduate Advisors.

COURSE DESCRIPTIONS

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

100 Man in Evolutionary Perspective

The nature, causes and prospects of being human as seen through an examination of the events and processes of biocultural evolution.

110 World Prehistory

An introduction to the archeological record relating to the development of culture from its stone age origins through the development of village agriculture and the beginnings of urban life. Emphasis on the Old World.

120 Peoples of the World

A general survey of the rich variety and types of traditional and contemporary societies in major culture areas of the world, such as hunting and gathering peoples, nomads, small-scale versus large-scale societies, and non-Western kingdom states. Intended as a general introduction to the field of ethnography, with emphasis on detailed descriptions of representative societies.

210 Introduction to Archeology

A study of how and why archeologists go about their research task, with emphasis on the conceptual tools and methodology involved in the interpretation of prehistoric and historic cultures. Case studies and examples drawn from select areas of the world.

220 Cultural Anthropology

A survey of the role and relevance of "culture" in various societies throughout the world, with emphasis on the nature and function of particular cultures and their interrelationship with environment, society and the individual. (Does not count for Anthropology major/minor program.)
230

College of Arts and Sciences

240 Principles of Cultural Anthropology 3 hrs. Fall, Winter

An introduction to the basic concepts and theoretical approaches employed in the study of diverse cultures and societies throughout the world, with emphasis on the insights derived from detailed case studies and cross-cultural comparisons of both small-scale and large-scale societies. (Course intended as general introduction to the field for Anthropology majors and minors, for Honors College students, and for combined Sociology/Anthropology majors.)

250 Introduction to Physical Anthropology 3 hrs. Fall, Winter

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

300 The Archeology of North America 3 hrs.

The prehistoric development of peoples and culture in the New World north of Mexico.

325 Social Structure 3 hrs.

A study of the various social groups and institutions by which diverse societies and cultures throughout the world are organized, with emphasis on the nature and role of kinship, territoriality, ethnicity and other principles in ordering relations both within and between various groups and societies, with particular attention given to the various analytic concepts and theoretical approaches that are relevant to such studies. Prerequisite: Anthro. 240, 220 or consent of instructor.

331 Art and Culture 3 hrs.

A study of artistic activity in cultures of Africa, Oceania and the Americas, with attention to prehistoric as well as recent products. Relations between the visual arts and other aspects of culture. Prerequisite: Anthro. 240, 220 or consent of instructor.

334 Cultures of North Africa and the Middle East 3 hrs.

A study of the peasant, urban, and nomad cultures from Morocco to Afghanistan, including consideration of Islamic civilization and recent ideological trends. Prerequisite: Anthro. 240, 220 or consent of instructor.

335 Cultures of Africa 3 hrs.

A study of the major culture areas and diverse societies of sub-Saharan Africa, with emphasis on the interrelationship of traditional beliefs and social practices viewed in historical and ecological perspectives as well as in the context of contemporary development problems. Prerequisite: Anthro. 240, 220 or consent of instructor.

336 Cultures of Asia 3 hrs.

A study and comparison of the social and cultural characteristics of the various peoples of Asia (e.g. China, India, Middle East, Central Asia, etc.), with concern for both the Great Civilizations and the lesser known tribal cultures. Prerequisite: Anthro. 240, 220 or consent of instructor.

337 Cultures of Mexico and Central America 3 hrs.

A study of the cultures of Mesoamerica with attention to both their indigenous historical development, their ethnic diversity and complexity, and the effect of Hispanic influences as well as their role in the contemporary life of Middle America today. Prerequisite: Anthro. 240, 220 or consent of instructor.

338 Cultures of South America 3 hrs.

A study of the various indigenous cultures of South America, their historical development and ecological adaptations and the impact of Hispanic/Iberian influences on them as well as their role in the contemporary life of particular South American countries today. Prerequisite: Anthro. 240, 220 or consent of instructor.

339 Native Cultures of North America 3 hrs.

Study of the aboriginal cultures of America from the Arctic to the Rio Grande, with emphasis on contrasting patterns of regional cultures.
340 Culture, Energy and Environment

A study of the interrelationships among particular cultures, their traditional energy systems and specific environments, with emphasis on cross-cultural comparisons and the role of socio-cultural processes in both shaping and defining particular environments and the flow of energy through them.

345 Topics in Anthropology

An intensive study of selected topics or emerging fields in anthropology, such as visual anthropology, museology, voluntary associations, populations genetics, women and culture, socialization, and occult or utopian movements. Topics will vary and be announced each semester. (May be repeated for credit with different topics.)

350 Human Evolution

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 human variation. Prerequisite: 250 or consent of instructor.

370 Culture and Communication

A consideration of the nature and role of various symbolic systems of communication, especially non-verbal, such as food, dress, art forms, use of space, mythology and folklore. Intended as a general introduction to such fields as semiology, proxemics, aesthetics, folklore analysis, structuralism, ethnosemantics, and modern linguistic theories of communication as they relate to cultural systems of cognition and social organization.

498 Honors Study

A program of independent study (reading or research) to provide the honors student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the Department. May be repeated once. Permission to register must be obtained from the Department Honors Adviser.

500 Topics in Archeology

A consideration of the prehistory of a particular geographic area (e.g. the southwestern United States, the Circumpolar) or of selected theoretical problems (e.g. artifact typology, prehistoric ecology). The topic to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: Varies with topic.

501 The Rise of Civilization

The archeological sequence in one or more of the nuclear centers of prehistoric civilization will be considered in some detail. The course may focus intensively upon one area (e.g. the Near East, or Meso-America), or it may give equal emphasis to two or more areas in a comparative framework. The specific area or areas to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: Varies with topic.

505 Southwestern Archeology

Prehistory of the Southwestern United States, from the earliest evidence of human occupation to historic times. Emphasis on the three major prehistoric cultures, but some attention also to their modern descendants. Prerequisite: Anthro. 210, or consent of instructor.

510 Field Methods in Archeology I

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 Field Methods in Archeology II

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
A systematic examination of the evolution of the significant theoretical problems and contributions in anthropology over the last two centuries. Developments are examined in relation to the prominent figures in the discipline and their times. Prerequisite: Anthro. 240, 220 or consent of instructor.

521 Formal Approaches to Anthropology
An introduction to several tools of analysis which contribute to anthropological theory. Topics chosen from anthropological research methodology, mathematical anthropology and data processing. Prerequisite: Anthro. 240, 220 or consent of instructor.

522 Methodology in Ethnographic Research
Emphasis is on quantitative and qualitative research materials as the basis for successful description and hypothesis testing in cultural anthropology. Considers the importance of research design and operations in generating more accurate observations on which theory building and testing rest. Includes introduction to ethnographic research techniques, e.g., participant-observation, structured and semi-structured interviews, questionnaires, sampling, technical equipment, etc. Prerequisite: Anthro. 240, 220 or consent of instructor.

523 Ethnographic Field Session
Supervised field examination of human communities in respect to specific ethnographic questions, analysis of field data, and report writing. (May be repeated for credit up to a total of six hours.) Prerequisite: Consent of instructor.

531 Medical Anthropology
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: Anthro. 240, 220 or consent of instructor.

532 Culture and Personality
An investigation of the interaction of culture and personality with particular attention to the role of culture as a force in the development of the individual. Prerequisite: Anthro. 240, 220 or consent of instructor.

534 Peasant Societies in the Developing World
A cross-cultural study of peasants as a cultural type, with emphasis on the contemporary world. Includes discussion of the history and development of peasant societies, but theoretical and substantive concentration is on the role of peasant groups in urbanized national societies. Prerequisite: Anthro. 240, 220 or consent of instructor.

535 The Anthropology of Religion
An examination of anthropological theories and findings relating to the origin, nature and function of religion as a universal category of culture. A scientific cross-cultural consideration of religious beliefs and practices and their relation to concepts of the nature of the universe. The role of religion in revitalistic reactions to culture contact. Prerequisite: Anthro. 240, 220 or consent of instructor.

536 Cultural Evolution
An inquiry into the dynamics of culture through a study of selected theories of culture change and their application to concrete situations such as the rise of complex civilizations and the reactions of non-Western societies to contact with the West. Prerequisite: Anthro. 240, 220 or consent of instructor.

537 Political Anthropology
Theoretical and descriptive analysis of the political aspect of social organization, ranging from primitive to complex societies; the relationship of politics to technological development, habitat, symbolic systems and other aspects of social organization. Prerequisite: Anthro. 240, 220 or consent of instructor.
538 Legal Anthropology
A study of law through the theory and method of comparative legal dynamics. The relation of law to
the whole of culture; the function of law as revealed in the comparative study of societies ranging from
simple to complex. Prerequisite: Anthro. 240, 220 or consent of instructor.

539 Economic Anthropology
A thorough examination of the relationship between economic and anthropological theory, with a
strong emphasis on its applicability and usefulness for explaining the nature of specific economic
relationships existing in selected primitive societies. Prerequisites: Anthro. 240 or 220; Econ 201 and 202;
or consent of instructor.

545 Topics in Ethnology
An intensive study of the cultures of an area of the world (e.g. Japan, Philippines, Caribbean, East
Africa) or selected problems (e.g. kinship systems, millenarian movements). Topic will be announced each
semester. (May be repeated for credit.) Prerequisite: Anthro. 240, 220 or consent of instructor.

549 Anthropology of Education
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: Anthro. 240, 220 or consent of instructor.

550 The Primates
A study of the Order Primates with emphasis on the similarities and differences in the physical features
of hominids, the apes, the monkeys and the Lower Primates. Field studies of the behavior and social
organization of monkeys and apes will be reviewed to gain insight into the early behavior and social
organization of early Homo Sapiens. Prerequisite: Anthro. 250 or consent of instructor.

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

555 Topics in Physical Anthropology
A consideration of the biological relationships of specific population groups or general problems in
human biology (e.g. human genetics, human growth and constitution, palaeopathology, dental
anthropology). Topic will be announced each semester. May be repeated for credit with different topics.
Prerequisite: Anthro. 250.

598 Readings in Anthropology
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.
The Department of Biology offers two distinct majors: Biology and Biomedical Sciences. Four minors are available: Biology, Biomedical Sciences, Botany and Zoology. All major and minor programs are taken under the direction and with the approval of a departmental advisor. Students are assigned to an advisor in their area of interest by the Biology Information Office, Room 100, Wood Hall.

MAJOR AND MINORS IN BIOLOGY

The Biology major is designed to provide the student with effective training and knowledge in the broad spectrum of the Life Sciences. Major areas of concentration include (in alphabetical order): Aquatic Biology, Botany, Ecology, Physiology and Zoology. It is anticipated that students completing this major will be prepared for one or more of the following goals: (1) graduate study to pursue an advanced degree, (2) employment after graduation in any of several types of jobs including government service, laboratory or technical work and industry, (3) teaching in the elementary or secondary schools, and (4) pre-professional training.

A major in Biology consists of a minimum of 30 credit hours in biology and must include: Biology 101, 102 and a course in each of the following areas: Ecology, Genetics and Physiology. In addition, students majoring in Biology are required to take 12 semester hours of College Chemistry including a course in Organic Chemistry, 8 hours of College Mathematics and 8 hours of College 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.

A minor in Biology, Botany or Zoology consists of 15 hours of Biology (20 hours in the Education curricula), including Biology 101 and 102, 8 semester hours of Chemistry and 4 hours of College Mathematics.

A student majoring in Biology may elect a minor in either Botany or Zoology if desired. In such situations, no courses taken toward the major may be applied to the minor.

Students majoring or minorning in Biology in elementary or secondary education curricula will add: Biology 403 — Elementary School Science, 4 hours, in the case of elementary education, or Biology 404 — Problems in Teaching Biology, 3 hours, in the case of secondary education. It is recommended that such students complete a Group Science minor of 24 hours by using the Biology cognate requirements namely 12 hours of Chemistry and 8 hours of Physics-Geology and by adding another 4 hours of electives in either Physics or Geology. Elementary and Secondary education majors or minors may not use the Botany or Zoology minor.

Only those biology courses in which a “C” or better is obtained may be counted toward a major or minor.

An Honors Program in Biology is available for students who demonstrate superior abilities during their first year of college work.
SUGGESTED SEQUENCE OF COURSE WORK FOR BIOLOGY MAJORS IN THE ARTS AND SCIENCES CURRICULUM*

**Freshman year:**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>General Education Electives**</td>
<td>6-8</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15-17</td>
</tr>
</tbody>
</table>

**Winter**

| Biology 102 or 101                        | 4    |
| Chemistry 120                             | 4    |
| Mathematics 120, 122, 100 or 200          | 4    |
| General Education elective**              | 3-4  |
| Physical Education                        | 1    |
|                                          | 16-17|

**Sophomore year:**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiology requirement</td>
<td>3-4</td>
</tr>
<tr>
<td>Chemistry 360 or 365</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 121, 123, 120</td>
<td>4</td>
</tr>
<tr>
<td>or 260</td>
<td>4</td>
</tr>
<tr>
<td>General Education elective**</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>14-16</td>
</tr>
</tbody>
</table>

**Junior year:**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology requirement</td>
<td>3</td>
</tr>
<tr>
<td>Biology elective</td>
<td>3-4</td>
</tr>
<tr>
<td>Physics 111 or 211</td>
<td>4</td>
</tr>
<tr>
<td>Foreign language (for B.A. degree only)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>14-15</td>
</tr>
</tbody>
</table>

**Winter**

| Biology elective(s)                       |      |
| General Education elective(s)**           |      |
| Foreign language (for B.A. degree only)   | 4    |
|                                          |      |

**Senior year:**

| Biology elective(s) to complete 30 hrs. |      |
| Complete General Education requirements  |      |
| Complete minor or second major requirements |      |
| Completion of 122 credit hours           |      |

**Liberal Arts Curriculum** students add the following requirements:

- One course in the Social Sciences.
- One course in the Humanities.
- One course in the Fine Arts.
- Electives in 300, 400, or 500 courses, other than General Education courses, to make a total of 50 hours.
- Additional work in a foreign language — total of 16 hours.

*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 Adviser.

**General Education electives should be determined in consultation with the student's Biology Department Adviser and General Education Counselors, so that they can best reflect the student's own interests and complement his major and minor areas.
Transfer Students. Consult with your adviser at the Biology Department before registering for classes.

Students In Specialized Curricula. Your faculty adviser is:

- Elementary Education
  - Dr. Beth Schultz
  - Room 159, Wood Hall

- Medical Technology
  - Mrs. Lois Gay
  - 2050 Friedman

- Premedical or predental
  - Mrs. Lois Gay
  - 2050 Friedman

- Secondary Education
  - Dr. William C. Van Deventer
  - Room 157A, Wood Hall

Delays in fulfilling requirements for graduation are almost certain for students who do not plan their curriculum with the assistance of a Biology Department adviser.

MAJOR AND MINOR IN BIOMEDICAL SCIENCES

The Biomedical Sciences program is designed to prepare students for biomedical careers by providing them with an effective foundation in the basic biomedically related sciences, including physiology, microbiology, genetics and anatomy, coupled with extensive training in modern laboratory techniques associated with the above disciplines. The specific objectives include: 1) producing students with technical training applicable to employment in hospitals, clinical research laboratories and state and federal agencies, 2) providing students interested in pursuing careers in primary and secondary education with more specialized and improved science training in the areas of human biology and health education and 3) producing highly qualified students interested in pursuing training in the health sciences at the graduate or professional levels.

A major in Biomedical Sciences (BMS) consists of a minimum of 30 credit hours in courses including the basic core curriculum and at least 6 credit hours of 500 level courses. An additional 3 credit hour laboratory course must be included among the electives. A minor in BMS consists of a minimum of 15 credit hours including the 2 introductory courses in the basic core. A maximum of 6 credit hours of approved biology courses outside the Biomedical Sciences curricular offerings may be applied toward a major or minor in BMS. All major and minor programs are taken under the direction of and with the approval of a Biomedical Sciences advisor. The Biomedical Major and Minor are not approved for the Education curricula.

The basic core curriculum for BMS majors consists of BioI. 101, 113, 200, 250, 312 and 350. BioI. 101 and 113 are not required of students demonstrating satisfactory performance on proficiency exams covering the content of these courses. Only courses in which a grade of "C" or better is obtained, may be counted towards a major or minor in BMS.

Students majoring in BMS are required to take college chemistry through biochemistry, 8 hours of college mathematics, and 8 hours of general physics. Students minoring in BMS are required to take 8 hours of college chemistry and 4 hours of college mathematics.

Transfer Students

Proficiency examinations covering the content of Biol. 101 and 113 will be available to all students transferring into the BMS degree program who wish to waive the requirements of taking these courses. The proficiency examinations will be offered at predetermined periods throughout the year. Successful passage of the examinations provides a waiver and not academic credit for Biol. 101 and 113. The student will be provided with a signed waiver form, which will become part of his/her Major Slip. The proficiency exam may be repeated only once. There will be no charge for the exams. Equivalent courses taken elsewhere may be substituted for Biol. 101. Other substitutions will require approval of the Biomedical Sciences advisor.

Exceptional transfer students may petition the Biomedical Sciences Curriculum Committee to waive Biol. 200. Following submission of a "Permission to waive Biol. 200" form, a quorum of the curriculum committee will meet with the student for the purpose of determining the student's competence in the subject matter covered in Biol. 200. The student will be asked to show such competence both verbally and by demonstration. An affirmative vote by a majority of the committee present will be required for waiver
Biology

of the Biol. 200 requirement. A successful waiver of Biol. 200 does not provide for academic credit. The student will be provided with a signed waiver form, which will become part of his/her Major Slip. This waiver option is not available to majors who have taken Biol. 101 and 113.

A minimum of 15 hours in the major, including Biol. 200, and 6 hours in the minor must be earned at Western Michigan University. Exceptions may be made at the discretion of the student's advisor.

All other course equivalencies and Biomedical Sciences credit decisions will be left to the discretion of the student's advisor.

SUGGESTED SEQUENCE OF COURSE WORK FOR BIOMEDICAL SCIENCES MAJORS IN THE ARTS AND SCIENCES CURRICULUM**

<table>
<thead>
<tr>
<th>Freshman year:</th>
<th>Hrs.</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 101</td>
<td>4</td>
<td>Biology 113</td>
</tr>
<tr>
<td>Chemistry 101 or 102</td>
<td>4</td>
<td>Chemistry 120</td>
</tr>
<tr>
<td>Mathematics*</td>
<td>4</td>
<td>Mathematics*</td>
</tr>
<tr>
<td>English 105</td>
<td>4</td>
<td>General Education Elective</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore year:</th>
<th>Hrs.</th>
<th></th>
<th>Hrs.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td>Winter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 200</td>
<td>4</td>
<td>Biology 250</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chemistry 360 or 365</td>
<td>4</td>
<td>Chemistry 361 or 222</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>General Education Elective</td>
<td>6-8</td>
<td>Physics 110 or 210</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13-15</td>
<td>General Education Elective</td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior year:</th>
<th>Hrs.</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 312</td>
<td>4</td>
<td>Biology 350</td>
</tr>
<tr>
<td>Chemistry 450 or 452</td>
<td>3-5</td>
<td>Biomedical Science Elective</td>
</tr>
<tr>
<td>Physics 111 or 211</td>
<td>4</td>
<td>General Education Elective</td>
</tr>
<tr>
<td>General Education Elective</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13-16</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior year:</th>
<th>Hrs.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Science electives to complete 30 hours, which must include an additional 3 hour course with a laboratory. Six hours of 500 level courses are required for majors (excluding Biology 598 and 599) Complete General Education Requirements Complete minor Completion of 122 credit hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mathematics Requirements: 8 hours
Mathematics 100 will not be accepted for credit for a Biomedical Science Major
Options: Mathematics 120 and 121
Mathematics 122 and 123
Mathematics 200 and 360

**Students contemplating majoring in Biomedical Sciences should contact the Biology Information Office (Room 100, Wood Hall) as early as possible so that they can locate their Departmental Biomedical Sciences advisor.
BIOLOGY PROGRAM
DESCRIPTION OF COURSES

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

101 Animal Biology 4 hrs.
A review of the field of zoology including some research topics. A taxonomic survey of the animal kingdom, discussing characteristics, importance and behavior of different groups. A study of cells, tissues, and other major systems of the animal, emphasizing their anatomy, physiology and biochemistry. The course may be taken concurrently with Plant Biology, Biology 102.

102 Plant Biology 4 hrs.
An introductory course in biology in which plants are used to illustrate basic biological principles. The interaction of structure, function, and environmental factors is emphasized. A survey of monera, fungi, algae, and multicellular plants is included. This course may be taken concurrently with Animal Biology, Biology 101.

105 Environmental Biology 3 hrs.
A study of the relationships of living organisms including man to their environment and to one another. Designed for non-major students. Approved for General Education. No prerequisite and not repeatable for credit. (Credit does not apply toward a major or minor in Biology, Botany or Zoology.)

107 Biological Science 4 hrs.
Designed to present basic biological principles, and to give the student an understanding of the operation of the world of life. Approved for General Education. (Credit does not apply toward a major or minor in Biology, Botany or Zoology.)

111 Healthful Living 2 hrs.
A study of the principles involving sound health practices. Factors in the causation, prevention, and control of all departures from normalcy in health are considered. (Credit does not apply toward a major or minor in Biology, Botany, or Zoology.)

220 Applied Botany 4 hrs.
Lectures, discussions, field trips and greenhouse experience are used to develop an understanding of the practical application of botany. Principles and practices in indoor and outdoor gardening, landscaping, plant propagation, and the care and identification of cultivated plants are emphasized.

225 Plants of Southwestern Michigan 3 hrs.
A field course designed for those who desire an acquaintance with the common plants occurring in the region.

234 Outdoor Science 4 hrs.
The aspects of the living world with emphasis on the relationship of living things to their environment. Outdoor studies are part of the course. Approved for General Education.

301 Ecology 3 hrs.
An introduction to the relationships of organisms to their environment and to one another. Interrelationships of individuals and the physical environment, dynamics of populations, and structure and function in the community and eco-system are considered. Prerequisite: At least 9 hours of biology.

315 Cell and Molecular Biology 3 hrs.
The cell is examined as the setting of life. Its structures and organelles, as well as their functions, are discussed. The elements and compounds that make up living systems are described and followed through important processes, such as the control of DNA over the synthesis of proteins, photosynthesis, and
various types of respiration. The student is also introduced to genetics. The lab encourages the
development of scientific reasoning, in the context of learning more about the components and the
processes of the cell, as well as about biological tools and techniques. Prerequisites: Biology 101 and 102,
Chemistry 101 or equivalent.

317 General Animal Physiology
3 hrs.

The field of comparative animal physiology is reviewed. Organs having various physiological functions
are compared. Their cellular structure and physiology will be integrated with macroscopic, microscopic,
biochemical, and biophysical approaches. The laboratory is organized to study and compare organs.
Prerequisites: Organic Chemistry, introductory physics, and one year of biology, or consent of instructor.

342 Comparative Chordate Anatomy
4 hrs.

A brief study of the classification, morphology, and physiology of the prechordates followed by a
detailed study of representative vertebrates, including an elasmobranch, urodele, and a choice of
mammals. Dissected monkeys available for study. Class project required. Prerequisites: Biology 101 and
an additional laboratory course in biology.

343 Vertebrate Embryology
4 hrs.

A study of the development of an individual from the origin of the germ cells to maturity, with special
reference to man. Prerequisites: Biology 101 and 102.

403 Elementary School Science
4 hrs.

A laboratory course focusing on ideas and subject matter commonly included in elementary school
science curricula. Prerequisite: Completion of General Education Science requirements.

404 Problems in the Teaching of Biology
3 hrs.

Class discussions, laboratory experiences and field work concerned with the teaching of biology in high
school. Required of all students who are following a secondary education curriculum and list biology as a
major or minor. This course assumes a working knowledge of plants, animals, and body chemistry, and of
ecology, physiology and genetics. Limited to majors and minors enrolled in a secondary education
curriculum.

501 Molecular Basis of Adaptation
3 hrs.

An investigation of the many environmental factors (heat, light, time, magnetism, others) that influence
the life and behavior of organisms. A study will be made of the strategies used by organisms to adapt to
those factors. Adaptation will be considered as adjustments in both behavior and physiology. Ecological
interactions between the environment and the organisms at the molecular, cell, and organ levels will be
studied. Plants, animals, and microorganisms will be used as examples. Prerequisites: Consent of
instructors.

502 Human Ecology
3 hrs.

A study of the man-dominated biotic community of civilization and its interrelationships. Lectures,
assigned reading, group and individual field work.

507 The Biology of Addictive Drugs
3 hrs.

The principles of pharmacology (what drugs do, their effects) as related to abuse drugs such as
marijuana, alcohol, heroin, methadone, LSD, amphetamines (Speed), cocaine, etc. The course is designed
primarily for non-science majors to give them an understanding of the objective and subjective effects of
drug use. Legal and social implications of illegal drug use are discussed. No prerequisites.
508 Recent Advances in Biology 3 hrs.
Recent research findings at the frontiers of biology as reported in periodicals, symposia and biological meetings. Prerequisite: At least 12 hours in biology.

509 Evolution 3 hrs.
A consideration of the evidence for and the principles involved in the evolution of plants and animals, including man. Prerequisite: Biology 250 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.

517 Cellular Physiology 3 hrs.
Concerned with the details of structure and functioning of cells, both animal and plant. The current status of major problems in the field is considered. Prerequisite: Biology 317 or consent of instructor.

521 Phycology 3 hrs.
Studies in the classification, structure, physiology, ecology and economic importance of the fresh-water algae. Prerequisite: Biology 301.

525 Biological Constituents 3 hrs.
The chemical elements in plants and animals, as well as the synthesis, characterization, and degradation products of the more important compounds. Prerequisites: 12 hours of biology, one year of chemistry.

527 Plant Physiology 3 hrs.
Advanced investigations into plant functions. Basic principles are examined more intensively, advantage is taken of the discoveries and unifying principles of modern biochemistry.

528 Biology of Non-Vascular Plants 3 hrs.
The study of classification, ecology and reproductive cycles of algae, fungi and bryophytes. Culture methods of growing these plants for research occupies a part of laboratory work. Prerequisite: At least 12 hours of biology.

529 Biology of Vascular Plants 3 hrs.
A detailed study of the morphology, life cycles, and evolution of vascular plants. Individual research required. Prerequisite: At least 12 hours of biology.

530 Environmental Education 3 hrs.
A review of ecological principles basic to understanding environmental problems. A survey of environmental problems through readings, discussions, and field experiences. The goal of 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.

533 Neuroendocrinology 3 hrs.
Neuroendocrinology is designed to acquaint the student with the interrelationship of the environment and the organism as mediated by the neuroendocrine system. The physiology and morphology of the neuroendocrine system will be studied as well as the chemical structure of the neurohormones. Regulations of cellular chemistry by the neuroendocrine products will be emphasized. Prerequisites: Biology 517, Cellular Physiology, Organic Chemistry or equivalents, or by consent of instructor.

538 Field Natural History 3 hrs.
A study of biological communities with particular emphasis on those accessible for use by public schools, e.g., school grounds, vacant lots, roadsides, parks and undeveloped areas. Primarily for teachers. Prerequisite: Biology 101 or 102 or consent of instructor.
539 Animal Behavior 3 hrs.
Animal behavior with emphasis on evolution and ecology to include an introduction to the ethological point of view. Two student projects. Prerequisites: Biology 301 and consent of instructor.

541 Invertebrate Zoology 3 hrs.
A study of the anatomy, physiology, embryology, and life history of representatives of the major groups of invertebrate animals. Prerequisite: At least 12 hours of biology.

542 Entomology 3 hrs.
A general study of insects, their structure, classification, life histories, ecological relationships and economic importance. Collection and identification of local species is required. Prerequisite: 12 hours of biology.

543 Protozoology 3 hrs.
Field and laboratory studies of both free-living and parasitic protozoans, including taxonomy, morphology, life histories, ecology, heredity, evolutionary development.

544 Developmental Biology 3 hrs.
Theories and phenomena of differentiation, cytodifferentiation and morphogenesis; concepts of inducers, organizers, etc.; experimental studies of embryos of various animals or study of some specific organs during development, including tissue culture techniques. Prerequisite: Biology 343 or consent of instructor.

545 Histology 3 hrs.
A study of the microscopic structure of tissues and organs. Prerequisite: Biology 210 or equivalent.

546 General Cytology 3 hrs.
A study of the nuclear and cytoplasmic structures of the cell involving cytochemistry and histochemistry. Principles of classical and electron microscopy will be considered. Prerequisites: An introductory course in biology. A course in physics and organic chemistry are highly recommended.

547 Ornithology 3 hrs.
A broad course that explores both scientific and popular aspects of bird study. Life history, anatomy and physiology, behavior, ecology and evolution are considered. Identification, bird-banding, and preparation of study skins are included. Prerequisite: Consent of instructor.

548 Animal Ecology 3 hrs.
Characteristics of animal populations and their interactions with other populations, the role of animals in the functioning of ecosystems. Prerequisites: A course in ecology and a course in statistics, or consent of instructor.

549 Ecology of Southwestern Michigan 3 hrs.
Surveys and analyses of major and minor ecosystems of this region as to physical environment, composition, structure, and function. Prerequisites: A course in ecology and some course work in taxonomic biology, geology, or geography.

550 Plant Anatomy 3 hrs.
An embryological and histological approach to the study of morphogenesis in seed bearing plants. Primary emphasis will be placed on monocots and dicots. Prerequisite: Biology 102.

551 Parasitology 3 hrs.
A study of parasites and host-parasite relationships illustrated by typical representatives of the principal animal groups. Special attention is given to the parasites of man. Prerequisite: At least 12 semester hours of biology.
552 Plant Ecology 3 hrs.
A consideration of the organization of vegetation and casual relationships between vegetation and environment. Prerequisites: Biology 301 and a course in systematic botany or equivalent.

553 Limnology 3 hrs.
Biological, chemical, and physical aspects of lakes and streams. Emphasis is on the ecological relationships of invertebrate animals and lower plants. Prerequisite: At least 12 hours of biology.

557 Tropical Marine Ecology 3 hrs.
A study of the complex interrelationships of marine life off the coast of British Honduras. Individual and group projects will be conducted on the cays and atolls of the second largest barrier reef in the world. Students must be experienced swimmers and capable of snorkel diving. Prerequisites: Biology 301 and consent of Consortium Screening Committee. (Available only at Tropical Research Center, Belize, Central America.)

558 Tropical Terrestrial Ecology 3 hrs.
A study of the terrestrial ecology in the various regions of British Honduras. Various locations will be selected to investigate the structure and dynamics of a variety of tropical ecosystems. Prerequisites: Biology 301 and consent of Consortium Screening Committee. (Available only at Tropical Research Center, Belize, Central America.)

559 Radiation Biology 3 hrs.
A study of the fundamentals of radiobiology including isotope technology, radiation measurements, radioactive decay, radiation and interaction in living matter, and health and safety regulations in the laboratory. Prerequisites: A minor in chemistry and consent of instructor.

561 Biology of Lower Vertebrates 3 hrs.
The biology of lower vertebrates with special reference to adaptation, evolution, behavior and ecology of major groups. Classification, museum and field methods will be stressed in laboratory. Field trips required. Prerequisite: Biology 301 or equivalent.

562 Biology of Higher Vertebrates 3 hrs.
Continuation of Biology 561

598 Readings in Biology 1-3 hrs.
APPROVED APPLICATION REQUIRED

599 Independent Studies in Biology 1-4 hrs.
APPROVED APPLICATION REQUIRED
For students who wish to carry on advanced work in special fields. Prerequisite: Consent of instructor.

BIOMEDICAL SCIENCES PROGRAM
DESCRIPTION OF COURSES

101 Animal Biology 4 hrs.
(See Description under Biology Program)

103 Human Biology for Physicians' Assistants 4 hrs.
See Physicians' Assistants Program
113 Cell Biology

An introduction to the major concepts of cell biology necessary to understand the working principles of modern biomedical science. Concepts which are stressed are cell structure and function, cell types, cell chemistry, cell reproduction, the transfer of information, and cell-cell interaction. This course serves two functions: (1) to provide the foundation on which further study in genetics, microbiology, and animal physiology is based, and (2) to represent the major biological principles appropriate for a terminal biological science course for the serious liberal arts student (or Honors College student). A college course in general chemistry is strongly recommended for liberal arts students as a prerequisite to this course.

200 General Biomedical Sciences Laboratory

A laboratory course covering the principles and biomedical applications of microscopy, molecular separation methods, spectrophotometry and radiometric methods. Prerequisites: Biology 101 and 113 and introductory chemistry.

209 Genetics, Evolution and Society

The mechanisms of human inheritance. Topics of social, medical and evolutionary importance are emphasized. (Credit does not apply toward a major in Biomedical Sciences but does apply toward a minor.)

210 Mammalian Anatomy

A study of the gross structure of the organ systems of the mammalian body with special reference to man. The laboratory experience utilizes predissected cats. Prerequisite: Biology 101 or equivalent.

230 Microbiology and Man

A course describing the nature of microorganisms, their harmful and beneficial effects on man, and their role in nature. Not for credit towards a Biomedical Science major but does apply toward a minor.

232 Microbiology for Nurses

A specialized course dealing with microorganisms, adapted to the needs of students in the Bronson Methodist Hospital School of Nursing. For Bronson students only.

240 Human Physiology

This course is designed to provide non-majors with an understanding of the basic functioning of the organ systems of the human body and their regulation and control. The molecular and cellular mechanisms involved are emphasized. Applications to exercise physiology are made. Clinical applications are introduced where they provide additional insight into basic function and regulatory mechanisms. Prerequisite: Biology 101 or equivalent.

250 General Genetics

A study of the mechanisms of heredity at the level of cells, individuals, families and populations. Prerequisite: Biology 200, or consent of instructor. Organic chemistry is recommended.

310 Anatomical Techniques

This is a laboratory course designed for the student to gain an expertise in dissection techniques and experience in presenting laboratory material. Prerequisite: Biology 210.

312 Microbiology

An introduction to the fundamental relationships among microbes with an emphasis on unifying principles. Laboratory work deals with techniques basic to bacteriology. Prerequisites: Biology 200, 250, or consent of instructor and a course in organic chemistry.

319 Clinical Physiology

A study of the functioning and regulation of the organ systems and the application of this knowledge to an understanding of their malfunctions. The molecular and cellular mechanisms involved are emphasized. Must be in Physicians' Assistant curriculum.
College of Arts and Sciences

322 Genetics Laboratory  2 hrs. Winter (alternate years)

Students will acquire techniques currently used in the field of genetics. Following experiments basic to all of genetics, students will be encouraged to pursue individual experimentation in depth and make decisions in the areas of microbial genetics, cell genetics, mammalian genetics, invertebrate genetics, plant genetics, human genetics or genetic counselling. Prerequisite: Biology 250 or equivalent.

330 Clinical and Pathogenic Microbiology  3 hrs. Winter

This course deals with pathogenic microorganisms, infectious diseases, diagnostic tests, and principles of immunology. Prerequisite: Biology 312.

350 Animal Physiology  4 hrs. Fall, Winter

An introduction to cell, tissue and organ function in animals with application to the pathology of physiological malfunction. The laboratory provides experience with laboratory instrumentation, experimental design, data organization and scientific writing. Prerequisites: Biology 250 and organic chemistry.

401 Microbiology of Infectious Disease  3 hrs.

Identification and therapy of infectious disease. May be repeated for credit. Prerequisite: Must be in Physicians' Assistant Curriculum.

518 Endocrinology  3 hrs. Winter

A survey of the hormonal integration of organ-system function including the chemical nature of these secretions, the cellular and biochemical mechanisms of hormone actions and the endocrine feedback control mechanisms. The regulatory nature of hormones in developmental processes, in adaptation and in disease processes will be stressed. Prerequisite: Biology 350, biochemistry is recommended.

519 Comparative Animal Physiology  3 hrs. Fall (alternate years)

This course deals with organ system functions in a wide range of animals and ways in which these diverse organisms perform similar functions. Thus, a unified understanding of a particular function is achieved and a better understanding of animal interrelationships, their evolutionary history, their speciation, and their ecology. General principles and unifying concepts and trends are emphasized. Prerequisite: Biology 350.

520 Human Genetics  3 hrs. Winter

The principles of human heredity with particular emphasis on the clinical significance of biochemical and chromosomal variation. Abnormalities of development and methods of risk analysis in genetic counseling are discussed. Prerequisite: Biology 250 or consent of instructor, biochemistry recommended.

522 Cytogenetics  3 hrs. Fall

The molecular, morphological and dynamic aspects of chromosomes, nucleus and allied structures in the nucleate organisms is considered. The chromosomal basis of transmission genetics involving normal, mutant and ploid genomes is presented. Prerequisite: Biology 250 or equivalent.

524 Microbial Genetics  3 hrs. Fall

A molecular approach to microbial genetics, dealing primarily with bacterial and viral systems. Emphasis is placed on current literature and on the application of concepts to biomedical research. Prerequisites: Biology 250 and 312 or consent of instructor. Biochemistry recommended.

532 Bacterial Physiology  3 hrs. Winter

Lectures on bacterial cytology, physiology, and metabolism with an emphasis on biochemical aspects. The course is designed for advanced undergraduates and beginning graduate students. No general textbook is required and considerable reference is made to the scientific literature. Prerequisites: Biology 312 and a course in biochemistry.
534 Virology  
A study of the classification, structure and chemistry of viruses. Emphasis will be placed on the cell-virus interaction leading to the disease process or cellular alterations in mammalian systems. Prerequisite: Biology 312, biochemistry recommended.

536 Immunology  
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens and their interaction. Emphasis will be placed on in vitro and in vivo humoral and hypersensitivity reactions. Prerequisite: Biology 312, biochemistry recommended.

540 Cell and Organ Culture  
The purpose is to introduce the student to the fundamental procedures of cell and organ cultures of mammalian tissue. The application of cell and organ culture to routine clinical, research or drug screening procedures will be emphasized as well as specialized procedures employed to solve specific biomedical research problems.

555 Human Environmental Physiology  
A study of the physiological and behavioral adaptation and responses of organisms to external environmental factors. Some attention is given to artificial environments and the problems involved. Prerequisite: Biology 350.

560 Reproductive Physiology  
An introduction to the physiological events associated with reproduction in higher animals. Emphasis is placed upon reproduction in mammals with constant comparison among mammals and between these and other animal groups. This course also introduces the subjects of contraception and population control, artificial insemination and birth defects. Prerequisite: Biology 350.

572 Biology of Neoplasia  
A comprehensive examination of the biological basis of cancer using animal models as examples with application to its expression in humans. This multi-disciplinary subject will utilize information from the areas of immunology, biochemistry, histology, virology and cell biology to give a current view of this disease. Prerequisite: Biology 350, biochemistry recommended.

598 Readings in Biology  
(See Description under Biology Program)

599 Independent Studies in Biology  
(See Description under Biology Program)
Students majoring in chemistry may prepare for a career in high school teaching, industrial laboratory work, or graduate work in departments of chemistry or medical colleges. The course offerings for the undergraduate attempt to give a broad but thorough grounding in the elements of chemistry. They should be fortified by a minor in physics, mathematics or biology. Most students who intend to do advanced work in chemistry should plan to obtain a reading knowledge of a European language. At the present time German is preferred but French or Russian might well be taken.

The Chemistry Department is accredited by the American Chemical Society. Students who follow the American Chemical Society certification course sequence below are considered professional chemists by the American Chemical Society. These students are eligible for membership senior grade in the American Chemical Society after two years experience in the field of chemistry rather than five years experience.

In order to complete an American Chemical Society Certified Chemistry Major, the following would be the expected minimum schedule of chemistry and prerequisite courses:

**Freshman year:**
- General Chemistry 101 or 102, Qualitative Analysis 120, Mathematics 122, Mathematics 123

**Sophomore year:**
- Organic Chemistry 360, Organic Chemistry 361, Mathematics 272, Physics 210, Physics 211

**Junior year:**
- Quantitative Analysis 222, Physical Chemistry 430, Physical Chemistry 431, Physical Chemistry 436 (2 hrs.)

**Senior year:**
- Instrumental Methods 520 and Inorganic Chemistry 510 or Biochemistry 550. In addition, two advanced electives from 500 level chemistry or mathematics or physics as approved by the Chemistry adviser. Reading knowledge of German or Russian is required for A.C.S. certificates.

The Arts and Sciences Curriculum Chemistry Major requires 34 hours in chemistry including the basic sequence as in the A.C.S. Certificate program through Physical Chemistry; 6 hours at the 500 level, chosen from at least two areas of chemistry.

Secondary Education chemistry majors require 30 hours of chemistry courses as in the Arts and Sciences Curriculum including a minimum of 4 hours of Physical Chemistry.

A minimum chemistry minor will contain at least eighteen hours. Chemistry minors in Secondary Education are required to take twenty hours of chemistry and to complete one year of physics before student teaching.

To qualify as a major or minor in Chemistry from Western Michigan University the student must complete a minimum of 14 credit hours or 7 credit hours, respectively, in the Chemistry Department following the declaration of the major or minor with the departmental adviser. Students who plan to attend graduate school in chemistry should take a minimum of courses under the credit-no credit option.

Students who fail to earn a "C" or better grade in Chemistry 120, 360, and 430 will not be permitted to enroll in courses requiring these classes as prerequisites.
DESCRIPTION OF COURSES

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

100 Introduction to General Chemistry 4 hrs. Fall

A course for students with insufficient background for college level chemistry which develops skills essential to a working understanding of the science of chemistry. Instruction and practice in the fundamental tools for solving chemical problems: chemical formulas, chemical equations, stoichiometry, measurement units, conversions. An introduction to the nature of matter is developed. Enrollment is restricted to students without high school chemistry and to those who demonstrate inadequate retention of their chemistry background. This course credit will not apply to curricular requirements of chemical science at this university and should be followed by Chemistry 101.

101 General Chemistry 4 hrs. Fall, Winter

The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for two or more additional courses in chemistry. Credit for 101 is equivalent to the level of completion of Chemistry 102. Prerequisite: Chemistry 100 or one unit high school algebra and chemistry, with low pass on the chemistry placement examination. This course includes lecture and laboratory.

102 General Chemistry 4 hrs. Fall, Winter

The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for more than two semesters of chemistry. Prerequisite: One unit of high school chemistry and one unit of algebra, pass chemistry placement examination at upper level. Students well prepared may earn credit by taking examination. This course includes lecture and laboratory.

103 General Chemistry 4 hrs. Fall, Winter

A course primarily for students in Engineering and Technology curricula and others planning only a one or two semester terminal review of chemistry. This course surveys principles of chemistry with emphasis on calculations, descriptive and applied chemistry. It serves as a prerequisite for Chemistry 109 only. Prerequisite: One unit high school algebra. This course includes lecture and laboratory.

105 The Scope of Chemistry 3 hrs. Fall, Winter

This course is designed to provide an opportunity to develop an understanding of the way chemistry functions as a science and an appreciation of its pervasive nature in modern society. Illustrations will be drawn from modern technology, medicine, agriculture and environmental concerns. Fundamental principles of atomic and molecular structure will be shown to undergird the profusion of modern materials and processes. Not applicable for a major or minor in chemistry nor as a prerequisite to other chemistry courses.

107 Chemistry of Textiles and Design Media 4 hrs. Winter

A course in which the concepts needed to understand the chemical properties of textile and design media are developed in a nonmathematical manner. Textile fibers, textile finishes, dyes, plastics, rubber, paint, paper, leather, metals, cleaning agents, ceramics, glass, cosmetics, and wood are considered. This course is designed to meet the needs of students of home economics who plan a career in merchandizing, or other students of art and applied science who handle the materials being considered. Not applicable for a major or minor in chemistry nor as a prerequisite to other chemistry classes, this course includes lecture and laboratory.

109 General Chemistry 4 hrs. Winter

This terminal course is designed to meet the needs of those who are required to complete one year of chemistry and is not acceptable for a chemistry major or minor or as a prerequisite for advanced chemistry. Descriptive chemistry of metallic and non-metallic elements with emphasis on industrial and practical applications, chemical equilibrium and simple organic chemistry are studied. Prerequisite: Chem. 101 or 102 or 103. This course includes lecture and laboratory.
120 Qualitative Analysis 4 hrs. Fall, Winter

The properties of a number of the more representative elements and the compounds which they form are studied. The descriptive chemistry of some common cations and anions is studied using the hydrogen sulfide scheme of analysis in the laboratory. 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.

206 Chemistry for Physicians' Assistants 5 hrs.

A simplified non-theoretical approach to practical inorganic, organic and physiological chemistry. The course serves both as a background for pharmacology and for interpreting biochemical parameters in the didactic medical courses.

222 Quantitative Analysis 4 hrs. Fall, Winter

This course includes the theory, techniques and calculations of quantitative analysis. Instrumental techniques are used to supplement classical analytical procedures in the laboratory. Prerequisite: Chem. 120.

308 Teaching of Physical Science 3 hrs. Winter

Problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of apparatus ordering, maintenance, and construction are also considered.

360 Organic Chemistry 4 hrs. Fall, Winter

The preparation and chemical properties of aliphatic and aromatic compounds are studied. Emphasis is placed upon the nature of covalent bonds and molecules and the general reactions of functional groups. The course includes lecture, laboratory and quiz. Prerequisite: Chem. 120.

361 Organic Chemistry 4 hrs. Fall, Winter

A continuation of course 360. Prerequisite: Chem. 360.

365 Introduction to Organic Chemistry 4 hrs. Fall, Winter

A one semester course which surveys the chemistry of aliphatic and aromatic carbon compounds, designed for those needing a working knowledge of organic chemistry without the theoretical detail of a full year course. Credit may not be received for both 365 and 360. This course, which includes laboratory, will not serve as prerequisite for 361. Prerequisite: Chem. 120.

390 Special Problems in Chemistry 2 hrs. Fall, Winter

This course is designed to give students that have completed basic chemistry an opportunity to receive credit for experience in chemical laboratory independent study in association with a faculty member. May be repeated once. Prerequisite: 18 hours of chemistry, with approval of the Department Chairman and a faculty director.

430 Physical Chemistry 3 hrs. Fall

Lectures on kinetic theory of gases, thermo-dynamics, phase rule, equilibria, electrochemistry, quantum theory, spectroscopy, statistical mechanics, chemical kinetics and mechanisms, transport properties, surface chemistry, macromolecules, crystal structure, etc. Prerequisites: Phy. 210, 211; Math 272, Chem. 222 (or corequisite).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>431</td>
<td>Physical Chemistry</td>
<td>3 hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td></td>
<td>A continuation of Chemistry 430. Prerequisite: Chem. 430.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>436</td>
<td>Physical Chemistry Laboratory</td>
<td>1 hr.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td></td>
<td>Laboratory experiments designed to emphasize and reinforce the principles covered in Chem. 430 and 431, with consideration of the limitations of physical measurements and their quantitative interpretation. Can be multiply enrolled or reenrolled for a total of 2 credit hours. Prerequisite: Chem. 430 or 535. Repeatable up to 2 credit hours.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Introductory Biochemistry</td>
<td>3 hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td></td>
<td>A basic course in the chemistry and metabolism of carbohydrates, lipids, proteins and nucleic acids. Not applicable to chemistry majors. Prerequisite: Chem. 365 or 361.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>452</td>
<td>Introductory Biochemistry</td>
<td>5 hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td></td>
<td>This course consists of 450 plus laboratory. Not applicable to chemistry majors. Prerequisite: Chem. 365 or 361.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>505</td>
<td>Chemical Literature</td>
<td>1 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>An introduction to the use of the various types of chemical literature such as journals, handbooks, abstracts, monographs, government and institutional publications, and patents. Problems in the course require literature searches in analytical, inorganic, biological, organic and physical chemistry fields. Prerequisite: 24 hrs. of chemistry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>506</td>
<td>Chemical Laboratory Safety</td>
<td>1 hr.</td>
<td>Winter</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>509</td>
<td>Topics in Chemistry</td>
<td>3 hrs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A topic is presented in greater depth or from a perspective different from that of a typical undergraduate course. Representative topics such as pesticides and drugs, industrial chemistry, chemical pollution, etc. according to student interest and request. Prerequisite: 16 hours of chemistry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>510</td>
<td>Inorganic Chemistry</td>
<td>4 hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td></td>
<td>The course includes descriptive and theoretical inorganic chemistry as well as preparation of different types of inorganic compounds. Prerequisite or corequisite: Chem. 431.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>520</td>
<td>Instrumental Methods in Chemistry</td>
<td>3 hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td>An introduction to the theory and application of modern chemical instrumentation is presented. General topics covered are elementary electronics, electrochemistry, spectroscopy, and other instrumental techniques. Prerequisite or corequisite: Chem. 431, 436.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>530</td>
<td>Introduction to Spectroscopy and Molecular Structure</td>
<td>3 hrs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction to the basic principles of atomic and molecular spectroscopy with emphasis on quantum concepts; interpretation of spectra in relation to changes in atomic and molecular energies; elucidation of molecular structure from interactions with electromagnetic radiation in the ultra-violet, visible, infra-red and u-wave regions and with magnetic fields as applied to nuclear magnetic resonance and electron spin resonance. Prerequisite: 431.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>535</td>
<td>Introduction to Physical Chemistry</td>
<td>3 hrs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theory and applications of chemical structure, energetics, and rates and mechanisms of processes as a basis for understanding the principles of chemistry. Laboratory credit is obtained by taking Chemistry 436, Physical Chemistry Laboratory. This course may not be applied to a graduate curriculum in chemistry. Prerequisites: 16 hours chemistry. Math 123, Physics 111 or 211.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
550 General Biochemistry

A thorough study of the chemistry and properties of carbohydrates, lipids, proteins and nucleic acids. Includes a discussion of enzymes, coenzymes and biochemical energetics. Prerequisites: Chem. 361 and 430 or 535.

3 hrs. Fall

554 General Biochemistry


3 hrs. Winter

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.

3 hrs.

560 Qualitative and Spectroscopic Analysis of Organic Compounds

A course in spectroscopic and chemical methods of identification of organic compounds in the pure state and in mixtures, which has as a secondary goal the development of deductive reasoning in the field of organic chemistry. Prerequisites: Chem. 361 and 24 hrs. of chemistry.

4 hrs. Fall

562 Advanced Organic Chemistry

Covers such topics as organometallic compounds, heterocyclic compounds, dyes, introduction to photochemistry, organo-silicon compounds, etc. Prerequisite Chem. 361.

3 hrs.

570 Polymer Chemistry

The aspects of macromolecular chemistry which are significantly different from the chemistry of small molecules are studied. In particular, mechanisms and techniques involved in the synthesis of macromolecules, and the structure, composition, mechanical properties, and solution properties of polymers are studied in terms of the organic, physical, and analytical chemistry involved. Prerequisites: Chem 361 or 365, and Chem 431 or 535.

3 hrs.

580 History of Chemistry

This course traces the roots of chemistry from ancient technology through alchemy and medicine to the chemical revolution of Lavoisier and Dalton. In more detail it examines the nineteenth century basis of modern chemistry and the twentieth century clarification of the structural atom. Prerequisite: 16 hours of Chemistry, including 360 or 365.

3 hrs. Winter

590 Special Problems in Chemistry

Research work on a problem in chemistry in association with a faculty member. May be repeated for credit. Prerequisites: Chem. 436, 24 hours of Chemistry, (etc.) with approval of the Department Chairman and a faculty director.

2 hrs. Fall, Winter
Communication Arts and Sciences

Richard J. Dieker, Chairman
Roy Beck
Charles T. Brown
William E. Buys
June Cottrell
Loren Crane
Ruth Heining
Charles Helgesen
James Jaksa
Alan Labovitz
James McIntyre
George Murdoch
Leon Nobes
Peter G. Northouse
Thomas Pagel
Beatrice Prussion
Sharon Ratliffe
Steven Rhodes
George Robeck
Jules Rossman
Thomas Sill
Robert L. Smith
Ernest Stech
Shirley Van Hooven
Eleanor Walton
Earl Washington
Shirley Woodworth
Paul Yelsma

Instructors from Division of Instructional Communications: Richard Atwell, Wanda Herman, John Provancher, Mark Spink.

Communication is the principal mode for establishing and maintaining human relationships. Effective oral communication is an educational imperative for all human beings.

The Department of Communication Arts and Sciences places a large share of responsibility on students in designing their own program; students planning to Major or Minor in CAS should discuss their program needs and interests with the appropriate Departmental adviser (education or non-education) at the earliest possible date. Appointments to see Departmental advisers may be made at Departmental offices, #300 Sprau Tower.

The Department includes four areas: Communication, Mass Communication, Oral Interpretation, and Teacher Preparation. The majority of students choose to spread their course work over two or more areas in designing their Majors or Minors. Some students, about thirty percent, prefer to select most of their course work in one of the four areas. Students who wish to familiarize themselves with area programs may wish to contact the chairpersons of the areas in which they are interested. Office hours of area chairpersons are available in the Departmental office, #300 Sprau Tower.

The Department encourages a close relationship between academic classes and extra-curricular and co-curricular experiences. Students may become involved in a variety of activities including the All-University Forum, community service projects, readers' theatre, oral interpretation festivals, and consultant services for campus organizations. Academic credit may be earned for significant participation in many of these communication activities.

MAJORS*

Two Majors are available.
Following the declaration of a Major in Communication Arts and Sciences, Majors are required to complete at least 18 semester hours toward completion of their program within this Department.

1. Communication Arts and Sciences Major
   A Communication Arts and Sciences Major requires 30 semester hours of CAS, including CAS 170 and 27 hours of electives to be arranged in consultation with the Departmental non-education adviser.

2. Communication Arts and Sciences — Education Major
   An Education Major in Communication Arts and Sciences requires 30 semester hours of CAS, including the following courses: CAS 170, CAS 562 (for the Secondary Education Major) or CAS 561 (for the Elementary Education Major) and 23 hours of electives to be arranged in consultation with the Departmental education adviser.

*Petitions for exceptions to these policies should be submitted to the Departmental chairman.
A "Handbook for Majors and Minors in Communication," which describes career opportunities and suggested programs of study in CAS, is available free of charge from the Department office, #300 Sprau Tower, or from the Departmental advisers.

MINORS*

Two Minors are available.

Following the declaration of a Minor in Communication Arts and Sciences, Minors are required to take at least 11 semester hours toward completion of their Minor within this Department.

1. Communication Arts and Sciences Minor
   A Communication Arts and Sciences Minor requires 20 semester hours of CAS, including CAS 170 and 17 additional elective hours to be chosen in consultation with the appropriate advisers of the Department.

2. Communication Arts and Sciences — Education Minor
   An Education Minor requires 20 semester hours of CAS for teaching in secondary and elementary schools, including the following courses: CAS 170, and for the elementary teacher, CAS 561**.

IN INVOLVEMENT IN
INTEGRATED LANGUAGE ARTS MINOR

The Department of Communication Arts and Sciences is one of five participating departments in the Integrated Language Arts Minor — a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the "Interdisciplinary Programs" section of the College of Arts and Sciences or its listing in the College of Education.

IN INVOLVEMENT IN
INTEGRATED CREATIVE ARTS MINOR

The Department of Communication Arts and Sciences is a participant in the Integrated Creative Arts Minor. An interdepartmental program, the minor offers elementary school teachers an opportunity to emphasize the integration of all the arts into the core of the elementary school curriculum. Interested students should contact Dr. Mary Cain, Department of Teacher Education.

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.

*Petitions for exceptions to these policies should be submitted to the Departmental chairman.
**To teach speech in a Michigan 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 CAS are counted as courses in speech.)
DESCRIPTION OF COURSES

104 Business and Professional Speech***
A beginning course in speech dealing with the study and application of basic principles underlying effective oral communication. Particular attention is given to developing skill in meeting the speech situations encountered in the business and professional world.

106 Voice and Diction
Individual improvement program emphasizing voice production and diction.

130 Public Speaking***
Study of public speech and audience psychology principles. Frequent practice to develop skill in speech composition, clarity of language, logical development and effectiveness as a speaker.

131 Parliamentary Procedure
Study and practice of the principles and rules which govern business meetings in voluntary organizations.

140 The Individual and the Mass Media
Self discovery of the individual's relationship and response to contemporary mass media messages through an experiential approach.

170 Interpersonal Communication I
An introductory course in communication theory and practice in which a student utilizes his powers of speech to increase his effectiveness in the interpersonal relationships through understanding of himself and others.

210 Oral Interpretation
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
Introduction to the basic theory of readers theatre and participation in group reading of prose, poetry, and drama.

232 Discussion
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
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
A survey of the nature and structure of contemporary broadcasting in the United States as a mass communication process involving a publicly owned but privately operated medium.

241 Film Communication
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.

***Of courses CAS 104 and 130, only one may be taken for credit.
247 Radio Writing and Production 3 hrs.
Analysis of sound as a creative element in radio broadcasting and production. Studio experience in writing and producing radio formats, commercials, drama, documentary and other types of aural messages. Prerequisite: CAS 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 consent of instructor.

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.

305 Special Topics in Communication 1-3 hrs.
Group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes; some are added during the semester. Further information and a full listing of topics may be obtained from the Departmental offices, #300 Sprau Tower. Six hours of CAS 305 and 505 may be accumulated as credit toward a Major or Minor in CAS.

307 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 3 hrs.
Selecting and arranging materials for readers theatre; directing and participating in performances. Prerequisite: Readers Theatre I.

312 Oral Interpretation of Drama 3 hrs.
Development of skills in oral presentation of dramatic forms of literature, through class analysis and individual presentation of dramatic scenes. Prerequisite: CAS 210.

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 241.

347 Television Production 3 hrs.
Study of television as a creative medium. Exploration of the elements involved in producing television studio programs. Practical experience in production and directing of various program units. In addition to text materials, students must provide supplies averaging about $10 per student. Prerequisite: CAS 240.
348 Television Writing and Continuity 3 hrs.
Explores the problems and techniques of combining sound and visual elements in the creative preparation of television broadcast formats, commercials, dramatic scripts, station continuity and documentaries.

349 Broadcast Journalism 3 hrs.
Study of radio and television as news media; basic principles of news reports, newscasts, news commentary, on-the-spot coverage and features.

360 The Teacher as Communicator 3 hrs.
A course in speech communication for those preparing to teach. The course examines the basic elements of speech communication and their specialized application to the various communicative roles of the teacher.

398 Independent Study 1-6 hrs.
Designed to allow outstanding students to work independently under staff supervision. Includes extensive study, research or special creative projects in any of the several areas of Communication Arts and Sciences. One to six hours credit may be accumulated. Prerequisite: Consent, Chairman of Department.

410 Oral Interpretation of Black American Literature 3 hrs.
Theory and principles of oral interpretation as applied to analysis of Black American literature and the development of skills needed to interpret that literature, including folk tales, essays, speeches, poetry, and drama, growing out of the oral traditions and written by Black Americans. Prerequisite: CAS 210.

447 Advanced Television Production 3 hrs.
Individual and group projects in the development and production of television programs stressing experimental techniques. Prerequisite: CAS 347 or consent of instructor.

448 Television Performance 2 hrs.
Exercises in television performance, stressing the special problems of the video performer. Prerequisite: Consent of instructor.

470 Communication, Social Issues and Change 3 hrs.
A study and practical application of communication and rhetorical methodology in contemporary social problems.

OPEN TO GRADUATES AND UPPERCLASSMEN

505 Special Topics in Communication 1-3 hrs.
Advanced group study of special topics in communication education, interpersonal and organizational communication, mass communication, oral interpretation, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Classes; some are added during the semester. Further information and a full listing of topics may be obtained from the Departmental offices, #300 Sprau Tower. Six hours of CAS 305 and 505 may be accumulated as credit toward a Major or Minor in CAS.

510 Studies in Oral Interpretation: Variable Topics 3 hrs.
Projects in reading and analysis of literature to intensify the student's application of the theory and principles of oral interpretation. Topics will vary each semester and students may repeat the course. Possible topics include the following:
a. Oral Interpretation of Shakespeare
b. Oral Interpretation of the Bible
c. Oral Interpretation of Selected Long Literary Forms
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 Schedule of Classes.

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. International and Comparative Systems of Mass Communication
b. Mass Communication and Social Change
c. Mass Communication, News and Public Affairs
d. Mass Communication and Politics
e. Mass Entertainment

541 Broadcast Regulation 3 hrs.
The laws and issues of broadcast regulation regarding licensing, ownership, programming, political broadcasting, advertising, and the role of the FCC, the FTC, the NAB, and other agencies and regulatory departments.

542 Mass Media and the Child 3 hrs.
Assesses the impact that mass media fare from radio, television, films, comics and other media may be having on the minds and behaviors of children.

545 Television Criticism 3 hrs.
Examines the various functions and writings of contemporary television critics, and establishes criteria for evaluating television programs and program criticism. Students will view and analyze various television program types, including documentary, drama, visual essay and other entertaining and educational programs.

547 Instructional Radio-Television 3 hrs.
Application of radio and television for the communication specialist. Utilization of electronic resources for instruction, observation, research, and training. Lab Fee: $10.

560 Studies in Communication Education: Variable Topics 3 hrs.
Selected studies in background, methods, materials and procedures in any one of the several speech communication areas. Possible topics include directing speech activities, communication behaviors of change agents, as well as others. Topics will vary from semester to semester and students may repeat the course.

561 Teaching Communication in the Elementary School 4 hrs.
Examination of the linguistic development of pre-school and elementary school children, the functions of language, study of the nature of the emotional and physical development of children as related to symbol using behaviors, study of materials and methods for affecting desired behaviors in children's thinking, communicating and enjoyment. C-card.

562 Teaching Communication in the Secondary School 4 hrs.
This is a course in becoming a professional teacher of communication. The focus of the course is self-examination, openness, and individual initiative. Some of the major topics are an examination of self in relation to teaching, the evolving and changing philosophies of speech communication education, the world of high school teaching as it now exists, innovative procedures in teaching communication, and how to get and hold a job in speech communication.
The class is, for the most part, a laboratory-workshop, using a mixture of group work, guests, visitations, and special projects. The student must have completed at least 15 hours of work in the CAS Department and, ideally, take the course immediately prior to student teaching.

564 Creative Dramatics for Children 4 hrs.

Study of the principles, materials and techniques of using informal drama as a classroom activity in elementary grades. Emphasizes theoretical and practical application through the planning and teaching of drama experiences.

570 Studies in Communication: Variable Topics 3 hrs.

Selected areas of study within the total range of communication. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under 570. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the Schedule of Classes.

a. Communication in Organization
b. Interpersonal Theories of Communication
c. Personality and Communication
d. Non-Verbal Communication
e. Attitude Change and Social Influence
f. Group Training, Theory and Practice
g. Semantics
h. Introduction to Communication Research
i. Intercultural Communication

598 Independent Study 1-4 hrs.

A program for advanced students with an interest in pursuing independently a program of readings, research in areas of special interest. To be arranged in consultation with a member of the staff and the Chairman of the Department.
Courses are designed (1) to contribute to General Education by providing basic understanding of the economy; (2) to fulfill the requirements for the training of teachers in certain professional groups, such as social sciences, business studies, and business administration; (3) to furnish courses and explore areas of economic thought which are prerequisite to graduate study in economics; and (4) to provide areas of study as pre-professional training for business administration, engineering, foreign service, journalism, law and social work.

A minor in Economics consists of a minimum of 15 hours in the Department.

A major in Economics consists of a minimum of 30 hours of work in the Department. The following are required courses for majors: Principles of Economics (201, 202), Income Analysis and Policy (306), Price Theory (303), and Statistics (502). In addition a major should choose the remainder of his courses in consultation with his advisor, with careful attention paid to achieving a proper spread.

A major in Economics who intends to do graduate work in Economics is advised to take Mathematics 122 and 123 at least, and Econometrics 509.

The Chairman 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

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

100 Contemporary Economic Problems 3 hrs. Fall, Winter
Focuses on several of the most important economic problems confronting our society — i.e., unemployment, environmental pollution, inflation, poverty, balance of international payments, monopoly power, the standard of living in developing nations and other problems which the students may suggest. Utilizing a non-technical approach, an attempt is made to show what economics can contribute to the analysis and to possible solutions to these problems. Cannot be used to satisfy major or minor program requirements in Economics.

201 Principles of Economics 3 hrs. Fall, Winter
An introduction to microeconomics, the study of the price system and resource allocation, problems of monopoly, and the role of government in regulating and supplementing the price system.

202 Principles of Economics 3 hrs. Fall, Winter
An introduction to macroeconomics, the study of total output and employment, inflation, economic growth, and introduction to international trade and development. Prerequisite: Econ. 201.

303 Price Theory 3 hrs. Fall, Winter
A basic course on economic theory, with emphasis on the theory of consumer behavior (the derivation of the demand curve), the theory of the firm and factor pricing. Prerequisites: Econ. 201 and 202.
306 Income Analysis and Policy 3 hrs. Fall, Winter
An examination of macroeconomic theory with particular emphasis on business cycles, economic growth, and price level instability. The interplay between theory and policy is analyzed. Prerequisites: Econ. 201 and 202.

400 Managerial Economics 3 hrs. Fall, Winter
An introductory examination of the application of tools of economic analysis to management problems and decision making. The basic concepts include marginalism and cost analysis, demand pricing, capital budgeting, and selected optimality models. Prerequisites: Econ. 201 and 202.

An examination of a selected area of concern not intensively covered in other courses. The focus of the course will be substantive as well as analytical. Topics may include such areas as poverty, the war industry, farm problems, misallocation of resources, welfare programs, unemployment and others. May be repeated for credit with a different topic. Prerequisites: Econ. 201 and 202.

502 Studies in Quantitative Economics 4 hrs. Fall
The course deals with statistical and mathematical techniques and concepts useful in economic analysis and their application to various areas in economics. Subject matter of the course will vary from semester to semester and may be chosen from such diverse topics as: linear programming, game theory, input-output analysis, statistics, welfare economics, utility theory and business cycles. Prerequisites: Econ. 201 and 202, Math 122 or consent of instructor.

504 Introduction to Mathematical Economics 4 hrs. Fall
An introductory course to acquaint the student with the application of basic mathematical concepts to economic analysis including such topics as revenue curves, cost curves, capital assets, growth models, and multipliers and accelerators. Prerequisites: Econ. 201 and 202, Math. 122 or consent of instructor.

505 History of Economic Thought 4 hrs. Winter
A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mercantilism and the evolution of the philosophy of natural liberties special emphasis will be placed on the contributions of significant economic thinkers and the influence of various schools of economic thought on national policy and economic development. Prerequisites: Econ. 201 and 202.

508 Institutional Economics 4 hrs. Winter
An intensive examination of heterodox economic theory, conceived in terms of the basic social concepts of institutions and technology, and utilizing developments in modern social science for the resolution of persistent economic problems. Prerequisites: Econ. 201 and 202.

509 Econometrics 3 hrs. Winter
An introductory course in analytical and quantitative methods in economics. Applied economic problems like linear programming, input-output analysis will be considered. Simple regression models and their uses in economics are also included. Prerequisites: Econ. 201 and 202, Math. 122, or consent of instructor.

539 Economic Anthropology 3 hrs. Winter
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: Anth. 220 or 240, Econ. 201 and 202; 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 effects of various economic activities. Prerequisites: Econ. 201 and 202.
313 Poverty and Economic Security 3 hrs. Fall

The course relates such risks as old age and disability to the general problem of income distribution and poverty in the United States. The welfare and social security systems are compared to proposed alternatives such as a negative income tax or guaranteed income.

318 The Economics of Medical Care 3 hrs.

This course is designed to familiarize the student with the basic economic problems that exist in the field of health care. It introduces to the student some basic economic tools which are useful in analyzing these problems. The demand for medical care, the supply of health services, the role of health insurance and pricing, and output decisions are analyzed. Various policy questions are also raised, and the pros and cons of alternative policies are presented. Finally, the role of planning in the reorganization and delivery of medical care services is discussed. Prerequisites: Econ. 201 and 202, or permission of instructor.

319 Environmental Economics 3 hrs. Fall, Winter

The study of economic aspects of environmental problems. Benefit-cost analysis is to be introduced and applied to problems in the management of air, water, and other natural resources. Environmental problems of selected industries — including transportation and electric power — economic growth, population and environmental quality are analyzed. Prerequisite: Econ. 201.

410 Labor Problems 3 hrs. Fall, Winter

An analysis of the nature and underlying causes of the problems facing the worker in modern economic society. Includes an examination of unions, collective bargaining, labor legislation, wages, unemployment and economic insecurity. Prerequisites: Econ. 201 and 202.

419 The Political Economy of Food and Nutrition 3 hrs.

An examination of the economic and socio-political aspects of food, diet and nutritional patterns in the U.S. and world economies. Prerequisites: Econ. 201 and 202.

512 Collective Bargaining 3 hrs. Fall

An analysis of the major problems in present-day collective bargaining including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisites: Econ. 201 and 202, or consent of instructor.

515 Economics of Human Resources 3 hrs.

The course will examine the development and utilization of manpower in the United States, including such topics as labor force components, contributors to productivity such as education, training, health and mobility, and 'issues of manpower policy. Prerequisites: Econ. 201 and 202.

516 Collective Bargaining in Public Employment 3 hrs. Winter

This course examines collective bargaining developments in local, state and federal governments, including bargaining units, negotiations, grievance procedures, strikes and dispute settlements. Prerequisites: Econ. 201, and 202, or consent of instructor.

420 Money and Credit 4 hrs. Fall, Winter

An analysis of the role of money and its impact on the economy — on inflation, unemployment, interest rates, income, and foreign exchange. The operations and relationships of commercial banks and the Federal Reserve are examined. Prerequisites: Econ. 201 and 202.
424 Federal Government Finance
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
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
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
The course will examine the economic structure and development of the urban complex. Among the topics to be considered are: the process of suburbanization, urban sprawl and urban blight, the pricing and production of public utilities in the local economy, economies of scale in the size of urban areas, the place of planning, the impact of public services and the tax structure on the location of economic activity, intergovernmental economic relationships. Prerequisites: Econ. 201 and 202.

INDUSTRIAL ORGANIZATION AND PUBLIC CONTROL

404 The Structure and Performance of Industry
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. Prerequisite: Econ. 201.

445 Corporations and Public Policy
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
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
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

386 Economics of the Soviet Union and Eastern Europe 3 hrs. Winter

A study of Soviet and East European planning practices including an examination of the development in commerce, agriculture and industry in these areas. Trade among the several Eastern bloc nations will also be covered. Prerequisite: Econ. 201.

480 International Economics 4 hrs. Fall

A study of the fundamentals of international trade and related problems, with special reference to the implications of the international economic policies of the United States both for the economy and for the firm. Prerequisites: Econ. 201 and 202.

484 Comparative Economic Systems 3 hrs. Winter

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. Prerequisite: Econ. 480 or consent of instructor.

585 The Economics of Sub-Saharan Africa 3 hrs. Winter

A survey of the indigenous economic systems of Sub-Saharan Africa and how these systems have been modified over time by the intrusion of various foreign populations. The economic progress will be examined and a detailed investigation of economic, social, and political obstacles to further progress will be made. Not open to students who previously received credit in 585 Economics of North Africa and the Near East. Prerequisites: Econ. 201 and 202 or consent of instructor.

587 Studies in Asian Economics 3 hrs. Fall

The course concentrates on the study of the Japanese, Chinese and Indian economic systems. These models are then applied as a basis of comparison to the other Asian economies. Prerequisites: Econ. 201 and 202.

588 Economic Development 4 hrs. Fall

An analysis of the economic factors such as population, resources, innovation and capital formation which affect economic growth. Selected underdeveloped areas will be studied to understand the cultural patterns and economic reasons for lack of development and the steps necessary to promote economic progress. Special attention will be paid to evaluating the effectiveness of the United States foreign aid program and examining the issues arising as a result of the conflict with the U.S.S.R. Prerequisites: Econ. 201 and 202.

589 The Economics of Latin America 3 hrs. Winter

A survey of the principal economic problems of the Latin American countries. A substantial portion of the course will be devoted to case studies of the development of particular countries. Prerequisites: Econ. 201 and 202.

SPECIAL STUDIES

490, 491, 492 Economics Honors Seminar 2 hrs. Fall, Winter

Designed for honors students, the Seminar deals with issues of current importance in economic theory and policy. Permission to register must be obtained from the Departmental Honors Committee.
495 Independent Study for Honors Students 2 hrs. Fall, Winter

A program of independent study, tailored to fit the needs and interests of economics honors students, under the direction of one of the members of the Department. Permission to register must be obtained from the Departmental Honors committee.

598 Readings in Economics 1-3 hrs. Fall, Winter

An independent program of study for qualified advanced students to be arranged in consultation with the instructor. Prerequisite: Consent of Chairman of Department.
The English Department serves students in two principal ways: in developing each person's power to communicate and express himself; and in enhancing each person's ability to participate in and understand the experiences of other people, real and imaginary, past and present.

Courses and programs offered by our department—in writing, English language, and literature (including film)—enable students to concentrate in English, complement their other studies, or simply explore and sample the worlds of language and literature. Although, as a department, we are engaged in training teachers and preparing students for graduate study, we are equally concerned with serving those students preparing for the many professions in which humane perceptions and the skills of communication are important.

SPECIAL NOTE TO NON-MAJORS

The English Department offers many courses suitable for students not majoring in English (including various writing courses). Many of these English courses may be used to satisfy General Education requirements:

105 Thought and Writing, 107 Good Books, 110 Literary Interpretation, 111 Contemporary Topics in Literature, 150 Literature and Other Arts, 210 Film Interpretation, 222 American Literature and Culture, 223 Black American Literature, 239 Contemporary Literature, 252 Shakespeare, 264 Journalism, 266 Writing Fiction and Poetry, 282 Children's Literature, 305 Practical Writing, 311 Perspectives Through Literature, 312 World Literature, 315 The English Bible as Literature, and other advanced courses, as appropriate to the interests and background of the student.

English advisors will help any student select courses in writing, English language, or literature which will be useful in General Education or in background for a career. Advisors' offices are on the sixth floor of Sprau Tower—phone 383-1684.

MAJORS AND MINORS IN ENGLISH

1. The standardized requirements for an English major (listed below) are flexible so that students may follow individualized courses of study. As soon as a student decides to become an English major, he or she should confer with one of the English advisors, who can assist in planning the major. Major or minor slips are not required except for students electing a major or minor with writing emphasis or a minor in journalism.
2. A minimum of thirty hours is required for a major in English, and 20 hours are required for a minor. Students are urged, however, to take as many additional hours as they can. In particular, students planning to teach or attend graduate school should consider taking additional work in preparation.

3. No more than four hours of “D” credit may be applied to an English major or minor.

4. Foreign Language Requirement: English majors must have at least one college year of a foreign language or its equivalent (at least two years of a language in high school). The department recommends as much beyond the minimum as a student can manage. Students planning to do graduate work beyond the M.A. ought to study at least two languages. French and German are most frequently required in graduate school.

5. Special Note to Transfer Students. All transfer students majoring or minoring in English should consult with one of the department’s undergraduate advisors (383-1684) about transferring credit in English courses from other colleges. An early conference will enable the student to avoid duplication of courses and possible loss of transfer credit and may enable bypassing some of the department’s basic requirements as listed below. It is departmental policy to accept no more than 20 hours of transferred credit toward a major and 12 hours of transferred credit toward a minor.

6. Honors Program. The English Department honors program allows especially capable students to work for Honors in English through several different means, depending on the temperament and needs of the particular student: independent study; group study in honors seminars; an “enriched” major program of at least 40 hours; special examination, research papers, or writing projects; and various combinations of these. Students who anticipate being able to meet the grade point average requirements for honors of 3.0 in all university work and 3.5 in the major should consult with the department’s Honors Director, Dr. Shirley Scott, to work out an individualized honors program.

**ENGLISH MAJORS**

**30 hours required**

**Arts and Sciences, Liberal Arts, other non-teaching curricula**

1) 110 Literary Interpretation;
2) An English language course (271, 372, or 572);
3) Either 310 Literary History and Criticism or 340 Development of English Verse;
4) At least one 400-level course other than 410;
5) Plus electives to complete the 30 hours.

Sixteen of the 30 hours must be in 300, 400, or 500 level courses (300-500 level courses fulfilling other basic requirements of the major may be included in this total). One of these 300, 400, or 500 level courses must be chosen from those indicated with an asterisk (*) in the description of courses (*courses emphasize literature written before 1900). English advisors (383-1684) will help plan individualized programs.

**Secondary Education Curriculum**

Requirements for the English major in secondary education vary in three respects from the requirements given above for Arts and Sciences Curriculum and Liberal Arts majors: (1) the requirement of a course in the English language must be satisfied with either 271 Structure of Modern English or 572 American Dialects; (2) at least one course in American literature is required (322 American Literature: Major Writers is especially recommended); (3) at least two of the following four courses in the teaching of English are required: 381, 382, 383, 385 (two credits each). (It is advisable to take more if possible.) These courses do not count toward the thirty credits in English required for the major.

The Department strongly recommends that majors in secondary education see a department advisor before completion of the first twelve hours of the major.

**Elementary Education Curriculum**

1) 110 Literary Interpretation;
2) 373 Reading and Writing as Psycholinguistic Processes;
3) 369 Writing for Elementary Teachers;
4) 282 Children’s Literature;
5) Two literature courses in addition to 110 and 282;
6) One 400- or 500-level English course;
7) Plus electives to complete the 30 hours.
The 400- or 500-level English course may count toward requirement 5 as well, if appropriate. Elementary education English majors should consult with an English advisor before registering for courses in the teaching of English (381, 382, 383, 385).

**English major (any curriculum) with Writing Emphasis**

Students in any curriculum may elect to take an English major with a writing emphasis. Twelve hours of course work in advanced writing are required and may be selected, in consultation with an English advisor, from English 264, 266, 362, 364, 365, 366, 367, 368, and 566. In addition the student must satisfy the basic requirements (above) for an English major in the desired curriculum, except that English 266 may substitute for 110. **Major slips are required** for the writing emphasis.

## ENGLISH MINORS 20 hours required

### Arts and Sciences, Liberal Arts, other non-teaching curricula

Required: 110 Literary Interpretation; at least 8 hours of course work in 300, 400, or 500 level courses; plus electives to complete the 20 hours.

For English minors in non-teaching curricula, only one specific course is required, in order that the minor program may be individualized to supplement or complement a major in virtually any other field of study—business, technology, fine arts, the sciences, social sciences, or humanities. For information on individual minor programs, see an English advisor.

### Secondary Education Curriculum

Required: 110 Literary Interpretation; either 271 Structure of Modern English or 572 American Dialects; an American literature course; at least 8 hours of course work in 300, 400, or 500 level courses; plus electives to complete the 20 hours.

The courses in the methods of teaching English (381, 382, 383, 385) do not count toward the English minor, but they may strengthen a student's professional preparation.

The Department strongly recommends that minors in secondary education see a department advisor before completion of the first twelve hours of the minor.

### Elementary Education Curriculum

Required: 110 Literary Interpretation; 373 Reading and Writing as Psycholinguistic Processes; 369 Writing for Elementary Teachers; 282 Children's Literature; plus electives to complete the 20 hours.

Students may not count both 282 and 283 Literature for Adolescents toward the English minor. Elementary education minors should consult with an English advisor before registering for courses in the teaching of English (381, 382, 383, 385).

### English Minor with Writing Emphasis

Students in the Arts and Sciences, Liberal Arts, or other non-teaching curricula may elect to take an English minor with writing emphasis. Required: twelve hours of advanced writing courses (to be selected, in consultation with an English advisor, from English 264, 266, 362, 364, 365, 366, 367, 368, and 566), eight hours of course work in English language and literature, also to be selected in consultation with an English department advisor. **Minor slips are required** for the writing emphasis.

## WORLD LITERATURE MINOR

The Department of English and the Department of Modern and Classical Languages offer jointly a World Literature Minor (20 hours). For description and requirements, see the “Inter-Disciplinary Programs” listing in the College of Arts and Sciences section of this catalog, or consult Dr. Syndergaard, 621 Sprau.
FINE ARTS MINOR

The English Department is one of the academic units participating in the Fine Arts Minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes. For full information see its description in the College of Fine Arts section of this catalog or consult Dr. Small, 918 Sprau.

ININVOLVEMENT IN
INTEGRATED LANGUAGE ARTS MINOR

The Department of English is one of five participating departments in the Integrated Language Arts Minor—a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the “Interdisciplinary Programs” section of the College of Arts and Sciences or its listing in the College of Education.

JOURNALISM MINOR  20 hours required

In response to the growing interest in journalism at Western, the English Department has established a journalism minor. This minor, which can include key courses outside the department, is useful preparation not only for prospective reporters and editors but also for people who plan careers in broadcasting and the media, advertising, marketing, public relations, business, industry, and government. Courses within the program may also be good choices for anyone who wants to understand a vital subject: the ways we communicate in our society.

The minor allows great flexibility in course selection so that students can combine the journalistic skills and insights of their minor with any of a wide variety of major programs: political science, engineering, economics, business, and history, for example.

Minor slips are required; see an English advisor (383-1684).

Basic Requirements

1) 264 Basic Journalism
2) 265 Journalism Laboratory (must be taken twice)
3) 363 Advanced Reporting and Editing
4) Electives to complete the 20 hours, from at least two of the following three groups:
   GROUP I: SPECIALIZED COURSES IN JOURNALISTIC WRITING
      English 364 Feature and Article Writing
      English 365 Reviewing for the Press
      CAS 349 Broadcast Journalism
   GROUP II: RELATED COURSES IN WRITING
      English 362 Advanced Writing
      English 266 Writing Fiction and Poetry
      CAS 348 Broadcast Writing and Continuity
   GROUP III: RELATED COURSES IN MEDIA AND COMMUNICATIONS
      CAS 240 Broadcast Communication
      CAS 540 Studies in Mass Communication
      (where topic is applicable and with permission of advisor)
      GHUM 316 Mass Media: Messages and Manipulation
105 Thought and Writing: Variable Topics  
A writing course in which the student will work closely with the instructor to develop his sense of language as a means for shaping and ordering his experience and ideas, and to develop imagination, thought, organization, and clarity in his written work. The student has a choice of several options which vary in emphasis and approach. Current options are Writing-Exposition, Writing-Description, and Writing and Science. May be repeated for credit. Does not count as credit toward English major or minor.

107 Good Books  
An exploration of good literature, selected from all times and countries, and experienced in a variety of ways—as fantasy and adventure, as imaginative response to fundamental human experience such as death or evil, as social criticism and analysis, as revelation of character and psychology, as experience of unfamiliar customs and cultures.

A course for the general student rather than the student who plans to specialize in the study of literature. Credit towards English major or minor by permission of the department only.

110 Literary Interpretation  
An introduction to the study of literature, aimed at developing sensitivity and skill in the critical interpretation of poetry, drama, and prose fiction.

111 Contemporary Topics in Literature  
Exploration of fiction, poetry, drama, and film related to current concerns. Topics vary from semester to semester. Typical examples are: literature and ecology; the individual and the city in American novel and film; literature and the search for identity and “life style”; myth and folklore as response to realities of human experience.

An exploratory course for the general student rather than the student who plans to specialize in the study of literature. Credit toward English major or minor by permission of the department only.

150 Literature and Other Arts  
Study of literature through its relationship to other arts. The course approaches literature by relating novels, stories, poems, or plays to their representations in other media and art forms, particularly film (including TV), music and song, dramatic representation, and painting.

210 Film Interpretation  
Studies in the motion picture as art form.

222 American Literature and Culture  
A study of some of the recurrent themes in American life as seen in American literature.

223 Black American Literature  
A survey of important black American writers and the historical development of the black image and experience in American literature and culture.

239 Contemporary Literature  
Selected readings in recent literature from various countries and areas of the world. Emphasis is upon authors whose major work belongs to the period since World War II, with some attention to influential works from the earlier twentieth century.

252 Shakespeare  
A survey of Shakespeare's art through study of selected tragedies, histories, and comedies.
264 Basic Journalism
Basic principles and practice of news gathering, news writing, copy editing, news evaluation, page layout, headline writing; introduction to feature and editorial writing.

4 hrs.

265 Journalism Laboratory
Regular supervised practice in newswriting or other work on the staff of a university newspaper at WMU. May be repeated for credit. Prerequisite: 264; or 264 may be taken concurrently.

Journalism Laboratory counts toward a Journalism minor but not toward an English major or minor.

1 hr.

266 Writing Fiction and Poetry
Study and practice in the writing of fiction and poetry, intended to develop the student's understanding of formal techniques and his skill in the use of these techniques.

4 hrs.

271 (270) Structure of Modern English
A study of the sound, word, and sentence structures (phonology, morphology, and syntax) of modern English.

4 hrs.

282 Children's Literature
An exploration of the human and literary values in the best of children's books. Emphasis is on critical sensitivity and techniques necessary for interpreting and evaluating works representative of the major forms of children's literature—folktales and fantasy, fiction and non-fiction, myth and poetry.

If this course is counted toward the English major or minor, 283 Literature for Adolescents may not be counted, except for elementary education English majors proceeding under the 1975-76 catalog.

4 hrs.

283 Literature for Adolescents
Critical analysis of those genres read by youth from twelve to sixteen: fiction (especially that of maturation, adventure, history, and fantasy)—drama, poetry, myth and legend, biography, and other non-fiction.

If this course is counted toward the English major or minor, 282 Children's Literature may not be counted, except for elementary education English majors proceeding under the 1975-76 catalog.

4 hrs.

305 Practical Writing: Variable Topics
A practical course for juniors and seniors who wish to develop their skills in writing. Emphasis is on understanding and writing forms of non-fictional prose such as research papers and reports; commentary on the arts; autobiography and the personal essay; pre-professional writing (for students planning careers in business, social service, industry, law, or other professions). Topics vary and will be announced each year. Does not count as credit towards an English major or minor. May be repeated for credit, but may be counted only once toward fulfillment of General Education requirements.

4 hrs.

307 Good Books II

4 hrs.

309 The American Novel Today
A reading of fiction published in the United States in the past few years, selected from works of both established and beginning writers. For the general student. Does not count toward English major or minor.

4 hrs.

310 Literary History and Criticism
Discussion of important topics and problems, both historical and critical, involved in the systematic study of literature. Emphasis includes study in the chronology of English literature, its development and continuity, and an introduction to the nature and uses of formal literary criticism. Prerequisite: 110.
311 Perspectives Through Literature
4 hrs.
Exploration of an important realm of human nature and action through the special perspective provided by literature. The literary perspectives may be supplemented by materials from other arts or disciplines. Topics vary and will be announced each year. Examples: The Irrational; The Quest for the Self; Images of Progress.
A non-technical course for the general student rather than the student specializing in the study of literature; does not count as credit towards an English major or minor.

312 World Literature: Variable Topics
4 hrs.
Study of works selected from the various literatures of the world, excluding Great Britain and the U.S.A. Works will be studied in English. Cultures and areas of the world covered in the course vary from semester to semester, and students may repeat the course for credit if the topics are different. Topics to be offered include the following: A. Western World Literature. B. Asian Literature. C. African Literature. Options B and C are approved for General Education in the Non-Western World area. Option A does not count for general education.

315 The English Bible as Literature
4 hrs.
Study of selections from the Old and New Testaments and the Apocrypha. Some attention will be given to the influence of the English Bible on a few representative writers, musicians, and artists, but emphasis will be on the poetic, philosophical, and narrative elements of the Bible itself.

322 American Literature: Major Writers
4 hrs.
Intensive reading of representative works of major American writers. Prerequisite: 110.

332 English Renaissance Literature
4 hrs.
Representative selections from the major writers of the period 1500-1660, by such writers as More, Spenser, Bacon, Donne, and Milton. Prerequisite: 110.

340 Development of English Verse
4 hrs.
An historical study of English poetry, from its beginning to the present, emphasizing the development of poetic techniques, major verse forms and styles, and their relation to theories of poetry. Prerequisite: 110.

344 (244) The British Novel
4 hrs.
A study of the novel as a literary form reflecting, in its development and diversity, changes in human consciousness. Emphasis will be on development of the British novel from the eighteenth to the early twentieth century. Prerequisite: 110.

362 Advanced Writing
4 hrs.
Practice in writing articles, essays, biographical and critical prose with emphasis on development of the student's individual style and elimination of obstacles to clear and vital expression.

363 Advanced Reporting and Editing
4 hrs.
Practice in interpretive reporting for newspapers and magazines, with emphasis on analysis and interpretation of data, researching the background for the news, and news evaluation; feature, editorial, and column writing; editing wire copy and pictures; news display. Prerequisite: 264.

364 Feature and Article Writing
4 hrs.
Study and practice in writing feature and magazine articles; attention to contemporary techniques and styles in documentary and personal reportage. Prerequisite: A previous college-level writing course.

365 Reviewing for the Press
4 hrs.
Theory and practice in writing reviews of books, drama, films, television, concerts and exhibitions for various kinds of mass-audience publications. Prerequisite: Previous course work in journalism, creative writing, literature, or media.
366 Advanced Fiction Writing
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
An advanced course in the writing of poetry, with emphasis on class discussion and criticism of each student's writing. Prerequisite: 266 or permission of the department.

368 Playwriting
An introductory course in the writing of drama, with class discussion and criticism of each student's writing, and including study of selected examples of drama in print and in production. Prerequisite: English 266, Theatre 376, or permission of the department.

369 Writing for Elementary Teachers
A course intended to develop the writing skills of prospective teachers and to explore the means by which the writing ability of elementary school children can be encouraged, developed, and evaluated.

372 Development of Modern English
A course in the history of the language treating the historic and linguistic forces which have affected pronunciation, grammar, and vocabulary.

373 Reading and Writing as Psycholinguistic Processes
A study of the processes of reading and writing English as these are explained by developments in linguistics and psycholinguistics. Particular attention is paid to the degree of complexity in sentence structure as it affects writing maturity, writing style, and reading.

381 Teaching of Literature
Techniques and theories of teaching literature in the secondary schools.

382 Teaching of English Language
Techniques and theories of teaching the English language to native speakers in the secondary schools. Prerequisite: 270, 271, or 373.

383 Teaching of Writing
Techniques and theories of teaching writing in the secondary schools.

385 Special Topics in the Teaching of English
Selective study of classroom problems and techniques in the teaching of English. Content varies, but emphasis will be on use of special materials or media in the English curriculum, new and experimental teaching methods or programs, or problems of classroom interaction. May be repeated for credit. Prerequisite, if any, will be announced by the English Department for each section.

410 Special Topics in Literature
A study in historical perspective of selected literary works of the English speaking world or international literature in translation. May be repeated for credit as long as the topics are different. Prerequisite: 110.

441 Modern Poetry
Study of twentieth-century British and American poetry, with emphasis on major poetic trends, concerns, and forms of the modern period. Prerequisite: 110.

442 Modern Drama
Studies in the major styles and forms of modern drama from Ibsen to the present. Prerequisite: 110.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>445</td>
<td>Modern Fiction</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Readings in representative British and American prose fiction of the twentieth century, with emphasis upon the diversity of styles and forms in modern fiction. Prerequisite: 110.</td>
<td></td>
</tr>
<tr>
<td>452</td>
<td>Shakespeare Seminar</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Intensive study of selected aspects of Shakespeare's poetic and dramatic art. Prerequisite: 110 or 252.</td>
<td></td>
</tr>
<tr>
<td>496</td>
<td>English Honors Seminar</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Special studies in selected topics. Open only to majors working for honors in English, or by permission of the instructor.</td>
<td></td>
</tr>
<tr>
<td>497</td>
<td>Studies in English: Variable Topics</td>
<td>1-3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.</td>
<td></td>
</tr>
<tr>
<td>499</td>
<td>English Seminar</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Special studies in literature or English language for small groups (limited to 16) of junior and senior English majors and minors. Intended for students who wish to pursue intensive discussion, criticism, and research on the announced topic. Descriptions of each topic are available from the Department in advance of registration. Prerequisite: limited to juniors and seniors with at least 16 hours of previous English credit.</td>
<td></td>
</tr>
<tr>
<td>510</td>
<td>Special Topics in Literature</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Study of a literary movement, theme, or genre, such as classicism, the Arthurian tradition, the lyric. May be repeated for credit as long as the topics are different. Prerequisite: 110 or permission of the department.</td>
<td></td>
</tr>
<tr>
<td>519</td>
<td>Non-Western Literature in Translation</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>522</td>
<td>Topics in American Literary History*</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Study of a movement or a recurrent theme in American literature, such as romanticism, realism, naturalism, humor, racial issues. Prerequisite: 110.</td>
<td></td>
</tr>
<tr>
<td>529</td>
<td>Medieval English Literature*</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Studies in Old and Middle English literature, excluding Chaucer, read either in the original or in modernized versions. Prerequisite: 110.</td>
<td></td>
</tr>
<tr>
<td>530</td>
<td>Medieval Continental Literature in English Trans</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>lation*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Readings in medieval European literature (in English translation), excluding that of England. Prerequisite: 110.</td>
<td></td>
</tr>
<tr>
<td>531</td>
<td>Chaucer*</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Readings in Chaucer, with emphasis on Troilus and Criseyde and The Canterbury Tales. Prerequisite: 110.</td>
<td></td>
</tr>
<tr>
<td>532</td>
<td>16th Century Literature*</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Selections from the major works in both prose and verse, by such writers as Wyatt, More, Sidney, and Spenser. Prerequisite: 110.</td>
<td></td>
</tr>
</tbody>
</table>
533 17th Century Literature*  
Selections from the major works in both prose and verse from 1600 to the Restoration, by such writers as Bacon, Browne, the metaphysical poets, and Milton. Prerequisite: 110.

534 Neo-Classical Literature*  
English literature from the Restoration through Pope and Swift. Prerequisite: 110.

535 18th Century Literature*  
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*  
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. Prerequisite: 110.

537 Victorian Literature*  
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, Browning, and Arnold. Prerequisite: 110.

538 Modern Literature  
Readings in major authors of the 20th Century, with some attention to literary and intellectual backgrounds of the international modern movement. Prerequisite: 110.

543 Elizabethan and Jacobean Drama*  
Studies in the non-Shakespearian drama in England during the Elizabethan and Jacobean periods, by such dramatists as Kyd, Marlowe, Jonson, Webster, Tourneur, and Ford. Prerequisite: 110.

554 Milton*  
A study of Milton's major works, with emphasis on Paradise Lost and the major poetry. Prerequisite: 110.

555 Studies in Major Writers  
Study of the works of classical, European, British or American writers. Limited to one or two authors. Prerequisite: 110.

566 Creative Writing Workshop  
A workshop and conference course in the writing of poetry, fiction, or drama, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Prerequisite: Six hours of creative writing, graduate standing, or permission of the department.

572 American Dialects  
A study of regional, social, and stylistic variation among American dialects, with emphasis on the dialects of minority ethnic groups as structured systems.

574 Linguistics for Teachers  
An application of the concepts of linguistics to the teaching of language, literature, composition and reading in the English curriculum. Prerequisite: 270, 271, 373, or an introduction to linguistics course, or permission of the department.

582 Studies in Children's Literature  
A study in depth of significant themes, movements, types in children's literature. Prerequisite: 282 or permission of the department.
597 Studies in English: Variable Topics 1-3 hrs.

Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the schedule of classes; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower.

598 Readings in English 1-4 hrs.

Individual reading project available to advanced students by special permission from the appropriate departmental advisor (undergraduate or graduate) and the staff member who will supervise the study. Normally, permission is granted only to students who have well thought-out projects dealing with authors or materials not being covered currently in the schedule. Permission is usually not granted to students who want to use the course simply to get one or two hours credit to complete an English major or minor.
PROGRAMS FOR MAJORS AND MINORS

These programs are designed to provide students with an improved understanding of man's physical and cultural surroundings and the interrelationship of these. Students are prepared through geography as a physical and social science for careers in such diverse fields as urban and regional planning, cartography, environmental studies and analysis, teaching in elementary and secondary schools, and travel planning and consulting. A program is also available for those who desire to continue in graduate studies.

A core of three courses (Geography 105, 205, 203) is required of majors. A non-teaching major in Geography with specialization provides for a minimum of 30 hours. It is recommended that 6 additional hours of work from complementary disciplines be taken in support of the area of specialization. An internship for variable credit (Geography 412) may be arranged in this program. For those who intend to pursue graduate work, it is recommended that courses in mathematics and foreign languages be considered as electives.

The Department will accept, toward the major or minor, credits earned at community and junior colleges which correspond to the 100-, 200-, 300-level offered by this Department. However, transfer students should meet with the undergraduate adviser as soon as possible in order to finalize their program and avoid the danger of duplication of course work. Courses taken on a Credit/No Credit basis may not be counted toward the major except with the approval of the Department Chairman. An Honors program is available for students so recommended by members of the faculty of the Department of Geography.

Students are invited to call at Room 317, Wood Hall (phone 383-1836) for information concerning the departmental major, minor, honors program, or financial assistance.

### NON-TEACHING MAJORS

<table>
<thead>
<tr>
<th>30 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 Our Physical Environment</td>
</tr>
<tr>
<td>205 Our Human World</td>
</tr>
<tr>
<td>203 Geographic Inquiry</td>
</tr>
<tr>
<td>Two courses from Group I at the 200 level or above</td>
</tr>
<tr>
<td>One course from Group II</td>
</tr>
<tr>
<td>One course from Group III</td>
</tr>
<tr>
<td>Remaining courses to be selected with consent of adviser.</td>
</tr>
</tbody>
</table>

### NON-TEACHING MINORS

<table>
<thead>
<tr>
<th>20 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 Our Physical Environment</td>
</tr>
<tr>
<td>205 Our Human World</td>
</tr>
<tr>
<td>One of the following: GEOG 203, 365, 560, 566, or 582</td>
</tr>
</tbody>
</table>

### NON-TEACHING MAJOR — WITH SPECIALIZATION

<table>
<thead>
<tr>
<th>30 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 Our Physical Environment</td>
</tr>
<tr>
<td>205 Our Human World</td>
</tr>
<tr>
<td>203 Geographic Inquiry</td>
</tr>
<tr>
<td>Remaining courses must be selected with consent of adviser.</td>
</tr>
</tbody>
</table>

The areas of specialization are: Urban and Regional Planning, the Environment, Geographic Techniques, Physical Geography, Regional Geography, and Travel Consulting and Planning. A program of courses is provided for each of these areas.

This major is focused upon courses designed to meet a student's particular needs. An internship (Geography 412) is available for those who wish to gain practical experience. This can be done by either assisting faculty in research, or by working in an approved off-campus agency. It is recommended that 6 additional hours of work from complementary disciplines be taken in support of the area of specialization.
College of Arts and Sciences

ELEMENTARY EDUCATION
MAJOR 30 HOURS

105 Our Physical Environment............. 4 hrs.
205 Our Human World ..................... 3 hrs.
203 Geographic Inquiry ................. 2 hrs.
460 Concepts and Strategies in the Teaching of Geography............. 3 hrs.
311 Michigan ..................... 3 hrs.
380 United States and Canada............. 3 hrs.

A course will be selected from Geography Group III if the student chooses to waive or substitute Geography 460 for Education 507, Teaching of Social Studies in the Elementary Schools (3 hrs.). It is also acceptable to take both courses.

SECONDARY EDUCATION
MAJOR 30 HOURS

Same requirements as elementary major.

SECONDARY EDUCATION
MINOR 20 HOURS

105 Our Physical Environment............. 4 hrs.
205 Our Human World ..................... 3 hrs.
460 Concepts and Strategies in the Teaching of Geography ...... 3 hrs.

Remaining courses to be selected with consent of adviser. Geography 460 may be waived and another Geography course substituted if Social Science 300, Teaching of Social Studies in Secondary Schools (3 hrs.) is required in another sequence.

Science Credit

The Geography courses 100, 105, 204, 206, 225, 226, 350, 365, 553, 554, 555, 557, 560, 568, 580, and 582 are acceptable for science credit in appropriate science sequences.

GROUP I SYSTEMATIC GEOGRAPHY

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

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.

101 Issues of Mankind

A geographic approach will be used to interpret selected characteristics of man and his cultural landscape. Topics include: urban problems, world poverty and social welfare, hunger, colonialism, employment crises, ethnic and minority groups, crime, types of world elections, communication and transportation systems, religion, and other issues of contemporary concern. Each offering of this course will focus on a single theme.
105 Our Physical Environment
(Science credit) A study of the physical environment of man. The course examines the seasonal and latitudinal distribution of solar energy and its effect on weather, vegetation, soils, surface and subsurface waters, and the earth's major landforms. Terrestrial energy is reviewed in relation to earth materials and earth-forming processes. Man induced energy changes are interwoven into each topic. Maps, aerial photographs and outdoor observations are utilized as primary investigative tools.

107 Planetary Science in Elementary Education
In interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites) Not recommended for science majors.

204 National Park Landscapes
(Science credit) Introduction to the physical and human landscapes of the national park system. Consideration of those natural and human processes which have produced the distinctive features of the national parks. Evolution of the national park concept, policies, and problems.

205 Our Human World
An introduction to those aspects of geography concerned with man and his efforts to cope with his environment. Included are population and settlement forms, the utilization of resources, the impact of technology on human occupancy of the earth, and the origin and dispersal of cultural elements among the various world realms.

206 The Atmospheric Environment and Man
(Science credit) A non-mathematical integrative approach to the atmospheric environment. Emphasis is placed on the interaction of the atmosphere with other environmental features with particular stress given to the role of the atmosphere in affecting the lives and activities of people. Inadvertent modification of the atmosphere by man, weather control, and air pollution also receive special treatment.

225 Introduction to Meteorology and Climatology
(Science credit) A non-mathematical analysis of systematic and regional atmospheric behavior. First part of course deals with fundamental physical laws affecting the elements of weather — temperature, moisture and humidity, pressure, and winds. Second part of course examines the distribution of various types of climates over the earth’s surface, with particular emphasis on the interaction of geographic factors with the major atmospheric climatic controls, and upon the effects of various climates on the economic activities of man. Prerequisite: Geography 105 or consent.

226 Physical Geography
(Science credit) This course introduces the major element of man's physical environment. Energy is the organizing concept which ties together and inter-relates the elements of weather and climate, the distribution of plants and soils, and the processes which have shaped the earth's major landforms.

244 World Patterns of Economic Activity
A survey of locational economic patterns and their interrelationships, including the study of spatial variation in economic development, primary production, energy generation, manufacturing, transportation, service occupations, and trade.

350 Principles of Conservation and Environmental Management
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.
360 Northlands Frontier

3 hrs.

Emphasizes the underlying issues responsible for change in the world's Northlands (Asia, Scandinavia, Greenland, and North America), as well as policies affecting their current and future use. Among topics discussed are resource exploitation, changes in the physical landscape, cultural attitudes, and the need for environmental protection policies.

361 Population: The Crowding World

3 hrs.

Population distribution and settlement patterns are examined geographically. Population topics include mapping and analysis, theories of population change, and types of migration. Emphasis is also placed on functions and structure of urban and rural settlements in selected world regions.

540 Studies in Political Geography

3 hrs.

Philosophy and applications of the field of political geography.

A. Principles of Political Geography. Principles and concepts are treated as they apply to the evolution of the modern state. Concepts such as the "organic state," boundaries and frontiers, the territorial sea and global relationships are treated in some detail.

B. National Power. The components of national power are analyzed according to political-geographical relationships.

543 Cultural Geography

3 hrs.

Techniques of spatial analysis applicable to the study of man and his adjustment to different environments. The place of origin, diffusion, and present distribution of selected cultural patterns will be traced with emphasis given to cultural traits which strongly influence human occupation of the earth's surface.

544 Studies in Economic Geography

2-3 hrs.

Presents world patterns of agriculture, manufacture, or transportation which link global production and consumption. In any term, the course focuses upon one of these three economic sectors.

A. Agriculture. Describes and analyzes the distribution of major crops and livestock, and their combinations in common farming operations. The spatial organization of agriculture through time is analyzed for selected areas.

B. Industry. Evaluates the general distribution and locational factors associated with selected industries, giving particular attention both to models of industrial location and to the empirical interrelation of economic, technological, and political elements affecting the locational decision.

C. Transportation. Emphasizes the historical evolution of transport systems in developed and developing nations, transport factors in location theory, techniques of transport analysis, the urban transport problem, and competitive and complementary characteristics of transport modes in differing political systems.

553 Water Resources and Man

3 hrs.

(Science credit) Examination of water resources management with emphasis upon rational development and utilization of available supplies. Topics include supply and demand, methods of supply augmentation (desalination, inter-basin transfers), water administration and policies, and various water problems together with their solutions.

554 Outdoor Recreation: Resources and Planning

3 hrs.

(Science Credit) Examination of extensive, resource-based outdoor recreation (such as parks, wilderness, wild rivers, hunting and fishing, hiking, etc.) with emphasis upon recreatinal planning. Topics include supply and demand for outdoor recreation, identification of present and future recreational needs, policy considerations, administration of recreational land uses, and various problems associated with outdoor recreation. Readings, discussion, and student-designed and executed individual studies provide professional orientation.
555 Contemporary Issues in Resources Management 3 hrs.
(Science credit) Geographic analysis of selected contemporary natural resource and environmental problems, such as questions of natural resource adequacy, environmental pollution, political and economic problems related to resource management, and individual studies of local environmental problems. Prerequisite: Geography 350 or consent.

556 Studies in Urban and Regional Planning 3 hrs.
Each of the courses listed under this number focuses on a major aspect of planning, including a review of the objectives of the planning process, legislation pertaining to planning operations, and methods of field and library investigation required for analysis and policy formulation in matters related to planning.

A. Urban Planning and Zoning. A survey of American planning thought and practice: the background of planning and zoning in American municipalities; traditional and contemporary approaches to the comprehensive plan; elements of land use and transportation planning; the legal foundations of zoning; and the organization of the planning agency.

B. Regional Planning. Organization and plans of regional development programs.

C. Public Lands and Parks. Specific programs and policies relating to the preservation and/or development of government-controlled lands.

557 Environmental Impact Assessment 3 hrs.
(Science credit) Human interference in natural processes often have harmful consequences. Growing recognition of the need for prior analysis of projects affecting the physical environment is reflected in federal, state and local legislation requiring environmental impact statements. The course gives students experience in the assessment and preparation of such statements which evaluate the environmental effects of governmental and private development. Pertinent laws and their history are examined, illustrative impact statements are analyzed, and students will prepare an environmental assessment of proposed action. Prerequisite: Geography 350 or equivalent.

570 Cities and Urban Systems 3-4 hrs.
Study of processes and forms of urban settlement highlighting problems relating to 1) political and geographical realities or urbanized regions, 2) factors in city growth (or decline), 3) the sizes, functions, and geographical distribution of cities, and 4) population patterns in contemporary cities. Activities are designed to provide the student with experience in the use of source materials and field techniques utilized in urban geography.

GROUP II REGIONAL GEOGRAPHY
(Courses described in italics are approved for General Education.)

309 Studies in Regional Geography 2-3 hrs.
An investigation of topics in physical and human geography of selected areas within major world regions. Regional concentration will vary from semester to semester, with the region being indicated at time of enrollment.

311 Geography of Michigan 3 hrs.
An introduction to the physical and cultural patterns in Michigan with emphasis upon an understanding of the distribution of population, resources, and forms of economic activity. Attention is also focused upon relevant current State problems. The specific content is determined by enrollees and the instructor.

380 United States and Canada 3 hrs.
A study of the physical environment north of the Rio Grande followed by an analysis of the spatial structure of the area's population and economy. The basis for the regional differentiation of the USA and Canada is considered, followed by a region-by-region analysis of each of these unique integrations of physical and cultural phenomena.
College of Arts and Sciences

381 South America 3 hrs.
Regional study of the nations of South America with attention to the interrelationships of the physical and cultural environments. Historical background necessary for the interpretation of the present political, social, and economic conditions is included.

382 Mexico and the Caribbean 3 hrs.
Systematic consideration of the physical environment of Mexico, Central America and the West Indies. A problems approach is utilized to reckon with the economic, social and political trends of the region.

383 Western and Southern Europe 3 hrs.
Intensive regional study of those Western European nations situated west of the Iron Curtain. The physical elements (climate, landforms, resources, etc.) are examined and the derivative cultural elements are identified. Emphasis is placed upon the social and economic activities of contemporary Western Europe.

384 Soviet Peoples and Landscape: Continuity and Change 3 hrs.
A general examination of the most important aspects of the Soviet Peoples and landscape set in a spatial framework. Topics discussed include: The physical environment, population distribution and dynamics, the Soviet strategy of economic development (both national and regional), problems of agricultural development, industrial and transport patterns, and problems of environmental deterioration.

385 The Pacific Realm 3 hrs.
Selected studies of the relationships between man and his environment in Australia, New Zealand, Melanesia, Micronesia and Polynesia.

386 Sub-Saharan Africa: Man, Environments, Resources 3 hrs.
Survey of the principal physical and political patterns of Africa south of the Sahara; followed by studies of the significant elements of the major realms and states, e.g., population distribution, patterns of subsistence and commercial agriculture, status of mineral and power resource development, transportation routes, regional development programs.

387 The Middle East and North Africa 3 hrs.
Study of the diversity and uniformity — both physical and cultural — of the Middle East and Africa north of (and including) the Sahara. Special attention is given to aridity problem, economic development, petroleum, Arab re-unification movements, and the impact of the Muslim World on the current political scene.

389 Conflict Resolution in Southeast Asia 3 hrs.
Patterns of population growth, agrarian development, and resource use are examined in light of changing cultural and political forces, in the physical context of the Indo-Chinese Peninsula and the Malay Archipelago.

390 The Indian Subcontinent in Transition 3 hrs.
Changing patterns of population, and rural and urban economic development are examined in light of the Indian philosophical tradition and regional social and political pressures, in the physical context of the Indian subcontinent (India, Bangladesh, Pakistan, and Sri Lanka).

550 Studies in Historical Geography 3 hrs.
Studies of geographic and related features which have combined to influence the course of historical development. This course will concentrate on a particular region and/or period of time during each semester in which it is offered. Each specialization will be designated in the class schedule.
GROUP III GEOGRAPHIC METHODOLOGY 
AND RESEARCH

203 Geographic Inquiry 
2 hrs.

The student will be introduced to geography as a field of study, of research, and occupational opportunity. Geography provides a means for analyzing the physical and cultural attributes of the environment. The student will have an opportunity to investigate social and environmental problems through data collection, analysis, interpretation, and map representation. The development of the various inquiry techniques in geography will be briefly reviewed and case studies exemplifying such development will be examined. The emphasis throughout will be on the application of inquiry models to geographic problems.

365 Map, Chart, and Air Photo Reading 
2-3 hrs.

(Science credit) The course introduces the student to a variety of maps, charts and aerial photographs. Information recognition and analysis from map, chart and photo form are emphasized for various uses. Included are terrain analysis, military grid system, scale determination and conversion, marine and aerial navigation applications, recreation uses, orienteering, landscape and vegetation analysis, and basic mapping skills. Military Science 200, Cartology, may be substituted for this course.

412 Professional Practice 
2-5 hrs.

Provision for an advanced student to benefit by supplementary practical experiences in a particular branch of geography, either by assisting faculty engaged in research or by working in a departmentally-approved off-campus agency. Specific assignments are arranged in consultation with departmental advisers during the semester preceding that in which the student expects to enroll in 412. The student may enroll for one additional semester, but no student will be allowed more than six hours total credit for 412. Prerequisite: Junior standing and consent of Department Chairman.

460 Concepts and Strategies in the Teaching of Geography 
3 hrs.

Study of objectives, tools, organization and presentation of material, methods of evaluation, and scrutiny of textual material in the field of geography.

560 Principles of Cartography 
4 hrs.

(Science credit) Introduction to map construction with primary emphasis on the conceptual planning and designing of maps as a medium for communication and research. Lectures are supplemented by laboratory assignments to familiarize students with drafting techniques, lettering and symbolization, the concept of scale and scale transformations, map layout and design, processes of map reproduction, the employment and construction of projections, and the compilation procedures and execution of thematic maps. Two one-hour lectures and two two-hour laboratory periods.

566 Field Geography 
2-4 hrs.

The theory and application of geographic techniques in field investigations; collection and analysis of field data; preparation and presentation of materials. The course is based primarily upon field observations. Desirable prerequisite: Geography 560 or consent.

568 Quantitative Methodology 
3 hrs.

The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography ranging from the use of common statistical techniques to methods of model formation in the analysis of spatial interaction. Prerequisite: A course in statistics or consent.

580 Advanced Cartography 
3 hrs.

(Science credit) Study of the more complex map projections, the compilation of data and the design of maps and graphs for research papers and the application of statistical techniques in mapping geographic phenomena. Students are assigned special problems to develop their proficiency in the use of cartography as a tool in research. One hour lecture and two two-hour labs. Prerequisite: Geography 560 or consent.
582 Remote Sensing of the Environment 3 hrs.

(Science credit) The student will acquire proficiency in the fundamental techniques and skills of photogrammetry and photo-interpretation during the first part of the course. The remainder of the semester will be spent in interpreting photos dealing with such topics as geomorphology, archaeology, vegetation and soils, water resource, rural and urban land use as well as topics adapted to the interest and anticipated future work of the student.

598 Readings in Geography 1-3 hrs.

Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Consent of department adviser and instructor.
Geology

Lloyd J. Schmaltz, Chairman
Ronald Chase
Casper Cronk
John D. Grace
William B. Harrison III
W. David Kuenzi
Richard Passero
W. Thomas Straw

GEOLOGY MAJOR (MINIMUM 35 HOURS)

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Geology 130</td>
<td>4</td>
</tr>
<tr>
<td>Earth History and Evolution 131</td>
<td>4</td>
</tr>
<tr>
<td>Mineralogy 335</td>
<td>4</td>
</tr>
<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
</tr>
<tr>
<td>Structural Geology 430</td>
<td>3</td>
</tr>
<tr>
<td>Petrology and Petrography 440</td>
<td>3</td>
</tr>
<tr>
<td>Surficial Processes and Groundwater Geology</td>
<td>3</td>
</tr>
<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
</tr>
<tr>
<td>Terrigenous Depositional Systems 535</td>
<td>3</td>
</tr>
<tr>
<td>Exploration Geophysics 560</td>
<td></td>
</tr>
</tbody>
</table>

35

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 and Introduction to Computers 106. Some modification of these requirements may be made in consultation with the student's departmental counselor. A summer field course in geology is strongly recommended for all geology majors; and is indespensible for students planning professional careers. In addition, at least one year of foreign language is recommended.

Geology majors should elect minors of mathematics, chemistry, physics, or biology. Students electing one of the above minors must still complete all other supporting required courses. Students not electing one of the above minors may elect the group science minor for geology majors (see below).

Suggested 4 year program of study for geology majors including all required supporting courses.

Freshman Year

Fall
Physical Geology 130
*Mathematics 122

Winter
Earth History and Evolution 131
Mathematics 123
Biology 101

Sophomore Year

Mineralogy 335
Chemistry 101 or 102

Invertebrate Paleontology 533
Chemistry 120

Junior Year

Optical Mineralogy 336
Surficial Processes and Groundwater Geology 532
Physics 210 or 110

Petrology & Petrography 440
Physics 211 or 111
Math 106

*Students with insufficient high school mathematics may have to take mathematics 120 and 121 instead of 122.
Summer Field Course in Geology

Senior Year

Terrigenous Depositional Systems 535
Structural Geology 430

Exploration Geophysics 560

GEOLOGY MINOR (MINIMUM 18 HOURS)

The geology minor is designed as a supporting minor for students preparing to do professional work in the fields of chemistry, physics, engineering, zoology, botany, and geography. It cannot be combined with earth science as a major-minor or double minor relationship. A student may design a geology minor for his specific need.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Geology 130</td>
<td>4</td>
</tr>
<tr>
<td>Earth History and Evolution 131</td>
<td>4</td>
</tr>
</tbody>
</table>

One of the following options is recommended:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineralogy 335</td>
<td>4</td>
</tr>
<tr>
<td>Optical Mineralogy 336</td>
<td>3</td>
</tr>
<tr>
<td>Petrology and Petrography 440</td>
<td>3</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minerals and Rocks 301</td>
<td>3</td>
</tr>
<tr>
<td>Invertebrate Paleontology 533</td>
<td>4</td>
</tr>
</tbody>
</table>

6 additional hours in geology                  6

Course substitution from other geology offerings can be made with the consent of counselor (e.g., a geography major minoring in geology might elect Regional Geomorphology, Surficial Processes and Groundwater Geology, or Glacial Geology).

18

21

GROUP SCIENCE MINOR (Minimum 24 hours)

FOR GEOLOGY MAJORS

The group science minor is designed for students not electing a mathematics, chemistry, physics or biology minors. Some modification of these requirements may be made in consultation with the student's departmental advisor.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td></td>
</tr>
<tr>
<td>General Chemistry 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>Qualitative Analysis 120</td>
<td>4</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Chemistry 103</td>
<td>4</td>
</tr>
<tr>
<td>General Chemistry 109</td>
<td>4</td>
</tr>
</tbody>
</table>

Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Physics 110</td>
<td>4</td>
</tr>
<tr>
<td>General Physics 111</td>
<td>4</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanics and Heat 210</td>
<td>4</td>
</tr>
<tr>
<td>Electricity and Light 211</td>
<td>4</td>
</tr>
</tbody>
</table>

8

Biology

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Biology</td>
<td>4</td>
</tr>
</tbody>
</table>

Electives

At least 4 credit hours selected from the physical or biological sciences with approval of student's advisor.

4
EARTH SCIENCE

TEACHING EARTH SCIENCE MAJOR AND MINOR

The teaching earth science major and minor are designed for students preparing to teach in the elementary and secondary schools. No grade below a “C” will be accepted in the required courses. All majors must complete a minimum of one semester each of college physics and college chemistry.

Major (30 hours) Hrs. 
Required Courses
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

Minor (21 hours) Hrs. 
Required Courses
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

NON-TEACHING EARTH SCIENCE MAJOR AND MINOR

The non-teaching major and minor program is a broad flexible course of instruction for those who plan to work in conservation, state and federal parks and planning agencies. The program is interdisciplinary in nature and offers students an opportunity to select earth science and related courses from the departments of geology, agriculture, biology, geography, chemistry, physics and others. The selection of courses is done in consultation with the earth science advisor in order to construct programs which will satisfy student needs and professional objectives. A complete list of approved courses is available from the Department of Geology.

COURSE DESCRIPTIONS

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

100 Earth Studies 4 hrs. Fall, Winter, Spring

The earth we live on is both friend and foe. It provides for us only if we understand it. If not, it becomes a harsh environment which might permit us to only eke out a primitive existence. Geology 100 introduces students to the stuff of which the earth is made, to the processes which have created the earth as we know it and to the geological hazards which affect our environment. Included are such topics as rocks and minerals, earthquakes and the structure of the earth, water occurrences and resources, glaciers, volcanoes, oceanography, continental drift, sea floor spreading, and plate tectonics, and the origin and evolution of life.

107 Planetary Science in Elementary Education 4 hrs.

An interdisciplinary study of the earth, atmosphere, solar system and universe, and their relationships and interactions. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites) Not recommended for science majors.
College of Arts and Sciences

130 Physical Geology 4 hrs. Fall, Winter, Spring
A study of the common rocks and minerals and the geologic processes acting upon these materials that form the structure and surface features of the earth. Three lectures and a two-hour laboratory period.

131 Earth History and Evolution 4 hrs. Fall, Winter, Spring
Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: Geology 130 or consent.

300 Oceanography 3 hrs. Fall, Winter, Spring
Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography. Lecture 3 hours a week.

301 Minerals and Rocks 3 hrs. Winter
A one-semester course covering hand specimen mineralogy and petrology; includes introduction to crystallography, physical and chemical properties of minerals, and rock description and genesis. Will not count toward a major in geology. Prerequisite: Geology 100 or 130.

307 Teaching of Earth Science 2 hrs. Winter
Philosophy, objectives, and methods of teaching secondary school earth science. Designed for earth science majors and minors. One hour lecture and two hours of lab. Prerequisites: 16 hours of Earth Science (including Geology 100 or 130) or consent.

312 Geology of the National Parks and Monuments 2-3 hrs.
A study of the origin of geologic features and the development of landscapes through geologic time in National Parks and selected Monuments. Students will be expected to read extensively in the available literature. Lecture 2 hours per week (2 credits). Optional Laboratory: Rocks, fossils, geologic maps and cross-sections of distinctive park areas will be studied (2 hours per week, 1 credit).

335 Mineralogy 4 hrs. Fall
Introduction of crystallography, crystal chemistry, and determinative mineralogy. Physical and chemical properties, occurrence, uses and determination of about 100 minerals. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 100 or 130 and General Chemistry or consent of instructor.

336 Optical Mineralogy 3 hrs. Winter
Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 335.

339 Field Studies in Geology 1-6 hrs.
Field study of specific subjects in Geology. Subject offered will be announced in advance and selected from: Field mapping, stratigraphy and sedimentation, regional geology, and so forth. The required course, Geology 339, in the teaching of Earth Science Major is normally taught the two weeks of summer prior to the fall term, but may be offered at other times during the summer. Students planning to take this course should check with the Earth Science advisor in the Department of Geology.

430 Structural Geology 3 hrs. Winter
Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Lecture 2 hours a week. Laboratory 2 hours a week. Prerequisites: Geology 131 and 440, or consent of instructor.

434 Problems in Geology 1-3 hrs.
Intensive reading and research on a topic in geology under the direction of a member of the geology faculty. Prerequisite: 16 hours in Geology and permission of instructor.
440 Petrology and Petrography 3 hrs. Fall  
Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisite: Geology 336.

444 Environmental Geology 3 hrs.  
*It has been said that Environmental Geology is a ridiculous term because all geology is environmental. It might also be said that all our earthly environment is geological — or intimately dependent on it. Environmental geology encompasses such critical subjects as the occurrence, utilization and limitations of our natural resources (rocks, minerals and fossil fuels); the cause, effects and hopefully the predictions of earthquakes; the requirements and hazards associated with construction sites; the occurrence and availability of water resources; the problems of waste disposal and many others. The course utilizes professional and semi-professional papers and will involve case studies.*

502 Special Problems in Earth Science 1-3 hrs. Fall, Winter  
Individual problems involving topical reading and/or research problems in earth sciences. May be repeated for credit. Prerequisite: Consent of instructor.

505 Regional Geomorphology of the United States 3 hrs.  
A study of geomorphic processes and landforms by consideration of geologic regions of the United States. Prerequisite: Geology 131 or consent.

520 Economic Geology 3 hrs.  
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, mineral fuels, and water. Lecture 3 hours a week. Prerequisite: Geology 335, or consent of instructor.

530 Plate Tectonics and Earth Structure 3 hrs.  
Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenents of plate tectonics. Prerequisites: Geology 131, 301, or 335.

532 Surficial Processes and Groundwater Geology 3 hrs.  
Detailed consideration of fluvial, eolian and glacial processes and the geologic aspects of surface water and groundwater hydrology. Qualitative and quantitative aspects of groundwater movement, location, and evaluation and the influences of man on the hydrologic system.

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 Terrigenous Depositional Systems 4 hrs.  
Processes, characteristics, and relationships among fluvial, deltaic, strand plain, lagoon, shelf, and slope terrigenous depositional systems. Laboratory includes textural analysis; sedimentary structures; paleocurrent analysis; electric logs, subsurface maps, and application of statistical and computer methods to the solution of sedimentologic problems; and basin analysis. Course includes a 3-day field trip. Three lectures and one three-hour laboratory per week. Prerequisite: Geology 131.

536 Glacial Geology 3 hrs. Spring  
A study of the mechanics of glacier movement, processes of glacial erosion and deposition, and the distribution of glacial features in space and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Prerequisites: Geology 131 and consent of instructor.
543 Paleoecology

Study will include the ecology, life, habits and environmental interactions of ancient organisms. Prerequisite: Geology 533 or Biology 541.

545 Carbonate and Evaporite Depositional Systems

Processes, characteristics, and relationships of modern and ancient platform and basinal carbonate and evaporite facies. Course includes an 11-day field trip (Spring Vacation) to investigate Holocene, Pleistocene, and Tertiary carbonate environments and facies in Florida; and a 3-day trip to northern Indiana and Ohio to examine Silurian Platform carbonates. Student projects include logging; description, and interpretation of core and slabs at the mesoscopic level. Two 2-hour meetings per week. Prerequisites: Geology 533, Geology 535 and consent.

560 Exploration Geophysics

Introduction to geophysical exploration methods including seismic reflection and refraction, gravity, electric, and electro magnetics. Prerequisites: Physics 111; Mathematics 106, 123; Geology 130.
History

Ernst A. Breisach, Chairman
George T. Beech
Alan S. Brown
Walter J. Brunhumer
Richard T. Burke
Lewis H. Carlson
Albert E. Castel
Sherwood S. Cordier
Ronald W. Davis
Edward O. Elsasser
Ross Gregory
Robert J. Hahn
H. Nicholas Hamner
Graham P. Hawks
John T. Houdek
Paul L. Maier
Gilbert W. Morell
Howard A. Mowen
Andrew C. Nahm
Emanuel Nodel
Dale P. Pattison
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.

Students planning to major in History should get a copy of the History Major Handbook from the Department office (4075 Friedmann) promptly after choosing their major.

Since each major is unique, appropriate cognate courses will vary widely from student to student. Therefore History students should choose cognates according to their particular needs after consultation with their History advisers.

Students planning to do graduate work beyond the M.A. are advised to study two languages. French and German are most frequently required in graduate school. Students planning to teach History in the Secondary school should elect Social Science 300, Teaching of Social Studies in Secondary Schools, and those planning to teach in the Elementary school should take Social Science 507, Teaching of Social Studies in Elementary Schools. Credit earned in these courses cannot be counted toward a History major or minor.

Courses taken on a Credit/No Credit basis may not be counted toward the major, except with the approval of the Department Chairman or Administrative Assistant. While many graduate schools will accept students who have elected a significant amount of work on a Credit/No Credit basis, admission may then depend on the results of the Graduate Record Examination or some comparable test. Graduate schools and school employers generally favor those applicants who have good letter grades on their transcripts.

REQUIREMENTS FOR THE MAJOR

I. Basic Courses: The following four basic courses or their equivalents:
   A. Early Western World (Hist. 100) and Modern Western World (Hist. 101)
   B. United States History (Hist. 210 and 211)
II. Non-European Area: One course chosen from:
   341 Soviet Union
   349 Ancient Near East
   370 History of Latin America
   371 Contemporary Latin America
   380 Introduction to Asian History and Civilization
   381 Modern Far East
   386 Introduction to African History and Civilization
   389 The Modern Middle East
III. Advanced Courses: A minimum of five courses taken in at least three of the following fields, one of which must be a 500 course other than 510 and 598:

A. North American History: (310, 312, 314, 315, 316, 317, 319, 375, 514, 518, 520, 521, 522, 523, 524, 525, 526, 527)

IV. Colloquium:
A. Colloquium: History Teaching in High School
   OR
B. Colloquium: History as a Discipline

V. Earn an overall average of "C" or better for all courses counted toward the major and no grade lower than "C" in any course numbered 300 or above which is to be counted as part of the major.

REQUIREMENTS FOR THE MINOR

1. I and II above
2. Any two additional advanced History courses numbered 300 or above
3. Requirement V above

Special Provisions

The Department will consider deviations from the above stated requirements. Such deviations must be approved by the Administrative Assistant. It will be necessary for the student to demonstrate familiarity with the subject matter in question.

Honors students in History should arrange, as early as possible, a conference with the departmental Honors adviser in order to work out an appropriate program.

TRANSFER CREDIT

A major in History must complete at this University a minimum of four History courses counted towards the major. This requirement might be waived with the permission of the Department, provided 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 advisor.
I. GENERAL COURSES:

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

100 The Early Western World 4 hrs.
Throughout the centuries western man has constantly adjusted his life style in response to the challenge of his times. In the process he has created many government forms, social structures, interpretations of man, ideological systems, and modes of artistic expression. The course examines these creations and shows how the historian analyzes the patterns of persistence and change which they reflect. Periods covered: Ancient Greece, Ancient Rome, Middle Ages, Renaissance, Reformation.

101 The Modern Western World 4 hrs.
Throughout the centuries western man has constantly adjusted his life style in response to the challenge of his times. In the process he has created many government forms, social structures, interpretations of man, ideological systems, and modes of artistic expression. The course examines these creations and shows how the historian analyzes the patterns of persistence and change which they reflect. Period covered: 1648-the Present.

102 History Through Literature 3 hrs.
The written works of any age reveal the moods, tensions, interests, outlook, and tastes of that period. This course is an introduction to historical literature. In it the effects of wars, revolutions, depressions, machines, and social conditions will be revealed through novels and other writings. How men have reacted to their problems in the past will suggest how we may deal with those of the present.

103 History and Current Events 3 hrs.
The mass media supply modern man with such a wealth of information on current social, political, and economic developments that confusion often results. Nevertheless the citizen of a democratic state is expected to make well-considered choices. This course will show what History can contribute to gaining perspectives which help organize and thus understand current events.

104 America and Her Minorities 3 hrs.
This course will focus on mainstream America and her attitudes and actions toward the various ethnic minorities. It will not be a history of each concerned minority, although minority reactions to majority actions will be examined. Native Americans, Chicanos, Blacks, Chinese, Japanese, Jews, and Southern and Eastern Europeans will be included. The sources to be used will be Presidential addresses and actions, Congressional debates and legislation, Supreme Court decisions, scholarly and scientific writing, and the popular arts, such as newspapers, wide-circulation magazines, best-selling novels, cartoons, films, radio, pop tunes, and advertising.

105 Man and His Environment Throughout History 3 hrs.
An examination of the relationship between man and his environment in historical perspective. The course approaches both mankind and the environment as evolving phenomena in an attempt to demonstrate the many variables involved when different types of political, social, and economic organizations interact with the many types of environments in the world, which are themselves changing constantly. Current relationships between mankind and the world environment are placed in perspective by considering past examples of environmental change and human adaptability.

210 United States to 1877 3 hrs.
This is an introductory course, but not the traditional narrative survey. Emphasis is placed upon basic intellectual, political, economic, and social influences that have shaped American life. Selected themes that reveal continuities in the American experience are used to introduce students to problems encountered in the study of History.
211 United States Since 1877

A continuation of History 210, with an emphasis upon the emergence of the United States as a world power and the consequences of this development. Again, the focus is upon selected themes such as urbanization, industrialization, and reform that reveal continuities in the American experience. Particular attention is given to various attempts to interpret twentieth century American development.

II. SPECIALIZED COURSES

300 Issues in History

This course is designed to show the usefulness of the historical approach for the understanding of the great and relevant issues confronting modern man. This course will offer multiple sections, each of which may deal with a different topic as listed in the Schedule of Classes. The course may be repeated for separate credit so long as the topic varies. Representative topics which may be treated include the Palestinian problem, contemporary British thought, the military in modern German society, Americans and nature, and European social revolutions.

301 Law and Justice in Western History

The theorist who devises the ritual of the law, the advocate who argues it, and the judge who pronounces it; the philosopher who examines ethical principle and the moralist who expresses it; he who investigates crime, he who commits it, and he who punishes the criminal; the ordinary man who is sustained, ennobled, abandoned or oppressed by the moral customs of his fellows — all are familiar figures in any organized society, and their activities and the manner in which these interact help establish the tone and quality of life of that society. The course observes and analyzes these activities on a comparative basis over the centuries of Western history.

302 History of Medicine and Medical Care

A study of the development of medicine throughout history. Medicine will be covered as (1) a science, (2) a healing agency, and (3) a social institution. Topics under (1) will include: Near Eastern medicine, Hippocratic medicine, medical science at Alexandria, Galen and Greek medicine at Rome, the transmission of Greek medicine through the Arabic and Byzantine cultures, medical theory and practice in the Middle Ages, the Renaissance recovery of ancient Greek medical writings, emergence of modern medical concepts, specifically the emergence of the cell theory and cellular pathology, the germ theory of disease, the rise of bacteriology and immunology. (2) Will deal with the development of methods of diagnosis, of treatment, and of hospitals, and the evolution of the nursing profession. (3) Will show the changing role of medical experts in different cultures; the types of medical education in the past; the development of medical social work as well as of organization and social role of medical research.

303 Woman in the Western World

What did a woman have to be or do in order to be valued in a male dominated culture? This course is designed to explore the condition of women in various periods of European and American history from ancient Greece to America of the 70's. Attention will be given to women's roles and status in each period in order to come to some conclusions about women's contributions to Western history and culture.

304 Business History

This course will focus on business and business leaders as an integral part of society. Extensive use will be made of the 'case' study method and business biography to explore questions of production, distribution, finance, management, and industrial and public relations in a variety of historical settings. The case study topics will cover the whole range of Western history with a special emphasis on the American experience, one which can not be properly understood without taking business and its development into account.

306 Main Currents of Early Western Thought

In this course we will consider the ideas and values which are the legacy of the early West to modern man. We will study ancient Near Eastern myth; the Jewish concepts of God, man, and time; the Greek philosophical mind; and the early Christian religion. We will also see how these elements were combined in the Middle Ages to form something new, the "West" with its ideas of progress and order, science and faith, rationalism and mysticism.
307 Main Currents of Modern Western Thought

The nature and prospects of the history of ideas; the Renaissance and Reformation and the transition from medieval values; the scientific revolution of the 17th century; the baroque; the 18th century Enlightenment; 19th century romanticism, liberalism, nationalism, socialism and materialism; formation and leading features of the contemporary world view.

308 Mainstreet U.S.A.: 1850-1970

"Community history" can often provide insight into the way that ordinary Americans have lived and worked and responded to national issues. Students will assess the impact of literature, movies, radio and television as they examine the role of the mass media in small-city culture through a focus on such topics as World War I, the Twenties, the Depression, World War II, and the Television Generation. In addition, they will learn to use archival materials, public records, and oral history to explore the effect of government policies, population movements, railroads and highways, steam and electric power, communications improvements, industrialization, etc., on the development of cities of less than 300,000 people.

310 History of Michigan

The development of Michigan from a primitive wilderness to an industrial state, with emphasis on the relation of the history of the state to that of the nation.

312 Representative Americans

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 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 U.S. Economic History

A study of American economic growth and change from colonial beginnings to the present. Major topics or themes examined include: the changing fortunes and significance of various socio-economic groups, the impact of technology and research, the growing role of government, and the causes and consequences of the revolutions in agriculture, transportation, and industry. Attention is given to the quantitative approach to the problem of generalization in economic history.

317 The History of the United States Constitution

The Constitution is the Supreme Law of the Land. But judges apply that law. Consequently judges exercise far more power in the United States than in any other nation. How and why did this occur? And with what results, good and bad?

318 Popular Culture in 20th Century America

This course includes a brief introduction to the various elements of popular culture (pulp fiction and best-sellers, comics, cartoons, mass circulation periodicals, movies, radio, television, music, humor, sports, and advertising) and applied these elements to the historical study of 20th Century America.
319 America and War

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.

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 survey course is designed to give the student a knowledge and appreciation of the various facets of the history of the Union of Soviet Socialist Republics from 1917 to the present. Aspects of the U.S.S.R. that are studied include Marxism-Leninism, the Communist Party, the government, foreign policy, planned economy, the systems of health and education; and contemporary art, literature, and music.

342 Great Britain and the British Empire

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 Modern 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.

347 Modern France

An examination of factors in French life in the 19th and 20th centuries fostering stability and instability, growth and stagnation, harmony and conflict, triumph and tragedy.

349 The Ancient Near East

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 dissenters. We will also briefly consider how medieval attitudes changed during the crisis of the Fourteenth Century, the Renaissance, and the Reformation.

370 History of Latin America

A survey is undertaken of the historical development of the Latin American region from its pre-Columbian Indian and Spanish ancestry to its contemporary expression in national entities. Attention is given to men and motives as well as the institutions and attitudes insofar as each of them determined the character of a given epoch and contributed to the pattern of overall development.

371 Contemporary Latin America

There is undertaken here an analysis of contemporary Latin America, a world area of immediate and future critical import in the affairs of mankind. An effort is made to gauge the origins, depth, and intensity of the dynamic forces and impulses which are inexorably wrenching Latin America out of a tradition-encrusted mold and forming it anew.

375 Canadian History

Canadian History is a survey of that country's past from the first explorations and the beginnings of the fur trade in the 16th century to the new nationalism of the 1970's. Special attention is given to the sources of Anglo-French division and Canada's changing relationship with the United States.

380 Introduction to Asian History and Civilization

An examination and analysis of the natural and human environment of the early Asian peoples and the emergence of philosophical, political, economic, social, and religious thoughts and corresponding ways of life of the Asians. A study of the encounter between the East and the West, and of how Asian people responded to the challenges from the West. Primary emphasis will be placed on the Hindu, the Moslem, the Confucian, the Buddhist, and the Shinton cultural regions in Asia.

381 The Modern Far East

A survey of the international relations of China, Japan, and Korea; reform and revolutionary movements in East Asia; aims and techniques of modernization and Westernization; the rise and fall of militaristic Japan; political and social upheavals, and the emergence of communism in China; and the rise of two Koreas.
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.

Modern Middle East  3 hrs.

The Middle East since the collapse of the Ottoman Empire at the close of World War I. Emphasis is upon the history of the Arab-Israeli conflict, which may be seen as thematic of the clash of the major forces shaping the modern Middle East, including Arab nationalism, Zionism, and colonialism.

Introduction to the Study of History  2 hrs.

Human life changes constantly. The historian analyzes these changes when he studies the life expressions of past generations. How the historian works at his task of "reconstructing" the past, the problems he encounters, and the various results he produces are the topics of the course.

Great Historians  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.

History of War  3 hrs.

The history of war from the age of Louis XIV to the era of the World Wars. An examination of the evolution of war and the role of conflict in international relations.

History Colloquium A - Education  1 hr.

In seven two-hour sessions students will be introduced to the work situation they can expect as historians teaching in secondary schools. Secondary teachers will speak on new and old teaching methods, trends in the history curriculum, and general professional activities of a history teacher.

History Colloquium B  1 hr.

Majors in History not intending to teach are introduced to general problems involved in the study of History. This will be done most often through discussion of research and writing by historians who have themselves done creative work in their field.

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.

Honors Seminar  1 hr.

Presentation of an Honors Essay by students enrolled in the Department Honors program. Such students apply to the department Honors adviser for admission to this course prior to registration time.

Problems in History  2-3 hrs.

This course is designed to show the usefulness of the historical approach for the understanding of the great and relevant issues confronting modern man. This course will offer multiple sections, each of which may deal with a different topic as listed in the Schedule of Classes. The course may be repeated for separate credit as long as the topic varies. Representative topics which may be treated include the Palestinian problem, contemporary British thought, the military in modern German society, Americans and nature, and European social revolutions.
501 Studies in European History  
The topics will be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics will be chosen from those areas of European history which are not adequately covered by regularly scheduled courses.

502 Studies in Non-Western History  
The topics will be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics will be chosen from those areas of African, Latin American, and Asian History which are not adequately covered by regularly scheduled courses.

509 Myth and Reality in the American Past  
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.

510 Field Experience in History  

511 Introduction to Museum and Archive Work  
Lectures, demonstrations, readings, discussion, and work experiences in museum archive theory and technique introduce the student to the types of work curators of historical museums and archives do.

514 Black History: The Impact of Black People on American Thought and Life  
Intellectuals and politicians have defined the place of black people in American history in ways that affect our understanding of the present. American writers, theologians, social scientists, and politicians have also contributed to current stereotypes. In this course, students will have an opportunity to explore “popular” interpretations of slavery, abolition, race-thinking, etc., as each has been used to explain recent events. The writings of men like Martin Delaney, W. E. B. DuBois, Marcus Garvey and Malcolm X challenge widely held beliefs about the past and provide fresh perspectives on contemporary America.

518 History of United States Foreign Relations  
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.

520 Colonial America  
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  
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  
The United States is a democracy. Or is it? This course attempts to answer that question by examining the origin and development of American political institutions during a time that is much like our own — that is, a time of rapid changes and intense ideological, racial, international, sectional, and personal conflict.
523 The American West 3 hrs.
A study of the exploration, conquest, and occupation of the North American continent. Among the topics included are Indian relations, the fur trade, land disposition, the cattle frontier, the mining frontier, and problems of law and order.

524 The Civil War and Reconstruction 3 hrs.
Between 1861 and 1865 over 600,000 Americans died fighting each other. Why? And with what results? The answers to these questions do not simply illuminate the past; they also tell us much about the present — a present in which many of the basic factors which produced the Civil War are still operating.

525 The Emergence of Modern America, 1877-1914 3 hrs.
This course will focus on the causes and consequences of industrialization, urbanization, progressivism, and the concurrent revolutions in agriculture, transportation, and communications. Attention will also be given to changing attitudes and values, the problems of generalization, and the anonymous American.

526 The U.S. Between World Wars (1914-40) 3 hrs.
For most Americans the twentieth century began with World War I; an examination of our response to the historical realities of the ensuing era can serve to clarify the dimensions and complexities of contemporary America. This course will emphasize the anonymous American through his political leaders, social and economic aspirations, religious devotions, international hopes and fears, and popular entertainments.

527 Contemporary America: 1940 to the Present 3 hrs.
Beginning with the background to the Second World War, this course brings American history as close to the present as possible. It follows the nation's change from detachment before the war to entanglement in the 1960's in problems all over the world. It deals with the efforts of the nation and groups within the nation to cope with the enormous political, economic, and social problems of the decades after the war. The course considers conflicting opinion on various issues, seeks to view events from both the perspective of the present and the time of their occurrence.

534 Medieval France 3 hrs.
A study of the formation of the French people and nation during the thousand years which followed the fall of the Roman Empire in the 5th century A.D. Threatening this process were the disruptive forces of provincialism and invasion by foreigners. Contributing to its success were the growth of a unified church, a national monarchy, the expansion of a vigorous rural and urban economy, and the development of a national language and literature.

535 Medieval England 3 hrs.
The story of the growth of the English people from scattered tribes of Anglo-Saxon invaders in the 5th century into one of the most highly organized European nations by the 15th century. Basic to this growth were the creation of a powerful kingship based on a common law and Parliament, the establishment of a vigorous national church, the prosperity of countryside and town, and the development of national language and literature.

538 Victorian England: The Era of the Middle Class 3 hrs.
A look at the years of Victoria's long reign as Great Britain attempted to solve the problems caused by the French and Economic Revolutions through parliamentary reform and additional democracy, resulting in the transition from a rural to an urban society; the rise of the middle class to a position of dominance; and the emergence of Britain as the greatest industrial nation and the most powerful empire in the world.

539 Contemporary Britain: The Era of the Common Man 3 hrs.
An exploration of the history of Great Britain during the crucial years of challenge to 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.
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.

551 Imperial Rome (The First Century)  
A study in depth of Roman politics and culture from the close of the Republic through the reigns of the emperors Augustus, Tiberius, Caligula, Claudius, and Nero. Emphasis will be placed on use of original sources in shaping the history of the century 30 B.C. to 70 A.D.

522 The Medieval Church  
Christianity is the most obvious and perhaps, the most important element in early Western culture. In this course we are not so much interested in the Church as an institution as in the growth of Western culture in the age — from the time of Jesus to that of Luther — in which Christian values were so important in everyday life. Among the topics we will consider are the impact of the classical and Germanic cultures on the Church, the church and feudalism, church-state relations, the rise and fall of papal theocracy, scholasticism, and mysticism. The emphasis throughout will be on topics most important for the understanding of our own values and society.

553 Life in the Middle Ages  
This course seeks to capture the reality of everyday life for the three main groups of lay people in medieval society, peasants, nobles, and townspeople, by studying members of each of those groups from the following viewpoints: (1) the ways in which they made a living, i.e., their work, the way it was organized, as for instance in the manor or the guild, and the methods, techniques, and equipment available to them; (2) the ways in which they spent their leisure time; (3) their standard of living as measured by their food, clothing, and other material possessions; (4) the social groups of which they were members and which gave meaning to their lives such as the family, the local community, and their social class; (5) their beliefs, values, and general outlook with special emphasis on the consequences of widespread illiteracy — the course will not discuss the culture of the educated elite such as in medieval philosophy and theology; and finally (6) their normal life cycle from childhood to old age looking at decisive events such as marriage, the birth of children, and death, and giving special attention to the high birth and death rates and low life expectancy, and their causes and consequences.

554 The Renaissance  
Between 1300 and 1517 great changes in European life were brought about by the catastrophic Black Death, the activities of merchant 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  
After 1517 the Western church broke apart and with it vanished the last remainder of European unity. Luther, Calvin, and Zwingli reshaped religious thought. Regional churches appeared. The Roman Catholic Church underwent a renewal. All of that was accompanied by bitter religious wars but also by early traces of the sciences, visionary social schemes, and a feverish artistic activity.

558 Eighteenth Century Europe  
A wide-ranging study of a creative period during which many modern institutions and values took form: social structure and economic development; domestic politics and international relations; currents in religion and the arts; the Enlightenment.

559 The French Revolution and Napoleon  
Theories respecting the French and related revolutions, and the nature of revolution and of the revolutionary psychology; the 18th century background; the moderate and radical phases of the Revolution proper; the rise and fall of the Napoleonic Empire
560 Nineteenth Century Europe
A study of the revolutionary currents pulsating through Europe in the 19th century, of the conflicts they engendered, and the profound changes they wrought.

562 Hitler's Europe: 1914-1945
The first modern generation of Europe is associated with an era of unprecedented violence. The course is concerned with the experiences of people and the events of states that raise questions as to the dynamics of revolution, hate, idealism, propaganda, optimism, wars, economic ambitions, progress, and murder.

563 Europe Since 1945
The recovery of Europe from World War II; the movement toward European unity; the defense of Europe; and the role of Europe in the international community.

571 Mexico: The Building of a Nation
A review of the 19th century 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.

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.

583 Modern Japan
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
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
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
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
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.

593 Philosophy of History
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 or 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.

598 Independent Reading in History

For the gifted student with special interests. The usual requirements are: a 2.7 minimum overall grade point average and a 3.0 minimum grade point average in all History courses. Reading on some selected period or topic under the supervision of a member of the History faculty, with the approval of the supervising instructor and the chairman of the Department's individualized courses prior to registration.
Modern and Classical Languages

Roger L. Cole, Chairman
Elsa Alvarez
John Benson
Mercedes Cardenas
Victor Coutant
Monique Y. Coyne
Benjamin Ebling
RobertFelkel
Jeffrey Gardiner

Elizabeth Giedeman
Robert Griffin
Paule M. Hammack
Herb B. Jones
Johannes Kissel
Peter W. Krawutschke
William McGranahan
Genevieve Orr

George F. Osmun
Joseph Reish
James D. Semelroth
Irene V. Storoshenko
Herman Teichert
Lindsey Wilhite
Richard Wyatt

GENERAL

For students majoring or minoring in a modern foreign language a course in modern European history is desirable. For Latin majors and minors a course in Roman history is recommended. A student may apply four credits towards a Latin major by taking both Greek 100 and 101. English majors are encouraged to take as much beyond the minimum in a foreign language as they can handle.

All students (freshmen or upper classmen) who wish to continue in a language they have studied in high school must take a placement examination. It may be used as a qualifying examination to exempt students for specific language requirements. The examination is given prior to each registration period and scores are posted in time for registration. Students must register according to their placement score.

The department considers one year of high school work equivalent to one semester of University work. Consequently:

1. A student underplacing receives no more than eight hours of University credit and no more than four hours credit towards a major or a minor until he reaches the level where he should have been.

2. A student may overplace by one or two courses. This student is allowed to decide on whether to omit the course overplaced. If he chooses to omit the course, he is eligible to receive credit. In order to qualify for this, he must check with the Placement Director.

Native speakers of a given language must consult with a departmental advisor before registering for courses up through the 300 level. A student planning a language major should consult with a departmental advisor as early as possible and obtain a recommendation form to insure proper planning and avoid subsequent difficulties.

The undergraduate major consists of a minimum of 30 credit hours (minimum of 20 credit hours for an undergraduate minor) beyond the 100-level (basic) courses. At least two 500-level courses must be included. All majors and minors are below.

Classical Humanities Major
Thirty hours beyond the 100-level in Latin. Latin 200-201 required; remaining hours from the core and cognate groups (at least three courses from each group). Teaching majors (36 hours) must also include Latin 324 and 557 (or other methods course).

French Major
Thirty hours beyond 100-level to include 316, 317, 328, 329 and two 500-level courses (one of them must be 560). Students in the Secondary Education Curriculum who are required to take Modern Language Instruction 558 may count this course as one of the 500 courses.
German Major
Thirty hours beyond the 100-level to include 316, 317, 325 and at least two 500-level courses other than 558. Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558.

Latin Major
Thirty hours beyond the 100-level with courses selected from the 200-500 series. Teaching majors must include 200, 201, 324, 550, 557 and 560.

Russian Major
Thirty hours beyond the 100-level to include 310, 316, 317, 328, 375, and at least two 500-level courses.

Spanish Major
Thirty hours beyond the 100-level to include 322 or 323, 325 and three 500-level courses (to include 6 hrs. of 526, 527, 528, 529 or 560). Students in the Secondary Education Curriculum are required to take Modern Language Instruction 558 which will be accepted in place of one 500-level literature course.

Teaching certification is approved for majors or minors in both secondary and elementary education for the following languages: French, German, Latin (secondary only), Russian, and Spanish.

A language methods course is required for all teaching majors in the modern languages and Latin (557 is required for Latin Majors). Exceptions to the patterns may be granted only by Departmental permission.

For details concerning additional graduate offerings and the Master's Degree in Language (in French, German, Latin or Spanish) consult the current Bulletin of the Graduate College.

For courses in Independent Study, consult listings under the individual language concerned.

Only courses in which a grade of "C" or better is obtained can be counted toward a major or minor.

FOREIGN CREDITS

Credit for language study at a foreign university may be granted on official proof that the student has completed his course work 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, colloquia, 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 for courses.
FOREIGN LITERATURE IN ENGLISH TRANSLATION

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

These courses will survey literary masterpieces of other countries in English translation. They are open to any student and there is no foreign language prerequisite. The courses will be taught entirely in English by specialists in the areas.

French 375 (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.

Spanish 376 Spanish Literature in English Translation 3 hrs.
Selected Spanish prose and poetry from the Middle Ages to the twentieth century. The course will include, but will not be restricted to, works by Lope de Vega, Cervantes, St. Teresa, Calderon de la Barca, Unamuno and Garcia Lorca, as well as the anonymous Poem of the Cid and Lazarillo de Tormes. This course does not apply toward a major or minor in Spanish. No prerequisite.

CLASSICS COURSES IN ENGLISH

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

Courses 360, 375 and 450 will use selections from Greek and Latin literature in English translation as the basis for content and discussion. Each will show its literary and cultural influence on later life. All five courses listed below will be taught entirely in English, have no foreign language requirement, and are open to any student.

250 (Classics) Ancient-Modern Studies 3 hrs.
The course is designed to examine the Greco-Roman world and its influence on the modern world in as many perspectives as possible. Examples: the rebel in society, concepts of justice, ancient literary criticism, ancient and modern technology, Topics vary and will be announced each year. May be repeated for credit with different topics.

350 (Classics) Classical Archaeology of the Aegean World 3 hrs.
A course dealing with the classic forms of art and architecture as they developed from the Cretan civilization to the height of Greek culture and as they were reflected in later Roman civilization. No prerequisite.
305 Languages

360 (Classics) The Role of Women in Ancient Greece and Rome 3 hrs.
Observations through the reading in English of selections from Greek and Latin prose and poetry of the status of women in ancient society, their contributions to literature and culture, and a comparison with the position of women in modern society. No prerequisite.

375 (575) (Classics) Classical Drama in Translation 3 hrs.
Reading and analysis of selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes as dramas and as expression of the Greek view of life. Some attention to Roman drama. No prerequisite.

450 (568) (Classics) Classical Greek and Roman Mythology 3 hrs.
Investigates the origins, elements, and interpretations of the principal myths and legends of Greece and Rome and their preservation not only in literature, but also in painting, music and sculpture. No prerequisite.

LANGUAGE TEACHING COURSES

558 Modern Language Instruction (in French, German, Spanish or other language) 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.
These methods courses will be offered regularly. The comparable methods course for Latin, 557 Teaching of Latin, is described under Classical Studies below.

CLASSICAL STUDIES
GREEK, LATIN AND CLASSICS COURSES IN ENGLISH

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

GREEK

100 Basic Greek 4 hrs.
Fundamentals of classical Greek; readings emphasize Greek thought, culture, and civilization.

101 Basic Greek 4 hrs.
Continuation of 100. Prerequisite: Greek 100 or equivalent.

200 Intermediate Greek 3 hrs.
Review of basic grammar and syntax. Selections from Xenophon and Plato. Prerequisite: Greek 101 or equivalent.

201 Intermediate Greek 3 hrs.
Continuation of 200. Prerequisite: Greek 200 or equivalent.

*May not be counted in the minor.
LATIN

100 Basic Latin  4 hrs.
Fundamentals of Latin; readings emphasize Roman thought, culture, and civilization.

101 Basic Latin  4 hrs.
Continuation of 100. Prerequisite: Latin 100 or equivalent.

200 Vergil  4 hrs.
Intermediate Latin. Development in use of fundamental language skills and the understanding and appreciation of the thought and style of the Aeneid. Prerequisite: Latin 101 or two years of high school Latin.

201 Lyric Poetry  4 hrs.
Intermediate Latin. Readings from Latin lyric poems, with special attention to development in use of fundamental language skills, prosody, literary style and appreciation. Prerequisite: Latin 101 or two years of high school Latin.

324 Latin Literature  4 hrs.
Selections from Latin prose and poetry from the beginning of Latin literature through the Silver Age. Prerequisite: Latin 200 or 201 or equivalent.

550 Independent Study in Latin  1-3 hrs.
Directed, individual study of a specific topic or genre in a Latin literary or linguistic area, e.g. biography, bucolic poetry, comedy, history, or satire. Departmental approval required for admission. Prerequisite: a minimum grade point average of 3.0 in the major.

557 Teaching of Latin  3 hrs.

560 Medieval Latin  3 hrs.
A study of the period 500-1500 A.D. when Classical Latin was blending into the new vernaculars to form eventual Romance Languages. Prose and poetic readings include a variety of themes reflecting the intellectual, cultural and religious thinking of the times. Prerequisite: One of Latin 200, 201, 324 or equivalent or permission of instructor.

CLASSICS COURSES IN ENGLISH
(For course descriptions, see page 304)

250 (Classics) Ancient-Modern Studies  3 hrs.
350 (Classics) Classical Archaeology of the Aegean World  3 hrs.
360 (Classics) The Role of Women in Ancient Greece and Rome  3 hrs.
375 (575) (Classics) Classical Drama in Translation  3 hrs.
450 (568) (Classics) Classical Greek and Roman Mythology  3 hrs.

CLASSICAL HUMANITIES INTERDISCIPLINARY PROGRAM
(See page 198 for details)
Languages

FRENCH

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

100 Basic French
Fundamentals of French with audiolingual emphasis. French cultural readings. 4 hrs.

101 Basic French
Continuation of 100. Prerequisite: French 100 or equivalent. 4 hrs.

104 Mini-French for Fashion Merchandising Majors
This course is specifically designed for students with careers in fashion merchandising and will include exposure to relevant fashion terminology, cultural insights, and practice in written and spoken French. 1 hr.

200 Intermediate French
The development of spoken and written expression in the French language with an emphasis on grammar review. Prerequisites: French 101 or two years of high school French, or equivalent. 4 hrs.

201 Intermediate French
The continued development of spoken and written expression in the French language through readings and discussions of civilization and culture materials. Prerequisite: French 200 or equivalent. 4 hrs.

316 French Composition
Emphasis upon increasing the student's command of written French. Prerequisite: French 201 or equivalent. 4 hrs.

317 French Conversation
Exercises to develop ease and accuracy in the use of everyday French. Emphasis on oral aspects of the language. Prerequisite: French 201 or equivalent. 4 hrs.

320 French Phonetics
Study and practice to correct typical difficulties encountered by students of French with Anglo-American patterns of pronunciation; also to study the teaching of French patterns. Prerequisite: French 200 or equivalent. (French 320 may be taken concurrently with French 201.) 3 hrs.

322 French Civilization
A study of selected aspects of French life and culture and their historical settings. Prerequisite: French 201 or equivalent. 3 hrs.

328 Introduction to French Prose
A close examination of selected French prose works, to include the novel, the short story and the essay. Prerequisites: French 316 and 317 or permission of instructor. 3 hrs.

329 Introduction to French Poetry and Drama
A close examination of selected French poetry and dramatic literature. Prerequisites: French 316 and 317 or permission of instructor. 3 hrs.

OPEN TO UPPERCLASSMEN

400 Elementary Reading for Graduate Proficiency
Basic grammar and elementary reading for translation and research purposes. The course is for the graduate 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. 4 hrs.
401 Intermediate Reading for Graduate Proficiency
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student's major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Open to advanced undergraduates upon recommendation of department chairman and by "C" card.

544 Seminar in France
A summer study of French language, literature, and culture concentrated at Grenoble and Paris. The course consists of formal study at the University of Grenoble with regularly scheduled lectures and discussions in the French language. The session at Grenoble is supplemented by an organized tour of Paris with full explanations by an instructor for all points visited. Each student submits a term paper investigating one phase of his studies of particular interest to him. Graduate or undergraduate credit. Prerequisite: French 200 or equivalent or permission of instructor.

550 Independent Study in French
Directed individual study of a specific topic in a French literary or linguistic area. Departmental approval required for admission. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

551 Advanced French Grammar and Composition
Intensive review of French structure and practice in composition. Prerequisite: French 316 and 317 or equivalent.

552 Advanced French Conversation
Intensive practice with spoken French. Prerequisite: French 316 and 317 or equivalent.

560 Studies in French 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. Prerequisites: French 316, 317, 328 and 329 or permission of instructor. Representative topics which may be treated in this area include:
- Medieval Literature — Outstanding works from various genres of the medieval period, such as chansons de geste, romans courtois, didactic works, farces, and poetry.
- Renaissance Literature — Outstanding works from the period, to include Montaigne, Rabelais and the Pèleride.
- Seventeenth Century Literature — Literary trends of the seventeenth century to include Corneille, Molière, Racine, Pascal, and La Rochefoucauld.
- Eighteenth Century Literature — Literature and philosophies of the French Enlightenment, to include major works by Voltaire, Rousseau, Diderot and Montesquieu.
- 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

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

100 Basic German
Fundamentals of German with audiolingual emphasis. German cultural readings. Does not count toward a major or a minor.

101 Basic German
Continuation of 100. Prerequisite: German 100 or equivalent. Does not count toward a major or a minor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Intermediate German</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>The development of spoken and written expression in the German language with an emphasis on grammar review. Prerequisites: German 101 or two years of high school German, or equivalent.</td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>Intermediate German</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>The continued development of spoken and written expression in the German language through readings and discussions of civilization and culture materials. Prerequisite: German 200 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>316</td>
<td>German Composition</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Emphasis upon increasing the student's command of written German. Prerequisite: German 201 or equivalent. (German 316 may be taken concurrently with German 201.)</td>
<td></td>
</tr>
<tr>
<td>317</td>
<td>German Conversation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Emphasis upon increasing the student's command of spoken German. Prerequisite: German 201 or equivalent. (German 317 may be taken concurrently with German 201.)</td>
<td></td>
</tr>
<tr>
<td>322</td>
<td>German Life and Culture</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Investigates cultural aspects necessary for an understanding of Germany. Historic, geographic, social and religious factors are treated. Prerequisites: German 316 and 317. (German 316 and 317 may be taken concurrently.)</td>
<td></td>
</tr>
<tr>
<td>325</td>
<td>Introduction to the Study of German Literature</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>An appreciation of German literature through reading and critical interpretation of selected works of various literary types. Prerequisites: German 316 and 317 or equivalent. (German 316 and 317 may be taken concurrently.)</td>
<td></td>
</tr>
</tbody>
</table>

**OPEN TO UPPERCLASSMEN**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 student 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>
</tr>
<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>
<td></td>
</tr>
<tr>
<td>528</td>
<td>Survey of German Literature</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: German 316, 317, and 325 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>529</td>
<td>Survey of German Literature</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>A comprehensive study of German literature from German Realism to the present. Prerequisites: German 316, 317, and 325 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in German</td>
<td>1-3 hrs.</td>
</tr>
</tbody>
</table>
College of Arts and Sciences

552 Advanced German Composition 3 hrs.
Intensive practice in composition and stylistics directed towards appreciation of literary and other written expression in German with work in free composition at an advanced level. Prerequisites: German 316 and 317.

553 Advanced German Conversation 3 hrs.
Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: German 316 and 317.

559 History of the German Language 3 hrs.
Survey of the development. Prerequisite: 6 hours of 300-level German or above.

560 Studies in German Literature 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisites: German 316, 317, and 325 or equivalent. Representative topics which may be treated in this area include:

- The Novelle — Survey of the development with representative selections
- Lyric Poetry — Survey of the development with significant selections.
- Nineteenth Century Drama — Primarily Kleist, Grillparzer, Hebbel, and Hauptmann.
- Twentieth Century Drama — Representative selections.

GREEK
(See Classical Studies)

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

100 Basic Italian 4 hrs.
Fundamentals of Italian with audiolingual emphasis. Italian cultural readings.

101 Basic Italian 4 hrs.
Continuation of 100. Prerequisite: Italian 100 or equivalent.

LATIN
(See Classical Studies)

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

100 Basic Russian 4 hrs.
Fundamentals of Russian with audiolingual emphasis.

101 Basic Russian 4 hrs.
Continuation of Russian 100. Prerequisite: Russian 100 or equivalent.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>Russian for Travel</td>
<td>2 hrs.</td>
</tr>
<tr>
<td></td>
<td>This course is specifically designed for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>students, faculty, and individuals outside</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the University community who wish to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>acquire the reading and basic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>communication skills necessary to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>derive the fullest possible benefit from</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a trip to the Soviet Union and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to permit free movement within a Russian</td>
<td></td>
</tr>
<tr>
<td></td>
<td>city without a guide.</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>Scientific Russian</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Basic grammar and practice in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>translation of scientific and technical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>material from Russian to English. Course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>is intended for undergraduates who are</td>
<td></td>
</tr>
<tr>
<td></td>
<td>declared majors in physical or social</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sciences and desire a knowledge of Russian</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for reading purposes only. Course is open</td>
<td></td>
</tr>
<tr>
<td></td>
<td>on a non-credit basis to graduate students</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and interested faculty and staff.</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>Intermediate Russian</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Level two Russian. Review and furthering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of oral and reading skills based upon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>increasingly advanced oral and written</td>
<td></td>
</tr>
<tr>
<td></td>
<td>exercises. Prerequisite: Russian 101 or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>equivalent.</td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>Intermediate Russian</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Continuation of 200. Prerequisite: Russian</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200 or equivalent.</td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>Russian Civilization</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>A study of selected aspects of Russian</td>
<td></td>
</tr>
<tr>
<td></td>
<td>life and culture and their historical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>settings. Prerequisite: Russian 201 or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>its equivalent.</td>
<td></td>
</tr>
<tr>
<td>316</td>
<td>Russian Composition</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Emphasis on increasing the student's</td>
<td></td>
</tr>
<tr>
<td></td>
<td>command of written Russian. Prerequisite:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Russian 201 or equivalent; required for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>majors and minors.</td>
<td></td>
</tr>
<tr>
<td>317</td>
<td>Russian Conversation</td>
<td>4 hrs.</td>
</tr>
<tr>
<td></td>
<td>Emphasis on increasing the student's</td>
<td></td>
</tr>
<tr>
<td></td>
<td>command of spoken Russian. Prerequisite:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Russian 201 or equivalent; required for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>majors and minors.</td>
<td></td>
</tr>
<tr>
<td>328</td>
<td>Introduction to Russian Literature</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Selections of Russian prose and poetry in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the original that represent contemporary,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>modern, and classical Russian writers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: Russian 201 or its</td>
<td></td>
</tr>
<tr>
<td></td>
<td>equivalent; required for majors and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>minors.</td>
<td></td>
</tr>
<tr>
<td>375</td>
<td>Russian Literature in English Translation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>A survey of the development of great</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Russian prose in its historical and cultural context. The course will include but not be restricted to works by Pushkin, Gogol, Turgenev, Dostoevski, Tolstoy, Gorki, Sholokhov, Pasternak, and Solzhenitsyn. The class will be conducted in English and the readings will be in translation. It is open to all university students and is required for all majoring in Russian.</td>
<td></td>
</tr>
<tr>
<td>550</td>
<td>Independent Study in Russian</td>
<td>1-3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Directed individual study of a specific</td>
<td></td>
</tr>
<tr>
<td></td>
<td>topic in a Russian literary or linguistic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>area. Departmental approval required for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>admission. Prerequisite: One 500-level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>course in the major; a minimum grade point</td>
<td></td>
</tr>
<tr>
<td></td>
<td>average of 3.0 in the major. Not open to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>minors.</td>
<td></td>
</tr>
<tr>
<td>552</td>
<td>Advanced Russian Composition and Conversation</td>
<td>3 hrs.</td>
</tr>
<tr>
<td></td>
<td>Practice in composition and stylistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>directed towards a command of literary and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>other written expression in Russian</td>
<td></td>
</tr>
<tr>
<td></td>
<td>combined with training in conversational</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Russian with an emphasis on the colloquial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>idiom. Prerequisites: 316, 317, and 328.</td>
<td></td>
</tr>
</tbody>
</table>
College of Arts and Sciences

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 Poetry: Form, content and history.

SPANISH

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

100 Basic Spanish 4 hrs.

Fundamentals of Spanish with audiolingual emphasis.

101 Basic Spanish 4 hrs.

Continuation of 100. Prerequisite: Spanish 100 or equivalent.

200 Intermediate Spanish 4 hrs.

The development of spoken and written expression in the Spanish language with an emphasis on grammar review. Prerequisite: Spanish 101 or two years of high school Spanish, or equivalent.

201 Intermediate Spanish 4 hrs.

The continued development of spoken and written expression in the Spanish language through readings and discussions of civilization and culture materials. Prerequisite: Spanish 200 or equivalent.

316 Spanish Composition 3 hrs.

Emphasis upon increasing the student's command of written Spanish. Prerequisite: Spanish 201 or equivalent. (Spanish 316 may be taken concurrently with Spanish 201.)

317 Spanish Conversation 3 hrs.

Emphasis upon increasing the student's command of spoken Spanish. Prerequisite: Spanish 201 or equivalent. (Spanish 317 may be taken concurrently with Spanish 201.)

322 Life and Culture of Spain 3 hrs.

A study of Spanish civilization in terms of its geography, history and art, and how these factors illuminate the character and traditions of the Spanish people.

323 Life and Culture of Latin America 3 hrs.

A study of Latin-American life and culture based on ethnic, historical, social, religious, and literary considerations. Prerequisites: Spanish 316 and 317 or equivalent (316 and 317 may be taken concurrently).

325 Introduction to the Study of Spanish Literatures 3 hrs.

An appreciation of Spanish literatures through reading and critical interpretation of selected works of various literary types. Prerequisites: Spanish 316 and 317 or equivalent.

526 Survey of Spanish Literature to the 18th Century 3 hrs.

A survey of Spanish literature from its origin to, and including, the seventeenth century. Prerequisites: Spanish 316, 317 and 325.
527 Survey of Spanish Literature from the 18th Century to the Present 3 hrs.
A survey of Spanish literature from the eighteenth century to the present. Prerequisites: Spanish 316, 317 and 325.

528 Survey of Spanish American Literature to Modernismo 3 hrs.
A survey of Spanish American literature from its origin to the era of Modernismo (late 19th century). Prerequisites: Spanish 316, 317, and 325.

529 Survey of Spanish American Literature from Modernismo to the Present 3 hrs.
A survey of Spanish American literature from late 19th century to the present. Prerequisites: Spanish 316, 317, and 325.

OPEN TO UPPERCLASSMEN

550 Independent Study in Spanish 1-3 hrs.
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission. Prerequisite: One 500-level literature course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

552 Advanced Spanish Grammar and Composition 3 hrs.
An advanced study of the intricacies and problems of Spanish grammar, syntax, and style with attention to improving written expression in Spanish at an advanced level. Prerequisite: Spanish 316, 317 and one additional 300-level course. At least 3 hours of 526, 527, 528, or 529 are recommended.

553 Advanced Spanish Conversation 3 hrs.
Intensive practice to reinforce and expand the basic oral communication skills and to develop flexible and idiomatic oral expression. Prerequisites: Spanish 316, 317, and one additional 300-level course. At least 3 hours of 526, 527, 528, or 529 are recommended.

560 Studies in Spanish Literatures 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: 3 hours 526, 527, 528, 529 or departmental permission. Representative topics which may be treated in this area include:
- Cervantes — *Don Quixote* and other works of Cervantes together with his life and thought.
- Seventeenth Century Theater — Main works of Lope de Vega through Calderon de la Barca.
- Nineteenth Century — The Romantic Movement.
- Nineteenth Century Novel — Development of the regional novel from Fernan Caballero through Blasco Ibanez.
- Generation of '98 — Thought and works of typical representatives such as Unamuno, Azorin, Baroja, and A. Machado.
- 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 new Spanish-American novel along with the cultural and social background.
Linguistics

Robert A. Palmatier, Chairman
D. P. S. Dwarikesh
Daniel P. Hendriksen

Linguistics is the scientific study of language — its nature and development, its universal properties, its diversified structures and their dialectal variants, its acquisition by children and non-native speakers, its systems of writing and transcription, its cultural role in the speech community, and its application to other areas of human knowledge.

The Linguistics Department at Western Michigan University is responsible for maintaining an undergraduate major and minor program in general linguistics, for teaching English as a second language to foreign students at the University, and for offering up to six semesters of study in a number of "critical" (neglected) languages.

The Linguistics major is intended either as a "second" major for undergraduates with a major in another department or as a "first" major for those who expect to pursue a career in linguistics. The major program requires twenty-four hours of credit in Linguistics Department courses and up to 6 hours of credit in "cognate" courses. One college year of a foreign language, or its equivalent, is required.

The Linguistics minor is intended as a supporting minor for undergraduates with a major in another related department. Its purpose is to complement and strengthen the program which the student has chosen for his major concentration. The minor program requires completion of twenty hours of credit in the five undergraduate "core" courses: 201, 321, 331, 420, 430.

Both majors and minors are required to consult with the Department advisor, 410 Sprau Tower, to receive a signed recommendation for their program. The advisor is authorized to grant a limited number of substitutions for "core" requirements. Both majors and minors are encouraged to take Ling. 100, The Nature of Language, as a lower-level General Education elective, although it does not count in the Linguistics programs.

Linguistics is suggested as a supporting major or minor for majors in Anthropology, Classical Humanities, Communication Arts and Sciences, English, French, German, Philosophy, Psychology, Russian, Sociology, Spanish, and Speech Pathology and Audiology. Linguistics has been approved by the State Board of Education as a minor or second major in the Secondary Education curriculum, as a second major in the Junior High School curriculum, and as a minor in the Elementary curriculum.

A Critical Language minor is available for those undergraduates who wish to specialize in one of a limited number of neglected languages. This twenty-hour minor is open only to those persons who are not in an Education curriculum. Interested students must consult with the Critical Languages Supervisor to determine which languages are eligible and to receive a signed recommendation for their program.

PROGRAMS
LINGUISTICS MAJOR AND MINOR

I. CORE COURSES IN LINGUISTICS
(20 hrs. required for both majors and minors)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Introduction to the Study of Language</td>
<td>4</td>
</tr>
<tr>
<td>321</td>
<td>Structure of Language I: Phonology and Morphology</td>
<td>4</td>
</tr>
<tr>
<td>331</td>
<td>Structure of Language II: Syntax and Semantics</td>
<td>4</td>
</tr>
<tr>
<td>420</td>
<td>Development of Language I: History of Language</td>
<td>4</td>
</tr>
<tr>
<td>430</td>
<td>Development of Language II: Dialects of Language</td>
<td>4</td>
</tr>
</tbody>
</table>
### II. ELECTIVE COURSES IN LINGUISTICS
(Majors must take at least 4 hrs.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>511</td>
<td>Methods of Teaching English as a Second Language or Dialect</td>
<td>4</td>
</tr>
<tr>
<td>515</td>
<td>Methods of Teaching Critical Languages</td>
<td>4</td>
</tr>
<tr>
<td>530</td>
<td>Aspects of Bilingualism</td>
<td>4</td>
</tr>
<tr>
<td>540</td>
<td>Generative Grammar</td>
<td>4</td>
</tr>
<tr>
<td>551</td>
<td>Psycholinguistics</td>
<td>4</td>
</tr>
<tr>
<td>552</td>
<td>Sociolinguistics</td>
<td>4</td>
</tr>
<tr>
<td>571</td>
<td>Languages of Asia</td>
<td>3</td>
</tr>
<tr>
<td>572</td>
<td>Languages of Africa</td>
<td>3</td>
</tr>
<tr>
<td>573</td>
<td>Languages of the Americas</td>
<td>4</td>
</tr>
<tr>
<td>581</td>
<td>Introduction to Research in Linguistics</td>
<td>4</td>
</tr>
</tbody>
</table>

### III. COGNATE COURSES IN OTHER DEPARTMENTS
(Majors may take up to 6 hrs.)

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>370</td>
<td>Culture and Communication</td>
<td>3</td>
</tr>
<tr>
<td>Communication Arts and Sciences</td>
<td>302</td>
<td>Theoretical Bases of Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>307</td>
<td>Psycho-Physical Bases of Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>570</td>
<td>Studies in Communication</td>
<td>Var.</td>
</tr>
<tr>
<td>English</td>
<td>271</td>
<td>Structure of Modern English</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>372</td>
<td>Development of Modern English</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>373</td>
<td>Reading and Writing as Psycholinguistic Processes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>572</td>
<td>American Dialects</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>574</td>
<td>Linguistics for Teachers</td>
<td>4</td>
</tr>
<tr>
<td>Modern and Classical Languages</td>
<td>320</td>
<td>French Phonetics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>558</td>
<td>Modern Language Instruction</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>559</td>
<td>History of the German Language</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>330</td>
<td>Philosophy and Language</td>
<td>4</td>
</tr>
<tr>
<td>Psychology</td>
<td>472</td>
<td>The Analysis of Verbal Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Speech Pathology and Audiology</td>
<td>202</td>
<td>Anatomy and Physiology of Speech</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>203</td>
<td>Speech and Language Development</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>204</td>
<td>Phonemics</td>
<td>2</td>
</tr>
</tbody>
</table>

### CRITICAL LANGUAGE MINOR

I. Introductory Linguistics Course (to be taken during first year of minor) 4 hrs.
   - Ling. 201 Intro. to the Study of Language (4 hrs.)
   - OR Ling. 500 Introduction to Linguistics (4 hrs.)

II. Basic Courses (both in the given language) 8 hrs.
   - Ling. 301 Basic Critical Languages (4 hrs.)
   - AND Ling. 302 Basic Critical Languages (Prereq.: 301) (4 hrs.)
III. Intermediate Courses (both in the given language)................................. 8 hrs.
   Ling. 501 Intermediate Critical Languages.......................... (Prereq.: 302) (4 hrs.)
   AND Ling. 502 Intermediate Critical Languages....................... (Prereq.: 501) (4 hrs.)
IV. Literacy Courses (optional—see below)........................................ (4 hrs.)
   Ling. 508 Reading Critical Languages........................ (Prereq.: 502) (4 hrs.)
   Ling. 509 Writing Critical Languages........................ (Prereq.: 502) (4 hrs.)
........................................................................... TOTAL: 20 hrs.

Admission to the Program:
Undergraduate students (including Linguistics Majors and Minors) may be admitted to the Critical
Language Minor at any level (including Freshman), provided that they are not in a Teacher Education
curriculum and are not native, fluent, and literate speakers of the language.

Eligible Languages:
The eligibility of languages varies from year to year. Languages currently scheduled by name are
automatically eligible. The eligibility of others depends on available resources. Contact the Critical
Languages Supervisor in the Department of Linguistics for up-to-date information.

Linguistics Majors and Minors:
Undergraduate Majors and Minors in Linguistics, who are already required to take an introductory
Linguistics course for their program, must take a literacy course in the given language (508 or 509), or
Ling. 571 or 572, in order to complete the requirements for the Critical Language Minor.

Credit by Examination:
Undergraduate students who feel that they possess the equivalent of 301, 302, 501, 502, 508, or 509 may
'comp out' of these courses for credit, provided that they pay the fees and pass an examination with a
grade of "C" or better.

INVOlVEMEnT IN
INTEGRAtED LAnGuAGE ARTS MINOR

The Department of Linguistics is one of five participating departments in the Integrated Language Arts
Minor—a program designed particularly for pre-service elementary school teachers. The program provides
opportunities for a wide variety of individual interests and alternative learning styles. For a full
description of the program consult its listing under the "Interdisciplinary Programs" section of the College
of Arts and Sciences or its listing in the College of Education.

COURSES

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

GENERAL LINGUISTICS COURSES

100 The Nature of Language .......................... 4 hrs.
A broad introduction to the nature and development of language in human society and to the
interdisciplinary aspects of current studies of language and language behavior.

Intermediate-level instruction in oral and written Standard American English for speakers of other
languages or of non-standard American English dialects. An attempt will be made to provide individual
tutoring where necessary.
112 Standard American English: Advanced
Advanced-level instruction in oral and written Standard American English for speakers of other languages or of non-standard American English dialects. A continuation of Ling. 111, with emphasis on advanced reading and writing skills.

201 (200) Introduction to the Study of Language
An introduction to the scientific study of human language and to the linguistic principles which govern the analysis, description, classification, and comparison of particular language structures.

321 (320) The Structure of Language I: Phonology and Morphology
An introduction to the study of sound systems (phonology) and word systems (morphology) and to the principles and methods of their analysis and description. Prerequisite: One linguistically-related course.

331 (330) The Structure of Language II: Syntax and Semantics
An introduction to the study of sentence systems (syntax) and meaning systems (semantics) and to the principles and methods of their analysis and description. Prerequisite: One linguistically-related course.

420 The Development of Language I: History of Language
An examination of the processes of language change and the principles which govern the historical and comparative study of languages. Prerequisite: One linguistically-related course.

430 The Development of Language II: Dialects of Language
An examination of the linguistic principles and methods involved in the study of geographical, social, and stylistic variation within languages. Prerequisite: One linguistically-related course.

500 Introduction to Linguistics
An introduction to modern linguistic theory and to the application of that theory to linguistically-related disciplines.

511 Methods of Teaching English as a Second Language or Dialect
Study of the application of linguistics and other disciplines to the teaching of Standard American English to speakers of other languages and of non-standard American English dialects, with emphasis on current methods and materials for instruction and testing. Course work will include tutorial experience.

515 Methods of Teaching Critical Languages
Study of the application of linguistics to the teaching of one or more “critical” languages (e.g. Latvian, Hebrew, Japanese, Arabic, Korean, etc.). Emphasis will be on modern and traditional methods and materials for instruction and testing. Course work will include tutorial experience. May be repeated for credit for a different language.

530 Aspects of Bilingualism
An examination of the psychological, sociological, historical, and linguistic aspects of bilingualism, including translation and interpretation. Special attention will be paid to the history and status of bilingualism in the United States, including the current efforts to provide bilingual education in the schools.

540 Generative Grammar
An examination of the theories of Transformational Grammar and Generative Semantics, and a study of their origins, development, modifications, and applications.

551 (550) Psycholinguistics
A study of linguistic systems as they connect language and thought, and relate competence to performance, in the acquisition, production, and perception of language.
302 Basic Critical Languages
Continuation of 301. Prerequisite: Ling. 301 or equivalent.

501 Intermediate Critical Languages
Continuation of Ling. 302, with greater attention to achieving self-reliance in conversation and to increasing reading and writing skills with the help of a dictionary. Prerequisite: Ling. 302 or equivalent.

502 Intermediate Critical Languages
Continuation of 501. Prerequisite: Ling. 501 or equivalent.

508 Reading Critical Languages
Intensive practice in reading literature, newspapers, and other literary materials in the critical language, including sources from the student's major field of study. Prerequisite: Ling. 502 or equivalent.
509 Writing Critical Languages

Intensive practice in writing a critical language to improve the student's ability to express himself effectively and to develop an individual style of composition. Prerequisite: Ling. 502 or equivalent.

CRITICAL LANGUAGES

Arabic
Brazilian Portuguese
Chinese (Mandarin)
Hebrew
Hindi-Urdu
Japanese

Korean
Latvian
Polish
Sanskrit
Serbo-Croatian
Swahili
The Mathematics Department offers a wide variety of courses and programs in both theoretical and applied areas. In addition to a traditional general Mathematics Major program in preparation for graduate study, there are Major programs which prepare students for careers in teaching, computer science, applied mathematics, and statistics. Mathematics Minors are quite flexible, allowing students to concentrate on areas of mathematics which complement their major area of study.

Major and Minor requirements in Mathematics are summarized in the following tables. Eligibility requirements for these programs are available in the Mathematics Department Office. Students considering a Mathematics Major or Minor should contact a Mathematics advisor as soon as possible, preferably no later than the first semester of the sophomore year. Major and Minor programs must be prepared by a departmental advisor.

### MATHEMATICS MAJOR OPTIONS

#### General Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106**</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>3</td>
</tr>
<tr>
<td>Math 330</td>
<td>4</td>
</tr>
<tr>
<td>Math 270 or 272</td>
<td>3-4</td>
</tr>
<tr>
<td>Math 570 or 571</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be Math 274, 340 or 342, 362, 490, 506, 520, 530, 574, 576 or 580. (At least two electives must be at 400 level or above.)

#### Applied Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>3</td>
</tr>
<tr>
<td>Math 270 or 272</td>
<td>3-4</td>
</tr>
<tr>
<td>Math 360</td>
<td>4</td>
</tr>
<tr>
<td>Math 274</td>
<td>3</td>
</tr>
<tr>
<td>Math 506</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Approved electives can be Math 408, 490, 506, 574, 575 or 576. Math 362-363 can be substituted for Math 360 and one elective.

Note: Any student considering graduate work should also elect Math 330 and Math 570.

---

### Teaching Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106**</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>3</td>
</tr>
<tr>
<td>Math 330</td>
<td>4</td>
</tr>
<tr>
<td>Math 340 or 342</td>
<td>3</td>
</tr>
<tr>
<td>Math 550* (552 for Elem.)</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be Math 270 or 272, 360 or 362, 363, 408, 490, 506, 530, 540, 570 or 580. (At least one elective must be at the 400 level or above.)

### Computer Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus through Math 123</td>
<td>8</td>
</tr>
<tr>
<td>Math 106</td>
<td>1</td>
</tr>
<tr>
<td>Math 230</td>
<td>4</td>
</tr>
<tr>
<td>Math 310</td>
<td>3</td>
</tr>
<tr>
<td>Math 506</td>
<td>3</td>
</tr>
<tr>
<td>Math 508</td>
<td>3</td>
</tr>
<tr>
<td>Math 509</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be chosen from Math 270 or 272, 274, 360 or 362, 363, 408, 490, 507 and 570. (At least one elective must be at the 400 level or above.) One elective may be replaced by an approved cognate.

---

*See course description for an alternative program which includes teaching experience in public schools.

**With the approval of the advisor, Math 306 may be substituted for Math 106 except in those cases when the student's program includes Math 506 either as a required course or as an elective.
Statistics Option

Calculus through Math 123 ................. 8
Math 106 .................................. 1
Math 230 .................................. 4
Math 362 .................................. 3
Math 363 .................................. 3
Math 270 or 272 ............................ 3-4
Math 506 .................................. 3
Math 567 .................................. 4
Math 568 or IEGM 508 ................. 3
Approved electives ....................... 6

At least one elective must be Math 310, 408, 490 or 507. One elective emphasizing statistical application can be from Management, Education, Psychology, Economics or Engineering.

For Mathematics Majors in the Statistics Option there are special combined programs with other departments available for students interested in particular fields of application. This Statistics Option is available as a major for students earning a BBA degree in the College of Business. For more information see a faculty advisor.

MATHEMATICS MINOR OPTIONS

Teaching Minor: Secondary

Calculus through Math 123 ................. 8
Math 106**................................. 1
Math 230 .................................. 4
Math 310 .................................. 3
Approved electives ....................... 4

Statistics Minor

Math 260, 360, 363 or 366 .................. 3-4
Math 362 .................................. 3
Math 567 .................................. 4
Math 306 or 506 ............................ 2-3
One approved elective ..................... 3-4

The elective would normally be selected from the following list of courses: Math 123, 490, 562, 568 and 599. An approved introductory course in statistics from another department may substitute for those listed in the first line of this minor.

Teaching Minor: Elementary

(for students in elementary education curricula only)

Math 106** .................................. 1
Math 150 .................................. 4
Math 151 .................................. 3
Math 122 or 200 ............................ 4
Math 265 .................................. 3
Math 552 .................................. 3
Math 553 or 595 ............................ 2

General Minor

Calculus through Math 123 ................. 8
Math 106** .................................. 1
Math 230 .................................. 4
Approved electives ....................... 6

Computer Science Minor

Math 306 or 506 ............................ 2-3
Math 508 .................................. 3
Math 509 .................................. 3
Approved electives ....................... 6-7

The electives would normally be selected from the following list of courses: Math 106, 123 or 230, 307, 309, 406, 408, 490, 507 and 599.

**See footnote on previous page.
HONORS IN MATHEMATICS

Selected students may qualify for a major with Honors in Mathematics. The purpose of this Honors Program in Mathematics is to give the conscientious, industrious student the special attention that his superior performance and interest in mathematics warrants. Students who are enrolled in, or have completed, Mathematics 310 or 230 may be recommended by a member of the mathematics faculty for consideration as honors students. For further information, see the Chairman of the Departmental Honors Program.

COURSE DESCRIPTIONS

Students who fail to earn a “C” or better grade in Mathematics 100, 120, 121, 122 or 123 will not be permitted to enroll in the next sequence course.

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

090 Mathematical Skills
   A remedial course dealing with those topics in arithmetic, elementary algebra and geometry necessary for further work in mathematics. Students may be required to take this course on the basis of either the A.C.T. Mathematics Proficiency test or a diagnostic test given in another mathematics course.

100 Algebra
   A course in algebra at the level usually covered in senior high school. Review and practice with basic algebraic skills. Graphical properties and manipulation with polynomial, logarithmic and exponential functions. Students presenting three years or more of high school mathematics including a course in advanced algebra will not receive credit for this course unless special permission is obtained from the Department of Mathematics. This is a continuous progress, mastery-based course in which students proceed at varying rates. Students sign up for 5 credit hours, with the possibility of reducing this to 4 if a diagnostic test shows prior mastery of the material in the first part of the course.

101 Trigonometry
   A basic introductory course in trigonometry. Topics include angles and their measurement; trigonometric functions and their graphs; triangle computations; identities; solution of equations and inequalities; inverse trig. functions. Students cannot receive full credit for both Math 101 and 121. Prerequisite: Three years of college preparatory mathematics or Math 100.

106 Introduction to Computers
   A standard programming language is used to acquaint students with the computer facility at WMU. Student-written computer programs are executed and related to a variety of computer applications that illustrate programming techniques and computer growth and development in contemporary society. Prerequisite: 1-1/2 years of high school algebra or Math 100.

116 Finite Mathematics with Applications
   This course is designed to give the student a background in the elements of finite mathematics. Included will be a discussion of: sets, relations and functions; systems of linear equations and inequalities; vectors and matrices; concepts of probability; random variables and distribution functions; applications of linear algebra and probability. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 100. 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. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 100. Prerequisite: Three years of college preparatory mathematics or Math 100.
121 Mathematics IB

Trigonometry and a continuation of the calculus in Math 120. Further discussion of derivatives and an introduction to integration. Math 120 and 121 together contain the calculus content of Math 122. Prerequisite: Math 120.

122 Calculus I

The first of a two-semester sequence in differential and integral calculus. Functions, limits, continuity, techniques and applications of differentiation, integration, logarithmic and exponential functions. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 120. Prerequisite: At least 3-1/2 years of college preparatory mathematics including trigonometry. Math 101 can be taken concurrently. (It is recommended that Math 106 be taken concurrently.) (Honors sections of Calculus I and II are offered, with some changes in content and emphasis. Interested students should contact a departmental advisor.)

123 Calculus II

A continuation of Calculus I. Techniques and applications of integration, trigonometric functions, sequences and series, indeterminate forms, improper integrals, applications to elementary differential equations. Prerequisite: Math 122 or 121 (Math 106 recommended).

150 Structure of Arithmetic

This course is designed to provide the elementary teacher with a minimum foundation in the structure of arithmetic. Included will be a discussion of sets, relations, and properties of natural numbers, integers, rational numbers and real numbers, as well as selected topics from number theory and algebra. This course can only be applied to the mathematics requirements of a program leading towards Elementary teacher certification. Prerequisite: Math 90 or adequate performance on admissions test.

151 Geometry for Elementary Teachers

This course is devoted to an analysis of geometric figures in the plane and space and to an investigation of geometric and topological transformations, their invariants and related topics; including symmetry, symmetry groups and measurement. Emphasis will be on the active participation of the student in the process of discovering and communicating mathematical ideas. Prerequisite: Math 10.

190 Survey of Mathematical Ideas

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

Topics include: sets, functions, trigonometry, rates, limits, differentiation, integration, applications. The course should not be elected by those students who wish to take courses in the Mathematics 120-121, or 122-123 sequences. Early in the term a placement exam will be given, and on the basis of this exam some students may be shifted to Math 100. Prerequisite: Math 100, or 1½ years high school algebra and 1 year high school geometry.

230 Elementary Linear Algebra

Vectors and geometry in two and three dimensions, systems of linear equations, matrix algebra, linear transformations in $\mathbb{R}^2$ and $\mathbb{R}^3$, generalizations to the vector spaces $\mathbb{R}^n$, inner products, determinants. Some emphasis on proofs. Prerequisite: Math 122 or 121 (Math 123 recommended).

260 Elementary Statistics

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.
Probability and Statistics for Elementary Teachers  
3 hrs.

The topics in this course will include the study of graphs and tables showing statistical data, the probability of finite sample spaces to include Bayes Law and the binomial distribution, mathematical expectations, and the testing of simple statistical hypotheses. Emphasis will be placed upon experiments to verify theoretical constructs. The problems of teaching probabilistic and statistical concepts to elementary school children will be considered in detail. Prerequisite: Math 151.

(270 Multivariate Calculus)  
3 hrs.

This course will no longer be offered beginning Fall Semester, 1976. Students whose programs require Math 270 may replace it by Math 272.

Vector and Multivariate Calculus  
4 hrs.

Vector calculus, functions of several variables, partial differentiation, multiple integration. Students cannot receive credit for both Math 270 and Math 272. Prerequisite: Math 123.

Introduction to Differential Equations  
3 hrs.

Techniques of solving differential equations. Prerequisite: Math 123.

Introductory Programming: FORTRAN  
2 hrs.

An introduction to computer programming using the FORTRAN language (FORmula TRANslation). Prerequisite: 1½ years of high school algebra or Math 100.

Introductory Programming: COBOL  
2 hrs.

An introduction to computer programming using the COBOL language (COmmon Business Oriented Language).

Introductory Programming: MACRO  
2 hrs.

A course in programming using the MACRO language (the assembly language for the PDP-10 computer). Prerequisite: Math 106 or 306.

Introductory Programming: ALGOL  
2 hrs.

An introduction to computer programming using the ALGOL language (ALGOritmic Language). Prerequisite: 1½ yrs. h.s. algebra or Math 100.

Finite Mathematics  
3 hrs.

Logic, sets, functions, induction, combinatorics, probability. Applications. Some emphasis on proofs. Prerequisite: Math 123 and 230.

Modern Algebra  
4 hrs.

Introduction to groups, rings, integral domains, fields. Emphasis will be placed on the integers and polynomial rings over a field. Prerequisite: Math 310.

Fundamental Concepts of Geometry  
3 hrs.

A critical re-examination of plane and solid euclidean geometry followed by euclidean geometry of four dimensions and noneuclidean geometry. Prerequisite: Math 230.

Introduction to Projective Geometry  
3 hrs.

A survey of affine and projective geometry using methods of elementary linear algebra. Prerequisite: Math 230.

Statistical Methods  
4 hrs.

This course treats both the theory and applications of statistics. The study of histograms and empirical distributions; random variables and probability distributions; normal, chi-square, t, F, binomial, Poisson distributions; central limit theorem; significance tests, both one- and two-sided, point and interval estimation; correlation; analysis of variance; control charts; sampling inspection both by attributes and variables. Students can receive credit for only one of Math 260, 360, 366. Prerequisite: Math 270 or 272.
362 Probability
Discrete probability spaces, conditional probability, discrete and continuous random variables, expectations, joint distributions, special distributions. Prerequisite: Math 123.

363 Statistics
Sampling distributions, estimation, hypothesis testing, confidence intervals, linear regression, correlation, analysis of variance. Prerequisite: Math 362.

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 Math 260, 360, 366.

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.

406 Special Programming Languages
Each section of this course will be devoted to a discussion of a special programming language. Prerequisite: one course in programming.

408 Linear Programming
Linear inequalities, convex geometry, optimization in linear systems, zero-sum games. Applications. Prerequisites: Math 106 or 306 or 506, and 230.

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. May be taken more than once with the approval of the student's advisor. Prerequisite: Approval of Department.

506 Programming for Computers
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 123, and 230 or 272.

507 Numerical Analysis
Numerical methods, involving polynomial evaluation, series approximations, numerical integration, interpolation solution of linear and differential equations, linear programming, least squares and minimax approximations. Topics include: Chebyshev polynomials, Legendre polynomials, Weierstrass Theorem, Bernstein polynomials, Runge-Kutta methods, Generalized Rolle's Theorem, Taylor's Theorem, Newton's method, False Position method, economization of power series, Minimax Theorem, forward differences, central differences, Simpson's rule, Boole's rule, and predictor-corrector methods. Prerequisites: Math 270 or 272, and a programming course, (274 recommended).

508 Assembly Language
A study of MACRO-10, the assembly language of the PDP-10 computer. Prerequisite: Math 306 or 506.

509 Data Structures
Introduces and compares alternatives for representing and manipulating data. Structures studied include stacks, queues, deques, linked lists, circular lists and trees as well as sequential storage. Topics include tree transversals, hash functions, Boolean functions, graphs and garbage collection. Prerequisite: Math 508.
General Topology I

Topics include: separation axioms, continuity, compactness, connectedness, product and quotient spaces, metric spaces. Prerequisite: Math 570 or permission of instructor.

Linear Algebra

Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: Math 330.

Advanced Geometry

Topics to be selected from projective geometry, algebraic geometry, differential geometry, or non-euclidean geometry. Prerequisite: Consent of instructor.

Teaching of Secondary Mathematics

In this course consideration is given to curriculum problems and trends in secondary school mathematics and to specific problems of teaching mathematics effectively to secondary school students. This course may be taken in conjunction with TEED 300 through participating in the Cooperative Mathematics Program conducted during Winter semester. Contact the Departmental Office at least one semester in advance for additional information. Prerequisite: Math 330.

Teaching of Elementary Mathematics

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.

Participation in Teaching Secondary Mathematics

School experiences and related seminar designed to provide the prospective teacher of secondary mathematics with tutorial, small group and a limited amount of total class teaching experience in the junior or senior high school mathematics classroom. Enrollment is restricted to students concurrently enrolled in Math 550. Can be elected on Credit/No Credit basis only. Prerequisite: Approval of instructor.

Teaching of Elementary Mathematics Teaching

Students will work cooperatively with an elementary school teacher in an elementary classroom in various aspects of helping children learn mathematics. The course will provide the prospective elementary teacher with an opportunity to work with small groups of young children and to observe them in mathematics learning. The student will be required to maintain a journal and meet weekly with a staff member supervising the course. Can be elected on Credit/No Credit basis only. Prerequisite: Math 552.

Applied Probability

A first course in probability for upper division and graduate students interested in applications. Topics will include: probability spaces, expectation, moment generating functions, central limit theorem, special discrete and continuous distributions. Applications will include reliability and production problems, and Markov chain methods. Not recommended for students who have taken Math 362 or 660. Prerequisite: Math 272 or 270.

Statistical Analysis I

The first course in the sequence 562, 662 or applied statistics which combines both theory and applications. Topics include: elementary theory of estimation and hypothesis testing; the use of the normal, chi-square, F and t distributions in statistics problems involving means and variances; simple linear, multiple, curvilinear, non-linear, and stepwise regression; simple, multiple, and partial correlation; one way and two way analysis of variance; random and fixed effects; nested designs. Prerequisite: Math 560 or 362.

Applied Statistics

A continuation course in statistical methods. Emphasis on regression, ANOVA and multiple comparisons, orthogonal comparisons, multiple linear regression and simple experimental design. Extensive use of available stored statistical computer programs to analyze data. Not for mathematics graduate students. Prerequisite: One course in elementary statistics.
568 Studies in Applied Statistics

Students will study statistical methodology using case study and computer techniques. Prerequisite: Math 567 or permission of instructor.

570 Advanced Calculus

Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisites: Math 230, and 272 or 310.

571 Foundations of Analysis

Fundamental concepts of real analysis, functions of one variable, topology of $\mathbb{R}^n$, Riemann-Stieltjes integral. Prerequisite: Approval of advisor.

574 Ordinary Differential Equations

Methods of solution, linear differential equations, ordinary and singular points, series solutions, Bessel and Legendre functions, boundary value problems, systems of equations, non-linear equations. Prerequisites: Math 230 or 272, and 274, or consent of instructor.

575 Introduction to Partial Differential Equations

Quasi-linear equations of the first order, linear and quasi-linear equations of the second order, separation of variables and Fourier series; solutions of Laplace equations, heat equations and wave equations as examples of elliptic, parabolic and hyperbolic equations. Prerequisite: Math 574 or consent of instructor.

576 Introduction to Complex Analysis

Complex numbers, elementary functions, differentiation of complex functions, integration, series, residue theory, conformal mappings. Graduate students should not elect both 576 and 676. Prerequisite: Math 270 or 272.

580 Number Theory

Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: Math 330.

595 Seminar in Elementary Mathematics Education

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

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

Michael Pritchard, Chairman
John Dilworth
Joseph Ellin
Arthur Falk
Richard Pulaski

Gregory Sheridan
Dale Westphal
Harvey Williams
Judith Wilson

While a student majoring in philosophy may go into law, journalism, education, government, computer-programming and even business, philosophy is not intended for those whose approach to college is primarily career-oriented. Philosophy is attractive to those who are prepared to search for understanding for its own sake, who do not expect ready-made answers or easy solutions, who are willing to subject their assumptions to critical scrutiny, and who are able to put aside judgments based on inspiration or intuition and adopt methods of close logical analysis. As preparation for a career, philosophy is chosen by those who are attracted to its subject-matter; prospective philosophy teachers, whether at the university, junior college, or even high school level, anticipate continuing for an advanced degree.

Appropriate courses and/or independent studies in philosophy can serve the purpose of helping to unify or "cap off" a wide variety of concentrations for those students who select the university’s “student planned curriculum”. See page 25 of this catalog. The Philosophy Department encourages these concentrations and members of the staff will be happy to serve as advisers to students wishing to construct concentrations that involve philosophy.

The Philosophy Department offices are located on the third floor of Friedmann Hall. Students are invited to visit the department office and the offices of faculty at any time. Office hours are posted beside each instructor's door.

Before preregistration each term, the faculty prepares brief written descriptions of the courses to be offered. These descriptions are posted on the department bulletin board outside the department office and additional copies may be obtained in the office. The department also announces its tentative course offerings a year in advance. Hence before preregistration for the Fall semester, the student can know which courses will probably be offered in the following Fall, Winter, Spring, and Summer.

ROBERT FRIEDMANN PHILOSOPHY PRIZE

A prize, normally $50, named in honor of Dr. Friedmann, the first person to teach philosophy at Western, awarded annually to an outstanding senior philosophy student.

HONORS PROGRAM

Applications to the departmental Honors Program are invited from qualified students. A student wishing to enter the program must submit a proposal for independent research to a faculty committee. Normally, the honors candidate works in close association with a professor of his choice, and submits a paper (or other project of philosophic merit) to the department. To achieve honors in philosophy the candidate’s academic record must be of high quality and his project must be outstanding.

Inter-disciplinary work involving faculty from other departments is encouraged. Normally, but not necessarily, the honors student is a senior major; in exceptional cases non-seniors or non-majors may be considered.

MAJOR AND MINOR REQUIREMENTS

Because the Philosophy Department believes that there is no single “correct” approach to the study of Philosophy, but that, as much as possible, each student under the guidance of a faculty member should design a program in accordance with his interests, ability, and intellectual maturity, there are no required courses in philosophy. Instead, students majoring in philosophy must plan their program with a faculty
adviser. Every faculty member serves as a student adviser and normally students may select any adviser they prefer. The adviser works closely with the student in planning a program of studies and helps the student make an informed and intelligent choice of courses.

The student should select his adviser as soon as he is fairly certain that he intends to major in philosophy. Normally this would not occur until after he has taken at least one, and possibly two, philosophy courses. Every major must choose and consult with an adviser no later than the completion of 12 hours of philosophy courses; NO HOURS BEYOND THE 12TH WILL BE CREDITED TOWARDS A PHILOSOPHY MAJOR UNLESS THE APPROVAL OF AN ADVISER HAS BEEN OBTAINED (TRANSFER STUDENTS MAY APPLY FOR EXEMPTIONS FROM THIS RULE IF THEY WISH TO TRANSFER MORE THAN 8 HOURS). Students are encouraged to see their advisers frequently, but consultation should occur at least once every academic year.

A major consists of a minimum of 28 hours in philosophy. Philosophy 100 and 200 cannot both be taken towards a major or minor.

Cognates: Appropriate courses in other departments may be used towards a philosophy major (not a minor) up to a maximum of four hours. Consult with the department chairman.

Minors: A minor consists of at least 16 hours in philosophy. Minors may choose any courses they find suitable. Minors are strongly urged to consult with advisors (preferably after completing 8 hours), but this is not required.

For further information, students should read the Philosophy Department Student Handbook or see any faculty member. The Handbook is available in the department office, 3100 Friedmann Hall.

STUDENTS NOT MAJORING OR MINORING IN PHILOSOPHY

Students not majoring or minoring in philosophy find that philosophy adds intellectual depth to their major field of study. Philosophy by its nature touches on many areas of life and thought, frequently from a perspective which students find valuable and exciting. Non-majors often consider their philosophy courses an essential element in their general intellectual growth.

In recognition of this, the department offers a wide range of courses for non-major/minors. Students interested in a general introduction to philosophy should consider Philosophy 100 or 200; students interested in a philosophical approach to a more specialized area should consider Philosophy 201, 220, or some upper-level cognate. Students interested in a more technical appreciation of the central problems of philosophy should consider such courses as Philosophy 332 (Theory of Knowledge) and Philosophy 333 (Metaphysics). Many students will find it advisable to begin with either Philosophy 100, 200, or Philosophy 201, and then continue on the upper level.

REPEATING COURSES FOR CREDIT

Since philosophy courses may vary widely in content from year to year, a student may be occasionally justified in repeating a course for credit. Students who wish to do so must obtain permission of the instructor before they register. If the student requests, the department will have his record indicate that the course when repeated differed substantially in content from the identically numbered course previously completed.
INTRODUCTORY COURSES

100 Philosophizing 4 hrs.
A seminar for students who wish to improve their ability to think analytically, argue logically, and express a train of thought carefully and cogently in writing. There will be frequent writing assignments which will focus on issues raised by readings of broad philosophical interest. Class time will be about equally divided between discussion of the readings and critical analysis of the student’s own writings.

200 Introduction to Philosophy 4 hrs.
An introduction to the nature of philosophy by a consideration of major types of philosophical questions, such as the principles of rational belief, the existence of God, what is the good life, the nature of knowledge, the problem of truth and verification. Selected texts from representative philosophers are used to define the questions and to present typical answers.

201 Introduction to Ethics 4 hrs.
An introduction to the philosophic study of morality. Deals with questions such as: What is the good life? Why should I be moral? What is the meaning of right and wrong?

220 Elementary Logic 4 hrs.
A study of the rules and techniques of deductive reasoning and the sources of some common fallacies. Topics included are syllogisms and the logic of propositions. Open to freshmen. Students with a background in college mathematics should take Intermediate Logic instead.

300 LEVEL COURSES

All courses at the 300-level presuppose some preparation either in philosophy or in some other field. Except for Philosophy 320 and 321, the specific kind of preparation is not presented in the form of specified courses called “requirements” or “prerequisites”. It is the student’s responsibility to be ready to work with the class at the proper level. More information may be obtained from the detailed course descriptions posted outside 3100 Friedmann Hall prior to registration. If in doubt about whether you are adequately prepared, talk with the instructor.

301 History of Modern Philosophy 4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with emphasis upon Descartes, Liebniz, Locke, Berkeley, Hume, and Kant.

303 Existentialist Philosophies 4 hrs.
A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

305 Contemporary British and American Philosophy 4 hrs.
British and American philosophy since approximately the end of the 19th century. The course will consider such movements as idealism, empiricism, pragmatism, realism, positivism, analytic philosophy, and ordinary language philosophy. Among figures studied may be: Bradley, Russell, Moore, Pierce, James, Santayana, Dewey, Whitehead, Lewis, Wittgenstein, Austin, Quine and Sellars.

306 Asian Thought: China 4 hrs.
A study of the major trends of Chinese thought, notably Confucianism and Taoism, with particular emphasis on their relevance to recent developments in China.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Phenomenology</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>310</td>
<td>Moral Philosophy</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>311</td>
<td>Political Philosophy</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>312</td>
<td>Philosophy of Art</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>313</td>
<td>Philosophy of Law</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>314</td>
<td>Philosophical Themes in Contemporary Social Movements</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>320</td>
<td>Intermediate Logic</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>321</td>
<td>Advanced Logic</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>322</td>
<td>Philosophy of the Social Sciences</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>323</td>
<td>Philosophy of Science</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>330</td>
<td>Philosophy and Language</td>
<td>4 hrs.</td>
</tr>
</tbody>
</table>

**Philosophy**

307 Phenomenology
A systematic study of the origins and developments of the phenomenological movement. The writings of several major phenomenologists will be considered, e.g. Husserl, Heidegger, Merleau-Ponty, etc.

310 Moral Philosophy
A study of some basic problems in moral philosophy. Special attention is given to the question of the relationship between the justification of actions, and motives, excuses, intentions, consequences. Contemporary works are emphasized.

311 Political Philosophy
An examination of fundamental problems arising from political and social relationships. The main emphasis is on such political value concepts as liberty, equality, human rights and justice. Topics that might be considered include, but are not necessarily restricted to: the nature and basis of political authority and obligation; civil disobedience; tolerance and dissent; the aims of political institutions; law and morality.

312 Philosophy of Art
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
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
Social movements commit themselves to certain views about man and nature which are broadly philosophical, though only one contemporary movement, Marxism, purports to present an entire philosophy. This course attempts to uncover and evaluate some of these philosophical themes, for example, freedom, repression and liberation; human nature and culture; the uses of violence; goals and methods of social change. Emphasis will be placed on recent social movements, but exploration of earlier movements (such as 19th and early 20th century Marxism) is not precluded.

320 Intermediate Logic
Symbolic logic: the logic of propositions, the predicate logic, and an introduction to the theory of identity and definite descriptions. Prerequisite: Phil. 220 or some college mathematics or permission of the instructor. Open to qualified freshmen.

321 Advanced Logic
Continuation of 320. Topics included are identity, definite descriptions, elementary set theory and relations; introduction to axiomatic systems of logic and metatheorems. Prerequisite: Phil. 320 or permission of the instructor.

322 Philosophy of the Social Sciences
A critical examination of the concepts, methods, presuppositions, and conclusions of the social and behavioral sciences.

323 Philosophy of Science
An examination of the nature of scientific explanation, inductive reasoning, and probability. Particular problems arising in the physical and natural sciences which may be included are the nature of scientific laws and theories, analysis of the concepts of space, time, and causality, the existence of unobservable entities, and the requirement of simplicity.

330 Philosophy and Language
A study of the nature and criteria of meaning and truth in the context of different types of discourse such as ethical, religious, or scientific.
332 Theory of Knowledge  
4 hrs.

An examination of basic problems concerning knowledge and belief, discussing traditional approaches but stressing recent analyses. Possible topics: skepticism and certainty, knowing and believing, perception, memory, “a priori” vs. “a posteriori” knowledge, self-knowledge, knowledge of others.

333 Metaphysics  
4 hrs.

A study of basic metaphysical questions, discussing traditional solutions but emphasizing recent approaches. Questions will be selected from such topics as: substances, qualities and relations, universals and particulars, identity, space and time, causation, mind and body, persons, free will.

334 Philosophical Problems of Psychology  
4 hrs.

Problems in the philosophy of mind with emphasis on recent analysis and solutions. Among the possible topics are: the definition of “mind” and its relation to “the body”, to “behavior”, and to “experience”; teleological and mechanistic explanations of behavior, including “behaviorism”, and “functionalism”; machine-models of thinking, “thinking machines”, robots, servomechanisms and the concept of a person; privacy of one’s own mind and one’s knowledge of other minds; consciousness of self and of world; free will and determinism.

350 Historically Oriented Studies — Variable Topics  
4 hrs.

Topics vary from term to term. The topic selected may be either the concentrated study of an individual philosopher, or an identifiable philosophical school, or the historical examination of a philosophical problem or concept.

**ADVANCED COURSES**

470 Seminar in Philosophy — Variable Topics  
2-4 hrs.

Seminars deal with selected advanced topics in philosophy. Since content varies from semester to semester, students are advised to check course descriptions which are available in the department office. Suggestions for seminar topics from students are welcomed. Seminars may be set up to be taken for variable credit and to last more or less than a semester’s length.

498 Independent Study  
2-4 hrs.

Independent study is for those students who have attained a degree of competence in philosophy and wish to embark upon a project to be carried out without the usual close guidance of the instructor in the classroom. Independent study may not be elected as a substitute for a regularly scheduled course. Prerequisite: Permission of the instructor with whom the student wishes to work.

598 Readings in Philosophy  
2-4 hrs.

Research on some selected period or topic under supervision of a member of the Philosophy faculty. Approval of instructor involved must be secured in advance of registration.
The Department of Physics offers two programs of study leading to a major in physics. One program is the physics major in the Arts and Sciences Curriculum (ASC) for those preparing for graduate study or professional employment in physics. The second program is designed for those in Secondary Education who desire to major in physics. Both programs require 30 credit hours in physics but differ according to the goals of the programs.

The Physics Department strongly recommends that students planning to enter graduate school take a minimum of 39 hours, and in addition to the required courses listed below, the student take 330 Thermodynamics and Kinetic Theory, 541 Electricity and Magnetism II, and 566 Advanced Lab.

The ASC major may select an option which provides special experience in physics instrumentation and computer control of experiments and data taking. In addition to the basic physics courses the student in this option is trained, through laboratories and courses in Mathematics, Electrical Engineering, and Physics, to use modern laboratory instrumentation. Students completing this option will receive recognition on their transcript. Details of the program are available from the Department Chairman.

The Physics offerings also include a variety of courses suitable for students not majoring in physics but having an interest in particular topics. Some may be taken without prerequisites, but a conference with the department chairman or undergraduate advisor will assure a selection appropriate to the student's interest and experience.

The required courses for physics majors are:

**ASC Physics Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>211 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>212 Atomic and Nuclear Physics</td>
<td>4</td>
</tr>
<tr>
<td>342 Electronics</td>
<td>5</td>
</tr>
<tr>
<td>520 Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>540 Electricity and Magnetism I</td>
<td>3</td>
</tr>
<tr>
<td>560 Modern Physics I</td>
<td>3</td>
</tr>
</tbody>
</table>

The remaining credit hours necessary to complete the major must be elected from the following list for each program.

**ASC Physics Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>198 Instrumentation in Physics (Computer Option only)</td>
<td>3</td>
</tr>
<tr>
<td>330 Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>352 Optics</td>
<td>4</td>
</tr>
<tr>
<td>470 Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>498 Special Problems</td>
<td>1-3</td>
</tr>
<tr>
<td>541 Electricity and Magnetism II</td>
<td>3</td>
</tr>
<tr>
<td>552 Applied Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>561 Modern Physics II</td>
<td>3</td>
</tr>
<tr>
<td>563 Introduction to Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>566 Advanced Lab</td>
<td>2-3</td>
</tr>
<tr>
<td>598 Selected Topics</td>
<td>1-4</td>
</tr>
</tbody>
</table>

**Secondary Education Physics Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>211 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>212 Atomic and Nuclear Physics</td>
<td>4</td>
</tr>
<tr>
<td>342 Electronics</td>
<td>5</td>
</tr>
<tr>
<td>360 Introduction to Theoretical Physics</td>
<td>4</td>
</tr>
<tr>
<td>470 Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>308 Teaching of Physical Science</td>
<td>3 (3 is required by the Education Program but does not contribute credit hours toward the major.)</td>
</tr>
</tbody>
</table>

**ASC Physics Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>198 Instrumentation in Physics (Computer Option only)</td>
<td>3</td>
</tr>
<tr>
<td>330 Thermodynamics and Kinetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>352 Optics</td>
<td>4</td>
</tr>
<tr>
<td>470 Historical Development of Concepts of Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>498 Special Problems</td>
<td>1-3</td>
</tr>
<tr>
<td>541 Electricity and Magnetism II</td>
<td>3</td>
</tr>
<tr>
<td>552 Applied Spectroscopy</td>
<td>3</td>
</tr>
<tr>
<td>561 Modern Physics II</td>
<td>3</td>
</tr>
<tr>
<td>563 Introduction to Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>566 Advanced Lab</td>
<td>2-3</td>
</tr>
<tr>
<td>598 Selected Topics</td>
<td>1-4</td>
</tr>
</tbody>
</table>

**Secondary Education Physics Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 Astronomy</td>
<td>4 (3 hours credit toward major or minor)</td>
</tr>
<tr>
<td>202 Photography</td>
<td>3 (2 hours credit toward major or minor)</td>
</tr>
</tbody>
</table>

Any physics course numbered above 300 except 308.
Suggested courses of study for a student majoring in physics under either program are:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hrs.</th>
<th>Second Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 122</td>
<td>4</td>
<td>Math 123</td>
<td>4</td>
</tr>
<tr>
<td>Physics 105 or 198</td>
<td>4 (3)</td>
<td>Physics 210</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Education</td>
<td>3-4</td>
<td>Gen. Education</td>
<td>3-4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 102</td>
<td>4</td>
<td>Chemistry 120</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16-17</td>
<td><strong>Total</strong></td>
<td>16-17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hrs.</th>
<th>Fourth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 272</td>
<td>4</td>
<td>Arts &amp; Sciences Curriculum</td>
<td></td>
</tr>
<tr>
<td>Physics 211</td>
<td>4</td>
<td>Physics Major</td>
<td></td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>Hrs.</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
<td>Math 274</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td>Physics 342</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gen. Ed.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phys. 330</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Hrs.</th>
<th>Sixth Semester</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 574</td>
<td>3</td>
<td>Arts &amp; Sciences Curriculum</td>
<td></td>
</tr>
<tr>
<td>Physics 212</td>
<td>4</td>
<td>Physics Major</td>
<td></td>
</tr>
<tr>
<td>Physics 520</td>
<td>3</td>
<td>Hrs.</td>
<td></td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>Math 575</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3-4</td>
<td>Physics 540</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17-18</td>
<td>Physics Elective</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Hrs.</th>
<th></th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 306 or 506</td>
<td>3</td>
<td>Edu. 301</td>
<td>3</td>
</tr>
<tr>
<td>Physics 560</td>
<td>3</td>
<td>Physics 360 or 470</td>
<td>4-3</td>
</tr>
<tr>
<td>Physics 352</td>
<td>4</td>
<td>Physics 308</td>
<td>3</td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>Gen. Ed.</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td><strong>Total</strong></td>
<td>17-16</td>
</tr>
</tbody>
</table>

**Secondary Education**

<table>
<thead>
<tr>
<th>Hrs.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Edu. 410</td>
<td>3</td>
</tr>
<tr>
<td>Edu. 450</td>
<td>3</td>
</tr>
<tr>
<td>Edu. 470</td>
<td>3</td>
</tr>
<tr>
<td>Directed Teaching</td>
<td>14</td>
</tr>
</tbody>
</table>
Any student contemplating majoring in physics should contact the physics department as early as possible. This is especially true for the transfer students from community colleges in regard to transfer credit and course of study. Students will want to contact the undergraduate adviser in the department regarding courses, employment opportunities, and graduate study in physics.

Any physics major may qualify for departmental honors in physics by fulfilling the following requirements:

1. Complete the courses recommended for students planning to enter graduate school.
2. Attain by the end of the semester preceding graduation an accumulated honor point ratio of at least 3.5 (B+) in his physics courses, and an accumulated honor point ratio of 3.0 or more in his other courses.

A Physics Minor consists of 20 credit hours including courses 210, 211, 212 (or 120). With 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 Arts & Sciences Curriculum minors in physics may be selected from any of the courses listed above under ASC Physics Major.

Only 12 hours of credit will be allowed towards a major or minor for Physics 210, 211, 212 or their equivalent.

The Physics Department offers public lectures and colloquia for undergraduate and graduate students. The Physics Lecture is a series of talks, usually by visitors from other institutions, on topics of general interest. Attendance is expected of all physics majors. The colloquia are primarily for graduate students and physics staff presented usually by WMU physics staff members or visitors from other universities on topics related to their research specialties.

An exemption examination is provided, during the first week of the Winter semester, for unusually well prepared students whose curriculum requires Physics 110, 111, 210 or 211. Passing this examination does not give credit for the course, but it may allow for waiver of the lecture requirement; departments allowing this waiver may also simply waive the laboratory requirement for students passing the exam. Otherwise, such students can take the laboratory by itself: to do so, they should contact the Physics Department immediately after the exam is graded.

**PHYSICS COURSES**

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

100 Acoustics

The main emphasis of this course is high-fidelity sound reproduction. Approximately two-thirds of the time is devoted to topics such as records, tape decks, tuners, pre-amplifiers, amplifiers, and speakers. Evaluation of high-fidelity components is discussed and demonstrated. The first third of the course covers traditional topics in acoustics such as the human ear, hearing defects, sound imaging, noise safety standards, and building acoustics. The course is designed for students with little background in science and no math is required. This course may not be applied toward either a major or minor in physics.

101 Principles of Photography

This course is designed for students who have little background in science but who want a basic course that explains the principles of photography, demonstrates amateur techniques, and familiarizes the student with available cameras and camera equipment. Topics covered include the nature of light, optics, color, cameras, film and paper, exposure, the latent image, development, lighting, and composition. Demonstrations in class include testing lens resolution, developing film and paper, black and white enlarging, toning, printing color negatives and slides, and basic portraiture. No darkroom facilities are available for students registering for the course. This course may not be applied toward either a major or minor in physics.
College of Arts and Sciences

102 Physics and the Environment  3 hrs. Fall

The objective of this course is to provide the student with an understanding of some of the physical principles which underlie selected environmental problems. Topics covered include the physical aspects of air pollution, the energy problem, and radioactivity. The course consists of three lectures per week. No previous training in physics is required. This course may not be applied towards either a major or minor in physics.

104 Introductory Astronomy  4 hrs. Fall, Winter

The aim of the course is to present the development of man's knowledge about the solar system, the stars, the galaxies, and the origin and evolution of the universe. Emphasis will be placed on the methods and tools of the astronomer, on the major principles and their applications, and on the challenging problems of the space age. Mathematics will be restricted to the simplest aspects of arithmetic and high school algebra. Three lecture-recitations and two hours of evening observation and laboratory per week are required. Not recommended for majors in the physical sciences.

105 General Astronomy  4 hrs. Fall

A more intensive and quantitative approach to 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 majors and minors in mathematics and/or the physical sciences. Provides 3 hours credit toward a Secondary Education major or minor. A student may not receive credit for both 104 and 105.

106 Elementary Physics  4 hrs. Fall, Winter

This course surveys physics from mechanics to modern physics in one semester. It is designed for students in curricula requiring four credit hours at the level of general college physics. The course consists of four lectures and one two-hour laboratory per week. A student may not receive credit for both 106 and either 110 or 210.

107 Planetary Science in Elementary Education  4 hrs.

An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among them. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisite.) Not recommended for science majors.

110 General Physics I  4 hrs. Fall, Winter, and Spring or Summer

A general college physics course in the principles and practical application of mechanics, sound, and heat. Required of all medical and dental students. Recommended for students in curricula other than science and students desiring a non-calculus course in physics. The course meets for four lectures and a two-hour laboratory per week. Many schools of engineering will not accept Physics 110-111 for transfer credit.

111 General Physics II  4 hrs. Fall, Winter, and Spring or Summer

This course follows 110 and consists of studies in electricity, magnetism, light, and atomic and nuclear physics. Prerequisite: Physics 110.

120 Elementary Modern Physics  3 hrs. Winter

The objective of this course is to provide the student with an introduction to the basic concepts of atomic and nuclear physics. The emphasis is on the physical ideas involved rather than detailed mathematical calculations. Topics covered include structure of the atom and nucleus, radioactivity, relativity, and quantum phenomena. This course may not be applied toward a major in physics. Prerequisite: Physics 106 or a general course in physics or consent of instructor.

130 Social Issues and Physical Science (see General Studies)
198 Instrumentation in Physics 3 hrs.
This introductory course explores the use of modern instrumentation in physics; the use of computers, computer circuits, basic techniques for physical measurement are included. The course is recommended for students selecting the scientific instrumentation and computer science option in the physics major. It may be used for credit toward a major by these students. One lecture and four hours of laboratory weekly.

202 Photography 3 hrs. Fall, Winter
This is an elementary course in the theory and use of photographic materials. It is applicable as two hours credit 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. The student must have an adjustable camera for the lab (35mm is preferred).

210 Mechanics and Heat 4 hrs. Fall, Winter
This first course of a sequence of three in general college physics employing calculus deals with mechanics and heat. It is required of physics majors, engineering students, and future physics teachers, and strongly recommended for majors in other sciences. The course consists of four lectures and a two-hour laboratory per week. Prerequisite: Math 123 concurrently or consent of instructor. Open to qualified freshmen. A student may not receive credit for both 110 and 210.

211 Electricity and Light 4 hrs. Fall, Winter
This course follows 210 and consists of studies in electricity, magnetism, and light. Prerequisite: Physics 210 or consent of instructor. A student may not receive credit for both 211 and 212.

212 Atomic and Nuclear Physics 4 hrs. Fall, Winter
This course, with 210 and 211, completes the sequence making up the introductory course in physics with calculus. Topics include special relativity, quantum physics, and atomic and nuclear structure. Students transferring from community colleges with one year of physics will normally be expected to take this course. The course consists of three lectures per week and 7-8 three-hour laboratory periods per semester. Prerequisite: Physics 211 or consent of instructor. Students may not receive credit for both 120 and 212.

214 Mechanics and Heat Problems 1 hr. Fall
This course is intended for those who have had 110 General Physics I, or its equivalent at another school, and who need to show credit in 210 Mechanics and Heat. The emphasis is on problem solving using calculus with the mathematical rigor required in Physics 210. This course plus Physics 110 is equivalent to Physics 210. Prerequisites: 110 General Physics I or equivalent, Math 123 concurrently, or consent of instructor.

215 Electricity and Light Problems 1 hr. Fall
This course is intended for those who have had 111 General Physics II, or its equivalent at another school, and who need to show credit in 211 Electricity and Light. The emphasis is on problem solving using calculus with the mathematical rigor required in Physics 211. This course plus Physics 111 is equivalent to Physics 211. Prerequisites: 111 General Physics II or equivalent, Math 123 concurrently, or consent of instructor.

308 Teaching of Physical Science 3 hrs. Winter
This course deals with problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of selection, maintenance, and construction of apparatus are also considered. Prerequisites: One year of college chemistry and one year of college physics. Does not carry credit towards Physics major or minor but is a required course for those in Secondary Education.

330 Thermodynamics and Kinetic Theory 3 hrs. Winter
Thermodynamics is the study of equilibrium bulk properties of large scale systems in which temperature is an important variable. Classical equilibrium thermodynamics is developed from the macroscopic viewpoint. Postulates, empirically founded, are put forth and the consequences are developed and applied to systems of interest in physics and chemistry. Introductory kinetic theory with selected topics is also included. Prerequisite: Physics 211.
342 Electronics  
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  
This is a course in geometrical and physical optics in which the main topics discussed are: reflection, refraction, aberrations, optical instruments, wave motion, interference, diffraction, polarization, double refraction, lasers, holography. Three lectures and one 3-hour laboratory per week. Prerequisite: Physics 211.

360 Introduction to Theoretical Physics  
The basic theories of classical mechanics, electromagnetism, special relativity, and non-relativistic quantum mechanics will be developed. Applications will be selected to illustrate the theory. The topics are condensations of the basic principles covered more extensively in Physics 520, 540, and 560. Therefore, this course is not recommended for physics majors planning to take the 500-level courses. Prerequisites: Physics 212 or 120, Math 272. This course and 470 are offered in alternate years.

470 Historical Developments of Concepts of Physical Science  
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.) Prerequisites: Physics 212 or 120, one year of college Chemistry and junior status as a science major. This course and 360 are offered in alternate years.

498 Special Problems  
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.

510 Studies in Space Science (see Group Science major under Inter-Disciplinary Programs in this college)

520 Analytical Mechanics  
The topics studied include the dynamics of a single particle and the motion of a system of interacting particles. Techniques of vector analysis are used frequently, and conservation laws are developed and applied. The Lagrangian formulation of mechanics is introduced. Prerequisites: Physics 211, Math 274. (The latter may be taken concurrently.)

540 Electricity and Magnetism I  
This is a theoretical course providing a thorough investigation of electric and magnetic fields. The applications of theorems of Stokes and Gauss are emphasized, and Maxwell's equations are developed. Prerequisites: Physics 212, Math 274 or consent of instructor.

541 Electricity and Magnetism II  
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  
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  
This course includes an introduction to quantum mechanics with selected applications, including one-dimensional potentials, the harmonic oscillator, one-electron atoms, the helium atom, atomic shell structure and atomic spectroscopy. A knowledge of elementary differential equations is assumed. Recommended for seniors. Prerequisites: Physics 212 and 520 or consent of instructor.

561 Modern Physics II  
Here the quantum theory covered in Physics 560 is applied to several areas of atomic and nuclear physics. The topics covered include x-rays, collision theory, general properties of nuclei, the nuclear two-body problem, nuclear reactions and nuclear models. Prerequisite: Physics 560. This course is offered in alternate years.

563 Introduction to Solid State Physics  
This course is designed to acquaint the student with the basic techniques for describing the structure and properties of solids. After an initial study of symmetry and crystal structure the following topics are treated: the cohesion of solids; x-ray and neutron diffraction; the elasticity of solids; lattice vibrations; the thermal and electrical properties of solids, with particular emphasis on metals. Prerequisite: Physics 560 or consent of instructor. This course is offered in alternate years.

566 Advanced Laboratory  
The objectives of this course are to provide the student with experience in the use of modern laboratory equipment and with a better understanding of several important physical phenomena. The student will select experiments from a list covering three areas: atomic, solid-state, and nuclear physics. A portion of the semester may be devoted to studying a problem in depth. The course consists of two or three three-hour laboratory periods each week. The course may be repeated for credit. Prerequisites: Physics 342 and either Physics 560 or Physics 360 (560 and 360 may be elected concurrently with 566).

598 Selected Topics  
This course affords an opportunity for advanced students with good scholastic records in Physics to pursue independently the study of some subject of interest to them. Prerequisite: Consent of instructor.
Courses in the Department are designed to prepare a student to: (1) become a functioning citizen; (2) become a teacher of government or civics; (3) become a governmental employee or officer; (4) understand the part government plays in every day business or other activities; (5) develop sound methods of investigation and reflection as well as the ability to evaluate political information critically; (6) understand the role which individuals and organized groups can play in the political process; and (7) appreciate the relationship of the study of government and public affairs to other social sciences. Students who wish to major or minor in Political Science should come to the Department Office as soon as possible to complete the appropriate declaration form and to consult with a departmental adviser.

The Standard Major and Minor in Political Science. The major consists of a minimum of 30 semester hours of work in the Department. The following are required courses for majors.

200 National Government
250 International Relations
340, 341, 342, 343, 344 or 345 (choose one) Foreign and Comparative Political Systems
One course in Theory and Methodology (except 590 and 591)

Students who may become majors are encouraged to take 100, Introduction to Political Science, as their first course in the Department.

The courses taken by the student to complete his 30 hour standard major may not include more than 16 hours in any one field including the core requirement in that field.

A minor consists of 20 semester hours in the Department. 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 (For questions see Prof. Wm. Fox, 1402 Sangren Hall).

A Criminal Justice Concentration is available within the standard political science major for students with particular career and/or advanced degree interests in this field. The concentration allows students completing the program to receive designation of this specialization on their Permanent Record Card. To complete the concentration, a student must:

A. Complete the four required courses of the standard major (see above)

B. Complete the following THREE courses —
   PSCI 320 American Judicial Process
   PSCI 525 The Politics of Criminal Justice
   SOC 362 Criminology

C. Complete TWO of the following Political Science courses —
   PSCI 204 Politics of Race
   PSCI 300 Urban Politics
   PSCI 313 Youth and Politics
   PSCI 330 Introduction to Public Administration
   PSCI 520 Constitutional Law
   PSCI 522 Civil Liberties and Civil Rights
   PSCI 534 Administrative Theory
D. Complete TWO of the following non-Departmental courses —

PHIL 313 Philosophy of Law  
BUS 340 Legal Environment  
SOC 462 Criminal Justice Process  
SOC 464 Sociology of Law Enforcement  
SOC 564 Juvenile Delinquency  
SOC 566 Advanced Criminology  
SWRK 565 Correctional Process

Students interested in the concentration should see the Criminal Justice Advisor of the Political Science Department, Dr. Peter Renstrom.

A special program is available through the Division of Continuing Education for students with an Associate Degree in Criminal Justice or Law Enforcement from a community college who wish to complete the Bachelor's Degree in this field. See Dr. Renstrom.

The Political Science Major and Minor programs in Public Administration are designed to prepare students for entrance level positions in public and public related agencies by equipping them with a knowledge and understanding of the political, social, economic and legal environment of public agencies, by introducing them to operational and procedural problems of public agencies, and by providing them with an understanding of selected administrative tools.

All students who elect the Public Administration programs are to complete a major card in consultation with the Public Administration Coordinator in the Department of Political Science. The student must consult with the coordinator upon entering the programs.

The Political Science major program in Public Administration (Curriculum PAP) requires 36 semester credit hours divided among: (1) an 18 semester hour core of Political Science courses, (2) nine credits in one of three competency areas, (3) an additional nine credits in one of several concentration areas or recommended electives.

The Public Administration Core:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI 200</td>
<td>National Government</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 330</td>
<td>Introduction to Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 504</td>
<td>Making of Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 526</td>
<td>Administrative Law and Public Regulation</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 530</td>
<td>Problems in Public Administration</td>
<td>3-4</td>
</tr>
<tr>
<td>PSCI 534</td>
<td>Administrative Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Competency Areas:

- Budget and Finance
- Statistics, Computer Operations, Data Processing
- Personnel Administration and Labor Relations

Concentration Areas or Electives:

With the approval of the Public Administration Coordinator, 9 credits are taken from an appropriate area depending upon the student’s particular needs and goals. Areas may include Urban Administration; Social Problems; Courts and Law Enforcement; Law; Engineering; or additional courses in the above competency areas.

The Public Administration Coordinator also suggests appropriate minors for the Political Science Major in Public Administration. The General Business minor is strongly recommended for those students whose career goals are not specifically set in other directions. Courses for this minor must be selected in consultation with the General Business Advisor, Dr. William Morrison.

The Political Science Minor program in Public Administration requires 20 semester hours. It includes the 18 semester hour core of Political Science courses and one of the following courses: PSCI 311, 531, 532, 533, or 535.

The Department of Political Science also cooperates with the College of Business in offering a curriculum in Public Administration (PAB) designed for students planning careers in the private sector involving contact with governmental agencies and activities. The student takes a Bachelor of Business Administration with a Business Administration major plus the Political Science minor in Public Administration as described above. For further details, see Business Administration: Related majors. For counseling see the General Business Advisor and the Public Administration Coordinator.

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 Dr. Robert W. Kaufman, Director, Institute of Public Affairs.

COURSE DESCRIPTIONS

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

100 Introduction to Political Science 3 hrs.
An introduction to those concepts useful for an understanding of politics. These concepts and their interrelationships will be examined in the context of contemporary political systems.

270 Political Topics 1 hr.
A specifically focused course dealing with a political topic of general student interest. The course will be primarily substantive rather than theoretical to accommodate students with no previous training in political science. The topic will be announced in advance, and the course may be repeated for credit with a different topic. Not approved for major or minor credit.

AMERICAN POLITICAL SYSTEM

200 National Government 3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions.

202 State and Local Government 4 hrs.
A study of the institutions, the problems and the politics of policy making at the state and local levels in the United States. Consideration is given to the changing relations of state and local government to the total framework of government in the United States.

204 Politics of Race 3 hrs.
Examines the sources of racial conflict and the dominant and alternative models of American social organization. Special emphasis is placed on the psychology of racial conflict in the American political system.

300 Urban Politics in the United States 3 hrs.
A study of those factors having an impact on the governing of American cities, including social and economic conditions in the cities, the organization of local political systems, and the actions of the state and federal governments. The city will be viewed as a center of economic and social problems that necessitate political activity and as a laboratory for the advancement of general knowledge of politics.

304 Political Perspectives of Black America 3 hrs.
Analyzes the development of black political perspectives and activities in the United States, with particular reference to the contemporary period. Prerequisite: 204.

310 Political Parties and Interest Groups 4 hrs.
An introduction to the theories and practices of political parties and interest groups in the American political system. The course considers the nature of politics, organization and functions of political parties, and the role of interest groups in policy development.
311 Congress and the Presidency
A study of the duties, functions and processes of the Congress and the presidency. The political roles and interrelationships of these branches of government will be emphasized.

312 Public Opinion and Voting Behavior
Introduction to the theory of public opinion and techniques for its measurement. The role of mass communication and propaganda in influencing public opinion and public policy. A study of public opinion and other factors entering into the voting behavior of citizens.

313 Youth and Politics
A concern with the processes through which children and young people learn about and develop attitudes and values toward the political system of which they are members. This course should be of particular interest to students planning careers in elementary education and secondary social science.

320 The American Judicial Process
An introduction to the politics of the American judicial process. The course will examine the judicial function generally with particular attention on the decisional processes, process participants, state and federal court structures, recruitment and selection of judges, bases of judicial behavior, policy making, and impact of judicial decisions.

504 Making of Public Policy in the U.S.
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
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. Topics will vary from semester to semester and students may repeat the course.

520 Constitutional Law
Study of leading American constitutional principles as they have evolved through major decisions of the U.S. Supreme Court. Emphasis on judicial review, federalism, separation of powers, commerce and taxation.

522 Civil Liberties and Civil Rights
An examination of Supreme Court responses to First Amendment, criminal procedure, and equal protection questions with particular emphasis on political, social and policy-making aspects.

525 The Politics of Criminal Justice
An examination of the processes of criminal justice with particular emphasis on the relationship between the political system and the administration of justice as it relates to those accused of crimes.

526 Administrative Law and Public Regulation
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.
PUBLIC ADMINISTRATION

200 National Government 3 hrs.
An introductory survey of American national government. This course introduces the basic principles and theories of American government, explores the political process, describes the structure, and illustrates its functions.

330 Introduction to Public Administration 3 hrs.
An introductory course in the administrative process in the public service. Special attention given to the environment and politics of administration, the role of the chief executive and the legislature. Detailed consideration of personnel and financial problems of administration.

504 Making of Public Policy in the U.S. 3 hrs.
A study of the formation of public policy at the local, state, and national levels with emphasis on the impact of decision processes upon policy outcomes.

526 Administrative Law and Public Regulation 3 hrs.
A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant aspects of the social and economic life of the nation. Special attention is paid to the extent of governmental regulation and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisite: 200 or a course in Economics.

530 Problems in Public Administration 3-4 hrs.
Consideration of issues and problems of current interest in the field of public administration. The course is intended to provide advanced work for undergraduates and to serve as an introduction to the field for graduate students without previous training in public administration.

531 Administration in Local and Regional Governments 3 hrs.
The administrative organization, structure, procedure and forms of local units of government are analyzed.

532 The Bureaucracy 3 hrs.
An analysis of the role of public bureaucracies in the decision process of government.

533 Public Personnel Administration 3 hrs.
This course emphasizes the development of public personnel patronage and merit systems, their structure, staffing effectiveness and current problems related to the staffing of public agencies.

534 Administrative Theory 3 hrs.
A study of descriptive theories of organizational and administrative behavior relevant to governmental administrative agencies. Theories of complex formal organizations, decisional theories and systems theories will be analyzed.

535 The Politics of Governmental Budgeting and Finance 3 hrs.
A survey of the political process of governmental budgeting and finance. Budget Systems including program planning and budgeting systems are studied. The politics of taxation and other governmental revenues including intergovernmental transfers are studied for their impact on public policy choices.

542 Administration in Developing Countries 3 hrs.
A consideration of the relation of administrative structure and technique to the political, economic and social problems of the developing countries. Special attention to the role of the bureaucracy in the political system and the nature of, and obstacles to, administrative modernization.
FOREIGN AND COMPARATIVE
POLITICAL SYSTEMS

340 West European Political Systems 4 hrs.
Consider the organization, political behavior and decision-making process of the major countries of West Europe, including Britain, France and Germany. Political trends and forces challenging and reshaping democratic institutions are examined.

341 African Political Systems 4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, are examined in detail. Major political problems dealing with political modernization are analyzed.

342 The People and Politics of Asia 4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes are examined in detail. Major political problems, country differences, and various paths to modernization, are analyzed.

343 Latin American Political Systems 4 hrs.
A systematic survey of the social, economic, and political characteristics of that area. Political culture, institutions and processes are examined in detail. Intra-regional differences and major political problems are analyzed.

344 Soviet and East European Political Systems 4 hrs.
The governmental organization and political structure of the Soviet Union and the states of Eastern Europe. Special attention is directed to the Communist Party and its relationship to the organization of the state. The social and economic bases of the current systems are stressed.

345 India and the Islamic World 3 hrs.
Political developments within and between these South Asian neighbors are described and analyzed. Major consideration will be given to developmental dilemmas.

346 Case Studies in East Asian Politics 3 hrs.
Offered as a single country study. Either Japan, China, Korea or Indonesia will be examined utilizing developmental approaches. The particular country under study will be analyzed with general theoretical as well as specific interests in view. May be repeated.

540 Western Democratic Systems 3 hrs.
A comparative study of the established democracies of North America, Western Europe, and older Commonwealth states. Examines the conflict in western democracies between traditional ideology, structures, procedures and contemporary conditions. Analyzes comparatively and theoretically the constitutional and political party systems, political culture and behavior.

542 Administration in Developing Countries 3 hrs.
A consideration of the relation of administrative structure and technique to the political, economic and social problems of the developing countries. Special attention to the role of the bureaucracy in the political system and the nature of, and obstacles to, administrative modernization.

544 The Military and Political Systems 3 hrs.
Old states as well as new ones are confronted with problems of a military nature which have an important bearing on the operation and development of their respective political systems. This course is designed to study the role of the military in advanced and less developed countries. Attempts will be made to identify the advantages and disadvantages, the strengths and weaknesses of the military nexus. Organized as a pro-seminar.
545 Theories of Political Development 3 hrs.
Examines various theories of political development and analyzes their relevance to both underdeveloped and modernized states. Considers such problems as national integration, political socialization and communication. Organized as a pro-seminar.

548 Asian Communism 3 hrs.
An examination of Asian communism. Emphasis is on the development of Chinese communism, however, North Korea, North Vietnam and communist movements in other Asian countries are included. The course covers ideology, revolutionary tactics, strategies, and prospects. Organized as a pro-seminar.

549 Problems of Foreign Political Systems 3 or 4 hrs.
Course will consider selected problems of the governments and political systems of Western and Eastern Europe, Asia, Africa, and Latin America. The specific problems, topics, and countries to be studied will be announced each semester. May be repeated.

INTERNATIONAL RELATIONS

250 International Relations 4 hrs.
A study of the nature of the international community and the forces which produce cooperation and conflict. Particular attention is given to analyzing power in terms of its acquisition and uses.

350 American Foreign Policy 4 hrs.
An analysis of the institutions and processes by which the American people and their government determine and seek to achieve the national interest of the United States in the international community.

354 International Organization 4 hrs.
Explores systems, methods, and agencies developed by states for meeting their common problems. Examines also the legal relations of nations in war and peace, international legal theory and institutions. Emphasis is placed on the United Nations and regional political, military, and economic agencies.

552 Studies in International Relations 3-4 hrs.
Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. Course may be repeated.

553 United Nations 3 hrs.
A study of the United Nations in action. Attention is focused on significant political problems confronting world organization, i.e., functional and dysfunctional aspects of the UN Charter; nationalism vs. internationalism within the UN; conflict resolution and UN peace-keeping efforts; specific UN accomplishments in maintaining a dynamic international equilibrium; UN weakness and the future of world organization.

555 International Law 3 hrs.
The theory, sources, development, and general principles of international law, and the relationship of law to the dynamics of international politics. Decisions of international and municipal tribunals and the practices of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties and neutrality will also be discussed.

556 Comparative Foreign Policy 3 hrs.
Analysis of foreign policy theories and practices in selected nations. Particular emphasis is given to the interactive process of conflict and competition, cooperation and compromise in the pursuit of national interests.
557 Studies in American Foreign Policy 3-4 hrs.

The course treats American foreign policy as a process and emphasizes both policy formation and policy execution through the vehicle of specific case problems, such as: the nature and role of foreign policy, Congress and foreign policy, the role of the military, the United Nations and American foreign policy, and changing American attitudes on the objectives of foreign policy. Topics will vary and will be announced each semester. Course may be repeated.

POLITICAL THEORY AND METHODOLOGY

360 Introduction to the History of Political Theory I: Political Theory to Thomas Hobbes 3 hrs.

A survey of political philosophy as it developed in Classical Greece, Rome, Medieval Europe, the Reformation and the Renaissance. Emphasis placed on comparative analysis of political philosophies as they reflect the richly diverse sociocultural conditions of these periods. No prerequisites.

361 Introduction to the History of Political Theory II: Political Theory from Thomas Hobbes to Karl Marx 3 hrs.

A survey of political philosophy from the seventeenth century to the middle of the nineteenth. Emphasis upon the great individual philosophers of this period and the early development of the major ideological systems of the modern period: conservatism, liberalism and socialism. No prerequisites.

362 Theoretical and Ideological Bases of Contemporary Politics 3 hrs.

A survey of the more significant developments beginning with the confrontation between socialism and liberalism and concluding with an analysis of those theories and ideologies which have emerged in our own times. No prerequisites.

366 Introduction to the Scope and Methods of Political Science 3 hrs.

A consideration of the nature and scope of political science and various approaches to the study of politics and their methods, primarily the application of scientific methodology to political inquiry.

560 Comparative Political Ideology 4 hrs.

A consideration of the concept of ideology and significant classical and contemporary ideologies, including their nature, causes and functions in various political systems.

562 Modern Democratic Theory 3 hrs.

The course consists of two parts. First, a consideration of traditional democratic theories, and the criticism of these theories emanating from modern elitists such as Mosca, Michels, Pareto and Ostrogorski. Second, an analysis of the attempts by contemporary economists, political scientists, and sociologists to meet these criticisms by revising democratic theory.

563 Theories of Revolution 4 hrs.

Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

564 Political Inquiry and Analysis 4 hrs.

Analysis of the application of scientific method to the study of political phenomena; problems of concept formation; law; cause and explanations; theory construction; the place of values in political inquiry.

590 Research Methodology 3 hrs.

Study of the formulation of research questions, the design of research, the methods of data collection, and the procedures for analyzing data concerning political institutions and behavior.
591 Statistics for Political Scientists

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.

390 Field Work in Political Science

An opportunity for students of Political Science to test theoretical and practical knowledge in an internship situation under the supervision of a faculty sponsor and a public official. Students wishing to apply must have a minimum of fifteen hours in Political Science and department approval before registering. Permission to enroll required.

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

Honor students, with the guidance of a faculty advisor, conduct research and write the Honors Paper on a topic of individual interest. Prerequisite: Membership in the Political Science Department Honors Program and permission to enroll.

572 Computer Utilization

A non-technical introduction to the computer. Emphasis is placed on the actual use of the computer by the student. The use of readily available data banks and library programs will allow the student to focus on the processing and manipulation of data. Computer programming and statistics are not taught, and are not prerequisites.

598 Studies in Political Science

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
David O. Lyon, Associate Chairman
Galen J. Alessi
Eston J. Asher
Howard Farris
Frank A. Fatzinger
Bradley Huitema
Brian Iwata

Neil D. Kent
Chris Koronakos
Marilyn K. Malott
Richard Malott
Jack Michael
Paul T. Mountjoy

John Nangle
Cherly Poche
Malcolm Robertson
Richard Schmidt
Arthur Snapper
Roger Ulrich

The Psychology Department offers a variety of courses and programs in both experimental and applied analysis of behavior. The programs are designed both for the student who plans to pursue graduate study and for the student who plans to terminate with the baccalaureate degree.

The sequencing of courses within the various programs is extremely important. Consequently, students should consult with Psychology Department advisors as early as possible in their course work.

Psychology credit transferred from community colleges and other accredited institutions will count toward the partial fulfillment of the requirements for a major or minor in Psychology. Transfer students must consult with a Department advisor before enrolling in Psychology courses, so that they might begin their studies at a point within the course sequence which is most appropriate to their previous training. Psychology students unable to sequence properly the required courses in their schedule option, should obtain permission from a Departmental advisor to enroll concurrently in some of the courses.

PSYCHOLOGY MAJOR OPTIONS

A student majoring in Psychology has three options: (a) The Experimental Analysis of Behavior Option, (b) The Human Services Option, and (c) The Secondary School Teaching Option. The requirements for each of these options are summarized below.

A note on the numbering system:

Courses ending in 0 (e.g. PSY 150) are in the general option, courses ending in 1 (e.g. PSY 151) are in the human services option, courses ending in 2 (e.g. PSY 152) are in the experimental option, courses ending in 3 (e.g. PSY 153) are required in more than one option, courses ending in 4 (e.g. PSY 154) are approved electives, courses ending in 5 or 6 (e.g. PSY 155 or PSY 156) are teaching assistant courses (5 for applied courses, and 6 for experimental courses), and courses ending in 7 (e.g. PSY 157) are advanced teaching apprentice courses.

The Experimental Analysis of Behavior Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 152</td>
<td>5</td>
</tr>
<tr>
<td>PSY 352</td>
<td>5</td>
</tr>
<tr>
<td>PSY 362</td>
<td>5</td>
</tr>
<tr>
<td>PSY 372</td>
<td>5</td>
</tr>
<tr>
<td>PSY 453</td>
<td>3</td>
</tr>
<tr>
<td>PSY 462</td>
<td>3</td>
</tr>
<tr>
<td>PSY 472</td>
<td>3</td>
</tr>
<tr>
<td>*Approved Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

The Human Services Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 151</td>
<td>3</td>
</tr>
<tr>
<td>PSY 161</td>
<td>4</td>
</tr>
<tr>
<td>PSY 251</td>
<td>4</td>
</tr>
<tr>
<td>PSY 351</td>
<td>5</td>
</tr>
<tr>
<td>PSY 361</td>
<td>5</td>
</tr>
<tr>
<td>PSY 453</td>
<td>3</td>
</tr>
<tr>
<td>PSY 461</td>
<td>3</td>
</tr>
<tr>
<td>*Approved Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

*Approved Electives: PSY 351, PSY 361, PSY 461, and PSY 464.

Acceptable Minors: Biology, Chemistry, Mathematics, Philosophy, and Physics.

Other Requirements: The following courses or proficiencies are required (a) BIOL 101, (b) MATH 100, and (c) two of EET 210, MGMT 102, or PHIL 320.

PSY 150 is recommended for those majors wishing to get an introduction to both the experimental analysis (science) and human services options, but other approved electives can be taken in its place.

The Secondary School Teaching Option: Students who plan to obtain a secondary school teaching certificate may elect to complete the required courses in either the Experimental Analysis of Behavior Option or the Human Services Option. They must also complete PSY 505 or PSY 517. These students are urged to complete teachable minors in one of the sciences or mathematics although other teachable minors may be approved by Departmental advisors.

PSYCHOLOGY MINOR OPTIONS

A student who elects to minor in Psychology has five options: (a) The Experimental Analysis of Behavior Option, (b) The Human Services Option, (c) The General Psychology Option, (d) The Business Option, (e) The Secondary School Teaching Option. The requirements for each of these options are summarized in the tables below.

<table>
<thead>
<tr>
<th>The Experimental Analysis of Behavior Option</th>
<th>The General Psychology Option</th>
<th>The Human Services Option</th>
<th>The Business Option</th>
<th>The Secondary School Teaching Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 152</td>
<td>PSY 150</td>
<td>PSY 151</td>
<td>PSY 150</td>
<td>PSY 150</td>
</tr>
<tr>
<td>PSY 352</td>
<td>PSY 160</td>
<td>PSY 161</td>
<td>PSY 160</td>
<td>PSY 160</td>
</tr>
<tr>
<td>PSY 362</td>
<td>PSY 250</td>
<td>PSY 251</td>
<td>PSY 250</td>
<td>PSY 250</td>
</tr>
<tr>
<td>PSY 372</td>
<td>PSY 350</td>
<td>PSY 351</td>
<td>PSY 344</td>
<td>PSY 350</td>
</tr>
<tr>
<td></td>
<td>PSY 360</td>
<td>PSY 361</td>
<td>PSY 540</td>
<td>PSY 540</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Secondary School Teaching Option: Students who plan to obtain a secondary school teaching certificate with Psychology as a teachable minor may elect to complete either the Experimental Analysis of Behavior Minor Option or the Human Services Minor Option. They must also complete either PSY 505 or PSY 517.
<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Credits</th>
<th>Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>Introduction to Human Behavior</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>151</td>
<td>Introduction to Applied Behavior Analysis</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>152</td>
<td>Introduction to the Experimental Analysis of Behavior</td>
<td>5 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>155</td>
<td>Teaching Apprenticeship in Introductory Psychology</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>157</td>
<td>Advanced Teaching Apprenticeship in Introductory Psychology</td>
<td>2-4 hrs.</td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>Child Psychology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>161</td>
<td>The Analysis of Children's Behavior</td>
<td>4 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>165</td>
<td>Teaching Apprenticeship in Child Psychology</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>167</td>
<td>Advanced Teaching Apprenticeship in Child Psychology</td>
<td>2-4 hrs.</td>
<td></td>
</tr>
<tr>
<td>194</td>
<td>General Psychology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>250</td>
<td>Abnormal Psychology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

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

150 Introduction to Human Behavior
An introduction to general psychology from the point of view of humanistic behaviorism: the use of the science of behavior to help people achieve their full potential as human beings. Emphasizes how the environment has a major influence on the way we are and how the environment can be changed so that we can become the kind of people we wish. Open to freshmen.

151 Introduction to Applied Behavior Analysis
An introduction to procedures for solving human problems and improving the human condition. Applications are made to such areas as education, business, marriage, child rearing, and mental health. Enrollment limited to psychology majors and minors.

152 Introduction to the Experimental Analysis of Behavior
An introduction to the science of behavior. The acquisition of laboratory skills is emphasized. Lecture and laboratory. Enrollment limited to psychology majors and minors.

155 Teaching Apprenticeship in Introductory Psychology
A laboratory course in the instructional methods of teaching introductory psychology. Prerequisite: consent of instructor. May be repeated for credit.

157 Advanced Teaching Apprenticeship in Introductory Psychology
A laboratory course in the instructional methods of teaching introductory psychology.

160 Child Psychology
The application of behavior principles in teaching the child at home and at school. Prerequisite: PSY 150 or consent of instructor.

161 The Analysis of Children's Behavior
An in-depth analysis of techniques in child rearing and early education. An examination of complex human learning. Lecture and laboratory. Prerequisite: PSY 151 or consent of instructor.

165 Teaching Apprenticeship in Child Psychology
A laboratory course in the instructional methods of teaching child psychology. May be repeated for credit.

167 Advanced Teaching Apprenticeship in Child Psychology
A laboratory course in the instructional methods of teaching Child Psychology.

194 General Psychology
An eclectic approach to a social and behavioral survey of major topics in psychology including learning, motivation, emotions, intelligence, personality, mental illness and social relations. Does not count for a major or minor in psychology. Approved for General Education purposes.

250 Abnormal Psychology
A study of the manner in which behaviors labeled by society are acquired and why they persist. Prerequisite: PSY 160 or consent of the instructor.
251 The Analysis of Abnormal Behavior 4 hrs. Fall, Winter
An introduction to behavior modification in institutions and clinics. Particular attention is paid to variables related to the development, maintenance, and modification of abnormal behavior. Lecture and laboratory. Prerequisite: PSY 161, or consent of instructor.

255 Teaching Apprenticeship in Abnormal Psychology 2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching abnormal psychology. May be repeated for credit.

344 Psychology in Business and Industry 3 hrs. Fall, Winter
A survey of organizational, business and industrial psychology, including such topics as behavior within the organization, organizational climates and structures, personnel, selection and placement, performance appraisal, training, social context of human work, and psychological aspects of consumer behavior.

350 Treatment of Human Problems 5 hrs. Fall, Winter
Direct work with people who have various types of learning or emotional problems. Prerequisite: PSY 250 or consent of instructor.

351 Applied Behavior Analysis Laboratory I 5 hrs. Fall, Winter
Experience in the application of behavior analysis procedures in such areas as education, mental retardation, and handicapped persons. An emphasis is placed on the development of professional skills. Prerequisite: Psychology 251 or consent of instructor. Concurrent enrollment in English 105 is required.

352 Experimental Analysis of Behavior Laboratory I 5 hrs.
An intermediate level coverage of the basic areas of respondent and operant behavior. Emphasis is placed on experimental methodology and stimulus control of behavior. Prerequisite: PSY 152 or consent of instructor. Concurrent enrollment in ENG 150 is required.

355 Teaching Apprenticeship in Elementary Applied Behavior Analysis 2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching applied behavior analysis. May be repeated for credit.

356 Teaching Apprenticeship in Elementary Experimental Analysis of Behavior 2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching the experimental analysis of behavior. May be repeated for credit.

360 Understanding Children 5 hrs. Fall, Winter
A laboratory course in which students gain experience in contingency management with children and adolescents. Prerequisite: PSY 350 or consent of instructor.

361 Applied Behavior Analysis Laboratory II 5 hrs. Fall, Winter
A continuation of PSY 351 in which students apply the principles of behavior analysis to the study of children and adolescents. Particular emphasis is placed on research design and report writing. Prerequisites: PSY 351 and ENG 105 or consent of instructor.

362 Experimental Analysis of Behavior Laboratory II 5 hrs. Fall, Winter
A study of the various approaches to response measurement, experimental methodology, and theoretical interpretations of data in the areas of classical conditioning and operant behavior. Prerequisites: PSY 352 and ENG 105 or consent of the instructor.

365 Teaching Apprenticeship in Advanced Applied Behavior Analysis 2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching advanced applied behavior analysis. May be repeated for credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>366</td>
<td>Teaching Apprenticeship in Advanced Experimental Analysis of Behavior</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

May be repeated for credit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>372</td>
<td>Physiological Psychology Laboratory</td>
<td>5 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

An introduction to physiology and its relationship to behavior. The acquisition of appropriate laboratory skills is emphasized. Lecture and laboratory. Prerequisites: PSY 352 and BIOL 101 or consent of instructor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>374</td>
<td>Toward Experimental Living</td>
<td>3 hrs.</td>
<td></td>
</tr>
</tbody>
</table>

A comparison of the research methodologies in complex social structures with an emphasis upon the design of communities.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>375</td>
<td>Teaching Apprenticeship in Physiological Psychology</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

A laboratory course in the instructional methods of teaching physiological psychology. May be repeated for credit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>384</td>
<td>Educational Psychology</td>
<td>5 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

A lecture and laboratory course in behavioral assessment, classroom contingency management, behavioral objectives, and other topics in educational psychology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>385</td>
<td>Teaching Apprenticeship in Educational Psychology</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

A laboratory course in the instructional methods of teaching educational psychology. May be repeated for credit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>453</td>
<td>Statistical Analysis</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

Interpretation and application of descriptive and inferential statistical techniques necessary in the understanding of data presentations in behavioral research. Major topics include: measures of central tendency and variability, frequency distributions and graphic presentations, the normal curve, probability theory and the binomial, hypothesis testing, the t-test, chi square, and correlation.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>Teaching Apprenticeship in Statistics</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

A laboratory course in the instructional methods of teaching elementary statistics. May be repeated for credit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>461</td>
<td>The Methodology of Applied Behavior Analysis</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

An examination of the problems approached and of the methodologies utilized in applications of behavior analysis. Extensive readings in the recent literature of applied behavior analysis bring the student into contact with the current issues in the field. Prerequisite: PSY 453 or consent of instructor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>462</td>
<td>The Methodology of the Experimental Analysis of Behavior</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

An examination of the problems approached and of the methodologies utilized in experimental analysis. Extensive readings of the recent literature of experimental analysis bring the student into contact with the current issues in the field.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>464</td>
<td>Systems and Theories in Psychology</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

A critical examination of the assumptions, methods and problems of several major schools of psychology: Structuralism, Functionalism, Associationism, Behaviorism, Gestalt Psychology and Psychoanalysis.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>465</td>
<td>Teaching Apprenticeship in Applied Behavior Analysis Methodology</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
</tr>
</tbody>
</table>

A laboratory course in the instructional methods of teaching the methodology of applied behavior analysis. May be repeated for credit.
466 Teaching Apprenticeship in Experimental Analysis Methodology 2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching and methodology of the experimental analysis of behavior. May be repeated for credit.

472 The Analysis of Verbal Behavior 3 hrs. Fall, Winter
An analysis of complex human behavior with an emphasis on language and verbal behavior. Prerequisite: PSY 462 or consent of instructor.

475 Teaching Apprenticeship in Verbal Behavior 2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching verbal behavior. May be repeated for credit.

SEMINARS AND INDEPENDENT STUDY

397 Seminar in Contemporary Problems 1-5 hrs. Fall, Winter
Survey and discussion of selected topics in contemporary psychology. Topic to be announced in the time schedule. May be repeated for credit. Prerequisite: Permission of instructor.

397 Current Issues in Psychology 1 hr. Fall, Winter
Lectures and discussions by various WMU faculty, guest lecturers, professionals from community mental health services, and graduate students. Topics include both basic science and professional activities. May be repeated as desired.

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.

OPEN TO UPPERCLASSMEN AND GRADUATE STUDENTS

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. This is a required methods course for students who plan to teach Psychology in the secondary school. Prerequisite: PSY 361.

510 Advanced General Psychology 3 hrs. Fall, Winter
Readings, lecture, and discussion designed to introduce non-majors in psychology to modern behavior theory. Emphasis will be upon human behavior, both normal and abnormal, with a significant portion of the course devoted to the higher cognitive processes. Recommended as a cognate course in Psychology. Recommended prerequisite: one prior course in psychology.

513 Research in Animal Behavior I 3 hrs. Fall, Winter
Research in various areas of animal behavior. An individual research project is required with emphasis on laboratory research of animal learning processes. Research design, data collection, analysis and reporting are included.

514 Research in Animal Behavior II 3 hrs. Fall, Winter
Advanced research in animal behavior. This course is for continuation of research initiated in Animal Behavior I and for advanced students with research of laboratory experience.

516 Conditioning and Learning 3 hrs. Fall, Winter
A study of the various approaches to response measurement, experimental methodology and theoretical interpretations of data in the area of conditioning and learning. Lecture and laboratory.
517 Psychology of Learning for Teachers 3 hrs. Fall, Winter

Designed to teach the principles of behavior and the application of these principles to teaching. Topic areas covered include the use of behavior principles in the development of objectives, selection and preparation of instructional material, classroom management and incentive motivation, behavior change, performance contracting and program evaluation. Practical application is stressed.

518 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.

520 Advanced Child Psychology 3 hrs. Fall, Winter

An intensive examination of the research literature in developmental psychology with concentration upon various theoretical interpretations of child behavior.

521 Advanced Child Psychology II 3 hrs. Fall, Winter

A continuation of PSY 520 — the study of children's behavior at an advanced level.

530 Statistics for Education 3 hrs. Fall, Winter

An introduction to basic statistical procedures and concepts. Primarily for students in education. Not open to Psychology majors.

535 Instrumentation in Psychology 3 hrs. Fall, Winter

A survey of problems in response measurement in experimentation lecture and laboratory.

540 Industrial Psychology 3 hrs. Fall, Winter

Application of psychological principles to industry and other organizations. An examination of employee selection, job satisfaction, training, evaluation of performance, supervision, and working conditions.

542 Human Factors Engineering 3 hrs. Fall, Winter

A survey of research on the adaptation of equipment, products and environment to man's use. Prerequisite: Permission of instructor.

570 A Behavior Analysis Approach to the Area of Retardation 3 hrs. Fall, Winter

Topics will include: historical background, assessment, training, and legal implications of treatment.

572 Applied Behavior Analysis 3 hrs. Fall, Winter

A systems approach: The application of systems analysis concepts to the design of systems which yield behavioral measures of complex social situations.

574 Experimental Social Psychology 3 hrs. Fall, Winter

Methodology of research with groups, with emphasis upon design and application. Prerequisite: Permission of the instructor.

580 Testing and Measurement in Education and Psychology 3 hrs. Fall, Winter

A study of psychological test and measurement procedures as applied to education.

595 History of Psychology 3 hrs. Fall, Winter

The historical and philosophical foundations of contemporary American psychology.

597 Topical Seminar 1-5 hrs. Fall, Winter

A survey in depth and discussion of a research topic of current interest. Prerequisite: Permission of instructor. May be repeated for credit.

598 Special Projects in Psychology 1-5 hrs. Fall, Winter
The study of religion in a public university is universal in scope and theoretical in intent. It is universal rather than parochial because the course offerings are not confined to any particular religious tradition, such as the Judeo-Christian heritage peculiar to Western culture, but are attempts to consider the religious experiences and expressions of mankind. It is theoretical rather than practical in that students are challenged to learn and think about religion both critically and constructively. There is no explicit attempt to make the students more religious.

Since religion is a basic mode of experiencing, expressing and appropriating humanness, the study of religion can contribute to an appreciative awareness of that humanness. Thus its purpose is generally humanistic, at least as far as the education of undergraduates is concerned. The various courses which comprise the curriculum in Religion can serve to deepen the student's self-understanding both within the context of Western culture and in the light of cross-cultural perspectives. This humanistic emphasis should not, however, obscure the fact that courses in Religion can be useful to students who wish to continue the study of religion on a graduate level, to students who plan to go into professional religious work, or to students who need to deepen their knowledge of other cultures.

The data for the study of religion are drawn from many sources, including the disciplines of anthropology, archaeology, sociology, psychology, history, philosophy, and the arts. But in the Department of Religion these data are structured and interpreted in terms of an autonomous discipline which is specifically designed to consider the nature and history of man's encounter with the sacred. In the context of this discipline the data are approached in four different ways, and the courses are thus under four specific fields of study. In the field of Historical Studies the focus is on the development of various religious traditions and on the development of religion in different periods and places. The field of Morphological and Phenomenological Studies approaches religious phenomena through the study of recurring religious patterns, forms or structures as these can be discerned regardless of time or place. This field is concerned with the structure of religion rather than with the history of religion. The field of Methodological Studies is analytical and critical in its approach to religion. An important element in this field is a disciplined consideration of how to study religion. The field of Constructive Studies is especially concerned with the power of religion as it explores issues and proposals in the contemporary religious situation, the significance of new religious forms, and the religious possibilities for the future which emerge in and through ecumenical and cross-cultural perspectives.

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 recommended in the field of Historical Studies. The two remaining courses should be taken in two of the three remaining fields.

Teaching Minor in the Academic Study of Religions

A teaching minor leading to state certification in the Academic Study of Religions consists of a minimum of six courses, totaling 22 semester hours, and composed as follows:

1. Religion 200: Introduction to Religion;
2. One course in primitive religions, within the category of Historical Studies;
3. One course in the Christian, Jewish, or Islamic religions, within the category of Historical Studies;
4. One course in Morphological and Phenomenological Studies;
(5) One course in any religion other than those specified above under (2) and (3), within the category of Historical Studies, or one course in Methodological Studies;


NOTE: In exceptional cases Rel. 498, Independent Studies in Religion, or Rel. 598, Readings in Religion, may be substituted within the stipulated category for any of the courses specified above except Rel. 200, Introduction to Religion.

Students wishing to obtain the teaching minor are urged to consult with the program administrator before composing their course program.

COURSE DESCRIPTIONS

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

200 Introduction to Religion 4 hrs.
An introduction to the study of religion intended to be universal in scope, theoretical and scientific in intent, and humanistic in orientation, of the nature and history of religion wherever it may be found, whatever its context, no matter what its forms, and attempting to raise whatever questions are necessary to illuminate its character. This will involve attention to more than one religious tradition, a discussion of the problems of definition, theory and method, and acknowledgment of the interdisciplinary aspects of much of the inquiry, and an examination of the consequences of this inquiry for problems of self-understanding in the context of western culture in general, and American society in particular.

HISTORICAL STUDIES

300 Primitive Religions 4 hrs.
The materials for this course are selected from the vast range of small-scale religious traditions preserved by contemporary primitive — that is to say, pre-literate — peoples. The course will attempt to explore three problem areas: 1) What general patterns of religious experience and expression are most characteristic of the religions of primitive peoples? 2) What religious forms are most characteristic of the religions of primitive peoples, and what is the relationship between particular religious forms and particular patterns of cultural life? 3) What have been the results of the encounter between primitive traditions and those of the Western world?

301 Protohistoric Religions: Ancient Near East, Greece and Rome, Meso-America 4 hrs.
Cities were once a new mode of human existence on the face of the earth, and they brought with them many new religious forms. This course will consider some of the major religious discoveries made in the urban centers of the Ancient Near East, Greece, Rome, and Meso-America with an attempt to find answers to questions such as: What is a city? What has man discovered about himself and his world through the experience of living in cities? Is the city itself a religious form?

302 Religion in the Indian Tradition 4 hrs.
This course draws its materials primarily from the great religious traditions native to India — i.e. Brahmanism, Buddhism, Jainism, and Hinduism. Particular attention is paid to the continuities of motif and practice that allow one to speak of "Indian Religion" as a unified phenomenon with a single history. Consideration is also given to such problems as the relationship between Indian religions and Indian culture and the relationship between Indian religious forms and the religious forms of other cultures.

303 Chinese Religion 4 hrs.
A study of the historical continuity and overall unity in the Chinese religious tradition. The formal religions of Confucianism, Taoism, and Chinese Buddhism, as well as the informal religious movements of "ancestor worship," family religion, and state religion will be discussed. An attempt is made to assess the meaning of religion in Chinese culture.
304 African Religions

This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focusing on the myriad religious forms, e.g., ideas of the soul, cosmology, initiation rites, etc., which have emerged during the long history of Africa. The course pays attention to religious forms which either came into being with or define a specific cultural stratum: for example, the religious forms of hunters and food-gatherers, horticulturalists, agriculturalists, nomadic herders. Finally an attempt is made to see what changes Westernization has made in the Africans appropriation of their traditional religious symbols.

305 The Christian Tradition

An introduction to some of the salient features of the Christian experience as expressed in thought, practice and institutional structures. In an effort to elucidate the all-pervasive influence Christianity has had on Western culture, the course focuses on such problems as the questions of the origin and identity of Christianity, the most important stages in its development, the interaction of Christian experience and current world-views of the host cultures, and particularly the phenomenon of secularization which is examined in the light of the astronomical, biological, historical, psychological and sociological "attacks" by modernity upon Christianity.

306 The Jewish Tradition

This course traces the history and development of Judaism from its roots in the Ancient Near East to the present, and its role in the shaping of Western consciousness. Particular attention is given to the periods of radical social, political and cultural change in Jewish history and hence to the critical problem of Jewish identity. An analysis of Jewish writings, customs, and institutions taken from different periods of Jewish history reveals that Jewish people have discovered and expressed their identity within a religious framework that includes myths and rituals, festivals and holy days, celebration of the past and anticipation of the future, as well as social movements and political revolutions.

307 The Islamic Tradition

A study of the most important factors involved in the development of both the Islamic religious tradition and Islamic civilization. The pre-Islamic background, the life of Muhammad, the Qur'an, geographical expansion of the Muslim community, Islamic law, mysticism, sectarian developments, philosophy, and Islam in the modern era are the major topics to be examined during the term.

308 Japanese Religion

A study of the historical continuity and overall unity in the Japanese religious tradition. The major organized religions of Shinto and Japanese Buddhism, and also the influence of Taoism, Confucianism, and Christianity are discussed; also taken up are the informal religious movements of "ancestor worship," family religion, and state religion. An attempt is made to assess the meaning of religion in Japanese culture.

400 Religious Texts

An introduction to the canonical and other religious texts of major Western and Eastern religions, such as the Qur'an, the Hebrew Bible, the New Testament, and selected religious texts of India, China and Japan. The specific subject matter of the course will vary from semester to semester and will be announced in the schedule of classes. Students may repeat the course for credit provided the subject matter is different. The major purpose of the course will be to elucidate the religious nature and functions of these tests, and to introduce students to some of the methods of interpretation and exegesis.

500 Historical 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: Zen Buddhism; Buddhism; Taoism; Shinto; New Religions of Japan; Religion in Japanese Literature; Islam in the Modern World; Christian Theology to 1500; Renaissance and Reformation Theology.
MORPHOLOGICAL AND PHENOMENOLOGICAL STUDIES IN RELIGION

310 Patterns in Comparative Religion 4 hrs.
Method in the most general sense refers to a way of organizing data with a specific goal in mind. This course will attempt to organize selected religious data in terms of forms (morphology) and structures (phenomenology). The specific purpose of the course will be to elucidate both the specificity of religious structures and their comprehensiveness. Types of data to be included are divine forms, cultic practices, initiatory scenarios, religious symbols, etc.

311 Myth and Ritual 4 hrs.
Eric Dardel, an anthropologist, has written: “Myth says with utmost seriousness something that is of essential importance.” In this course an attempt will be made to discover just what this important something is and how it is actualized in certain rituals. Myths and rituals will be taken from a variety of historical traditions in order to reflect the cultural milieu of the communities whose lives are governed by them. Special problems to be considered will be the relationship between myth and cult, the problem of time and myth, the logic of mythic forms, etc.

312 Religious Forms in Modern Literature 4 hrs.
A study of the correlation between various religious forms and literary forms. Particular attention will be devoted to the structural function of religious forms in modern literature. Specific forms such as the Saviour, the Divine Child, the Earth Mother, the Hero, the Androgyne, Demons, Initiation, Vocation, The Eschaton, and Cosmic and Spiritual Regeneration will be identified and exemplified in particular works of literature.

313 Religion in America 4 hrs.
An introduction to the full range of religious phenomena in today’s North American culture and societies. The course attempts to isolate the specifically religious elements in concepts, values, and institutions and relate them to other elements of the socio-cultural fabric. While attention is directed to historical background, the rise, institutionalization and decline of movements, developing traditions, changing concepts, etc., the emphasis of the course is on contemporary experience and special attention is given to content analysis of the mass media, such as TV, radio, newspapers and magazines, advertising, popular music, comics, films, etc.

510 Morphological and Phenomenological Studies in Religion 2-4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Millenium, Utopia, and Revolution; Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition.

METHODOLOGICAL STUDIES IN RELIGION

320 The Philosophy of Religion 4 hrs.
An examination of the place of religion in human experience with special attention to the nature of religious language, the role and structure of religious concepts, the relation between religion and theology, and the logic of religious symbols.

321 The History of the Study of Religion 4 hrs.
In calling mythology a “disease of language,” and religion an error founded on dreams, a projection of society, an Oedipus complex, etc., a number of great thinkers helped to found a discipline — and to endow it with some massive problems. This course introduces students to these major thinkers and the contributions of their various fields: philology, anthropology, sociology, psychology, psychoanalysis, and theology. Special attention will be devoted to the problem of the autonomy of the discipline of religion in relation to the “parental” human sciences.
323 The Religious Factor in Social and Cultural Change 4 hrs.

In this course, religion will be looked upon as a driving force of social and cultural evolution. The historical and contemporary record shows religion capable of exhibiting profound revolutionary tendencies as, for instance, in the Peasant War in 16th century Germany or in the present South American situation. The course will be concerned with religion's capability to promote fundamental change. It will explore the following main issues: The utopian and prophetic elements in Eastern, Mid-Eastern, and Western religious traditions; comparison of contemporary religious and secular political hopes and aspirations; the correlation of political exodus utopias and religious eschatologies; the mutual reproduction of religious theory and social and political practice.

324 Psychological Elements in Religion 4 hrs.

The course is concerned with the correlation between religion and the human subject — the religious or areligious individual. The central interest of the course is with religious propensities, feelings, impulses, passions, attitudes, motivations, values, ideas, prejudices. Critical questions such as the following will be asked: What is the function of religious faith for the nervous stability, mental health and wholesomeness of the subject? Does religion reinforce or hinder the maturation process of the individual? Is the need for religion just a derivation from the child's feeling of helplessness and of the longing it evokes for a sublime father figure?

520 Methodological Studies in Religion 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: Scientific Issues in the Study of Religion; the Critical Theory; Myth and Symbol in Religion and Literature.

521 The Teaching of Religion in the Public School 2 hrs.

This course focuses on methods and issues involved in the teaching of religion in the public school. Particular attention is given to the problems of its constitutionality, the distinction between the academic study of religion and religious instruction, and the question of meaning. Various approaches to the teaching of religion are critically evaluated. Teaching methods appropriate to the level of instruction, availability, organization, selection and use of materials are discussed.

Required of all students following a Secondary Education Curriculum which includes the Academic Study of Religions as a minor. (This course is not applicable to the regular religion major/minor program.)

CONSTRUCTIVE STUDIES IN RELIGION

330 Studies in Contemporary Theology 4 hrs.

Topics such as the following will be studied: Radical Theology, Modern Catholic Theology, Ecumenical Theology, Christian-Marxist Dialogue, etc. 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  
This course will be a study of different styles of religious and secular social ethics and the creative ideas, problems, and attitudes toward the social world they contain. The course will discuss a variety of special contemporary socio-ethical problems: The new sexual morality, abortion, divorce, guaranteed income, thermonuclear and chemical warfare, artificial insemination, euthanasia, and drug addiction. Particular attention will be paid to how different styles of social ethics relate themselves to fundamental changes in contemporary marriage and family life as well as in the economic, political, and cultural sphere.

333 Religion and Ecological Awareness  
A study of our society's attitudes toward the natural environment with special attention given to the sanctions which undergird these attitudes, a consideration of the various religious responses to the environmental crisis, and an inquiry into the possibility of reappropriating a sense for the sacrality of nature through the emerging ecological awareness.

334 Religion in Industrial Society  
Whereas a major focus of the systematic study of religion is upon religious traditions, or aspects of them, it is important that attention also be paid to the questions raised by the various contexts in which religion occurs as well as to questions raised by the methods developed in studying religion in such contexts. The specific context of religion to be studied in this course is that of industrial society. For religion to be understood in more than historical terms it is important that attention be paid to this kind of context. As a consequence of such a focus questions also are raised about the methods developed to specify and delineate such contexts and the role that religion plays in them. This provides an occasion for raising questions about the assumptions underlying such methods and about their relationship to the systematic study of religion.

530 Constructive Studies in Religion  
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: Religious Images of Man; Christian Humanism; the Structure of Religion.

498 Independent Study  
Research on some selected problem under supervision of a member of the Religion faculty. Approval of the instructor involved and Chairperson of the Department must be secured in advance of registration.

598 Readings in Religion  
Research on some selected period or topic under supervision of a member of the Religion faculty. Approval of the instructor involved and Chairperson of the Department must be secured in advance of registration.
Courses are designed to give students a better understanding of the significant factors and processes of modern life; to provide study useful for particular applied fields, such as social work, criminal justice, city, state, and federal governmental service, and social research; to meet the needs of students preparing to teach in the social science field; and to prepare students for graduate work in sociology.

The Center for Sociological Research, as the research arm of the department, provides facilities and services available to students as well as faculty for instructional and research purposes. The Center maintains computer and other research facilities which are used in research course instruction. Research conducted through the Center has dealt with subjects such as: criminal justice, marital roles, race relations, voting behavior, alcoholism, mental health, demography, and education.

HONORS PROGRAM

Students may participate in the Sociology Honors Program in two ways:

1. Membership in Alpha Kappa Delta, the national sociology honorary society. AKD is open to all students who have completed at least ten hours in sociology with a grade-point average of 3.0 or better, and whose overall average is at least 3.0.

2. Qualifying for a bachelor’s degree with Honors in Sociology. The purpose of this program is to stimulate and reward outstanding student work in sociology. Requirements include: sociology major, overall average of 3.0 or better with an average of at least 3.25 in sociology, satisfactory completion of Soc. 499 (Honors Seminar), and satisfactory completion of an Honors Paper (including an oral exam on the paper). University recognition of graduation with honors appears on the diploma and transcript.

Further information and application forms may be obtained at the Sociology Undergraduate Office, 2420 Sangren Hall.

MAJORS

A major in sociology consists of a minimum of 30 hours in sociology courses. Soc. 200, 300, and 382 are required. No more than one course at the 100 level may be applied to a major or minor. Students may choose one of the concentrations described below, or they may make their own selections of courses to complete the 30-hour requirement.

Transfer students should see the department advisor, since any transfer credit in sociology without a stated equivalent must be evaluated by the department if it is to apply toward a sociology major or minor.

Students in secondary education may take Soc. Sci. 300 (Teaching of Social Studies in Secondary Schools) to meet the state certification requirement for a teaching methods course. This course may not be included in the hours required for a sociology major or minor.

Sociology majors may spend one or two semesters at the Merrill-Palmer Institute in Detroit with credit toward graduation. Students must make individual application to Merrill-Palmer, but if sociology credit is desired, the department advisor must be consulted in advance.
Two concentrations within the standard sociology major are available to students with particular career and/or graduate study interest in either of the areas. Students who complete one of these concentrations will have the appropriate designation on their transcripts.

**CRIMINAL JUSTICE CONCENTRATION**: provides background and perspective for careers in police work, probation, and work with juveniles, as well as training for professional or graduate study in criminology or law.

- Required courses: Soc. 200, 300, 382
- Criminal Justice Core: Soc. 362, 462, 464, 564, 565, and 566
- Plus one of: Soc. 210, 262, 314, 353

Additional electives are required, and may be selected in consultation with the department advisor. A major slip is required for this major.

A special program is available through the Division of Continuing Education for students with an associate's degree in criminal justice or law enforcement from a community college who wish to complete the bachelor's degree in this field. This program allows full credit for all courses taken in the associate degree program. For further information, see the department advisor.

**URBAN STUDIES CONCENTRATION**: provides valuable training for students desiring research or staff positions in municipal government or various urban programs. This concentration is most valuable, however, as pre-professional training for those interested in such fields as planning, community development, architecture, or law.

- Required courses: Soc. 200, 300, 382
- Urban Core: Soc. 353, 354, 454, 553
- Plus three of: Soc. 314, 355, 371, 375, 430, 471, 472, 495, 554, 556, 570, 572, 575

Additional electives are required, and may be selected in consultation with the department advisor. A major slip is required for this major.

**SOCIOLGY/ANTHROPOLOGY MAJOR**: A combined major in sociology and anthropology consists of a minimum of 30 hours, with at least 12 hours in each department. Soc. 200, 300, 382, and Anth. 210, 240, and 250 are required. Additional courses in either department may be selected by the student.

**MINOR**

A minor in sociology consists of 15 hours for students in curricula other than education. Students qualifying for teacher certification are required to complete a minimum of 20 hours. Soc. 200 and 210 are required in either case. The balance of the hours required may be selected by the student.

**UNDERGRADUATE ASSISTANTSHIPS**

Students interested in becoming more involved in the department's activities and projects may wish to apply for undergraduate assistantships which are available fall and winter semesters. Department assistants receive a moderate stipend, and are assigned to work for a faculty member or department project. For further information and application forms, see the department advisor.

**ADVISING**

Department Advisor: Helen Nelson, 2407 Sangren Hall, 383-1733

Students are encouraged to consult the department advisor for evaluation of transfer credit in sociology, major slips for the concentrations in the sociology major, or any other questions involving sociology majors or minors.

Information on graduate programs at Western as well as other schools is also available in the advisor's office.
INTRODUCTORY

100 American Society 3 hrs.
An analysis of contemporary American society, including continuity and change in value systems, major institutions and their interrelationships, and other aspects of social life.

101 Ideologies and Societies 3 hrs.
The course considers ideologies which serve as modes of organizing societies, such as capitalism, socialism, democracy. The impact of these ideologies on the structure and functioning of societies is analyzed.

122 Death: Dying and Bereavement 3 hrs.
Social structures, attitudes, beliefs and values about death, dying and bereavement in contemporary American society as well as in other societies and other time periods will be considered. Medical, legal, religious, and psychological issues in relation to death, dying and bereavement will be discussed. (Not recommended for persons recently bereaved.)

153 Civilization and the City 3 hrs.
An examination of the city as a central feature in the history of civilization. Cities throughout history and in different cultures (Africa, Asia, Europe, and America) will be examined as civilizing influences upon mankind. The characteristics, problems, and consequences of contemporary urbanization and the prospects of continued urbanization will also be discussed.

171 Social Impacts of Science and Technology 3 hrs.
An analysis of social consequences of major scientific and technological changes, including the actual and potential impact of advances in the physical and natural sciences.

190 Men and Women in Contemporary Society 3 hrs.
A systematic analysis of roles of men and women, with particular emphasis upon problems of adjustment and conflict in contemporary society.

200 Principles of Sociology 3 hrs.
An introduction to and survey of the discipline of sociology and its major fields of study. Selected sociological concepts, theories, and research findings will be discussed. Required for sociology majors and minors.

THEORY

300 Sociological Theory 3 hrs.
A study of major theoretical viewpoints in contemporary sociology. The course is oriented toward the understanding, application, and extension of these major perspectives. Required for sociology majors. Prerequisite: Soc. 200.

500 History of Social Thought 3 hrs.
A critical survey of the social thinking of outstanding students of society from Plato to modern social scientists. Prerequisite: 9 hours of sociology.
501 Social Systems Theory and Analysis

An investigation and critique of social systems theory, general systems analysis, and specific systems analysis techniques which have been used in social organizations. Each student will be required to conduct a systems analysis during the course.

SOCIAL PROBLEMS

210 Modern Social Problems

The course aims to develop a theoretical framework for understanding selected social problems in American society in such areas as: intergroup conflict, race, poverty, juvenile delinquency and crime, population changes, and mass communication. Problems selected for emphasis may vary with the instructor. Required for sociology minors.

314 Ethnic Relations

A study of race and ethnic relations, stressing a global perspective of social relations among varied peoples at different levels of development, and in different parts of the world.

510 Studies in Social Problems: Variable Topics

An examination of a selected area of concern in social problems not intensively covered in other courses. The focus of the course will be substantive, as well as theoretical and methodological. Topics may include such areas as poverty, mental illness, narcotic addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: Soc. 200 or 210, or consent of instructor.

515 Social Conflict

An examination of causes of social conflict, strategies in pursuing conflict, and forms of conflict resolution in conflicts between individuals, between groups, and between nations. Prerequisite: Soc. 200 or 600*, or consent of instructor.

SOCIAL PSYCHOLOGY

320 Introduction to Social Psychology

An introduction to social psychological theory and research, covering the interaction of individuals and the relationships of individuals to groups. Includes such topics as social influence, attitudes, socialization, and personality.

520 Studies in Social Psychology: Variable Topics

Further analysis of selected topics in social psychology not intensively covered in other courses. Specified topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: Soc. 320.

521 Socialization and Personality Development

An investigation of the development of individual knowledge and abilities during childhood as acquired through social interaction and biological maturation. Social theories of learning and child development will be covered, with emphasis on such topics as biological maturation and social learning, language acquisition, the development of self, and the acquisition and systematic organization of beliefs, attitudes, norms and values. Prerequisite: Soc. 320 or consent of instructor.

523 Contemporary Social Movements

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.

*600 Social Dynamics of Human Behavior is the introductory course in sociology at the graduate level.
525 Social Psychology of Education 3 hrs.
An intensive examination of the roles and the interaction of students, teachers, and administrators in the school setting. Particular attention will be given to the importance of peers, family, and social structure. Prerequisite: Soc. 320 or equivalent.

COMPARATIVE SOCIOLOGY

335 Modern Latin American Societies 3 hrs.
An introduction to contemporary Latin American societies focusing on their developmental problems and processes. Topics may include rural-urban migration, land reform, and governmental development policies in the urban industrial sector.

An introduction to Japanese society, focusing upon current developments in the process of industrialization and urbanization. Examines the impact of these processes in Japanese population, family life, village organization, urban community, class structure, and personality.

337 Modern Arab Societies 3 hrs.
An introduction to the Arab societies of the Middle East and North Africa, focusing on current tribalism and ethnic group tensions. The course examines the influences of the three major western religions and the religious, social, political, and economic tensions that have ensued in intergroup relations.

430 (530) Social Forces in Developing Areas 3 hrs.
An examination of the social factors which influence the development of currently developing areas in Africa, Asia, and Latin America. These factors include such phenomena as urbanization, nationalism, the "population explosion," welfare institutions and practices, industrialization and the acculturation of ethnic minorities. Prerequisite: Soc. 200 or consent of instructor.

Analysis of social change in specific geographic or national areas designated in the course title as scheduled. Change is examined through perspectives from history, anthropology, and sociology. May be repeated for credit with a different area. Prerequisite: Soc. 200 or 600.

532 Introduction to Comparative Sociology 3 hrs.
An introduction to the history, major theoretical perspectives and methodological issues associated with cross-national and cross-cultural studies. Particular emphasis will be placed upon those studies which have been central to the development of the comparative approach in sociology. Prerequisite: Consent of instructor.

533 (577) Comparative Institutional Studies 3 hrs.
A comparative study of the structure and functioning of selected aspects of culture in America and other selected countries, such as the legal structure, family and educational systems, the welfare structure, stratification, economic institutions, political organization, the role of science and the basic character of social change. Prerequisite: Soc. 200 or 600.

534 (559) Studies in Ethnic Relations: Designated Areas 3 hrs.
An investigation of the structure and dynamics of tribal, ethnic, and race relations in the context of current theories of racial and ethnic relations. The course will focus on one or another major geographic or cultural area (Africa, Southeast Asia, etc.) and will compare case studies drawn from different countries within this area. May be repeated for credit with a different area. Prerequisite: Soc. 200 or 600, or consent of instructor.

535 (557) Changing Social Systems — Sub-Saharan Africa 3 hrs.
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems resulting from the impact of European culture and other contemporary world influences. Prerequisite: Soc. 200 or 600, or consent of instructor.
COMMUNITY AND CLASS

250 Rural Communities and Minorities 3 hrs.
Rural American society is a complex social situation involving the classic social institutions and problems, including social class, religion, poverty, and diverse racial and ethnic groups. This course attempts to examine these institutions and problems through current literature and by means of a series of field trips to visit examples of these social structures in southwestern Michigan. Contrasting rural communities in other countries may also be considered.

351 Sociology of Childhood 3 hrs.
An examination of the social nature of childhood, from birth to adolescence, and the role of childhood in the social and cultural life of various societies. Analysis will be made of the culture of childhood, both as organized for children by adults and as generated and maintained by children.

352 Introduction to Social Gerontology 3 hrs.
An exploration of the social, psychological, economic, and physical aspects of aging. Consideration will be given to institutional programming for older people in American and other societies.

353 The City in the Contemporary World 3 hrs.
A survey of the problems specifically related to cities and the process of urbanization in developed and developing societies. Selected topics may include urban planning, city growth, crowding, and city and economic development, housing and public services, population redistribution, and public policies affecting the city.

354 Population and Society 3 hrs.
A sociological investigation into the dynamics and consequences of the world-wide "population explosion," and U.S. population problems such as family planning, the "baby boom," zero population growth, and ecological issues. Prerequisite: Soc. 200.

355 Social Structure of Black America 3 hrs.
A study of social structure and interpersonal relations in black communities, including historical and anthropological perspectives. The course will focus selectively on family, religious, educational, political, legal, and economic institutions. Emphasis will be given to the patterned consequences of white domination in the society. Prerequisite: Soc. 200.

451 Sociology of Sports 3 hrs.
An analysis of the place of sports in the social and cultural life of the United States and other societies. The sociological perspective is used to interpret the nature of sports activities, individual and group effects of sports participation, and the part sex roles and cultural values play in the sports of a nation. Prerequisite: Soc. 200 or consent of instructor.

454 Community Studies 3 hrs.
An examination of the American community, including the small town as well as the urban or suburban neighborhood. Topics include: decline of the traditional American community, urban and ethnic neighborhoods, and differing sociological approaches used in the analysis of community structure. All students are required to participate in field work aimed at the analysis of a community in the Kalamazoo area.

552 Sociology of Aging 3 hrs.
An examination of the process of aging in American society, with particular emphasis on the periods of late maturity and old age. Consideration will be given to theories of aging and the social implications of age grading, the meaning of work and retirement, and the status and roles of the aged. Prerequisite: 6 hours of sociology including Soc. 200 or 600, or consent of instructor.
College of Arts and Sciences

553 Urban Sociology 3 hrs.
An introduction to sociological theory and research on the city including ecological theory, social psychology, institutional analysis, structure and processes like metropolitanization, suburbanization, and planning. Cities in developed and developing societies will be compared and contrasted and specific attention will be given the industrial biases of current urban theories.

554 Demographic Methods 3 hrs.
This course will investigate the sources and validity of census, vital statistics, and other population data. Students will evaluate measures of population composition relating to racial, marital, educational, and economic characteristics; assess various techniques for the analysis of mortality (life tables), reproduction and natality, migration and mobility, with different sources of data; learn techniques of estimating and projecting future population trends.

556 Social Stratification 3 hrs.
An analysis of the nature, causes, and consequences of class and status differences within societies. Stress is placed upon such concepts as mobility, class, status, and differential power. Conflict and functional theories of stratification are treated. Prerequisite: Soc. 200 or 600, or consent of instructor.

CRIMINAL JUSTICE

264 Introduction to Criminal Justice 3 hrs.
An overview of the criminal justice system as it currently operates in its three major components: police, courts, corrections. A broad-based interdisciplinary perspective is employed to introduce the beginning student to the process of criminal justice in modern America. Particular attention is placed on the discretionary authority of officials who are engaged in the decision-making roles required to process suspects from arrest to release.

362 (312) Criminology 3 hrs.

462 Criminal Justice Process 3 hrs.
An analysis of the substantive and procedural criminal law as it relates to each stage of the criminal justice process. The focus will be on the sociological and legal implications of discretion and court decisions from arrest to conviction and sentencing. Prerequisite: Soc. 362 or consent of instructor.

464 Sociology of Law Enforcement 3 hrs.
A sociological analysis of the process of law enforcement as it involves municipal, state, and federal agencies. Includes analysis of the police “working personality,” social role, isolation from other social groups, vulnerability to corruption through politics and/or organized crime, and abuses of authority. The development and comparison of the police role will be traced from its roots in England to the present American position. Prerequisite: Soc. 362.

564 (514) Juvenile Delinquency and the Community 3 hrs.
A study of juvenile delinquency as a social problem. Extent, causative factors, methods of treatment, and programs of prevention and control are covered. When feasible, community resource people are invited to participate. Prerequisite: Soc. 200 or 600.

565 Correctional Process and Techniques 3 hrs.
(This course is the same as SWK 565)
An overview of the correctional process as it can operate in probation, prison and parole to alter the criminal behavior patterns of legally defined offenders. A broad perspective is employed based on existing criminological theory and accumulated knowledge of the phenomena of crime and delinquency. Selected techniques for correctional behavior modifications are studied in relation to a typology of normative deviancy in terms of both etiology and rehabilitation. Prerequisite: Consent of instructor.
566 (512) Advanced Criminology

A critical analysis and evaluation of selected controversial issues in modern criminology. Topics include the legal-social dichotomy of the juvenile court, recent approach to delinquency prevention, recommendations for decriminalization, the phenomena of organized crime and white-collar crime, and the feasibility of capital punishment. Prerequisite: Soc. 362.

INSTITUTIONS

371 Dynamics of Contemporary Social Change

A study of sources, mechanisms, and consequences of social change, forces promoting or impeding change, and planning for change in contemporary societies. Prerequisite: Soc. 200.

373 Sociology of Health and Illness

Introduction to the concepts of health and illness in our society; ways of measuring disease; the impact of social class, race, region, and ethnicity on the perception and distribution of disease. Attention will also be paid to the social structure of the health care delivery system and of alternative systems of medical care. Prerequisite: Soc. 200 or consent of instructor.

375 Sociology of Industrial Relations

Social and cultural aspects of labor relations, collective bargaining, strikes, morale and productivity in the United States.

376 Sociology of Education

A survey of contemporary educational problems from a sociological perspective. Includes such topics as race relations in the schools, teacher professionalization, classroom behavior, teacher organizations, and studies on modern youth culture. This course is intended as a general introduction to sociology of education for sociology majors and other interested students. Prerequisite: Soc. 200.

471 Bureaucracy

This course examines bureaucratic and alternative forms of organization in various spheres of life — business, government, unions, schools, religious organizations, etc. Prerequisite: Soc. 200 or consent of instructor.

472 Voluntary Associations

An investigation of the role of voluntary associations (such as conservation clubs, unions, political groups, civic groups, and social clubs) in society. Types, membership patterns, organizational processes, and functions of voluntary associations will be examined. Additional topics may include: America as a nation of “joiners,” participant culture and personality, and the contribution of voluntary associations to social movements and social change. Prerequisite: Soc. 200.

570 Studies in Social Institutions: Variable Topics

An examination of a selected topic in the area of social organization or institutions. The focus of the course will be substantive, but theoretical and methodological concerns will also be covered. Possible topics could include work and leisure, occupations and professions, sociology of science, mass society, macro-sociology, arts, and others. May be repeated for credit with a different topic. Prerequisite: Soc. 200 or consent of instructor.

572 Power and Society

An analysis of the bases, distribution, and uses of power in societies and in local communities. Marxist, elitist, and pluralist theories will be considered along with empirical studies of power. A major goal will be understanding the use of power by various groups in facilitating or controlling social change. Prerequisite: Soc. 200 or 600.
573 Sociology of Political Behavior 3 hrs.

Systematic sociological theory and research applied to the study of political organization and behavior in the United States and in selected countries abroad. Such topics as political parties, voting, bureaucracy, and political ideology will be considered. Prerequisite: Soc 200 or 600, or consent of instructor.

574 Sociology of Religious Institutions 3 hrs.

A study of the social role of religious institutions and beliefs, with particular reference to the United States. The course considers social factors affecting the development of different types of religious institutions and the influence of religion on American society. Prerequisite: Soc. 200 or 600.

575 Industrial Sociology 3 hrs.

The sociological study of industrial organizations and of the process of industrialization. The impact of technology and related factors on work organizations, the structure and operation of labor unions, and the changes occurring in industrial society are discussed. Prerequisite: Soc. 200 or 600.

576 Sociology of School Organization 3 hrs.

Advanced studies of education as an institution, emphasizing interaction with other social institutions and analysis of internal organization. Attention is focused on the school and social change, schooling and the control of society, and schooling and stratification, as well as impediments to change, power and authority structures and the schools, the teaching profession, and student social structures. Prerequisite: 6 hours of sociology or consent of instructor.

577 Sociology of Learning 3 hrs.

Advanced studies of education focusing on the impact of culture and school organization on learning in the educational setting. Topics include cultural forces such as ethnicity, religion, socio-economic status and bureaucratic structure, classroom organization, team teaching and the open classroom, segregation, and school type. Prerequisite: 6 hours of sociology or consent of instructor.

578 Sociology of Law 3 hrs.

An examination of legal organization, the legal profession, and legal norms in the United States and other western societies. Emphasis will be placed upon the relationship between the legal system and the society in which it functions. Prerequisite: Soc. 200 or 600.

RESEARCH

382 Methods of Sociological Inquiry 5 hrs.

An introduction to quantitative and qualitative methods of empirical research in sociology and the description of findings. Theory and techniques of research design are considered, including formulation of hypotheses, sampling, and the collection, analysis, and interpretation of data. Laboratory sessions provide special assistance. Required for sociology majors, who are urged to take this course following Soc. 200, to develop ability to evaluate research findings in subsequent content courses. Prerequisite: Soc. 200.

385 Social Research Projects 3 hrs.

This course is designed to enhance the skills of students in applied social research. With direct supervision by the instructor, individuals or small groups of students will address themselves to research problems that have been identified in the community. Students will be encouraged to select and develop their own research topics. Prerequisite: Soc. 382 or equivalent.

580 Social Statistics 3 hrs.

An introduction to statistical reasoning and application with particular reference to social science. The course will view statistics as an aspect of scientific inquiry and consider problems of analysis and interpretation of typical social science data. Not for sociology majors.
Sociology 581 Logic and Analysis of Social Research 5 hrs.
This course is designed to integrate the philosophy and logic of science with that of research analysis and statistics necessary for graduate study. The course will include an introduction to the philosophy of science: techniques of theory construction; logic of measurement; descriptive, inferential, and multivariate statistics; and the logic of analysis. Prerequisite: Soc. 382 or equivalent.

583 Research Design and Data Collection 4 hrs.
This course is designed to familiarize students with the development of data-gathering techniques and research proposals. The course will include problem specification, research designs, measurement and scaling, and proposal development. Prerequisite: Soc. 581.

FAMILY

390 Marriage and Family Relations 3 hrs.
A sociological analysis of the structural and interactional aspects of marriage and family groups in contemporary society, with 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.
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 2 hrs.
Provides the student with working knowledge of the methods and materials appropriate in the school, the church and other social situations, for working with individuals and small groups who desire preparation for marriage and parenthood. Some attention will be given to the techniques for handling counseling opportunities arising out of these teaching situations. Prerequisite: Soc. 200 or 600 or consent of instructor.

INDEPENDENT AND SPECIAL STUDIES

495 Special Topics in Sociology: Variable Topics 1-3 hrs.
A specialized course dealing, each time it is scheduled, with some particular aspect of sociology not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: Soc. 200.

498 Field Experience 2-8 hrs.
Structured as part of a specific departmental program and identified as such in the printed schedule when offered. Opportunity is provided for supervised experiences in local organizations or activities in such areas as criminal justice, gerontology, and urban studies. Prerequisite: Written permission of instructor/supervisor.

499 Honors Seminar 2-6 hrs.
Investigation of selected topics in seminar sessions by advanced undergraduates. Registration by special invitation from the department chairperson.

598 Directed Individual Study 2-6 hrs.
A program of independent study (reading or research) to provide the unusually qualified sociology student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. The initiative for planning the topic for investigation must come from the student. Approval is contingent upon the merit of the proposal. Two or three hours credit per semester, cumulative to six hours. Enrollment beyond the first semester may be either for the same topic or for a new topic. Prerequisite: Consent of instructor and the department chairperson.
College of Arts and Sciences

School of Social Work

Robert Barstow, Director
Reginald Avery
Richard E. Boettcher
Lloyd Braithwaite
William A. Burian
Mary E. Burns
Brenda Crawley
G. G. Dadlani
Phyllis Day

Betty Deshler
John Flynn
Karl Hallsten
David Joslyn
Peter M. Kettner
Philip Kramer
Michael Long

Nathaniel McCaslin
Deloris Phillips
Kenneth E. Reid
Lynne Riehman
Danny H. Thompson
Tom Vassil
Gene E. Webb

The School of Social Work offers both an undergraduate and graduate professional program. The undergraduate professional program 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. In addition, the School of Social Work participates in an University Gerontology minor. Social Work students should consult their curriculum advisor for program planning for the Gerontology minor. Also available to social work majors is a concentration in corrections.

Offerings in the Social Work major proceed in four substantive components. The first component provides knowledge about social welfare systems and policies. The second deals with psychological and sociological theories concerned with individual, family, group organization and social systems. The third component focuses upon social work practice content. The fourth component provides an introduction to social research.

Effective 1976, students planning to major in Social Work will be admitted into a Pre-Social Work Curriculum at the time of admission to the University. On completion of 45 semester hours (midway through their sophomore year) students must submit an application to the Director of Admissions of the School of Social Work for processing into the major. Social Work 210, "Social Work Services and Professional Roles," should be taken in the first semester of the sophomore year. Students applying for the major with more than 62 semester hours should be aware that this might result in a delayed graduation. Students admitted to the University prior to 1976 must also apply for admission to the Social Work major.

A guided interdisciplinary minor of 19-20 hours is required to fulfill the program requirements. In addition, a student may choose to select a second regular curriculum minor from another department. If so, the student should consult the undergraduate Social Work counselor for approval. Further questions concerning the Social Work major or minor may be directed to Ellie Householder in the School of Social Work.

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 Bulletin.

UNDERGRADUATE SOCIAL WORK CURRICULUM

A. Minimum hours required for graduation 122 hrs.

B. Course Requirements

1. General Education .............................. 35 hrs.

2. Requirements for the undergraduate Social Work Major .............................. 32 hrs.

   210 Social Work Services & Professional Roles .................. 3
   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: Following completion of SWRK 210 students must be accepted into the Social Work Curriculum to complete the major.

3. Required Research Component
SOC. 382 Methods of Sociology Inquiry .......................................................... 5 hrs.

CAS 170 Interpersonal Communications ........................................................... 3 hrs.
ENGL 305 Practical Writing ............................................................................. 4 hrs.

Any one of the following:
ECON 100 Contemporary Economic Problems ............................................. 3 hrs.
ECON 313 Poverty and Economic Security ..................................................... 3 hrs.

Any one of the following:
PSI 202 State & Local Government ................................................................. 4 hrs.
PSI 300 Urban Politics ..................................................................................... 3 hrs.

Any one of the following:
PSY 150 Introduction to Human Behavior ....................................................... 3 hrs.
PSY 160 Child Psychology ............................................................................... 3 hrs.
PSY 250 Abnormal Psychology ........................................................................ 3 hrs.

Any one of the following:
SOC 210 Modern Social Problems .................................................................. 3 hrs.
SOC 300 Sociological Theory ........................................................................... 3 hrs.
SOC 352 Introduction to Social Gerontology .................................................. 3 hrs.
SOC 371 Dynamics of Contemporary Social Change ....................................... 3 hrs.

5. Physical Education ......................................................................................... 2 hrs.


Students are encouraged to elect additional courses in any area of their specific interest. Particularly recommended in preparation for social work practice are: Anthropology, Communication Arts and Sciences, Economics, History, Philosophy, Political Science, Psychology, Sociology. The following Social Work courses are also available as electives for undergraduate students:

100 Introduction to Social Services ................................................................. 3
*412 Projects in Social Work ............................................................................. 4
464 Problem Solving in Gerontology ................................................................. 3
513 Social Welfare and the Law ........................................................................ 2
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
567 Institutional Corrections ............................................................................... 3
568 Non-institutional Corrections ....................................................................... 3
572 Community Agency Resources .................................................................... 2
597 Teaching Apprenticeship in Selected Social Work Curriculum Areas ...... 1-4
598 Readings in Social Work ............................................................................. 1-4

Requirements for the undergraduate social work minor ............................. 15 hrs.
210 Social Work Services and Professional Roles ........................................... 3
300 Social Welfare as a Social Institution ....................................................... 3
301 Social Issues and Program Analysis ........................................................... 3

plus

Two of the following Social Work courses:
S.W. 350, 351, 464, 533, 561, 562, 563, 565, 566, 567, or 568.

C. The student must satisfy the requirements for the B.A. or B. S. degree.

*Completed applications are due at least 15 weeks prior to the semester in which field work is to be taken.
COURSE DESCRIPTIONS

(Course described in italics is approved for General Education.)

100 An Introduction to Social Services 3 hrs.
A descriptive course covering knowledge content relating to operation of social service programs. It is a study of the philosophy and value base for these services.
Observation visits to field agencies, films, guest lectures and other lab and volunteer experiences may be arranged with the instructor to promote appreciation of knowledge content.

210 Social Work Services and Professional Roles 3 hrs.
An examination of delivery of social work services at local, state and national levels. Analysis of professional social worker roles and service delivery systems. Utilization of video tape and other audiovisual media for supplementation of classroom learning. Required for social work majors and minors. (Prerequisite: Sophomore status.)

300 Social Welfare as a Social Institution 3 hrs.
Course objective is to enable the student to develop a perspective on the growth of welfare services and their relationship to welfare needs. It is a critical examination of the forces (e.g., social, economic, historical, political, and philosophical) that have led to the institutionalization of social welfare. (Prerequisites: S.W. 210 and junior status.)

301 Social Issues and Program Analysis 3 hrs.
Course objective is to develop analytical and evaluative ability on the part of the student to understand major welfare issues and other policy considerations which have bearing upon service delivery systems. The purpose is also to intensify the student's knowledge of contemporary society and an awareness of the need for new models of social welfare to adapt to changing issues with projection of future problems, programs and policies. (Prerequisites: S.W. 210, 300 and junior status.)

Provides the student with a basic understanding of human behavior, related to human developmental processes, ego psychology, learning theory, and family social and cultural dynamics. Examines socialization and its influence on human behavior. Identifies significant physical, mental, emotional, social and cultural factors which affect the development of the personality, biological and family systems. (Prerequisite: S.W. 210 and junior status.)

351 Social Work Concepts in Group, Community and Organizational Behavior 3 hrs.
Provides the student with an understanding of human behavior related to small group process, role theory, communications theory, social conflict constructs, systems concepts, formal organization and community dynamics. Examines the interplay of various forces which affect the development of social groups, communities, and organizations, and the effects of these interdependent systems on the client system. (Prerequisites: S.W. 210 and 350 and junior status.)

400 Social Work Practice: Values and Problems Analysis 3 hrs.
Taken concurrently with S.W. 410. Focuses upon problem identification, data collection and analysis and goal formulation. Examination of role and status and interrelationships of client action, service, and target systems. The student learns to identify problems at various system levels (individual, small group, community and organization); to recognize and seek varying perceptions of a given problem; to assess the accuracy of information needed; to order and interpret information from different theoretical perspectives; to write a diagnostic statement; to determine priorities and service limits; and to formulate objectives. (Prerequisites: S.W. 210, 300, 301, 350 and 351)

401 Social Work Practice: Intervention and Evaluation 3 hrs.
A study of social work interventions, their differential use at various system levels (i.e., person, group, organization and community), and evaluation of their effectiveness. Students learn to identify and appraise interventions in reported and simulated social work situations, to select and use interventive behaviors in
social work simulations, and to evaluate the effectiveness of their own interventive behaviors in simulated and real situations. (Prerequisites: Senior status, completion of S.W. 400 and 410 and concurrent enrollment in S.W. 411)

*410 Field Experience and Seminar I 4 hrs.

Two hundred and twenty-five (225) clock hours in the field and fifteen (15) hours in a campus-based seminar. In a social work or allied service agency, students develop a working knowledge of the agency's functions, structure and processes and its service provider role within a total community. Students apply knowledge and develop skills in problem assessment and goal formulation within the context of social work values. (Prerequisites: Senior status, submission of field experience application to the Director of Field Education at least fifteen (15) weeks prior to the semester field work is to be taken; arrangement of class schedule so that the student is in a field agency on Tuesdays and Thursdays of each week; concurrent enrollment in S.W. 400 and enrollment in S.W. 411 the following term.)

*411 Field Experience and Seminar II 4 hrs.

A continuation of S.W. 410. Two hundred and twenty-five (255) clock hours in the field and fifteen (15) hours in a campus-based seminar. Students engage in social work interventions and practice interventive behaviors in solving problems with individuals, groups, organizations and/or a community. (Prerequisites: Senior status, completion of S.W. 400 and 410 and concurrent enrollment in S.W. 411. Field experience application not required if student submitted one for 410.)

*412 Special Projects in Social Work 4 hrs.

Application of problem solving methods and techniques in work with older adults. Attention is given to problem identification, analysis, and differential approaches to intervention. Program development and service delivery in the field of gerontology are considered. Open to social work students and students from related professional disciplines with consent of instructor.

464 Problem Solving in Gerontology 3 hrs.

This course provides the student with information about social welfare programs, both institutional and non-institutional, which are available to our aged population. The student is introduced to different approaches to service delivery and interventive problem solving techniques utilized by professional social workers in working with minority and majority aged populations. Open to social work students and students from related professional disciplines with consent of instructor.


The legal bases of organized social welfare and social work practice are examined through the study of selected examples of social legislation and judicial decisions, the legislative process, development of administrative regulations and court organization. Illustrative case studies are used to demonstrate how social workers can manage within the restrictions and opportunities presented by legal institutions and practices in social and individual case situations. Prerequisite: Consent of instructor.

533 Dynamics of Race and Culture for Social Work Practice 3 hrs.

Focus is upon ethnic/racial groups who are among social welfare consumer groups and social work clientele. Racial/cultural characteristics, group strengths and weaknesses, group priorities and experiences in the context of social welfare and social work will be examined. Implications of ethnic factors for social work practice, social planning, and social work education will be explored. Prerequisite: Consent of instructor.

561 Community Development in Selected Countries 3 hrs.

This course is intended to provide basic information needed in understanding community life in developing countries. It places emphasis on the history and philosophy of community development in the context of differential socio-economic systems. Includes evaluation and analysis of organizational and administrative problems involved in implementing programs. Prerequisite: Consent of instructor.

*Completed applications for 410 and 411 and 412 are due at least 15 weeks prior to the semester field work is to be taken.
562 Community Organization in Urban Areas 3 hrs.
Social welfare planning, and social action methods are studies as approaches for preventing and resolving aspects of social problems in medium and larger size urban communities. Emphasis is placed on the organizing of neighborhood and consumer groups for social interaction and improvement of community conditions. Prerequisite: Consent of instructor.

563 Social Work Concepts in Rehabilitation 3 hrs.
Application of social work problem solving concepts to social-psychological problems in the broad field of physical and mental rehabilitation. Both individualized services and programmatic implications are given consideration. Open to M.S.W. students and students from related professional department with consent of instructor.

565 Correctional Process and Techniques 3 hrs.
An overview of the correctional process as it can operate in probation, prison and parole to alter the criminal behavior patterns of legally defined offenders. A broad perspective is employed based on existing criminological theory and accumulated knowledge of the phenomenon of crime and delinquency. Selected techniques for correctional behavior modifications are studied in relation to a typology of normative deviancy in terms of both etiology and rehabilitation. Prerequisite: Consent of instructor.

566 Social Services in the Schools 3 hrs.
The role of the Social Worker in elementary and secondary schools and the necessary adaptations in the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationships with the surrounding community. The specific contributions of a school Social Worker as a helping person to the pupils, the school staff and the homes by various interventive means is explored. Prerequisite: Consent of instructor.

567 Institutional Treatment of Offenders 3 hrs.
This is a seminar in correctional treatment which focuses on modern means of intervention in closed custody (institutional) settings. Available methods currently utilized to improve the social functioning of the imprisoned lawbreaker will be reviewed. Specific attention is directed at such role functions as correctional diagnostician, correctional counselor, program administrator, institutional parole officer, correctional officer, training school teacher, etc. The impact of custody, classification and prison programming will be examined in detail. Inadvertent products of total institutions on incarcerated inmates will be evaluated in terms of the inmate culture, prisonization and leadership roles. This will be applied to all types of correctional institutions (juvenile and adult, men and women, misdemeanant and felon). Visits to selected institutions will be arranged. Prerequisite: Consent of instructor.

568 Non-institutional Treatment of Offenders 3 hrs.
This is a seminar in correctional treatment which focuses on modern means of intervention which emerge from local community resources directed at the improved social functioning of the identified lawbreaker. Specific attention is directed at the role functions relative to such correctional processes as probation, parole, half-way houses, community treatment centers and youth service facilities. Methods and techniques of service delivery to men and women, juveniles and adults, misdemeanants and felons will be analyzed. Visits to selected agencies will be arranged. Prerequisite: Consent of instructor.

572 Community Agency Resources 2 hrs.
A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc. (Not recommended for Social Work Students.)

597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1-4 hrs.
The course focuses on the development of educational skills for social workers through faculty directed participation in teaching activities in a selected social work course. Specific learning objectives and expectations for apprentices are arranged with participating faculty. This course may be taken a second time (1-4 credits, or a maximum of 8 total toward degree) by a student who wishes to increase teaching skills through applied practice in another social work area.
598 Readings in Social Work

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.
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. 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.

The Department of Speech Pathology and Audiology maintains certain academic and clinical standards. Initial admittance to the department program is to a Pre-Speech Pathology and Audiology status. Subsequent admission to the Speech Pathology and Audiology (Non-Teaching) curriculum requires 1) completion of at least 40 semester hours of acceptable undergraduate course work, 2) early arrangements for the English Skills Test (contact Speech Pathology and Audiology Department for details), 3) satisfactory enrollments in the following two beginning department courses: Orientation to Professional Practice and Anatomy and Physiology of Speech, and 4) departmental approval of the student's formal application. Students who earn grades of lower than C in more than one departmental course will not normally be permitted to continue as matriculants in the program. Further details about these requirements may be obtained from the department office in the Speech and Hearing Center.

The same requirements apply for students interested in careers as clinicians in the public schools and thus must plan for teacher certification. For these students, the appropriate program is the Special Education Curriculum in Speech Pathology and Audiology.

A. Minimum Hours required for this curriculum .............................................. 122 hrs.

B. Course Requirements

1. General Educational requirements as described in the General Information Section of this catalog must be met.

2. Psychology ......................................................... 6 hrs.

3. Teacher Education and Special Education ..........................................................................

   Human Development and Learning 250 ............................................................................. 4
   Education of Exceptional Children 530 ............................................................................ 3
   Behavior Disorders in School-Aged Children 588 ............................................................ 3

4. Speech Pathology and Audiology ................................................................................ 30 hrs.

   Orientation to Professional Practice 201 ........................................................................ 3
   Anatomy and Physiology of Speech 202 .......................................................................... 3
   Speech and Language Development 203 ......................................................................... 3
   Phonemics 204 .................................................................................................................. 2
   Bases of Speech and Hearing 300 ................................................................................... 3
   Phonemic Disorders 351 .................................................................................................. 2
   Phonatory Disorders 352 ................................................................................................ 2
   Fluency Disorders 353 ...................................................................................................... 2
   Language Disorders in Children 354 .............................................................................. 2
   Hearing Disorders 355 ...................................................................................................... 2
   Introduction to Audiology 357 ....................................................................................... 2
   Practicum I 400 ............................................................................................................... 1
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.

IN VolvemenT IN
INTEGRATED LANGUAGE ARTS MINOR

The Department of Speech Pathology and Audiology is one of five participating departments in the Integrated Language Arts Minor—a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the “Interdisciplinary Programs” section of the College of Arts and Sciences or its listing in the College of Education.

COuRSe dESCRIPTIONS

(Course described in italics is approved for General Education.)

200 Introduction to Communication Disorders 3 hrs. Fall, Winter
A survey course about speech, hearing and language disorders. Credit does not apply toward a major in Speech Pathology and Audiology.

201 Orientation to Professional Practice 3 hrs. Fall, Winter
This course is designed to acquaint the student with the speech and hearing profession and with basic principles and strategies for the observation and description of behaviors relevant to the study of human communication and its disorders. Successful completion of this course requires that the student demonstrate proficiency in the collection, reporting and interpretation of data related to speech, language and hearing characteristics.

202 Anatomy and Physiology of Speech 3 hrs. Fall, Winter
The structural anatomy and physiology of the processes related to normal speech production. Major units include respiration, phonation, articulation, and the nervous system. Prerequisite: Sophomore standing.

203 Speech and Language Development 3 hrs. Fall, Winter
A study of the nature and development of the normal acquisition of speech and language. Prerequisite: Sophomore standing.

204 Phonemics 2 hrs. Fall, Winter
A study of the phonemes of English. Practice in the use of the International Phonetic Alphabet is provided to prepare the student for accurate transcription of speech behavior. Prerequisite: Sophomore standing.

300 Bases of Speech and Hearing 3 hrs. Fall, Winter
An introduction to the scientific study of speech production, perception, and reception. Speech is studied as an acoustic event, and modern developments in the recording and analysis of vocal utterances are examined.
351 Phonemic Disorders 2 hrs. Fall, Winter
A detailed study of the nature of phonemic disorders; orientation to clinical management. Prerequisites: 201, 204.

352 Phonatory Disorders 2 hrs. Fall, Winter
A detailed study of the nature of phonatory disorders; orientation to clinical management. Prerequisites: 201, 202.

353 Fluency Disorders 2 hrs. Fall, Winter
A detailed study of the nature of fluency disorders; orientation to clinical management. Prerequisite: 201.

354 Language Disorders in Children 2 hrs. Fall, Winter
A detailed study of the nature of communication problems associated with congenital or acquired impairment of language function in children; orientation to clinical management. Prerequisites: 201, 203.

355 Hearing Disorders 2 hrs. Fall, Winter
A study of aural pathology and the effects on hearing. Prerequisites: 201, 202, 300.

357 Introduction to Audiometry 2 hrs. Fall, Winter
An introduction to the study of the measurement of hearing and to the field of audiology. Prerequisites: 201, 202, 300.

400 Practicum in Speech Pathology and Audiology I 1 hr. Fall, Winter
Clinical experience in the management of speech, language, and/or hearing disorders.

401 Practicum in Speech Pathology and Audiology II 1 hr. Fall, Winter
Clinical experience in the management of speech, language, and/or hearing problems. Prerequisite: 400.

455 Seminar in Speech Pathology and Audiology 2 hrs.
Designed to provide an opportunity for qualified students to examine and discuss a subject area in a field of common interest. Prerequisite: Senior standing.

500 Scientific Methods in Speech, Language and Hearing 2 hrs.
Research in normal and disordered communication is studied with reference to the scientific method, principles of measurement, instrumentation, and experimental techniques. The course requires that either a laboratory or a clinical research proposal be formulated by each student.

550 Advanced Speech and Hearing Science 2 hrs.
Theories of speech production, reception and perception are considered in this course from the point of view of experimental phonetics and experimental audiology. Prerequisites: 300, 357.

551 Neuropathologies of Speech 2 hrs.
This course is concerned primarily with surveying selected communication disorders associated with neuropathologies. Prerequisites: 201, 202, 203.

552 Communication Problems of the Aged 3 hrs.
This course is designed to acquaint the student with receptive and expressive communication problems common to older adults. Emphasis will be on the clinical management of characteristic organic speech disorders and impaired auditory functions associated with aging.

554 Speech and Hearing Therapy in the Schools 2 hrs.
Study of clinical work with speech-or hearing-disordered children in the school setting. Prerequisites: 351, 352, 353, 354, 355.
555 Hearing Measurement

This course is designed to acquaint the student with principles, theories, and methods of hearing measurement which provide the basis for clinical and audiometric procedures.

556 Rehabilitative Audiology

Orientation to the clinical management of communication problems associated with auditory impairment. Prerequisites: 355, 357.

557 Educational Audiology

This course deals with the educational, psychological and vocational needs of the hearing impaired child and the parameters that affect educational programming.

595 Oral Language Development and Dysfunction

This course is designed to provide the student preparing to be a classroom or special teacher with information about the nature of oral language, its development, conditions associated with dysfunction, and the principles and methods of treatment for children with specific speech or language disorders. Not open to students who have had Speech Pathology and Audiology 201 or its equivalent.
College of Business

DARRELL G. JONES, Dean
LEO NIEMI, Assistant to the Dean
JOHN H. McBETH, Director of Academic Advising
MICHELE M. MOE, Admissions Officer

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 professional College of Business is to prepare capable men and women for responsible positions in business, industry, and public service. Three major areas of education are involved in the development process. They are:

1. A foundation of liberal arts and sciences in full recognition that as a future leader in the business and industrial world, the student will need a sound understanding of his relationships to social, economic, political and cultural trends.

2. The presentation of a core curriculum which contemplates a thorough grounding in the fundamentals through which our free enterprise economic system operates. These fundamentals are met through business core subjects such as accounting, statistics, law, finance, marketing, management and communication.

3. An opportunity for specialization in various aspects of business activity.

Continuing opportunities are made available to resident students to participate in campus meetings with business, industrial, and public service leaders, as well as outstanding professional men from various disciplines. In addition, business firm visitations, as well as business internships, give ample opportunity for the student to relate himself to his future role. Western's Career Planning and Placement office is visited by the major firms that are engaged in recruiting activities.

The six main programs in the college of Business are:

1. Business Administration — Bachelor of Business Administration Degree.
3. Master of Business Administration for graduate students with Liberal Arts, Engineering, Business or other undergraduate preparation.
4. Master of Science in Accountancy for students desiring intensive preparation for a professional accounting career.
5. Master of Science in Business for students desiring intensive preparation for professional careers in Business.
6. Master of Arts in the teaching of business subject and Specialist in Arts in Business Education are intended to prepare teachers for superior classroom performance at both the secondary and post-secondary levels.

BUSINESS RESEARCH AND SERVICE INSTITUTE

The Business Research and Service Institute (BRSI) provides a communicative link between the College of Business and a “community” comprised of business, government and non-profit agencies. Utilizing the expertise of highly-qualified faculty in six major disciplines (Accounting, Administrative Services, Finance, Law, Management and Marketing), the Institute designs and conducts management development programs, workshops, and specialized seminars. In addition, BRSI assists the “community” in improving administrative competency through research and diagnostic activities.
Business Administration Curriculum (BBA Degree)

The courses and their proper sequence for the B.B.A. degree are listed below. The courses with lower numbers are considered general prerequisites to those with higher numbers. In addition, many are specific prerequisites as noted in the course descriptions in this catalog. Students are therefore cautioned against deviating from this pattern.

A further requirement is that of the 120 hours of course work exclusive of physical education, at least 48 hours must be taken from areas outside of business and upper division economics.

The last 30 hours of work for those in the B.B.A. curriculum must be taken on campus. Exceptions may be granted only by approval of the Department Head and the Dean of the College of Business.

Advising

For major and minor areas of concentration, see departmental advisers. "A student cannot have a major and a minor in the same department."

For questions regarding other curriculum requirements such as General Education courses, B.B.A. Core Cognates and transfer credit equivalencies, contact Dr. John McBeth or Mrs. Michele Moe in the College of Business Academic Advising Office.

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

B. Course Requirements:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Education:</td>
<td></td>
</tr>
<tr>
<td>See General Information section of catalog for listing of requirements.</td>
<td></td>
</tr>
<tr>
<td>2. B.B.A. Core Cognates:</td>
<td></td>
</tr>
<tr>
<td>BED 142, Informational Writing**</td>
<td></td>
</tr>
<tr>
<td>CAS 104, 130, 232, or 331</td>
<td></td>
</tr>
<tr>
<td>PSY 190, 344, or SOC 200 or GSSC 121*</td>
<td></td>
</tr>
<tr>
<td>MATH 116 Finite Math. with Applications</td>
<td></td>
</tr>
<tr>
<td>MGMT 102 Computer Usage</td>
<td></td>
</tr>
<tr>
<td>3. Physical Education</td>
<td></td>
</tr>
<tr>
<td>4. Electives (BED 140, Ind. &amp; Bus. World; etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Education Requirements</td>
<td></td>
</tr>
<tr>
<td>2. B.B.A. Core Cognates:</td>
<td></td>
</tr>
<tr>
<td>ECON 201, 202 Principles of Economics</td>
<td></td>
</tr>
<tr>
<td>3. B.B.A. Core;</td>
<td></td>
</tr>
<tr>
<td>ACTY 210, 211 Principles of Accounting</td>
<td></td>
</tr>
<tr>
<td>BED 242 Business Communication</td>
<td></td>
</tr>
<tr>
<td>MGMT 200 Decision Making with Statistics</td>
<td></td>
</tr>
<tr>
<td>4. Physical Education</td>
<td></td>
</tr>
<tr>
<td>5. Electives (GEOG 244, Econ., Geography, Soc 200, Princ. of Soc., Psci 200 etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Applicable to total General Education Requirement.
†Should be taken prior to, or concurrently with MGMT 200, Decision Making with Statistics 200.
**IEGM 102 Technical Communications may be substituted.
College of Business

Junior Year

1. General Education
   GSSC 304 Intro. to Non-Western World or other 300 or higher
   level approved Non-Western world course ......................................... 4

2. BBA Core Cognates;
   One of the following Advanced Economics courses; 303,
   306, 400, 404, 445, 420* in consultation with major advisor .................. 3

3. BBA Core;
   GBUS 340 The Legal Environment ..................................................... 3
   GBUS 341 Business Law ......................................................................... 3
   GBUS 320 Business Finance .................................................................... 3
   MGMT 300 Fundamentals of Management ................................................ 3
   MKTG 370 Marketing ............................................................................. 3

4. Major and Minor Requirements and Electives ...................................... 9

   Hrs. 31

Senior Year

1. General Education. ............................................................................ 4

2. BBA Core;
   MGMT 499 Management Problems ....................................................... 3

3. Major and Minor Requirements and Electives .................................... 24

   Hrs. 31

Note to Transfer Students:

Students at two-year community colleges who plan to continue at WMU are urged to take courses
 equivalent to the ones listed for the Freshman and Sophomore years, as this will facilitate entry into the
 upper level program of the college. Community college students should also be aware of coursework
 acceptable by transfer on the basis of the university's MACRAO agreement and acceptable validation
 procedures.

Regarding the Mathematics 116 requirement, a three-hour college algebra course based on a prerequisite
 of three years of college preparatory mathematics is acceptable as a transfer course.

With departmental approval, transfer courses from four-year schools (and appropriate lower division
 courses from community colleges) may be included in majors and minors. However, a minimum of 12
 semester hours for a major and 9 for a minor must be taken at WMU.

*Not open to credit to students with credit in GBUS 310.
Areas of Concentration In Business Administration

ACCOUNTANCY

Major Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Accounting 210, 211</td>
<td>6</td>
</tr>
<tr>
<td>Financial Accounting 310, 311, 411</td>
<td>9</td>
</tr>
<tr>
<td>Cost Accounting 322</td>
<td>3</td>
</tr>
<tr>
<td>Income Tax Accounting 324</td>
<td>3</td>
</tr>
<tr>
<td>Auditing 516</td>
<td>3</td>
</tr>
<tr>
<td>Elective in Accountancy</td>
<td>3</td>
</tr>
</tbody>
</table>

Minor Requirements:

Students preparing for positions in industry and government wishing to minor in Accountancy are required to take 15 hours. Of these 15 hours, Accounting 210, 211 and 310 are required. The remaining 6 hours will be selected with the student’s professional objectives in mind.

Accountancy Electives Available for Majors and Minors:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting Information Systems 413</td>
<td>3</td>
</tr>
<tr>
<td>Institutional Accounting 414</td>
<td>3</td>
</tr>
<tr>
<td>Topics in Accounting 420</td>
<td>3</td>
</tr>
<tr>
<td>Theory and Problems 518</td>
<td>3</td>
</tr>
<tr>
<td>Studies in International Accounting 521</td>
<td>3</td>
</tr>
<tr>
<td>Cost Accounting — Theory and Practice 522</td>
<td>3</td>
</tr>
<tr>
<td>Studies in Tax Accounting 524</td>
<td>3</td>
</tr>
</tbody>
</table>

Advisors: Report to the Department of Accountancy, 150 East Hall for assignment to an advisor.

Transfer Credits: Up to 6 hours of Elementary Accounting may be accepted from other than a four-year accredited school. All majors must take a minimum of 12 hours of accounting courses at WMU.

BUSINESS EDUCATION AND ADMINISTRATIVE SERVICES

The Department of Business Education and Administrative Services offers three undergraduate programs of study: (1) the administrative services area including business communication, office systems, data processing, and consumer relations; (2) the preparation of business teachers; and (3) the secretarial administration area including a co-op program.

To assure appropriate program planning and sequencing, students should consult with Department advisers as early as possible.

1. Administrative Services

Four options are available in the Administrative Services area of concentration including business communication, office systems, data processing, and consumer relations.

Because each option includes a prescribed 24-hour program of study, students should consult with a department advisor for program planning.

Advisor: Contact Departmental Office
Administrative Services Minor

An Administrative Services minor consists of 18 hours chosen in consultation with an advisor. Suggested areas of concentration include business communication, data processing, office systems, or appropriate combinations.

2. Business Education

Students who complete a prescribed BBA/business education major earn both a teaching major (30 hours), and a teaching minor (20 hours) in business and receive a Michigan Secondary Provision Certificate for teaching business subjects in grades 7 through 12.

In addition to satisfying university and college of business requirements, students complete: 21 semester hours of professional education courses, Methods of Teaching Business Subjects (Business Education 346/347) and at least one of the following teaching emphases:

1. Accounting and related business subjects. (Business Education 183, 281, 292, 386, 561, Accounting 211 are required)
2. Clerical and related business subjects (Business Education 185, 281, 288, 292, and 386 are required)
4. General Business and related subjects (Business Education 386, 261, 292 are required)
5. Secretarial and related business subjects (Business Education 184, 185, 280, 287, and 386 are required)
6. Office Education Coordinator (Business Education 185, 281, 282, 583, and 590 are required)
7. Other areas of emphasis may be selected with the permission of the Department Head.

Students may also meet the requirement for vocational endorsement by completing an appropriate vocational teaching area of emphasis and Business Education 282 and 283 (or equivalent). Vocational endorsement allows graduates to teach in or coordinate State reimbursed office education programs.

Business Education Minors

Students not majoring in Business Education may elect a 20 hour business education minor which includes at least one of the teaching emphases listed above and Business Education 346 and 347. A minimum of 12 hours must be taken in the College of Business.

Note to College Graduates Seeking Teaching Certification:

Students with a bachelor's degree seeking teaching certification in business education may transfer appropriate courses; however, a minimum of 12 hours must be taken in the Department.

3. Secretarial Administration

The Secretarial Administration major allows students to progress through sequential preparatory phases as they move toward the acquisition of a bachelor's degree in preparation for administrative, secretarial and office supervisory positions. A statement certifying the completion of the internship phase of the Secretarial Administration program is available on request.

A. Secretarial Internship Phase

This program concentrates on the development of skills through co-operative work experience combined with classroom experience. The latter is combined with part-time employment during the sophomore year.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informational Writing 142</td>
<td>3</td>
</tr>
<tr>
<td>Transcription 184</td>
<td>4</td>
</tr>
<tr>
<td>Integrated Office Skills 281</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 150 or 120</td>
<td>3</td>
</tr>
<tr>
<td>Industrial and Business World 140</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Electives and General Education Requirement</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Communication 242</td>
<td>3</td>
</tr>
<tr>
<td>Coordinated Bus. Experience 282</td>
<td>3</td>
</tr>
<tr>
<td>Coordinated Bus. Experience 283</td>
<td>1</td>
</tr>
<tr>
<td>Accounting 210</td>
<td>3</td>
</tr>
<tr>
<td>Secretarial Administration 287</td>
<td>4</td>
</tr>
<tr>
<td>Electives and General Education Requirements</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>
B. Administrative Supervision Phase (third and fourth years)

This phase of the major requires the completion of the Business Administration Curriculum requirements.

FINANCE

1. Finance Majors (24 hours)

The Finance Area offers major options in five specific five areas and a sixth to encompass those students desiring a general finance major.

The major optional areas and advisors are as follows:

I. Corporate Financial Management
   Advisors: Grossnickle and Balik

II. Securities and Investment Management
    Advisors: Edwards

III. Financial Markets and Institutions
     Advisor: Balik and Planisek

IV. Insurance
    Advisor: Burdick

V. Real Estate
   Advisor: Weeks

VI. General Finance
    Advisors: All Finance Professors

All options except Option IV require a core comprised of American Financial System 310, and Business Finance 320. The remaining six finance courses to complete the major may be selected in consultation with the appropriate advisor.

Option IV requires the previously mentioned 310 and 320 plus Risk and Insurance 321. The remaining five courses may be selected in consultation with Professor Burdick, advisor.

List of courses from which selections may be made to complete the Finance Major:

305 Personal Finance
321 Risk and Insurance
322 Life and Health Insurance
323 Property and Liability Insurance
326 Investments-Fundamental Analysis
327 Investments-Market Analysis
328 Internship in Finance
330 Real Estate Fundamentals
331 Real Estate Finance
425 Financial Management I
   Short-term Capital
426 Financial Markets II
   Long-term Capital
427 Money and Capital Markets
428 MGMT of Financial Institutions
429 Mortgage Banking
499 Seminar Topics in Finance
520 Portfolio Analysis and Mgmt.
521 International Finance
526 Group Insurance & Pensions
528 Insurance Company Management
598 Readings in Finance

2. Finance Minors (15 hours)

Advisors: All Finance Professors

American Financial Systems 310, Business Finance 320, plus nine additional hours in Finance selected with the approval of the advisor from the courses listed above.
GENERAL BUSINESS

1. General Business Majors

In addition to the Business Administration Core, elect a logical sequence of five advanced business courses of 300* level or above, but not more than three out of those five elected courses may be from any one department or area.

2. General Business Minors

Option 1: General Business

Any student who has completed five courses from the Business Administration Core listed on pages 387-392 shall be entitled to declare these courses as his 15-semester-hour General Business minor.** One advanced business course (300* level or above) of three or more semester hours may be substituted for one of the five core courses. However, not more than two courses may be taken from any one of the following six areas: Accounting, Business Education and Administrative Services, Finance, Law, Management and Marketing. The requirement of a written minor slip and consent of the advisor is waived.

Option 2: Business Law

Any student who has completed five courses from General Business 311, 340, 341, 442, 450, 541, 542, 543, 544 or Political Science 526, may declare these courses as his Business Law Minor. The requirement of a written minor slip and consent of the advisor is waived.

MANAGEMENT

Major in Management (24 hrs.)

A major in Management consists of the six courses listed below plus an additional six hours of advanced work. Such courses may be drawn from all Management Department offerings above 304, except 499. A student who wishes to build a special program which may include courses from other departments is required to do so in consultation with a departmental advisor and must file a major slip.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Management 300</td>
<td>3</td>
</tr>
<tr>
<td>Management Analysis and Behavior (I) 301</td>
<td>3</td>
</tr>
<tr>
<td>Management Analysis and Behavior (II) 302</td>
<td>3</td>
</tr>
<tr>
<td>Management Analysis and Organizations Design (I) 303</td>
<td>3</td>
</tr>
<tr>
<td>Management Analysis and Organizations Design (II) 304</td>
<td>3</td>
</tr>
<tr>
<td>Topics in Management 400</td>
<td>3-6</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.

MARKETING

The Marketing Department offers four major areas of concentration as shown below. The courses are to be taken in the sequence indicated, following the prerequisites as listed after the course descriptions.

1. Advertising

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Advertising Copy &amp; Layout 474</td>
<td>3</td>
</tr>
<tr>
<td>Advertising Media/Campaigns &amp; Strategies 572</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Strategy 576</td>
<td>3</td>
</tr>
<tr>
<td>Consumer Behavior 477</td>
<td>3</td>
</tr>
</tbody>
</table>

Advisor: Cannon

Hrs. 24

*Consumer Principles and Practices 292 may be used as one of the advanced business courses.

**For a 20 semester hour Business Education teaching minor, see Business Education advisor.
2. Retailing

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Retailing 375</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Retail Merchandising &amp; Promotion 476</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Internship 479</td>
<td>1-6</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Strategy 576</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Industrial Marketing

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Purchasing Management 372</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Marketing 470</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Logistics 574</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Strategy 576</td>
<td>3</td>
</tr>
</tbody>
</table>

4. General Marketing

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 370</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 374</td>
<td>3</td>
</tr>
<tr>
<td>Sales Administration 376</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Marketing 470</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Research 573</td>
<td>3</td>
</tr>
<tr>
<td>International Marketing 575</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Strategy 576</td>
<td>3</td>
</tr>
<tr>
<td>Elective From Marketing Department</td>
<td>3</td>
</tr>
</tbody>
</table>

Any deviations from course sequence or course substitutions must have written approval from the student's major advisor.

A minor in Marketing will consist of the following courses:
1. Marketing 370, 3 Credit Hours.
2. Advertising 374, 3 Credit Hours.
3. Sales Administration 376, 3 Credit Hours; plus six hours of electives from within the Department and approved by the Departmental advisor.

**RELATED MAJORS**

Students who complete the B.B.A. curriculum requirements listed on pages 385-386 may major in any of the following four areas and receive the B.B.A. Degree.

1. **Economics**
   
   Elect 30 semester hours from the Department of Economics.

   **Advisor:** Bowers

2. **Public Administration**
   
   The Public Administration curriculum requires the completion of the Business Administration major and the Political Science minor listed below.*

   **Advisor:** Morrison
Major: In addition to the Business Administration Core, elect at least 15 semester hours from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBUS 311</td>
<td>Ecology and the Law</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 322</td>
<td>Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 324</td>
<td>Income Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 352</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 372</td>
<td>Purchasing Management</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 414</td>
<td>Institutional Accounting</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 428</td>
<td>Management of Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 542</td>
<td>Law of Real Property</td>
<td>3</td>
</tr>
<tr>
<td>GBUS 544</td>
<td>Law of Business Organizations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 555</td>
<td>Electronic Data Processing</td>
<td>3</td>
</tr>
<tr>
<td>BED 556</td>
<td>Office Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Minor: (Political Science)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>National Government</td>
<td>3</td>
</tr>
<tr>
<td>202</td>
<td>State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>330</td>
<td>Introduction to Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>530</td>
<td>Problems in Public Administration</td>
<td>3-4</td>
</tr>
<tr>
<td>526</td>
<td>Administrative Law and Public Regulation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives with approval of Political Science</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>Department Chairman</td>
<td></td>
</tr>
</tbody>
</table>

3. Statistics

Advisor: Sievers

The following courses from the Department of Mathematics plus one business elective comprise the major in Statistics. All students electing the Statistics option must make sure they meet the minimum requirement of 48 hours in business and upper division economics courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>Introduction to Computers, or MGMT 102, Computer Usage</td>
<td>1-3</td>
</tr>
<tr>
<td>122</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>123</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>230</td>
<td>Elementary Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>270</td>
<td>Multivariate Calculus</td>
<td>3</td>
</tr>
<tr>
<td>362</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>363</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>506</td>
<td>Programming for Computers</td>
<td>3</td>
</tr>
<tr>
<td>567</td>
<td>Applied Statistics</td>
<td>4</td>
</tr>
<tr>
<td>568</td>
<td>Studies in Applied Statistics or ENGT 508</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>Electives (one Math and one Business course from list below)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives

Select one Math course from 310 Finite Mathematics, 507 Numerical Analysis, 408 Linear Programming, 490 Topics in Mathematics and one upper-level Business course emphasizing statistical application.

4. Agri-Business

Advisor: Baker

The Agri-Business major requires the completion of B.B.A. curriculum requirements and a major in the Agriculture Department consisting of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGR 110</td>
<td>Animal Industry</td>
<td>3</td>
</tr>
<tr>
<td>AGR 111</td>
<td>Animal Industry</td>
<td>3</td>
</tr>
<tr>
<td>AGR 220</td>
<td>Agronomy</td>
<td>5</td>
</tr>
<tr>
<td>AGR 320</td>
<td>Intro to Soils Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>AGR 322</td>
<td>Agriculture, Marketing Finance</td>
<td>4</td>
</tr>
<tr>
<td>AGR 330</td>
<td>Farm Organization and Management</td>
<td>5</td>
</tr>
</tbody>
</table>

*Another option is available where a student may major in Political Science and minor in Business. See Political Science advisor.
DESCRIPTION OF COURSES

All College Courses

353 Introduction to International Business 3 cr. hrs.

Presents an overview of the framework of international business and consideration of the various dimensions of international activities.

399 Field Experience (Community Participation) 2-8 hrs.

A program of independent study combining academic work with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

Students may receive six hours credit in any combination of departments as described, provided the seminar is planned with that combination in mind. No student will receive credit under the course plan indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the College of Business.

504 International Business Seminar 1-6 hrs.

A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organizations, supplemented by coordinated faculty lectures and assigned reading. Students completing such a seminar may receive credit in the Departments of Accountancy, Business Education and Administrative Services, General Business, Management or Marketing, if approved by the Head of the Department prior to registration for the seminar.
Accountancy

Gale E. Newell, Acting Chairman
David J. Boyd
John T. Burke
James E. Daniels
Frederick Everett
Max A. Laudeman
James L. Mitchell, Jr.
William C. Morris
Robert D. Neubig
David Rozelle
F.W. Schaeberle
John D. Sheppard
William R. Welke
Robert B. Wetnight

The Department of Accountancy prepares its majors for positions as accountants in industrial, governmental and public accounting enterprises. Accountancy majors must complete the Business Administration curriculum.

201 (215) Accounting Concepts and Applications 3 hrs.
A study of the fundamental concepts and applications of accounting. Especially designed for the non-business student. This course does not serve as a prerequisite for any other accounting course and cannot be used for a major or minor in business. Not open to students with credit in accounting.

210 Principles of Accounting 3 hrs.
An introductory course in accounting which includes the recording and reporting of business transactions, and the measuring, planning and controlling of business income, assets and equities.

211 Principles of Accounting 3 hrs.
A continuation of course 210 with emphasis on financial and cost accounting concepts. Prerequisite: 210.

301 Accounting and Tax Applications 3 hrs.
A non-technical survey course in accounting and taxes to partially fulfill the general education requirements for non-business students. The course involves a development of fundamental concepts of accounting and taxes and an application of these concepts to the individual.

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. Prerequisites: 311 and senior standing.

413 (513) Accounting Information Systems 3 hrs.
A study of concepts, organization, technology, and controls of an accounting information system. Includes a study of specific applications, (payroll, accounts receivable, etc.), with particular emphasis on data input, processing, and output utilizing the computer. Prerequisites: Management 102, Accounting 310, and Accounting 322, or their equivalents.

414 (341) Institutional Accounting 3 hrs.
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.
Seniors who are eligible may enroll for departmental honors. Requirements and permission to elect must be obtained at Department of Accountancy office.

420 Topics In Accounting 3 hrs.
An examination of advanced topics in Accounting. Course may be repeated under different topics. Prerequisite: Consent of Instructor.

505 Administration Accounting 3 hrs.
Basic topics are the accumulation of financial data and the preparation of financial statements. Included are accounting topics related to business assets and entities and an introduction to the analysis and interpretation of financial statements. This is a program prerequisite course for MBA and MS students in the College of Business. Closed to students with credit for ACTY 210, 211 or equivalent. Must be taken on a credit-no credit basis.

516 (416) Auditing 3 hrs.
The theory and practice of public and internal auditing of business enterprises. Prerequisites: 311 and senior accounting major.

518 Accounting Theory and Problems 3 hrs.
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.
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.
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.
Special studies related to tax problems of individuals, partnerships and corporations. Emphasis on corporation taxes, trusts and estate tax problems. Gift and estate taxes, and an introduction to tax planning are included. Prerequisite: 324 or written consent of instructor.

598 Readings in Accounting 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
Business Education and Administrative Services

L. Michael Moskovis, Head
Charles A. Blagdon
Kimon Bournazos
Joel Bowman
Bernadine Branchaw
Marcia Brown
Ronald DeYoung
Caryl Freeman
Peggy Pattison

Earl Halvas
Ann Helgesen
Darrell G. Jones
Maureen Kiewiet
E. L. Marietta
John H. McBeth
Max O. McKitrick

William Morrison
Leo Niemi
Thomas W. Null
David L. Perry
Charles A. Shull
Jean O. Smith
James P. Zappen

The Department of Business Education and Administrative Services offers three undergraduate programs of study: (1) the administrative services area including business communication, office systems, data processing, and consumer relations; (2) the preparation of business teachers; and (3) the secretarial administration area including a co-op program.

100 Introduction of Business Writing 3 hrs.
A course dealing with those areas of written communication necessary for the development of basic business writing skills. Designed as a foundation for subsequent business writing/communication courses.

140 Industrial and Business World 3 hrs.
An introductory course which acquaints students with the organization of American business and reviews current problems and issues. Emphasis is placed on the relation of business to the various segments of society. Students participate in business simulations and games and actively become acquainted with business through a number of community resources.

142 Informational Writing 3 hrs.
Development of the basic composition skills required of the competent writer in business and the professions. Through continuing directed practice in writing, students develop competence in the organization and presentation of facts and information in writing.

180 Beginning Shorthand 4 hrs.
Students learn to read, and transcribe shorthand. Typewriting 182 or its equivalent is a prerequisite or should be elected concurrently. Credit is given to beginning students or students with not more than one semester of high school shorthand. In addition to classwork, at least two hours of laboratory work are required each week.

181 Intermediate Shorthand 4 hrs.
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 are required each week.

182 Beginning Typewriting 3 hrs.
Emphasis is placed on keyboard mastery and the use of the typewriter as a personal writing tool; students complete projects related to their majors in which the typewriter may be used as a communication tool. Credit given to students with not more than one semester of high school typewriting.
183 Intermediate Typewriting

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 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 are required each week.

185 Production Typewriting

The development of skill in the production of typewritten materials for office use. Prerequisite: Business Education 183 or equivalent.

242 Business Communication

A study of the use of written communication to solve selected kinds of business problems. Directed practice in using principles, formats, and techniques of written communication in business. Prerequisite: Business Education 142 or equivalent.

246 Survey of Office Machines

Students develop a working knowledge of the basic mathematical operations applied to typical business problems on office calculating machines.

261 COBOL

Computer programming in COBOL: timesharing and/or batch sequential, indexed sequential and random modes. Prerequisite: Management 102.

262 FORTRAN

Computer programming in FORTRAN; appropriate business application are flowcharted, programmed and run on the PDP-10 timesharing computer. Prerequisite: Management 102.

281 Integrated Office Skills

This course develops knowledge of calculating, office reproduction, and machine transcription equipment. Students apply skills and knowledge in simulated office environments. In addition to classwork, three hours of laboratory time are recommended each week.

282 Coordinated Business Experience

A work-experience course for students in the secretarial and Business Teacher Curriculum. Prerequisite: Departmental permission.

283 Coordinated Business Experience

A continuation of Business Education 282. Prerequisite: Departmental permission.

287 Secretarial Administration

An integrated learning program emphasizing the activities performed by the administrative assistant. Students complete class projects and simulations which emphasize problem solving and decision making.

288 Records Management

The study of efficient methods and procedures of processing, controlling, and disposing of organizational records. Includes information retention and retrieval, classifying, and the administration of office information systems. Emphasis is placed on the role of supervisory personnel in a records management program.
College of Business

This course examines the sociological, psychological, and economic aspects of the American consumer movement. Students review the function of the marketplace and examine its contributions and failings. Analysis is made of the changes and problems facing the consumer and the role of private and governmental protection agencies. Legal rights and responsibilities are reviewed, especially those involving warranties, guaranties, and landlord and tenant relationships.

330 Office Automation 3 hrs.
The development of office automation from manual to automatic systems, computer programming in BASIC and the methods of automating the various administrative service functions performed in organizations.

342 Organizational Communication 3 hrs.
A study of the theory of communication in structured organizations and applications of communication theory to the solution of communication problems in organizations. Directed practice in preparation of business presentations and in use of other organizational communication formats. Prerequisite: Business Education 242.

346 Teaching of Business Subjects 3-5 hrs.
A course in the methods of teaching the business subjects including shorthand, typewriting, accounting, and basic business subjects. This course should immediately precede directed teaching in business education. This course is required for business education certification and follows this pattern:

<table>
<thead>
<tr>
<th>Units</th>
<th>Wks.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>1-3</td>
<td>1</td>
</tr>
<tr>
<td>III</td>
<td>4-6</td>
<td>1</td>
</tr>
<tr>
<td>IV</td>
<td>7-9</td>
<td>1</td>
</tr>
<tr>
<td>V</td>
<td>10-12</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>13-15</td>
<td>1</td>
</tr>
</tbody>
</table>

All students will enroll for Unit I and at least 2 others.
Prerequisites: Open only to Business Education majors or minors; TEED 301.

347 Practicum in Teaching of Business Subjects 1 hr.
This course for prospective business teachers provides directed practice in applying concepts and techniques developed in Business Education 346. Special emphasis is placed on videotaped microteaching experiences. This course is taken concurrently with Business Education 346.

363 Computer Languages 3 hrs.
Examination of computer languages not covered in 261 or 262; emphasis is placed on business application in which advanced COBOL, assembly or other appropriate languages and techniques may be used. Prerequisite: Business Education 261.

380 Alphabetic Shorthand I 4 hrs.
A system of alphabetic shorthand for personal and business use where 100 words a minute is adequate. Prerequisite: Ability to typewrite.

381 Alphabetic Shorthand II 4 hrs.
A continuation of Business Education 380 with emphasis on transcription. Prerequisites: Business Education 380 and 183 or equivalent.

386 Office Organization 3 hrs.
Designed for students preparing for professional office administration and/or business teaching. Emphasis placed on office functions and environment, office technology and systems, and the principles of office organization and supervision.
410 Internship

Under the direction of a faculty advisor, qualified students may engage in a variety of professional experiences. Scheduled meetings with advisor and written experience reports required. Prerequisite: Filing of a departmental permission-to-elect form. May be repeated for a maximum of 4 hours credit.

442 Advanced Business Writing

Emphasis on the written communication problems of business, including subject and audience analysis, selection of channels and media, message design, style, and editing.

542 Report Writing

Intensive discussion and practice of the commonly used report-writing techniques. The study includes various formats and graphics of reports. In addition to writing several brief reports, students prepare a complete research report. Open to students with junior standing and above.

554 Topics in Business Communication

An intensive study of a topic in business communication such as a communication systems, business media, business publicity and others. The topic will be announced in advance. May be repeated for credit.

555 Topics in Data Processing

Special topics appropriate to business applications such as programming documentation and efficiency, planning, organizing and directing management information systems. Prerequisite: Permission of Instructor.

556 Office Management

Procedures of office administration from the manager's viewpoint. Particular emphasis is placed on developing, managing, and controlling office systems, as well as the role administrative managers play in managing human resources.

557 Topics in Administrative Services

Includes an intensive study of a selected topic in Administrative Services such as communication audits, office systems, work measurement and simplification, forms control and design, and others. The topic will be announced in advance. May be repeated for credit.

560 Office Systems and Procedures

A study of paperwork systems and procedures. Emphasis is placed on office systems and the techniques of systems development including fact gathering and recording, work analysis, and office work simplification and measurement.

583 Coordination Techniques in Office Education

A study of the role and responsibilities of the office education coordinator in the educational system. Surveys the organization of the office education program, the course content of the related class, supervision of on-the-job trainees, the establishment of working relationships among the school, business and home; examines pertinent research. Prerequisite: DE 573.

584 Improvement of Instruction in Secretarial Subjects

A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in secretarial subjects.

586 Improvements of Instruction in Typewriting

A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in typewriting.

588 Improvement of Instruction in Accounting/Computing Programs

A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in the accounting/computing programs.
College of Business

589 Organization and Teaching of Office Practice 3 hrs.
A consideration of aims and content of the office-practice course with plans and techniques for organizing and teaching the subject matter of the course and its laboratory material.

590 Vocational Block Programs 3 hrs.
Examines purposes and philosophy of vocational block programs; considers instructional development, classroom management, and program evaluation. Required for vocational office endorsement. Senior standing only.

591 Improvement of Instruction in Basic Business/Economic Education 3 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and developments in basic business and economic education.

596 Independent Study 1-4 hrs.
A directed independent project in an area of business education or administrative services. Prerequisite: Consent of department head.

598 Readings 1-4 hrs.
A series of direct readings in an area of business education or administrative services. Prerequisite: Consent of department head.
General Business

The General Business Department includes the areas of Finance and Law. Specialized majors may be obtained from the areas of Finance and specialized minors in Finance, and Law. In addition, non-specialized General Business majors and minors may be obtained by selecting a logical sequence of courses from the several departments within the College of Business. All majors and minors (except General Business and Law minors) in this department must be approved by the assigned advisor.

FINANCE AREA

Robert Balik
William L. Burdick
Adrian C. Edwards

Edwin Grossnickle
Sandra Planisek
Wayne Weeks

305 Personal Finance

Deals with various concepts inherent in personal financial management. This is a survey course designed to enable the student to better understand the considerations involved in the management of income, savings, investments and in debt planning. A lecture-discussion approach will include consideration of insurance planning, investment management, consumer and mortgage credit, real estate, tax planning and financial planning in the area of wills and estates.

310 The American Financial System

A survey of the financial system of the United States designed to provide essential foundation for advanced finance and business courses. The emphasis is on the impacts and implications of changes in monetary policies and financial conditions upon the business community, especially as these changes affect business managers. The course covers the development of the American financial system, the major financial institutions, the financial markets, the monetary theory underlying modern financial systems, and stabilization policies.

320 Business Finance

Presents a basis for understanding the financial management function of the business enterprise. Considers financial principles and techniques essential for planning and controlling profitability and liquidity of assets, planning capital structure and cost of capital, and utilizing financial instruments and institutions for capital raising. Prerequisites: Accounting 210 and 211.

321 Risk and Insurance

3 hrs. Fall, Winter, Spring

A comprehensive course which considers the nature and orientation of insurance risks and their management. Major business and personal risks are analyzed and their insurance treatment evaluated, as are the functional aspects of insurer operations. The impact of insurance on public policy is also considered.

322 Life and Health Insurance

3 hrs. Fall

This course combines a discussion of the economic aspects of life and health insurance with basic analysis of life insurance, health insurance and annuity contracts. It also includes investigation of the major functional aspects of life and health insurance companies. Prerequisite: 321 Risk and Insurance.

323 Property and Liability Insurance

3 hrs. Winter

This course includes analytical study of the major property and liability contracts, together with discussion of the principal functional aspects of property and liability company operations. Prerequisite: 321 Risk and Insurance.
326 Investment Analysis 3 hrs.
A survey of the securities' markets from the viewpoint of the novice investor. The course includes a study of market operations, trading techniques, special investment vehicles, such as options and warrants, and a consideration of the investment objectives and practices of institutional investors.

327 Security Analysis 3 hrs.
An analysis of stocks and bonds as investment vehicles. The course is designed as a sophisticated analysis of valuation techniques with a view towards aiding the student to bridge the gaps between techniques as used by the academician and the practitioner. Prerequisite: 326 Investment Analysis.

328 Internship in Finance 1-5 hrs.
Under the direction of a faculty advisor, students obtain employment experience with industrial, commercial, and financial enterprises (commercial banks, insurance companies, etc.) and students are required to file periodic reports to the advisor. In addition, they are evaluated by the firm's executives.

330 Real Estate Fundamentals 3 hrs.
Supplies the basis for comprehension in real estate of the basic economic characteristics and the organization and techniques used in the real estate business. Treats real estate resources, marketing, financing, valuation, and trends.

331 Real Estate Finance 3 hrs.
Considers the field of real estate finance from the viewpoint of sources of funds, various real estate contracts, valuation techniques, appraisals of residential and income properties, and the various aspects of risk analysis in real estate. Prerequisite: 330 Real Estate Fundamentals.

332 Real Estate Investments 3 hrs.
Types, direct vs indirect, the effect of various forms of taxation, market conditions and governmental policies as they affect the investor's spendable income. Prerequisite: 330 or consent of instructor.

333 Real Estate Appraisal 3 hrs.
A study of the sources of Real Estate Value, the techniques for estimating property value, and the effective use of appraisal information. Prerequisite: 330 or consent of instructor.

334 Real Estate Land Development 3 hrs.
Neighborhood and city growth, municipal planning and zoning, development of residential, commercial, industrial and special purpose properties. Prerequisite: 330 or consent of instructor.

425 Financial Management I — Short-Term Capital 3 hrs.
An analysis of the managerial aspects relating to the inflows and outflows of working capital in corporate enterprises. The course examines in lecture and case discussion the different aspects involved in the effective management of the cash, receivables and inventory functions; the use of rating agencies in aiding credit acceptance; and the many considerations which become a part of the short-term financing function of the corporate enterprise. Prerequisite: Business Finance 320.

426 Financial Management II — Long-Term Capital 3 hrs.
An analysis of the managerial aspects relating to the inflows and outflows of permanent capital in corporate enterprises. The course examines in lecture and case discussion the different aspects involved in the effective management of long-lived assets, intermediate and long-term credit, equity and internal financing. It covers, in addition, the areas of corporate expansion including mergers and acquisitions and the financial aspects of corporate reorganizations and bankruptcies. Prerequisite: Business Finance 320.

427 Money and Capital Markets 3 hrs.
A systematic analysis of the functions and operation 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.
428 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. Prerequisite: 310 The American Financial System.

429 Mortgage Banking 3 hrs.

Mortgage lending in the United States with special emphasis on the function, lending policies and operations of mortgage banks. Considers interrelationships of these institutions with savings and loan associations, savings banks, insurance companies, individuals and governmental institutions in providing funds to the primary and secondary mortgage markets. Prerequisites: American Financial System 310, and Business Finance 320.

499 Senior Topics in Finance 3 hrs. Winter

This course is designed as a capstone course for finance majors who can benefit from intensive study of selected current issues in finance. Course designed to increase research and analytical capacities of finance majors through intensive faculty-student work. Student permitted freedom to explore topics of interest in-depth with assistance of professors. Prerequisite: Written consent of instructor.

520 Portfolio Analysis and Management 3 hrs.

In-depth approach to the development and administration of security portfolios. Emphasizes the investment strategies followed by individuals and by portfolio managers in financial institutions. Latest portfolio strategies and techniques are studied and evaluated. Prerequisite: Investments 326 or equivalent.

521 International Finance 3 hrs.

A study of contemporary problems in international finance. The course examines the international money markets, working capital considerations and capital budgeting problems as faced by the multinational corporation. Prerequisite: Finance 320 or equivalent or consent of instructor.

522 Real Estate Management 3 hrs.

Management of income producing properties as an agent of the owner. Consideration of professional standards, business promotion, leasing, insurance and maintenance. Prerequisite: GBUS 330 or consent.

526 Group Insurance and Pensions 3 hrs.

By means of problems and cases this course analyzes in detail the following areas: group life and health insurance, business life and health insurance, insured pension plans and estate and tax planning. Prerequisite: Life and Health Insurance 322.

528 Insurance Company Management 3 hrs.

The topics studied by means of cases and problems in this course include multiple-line insurance operations, special problems in functional areas of industry operations and personal and commercial risk surveys and analysis. Prerequisite: Property and Liability Insurance 323.

598 Readings in General Business (Finance) 1-4 hrs.

Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
311 Ecology and the Law

The study of law as it relates to man's efforts to protect his environment. Included will be an examination of traditional common law principles and federal and state statutes relating to environmental protection, analysis of recent cases, and discussion of techniques for the effective use of administrative procedures of the various environmental protection agencies.

340 Legal Environment

An introduction to the legal environment in society.

341 Business Law

Continuation of Legal Environment 340 with emphasis on contracts, borrowing and banking transactions to include checks and other commercial paper, agency and employment contracts; and trade regulations. Prerequisite: 340 Legal Environment.

442 Damage and Tort Liability

The study of individual and business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: 340 Legal Environment.

450 Legal Aspects of Employment

A survey of the rights, duties and general relationship between employer and employee, including hiring, firing, agency, employee benefit programs, workmen's compensation and an introduction to current labor legislation. Prerequisite: 340 Legal Environment.

541 Law of Sales and Personal Property

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 Estate

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

A study of United States, foreign and international laws which affect business corporations. Prerequisite: 340 Legal Environment.

544 Law of Business Organization

Study of business organizations including partnerships and corporations. Prerequisite: 340 Legal Environment.

598 Readings in General Business (Law)

Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
102 Computer Usage 3 hrs.
An introductory, non-mathematical course designed for students who wish to learn how to use time shared computers by utilizing remote terminals. You will (1) learn the capabilities of electronic data processing equipment, (2) use the computer to assist you in problem solving by accessing stored programs, (3) learn to write elementary computer programs, and (4) study the application of computer technology to various fields.

200 Decision Making with Statistics 3 hrs.
An applications-oriented study of statistical concepts and techniques. The course focuses on the student as a user of statistics who needs a minimal understanding of mathematical theory and formula derivation. Major topics of study are statistical description, central tendency, dispersion, distributional shapes, sampling, confidence levels, probability, comparison tests, association tests, regression and time series. The objectives of the course are to develop the skill to apply these concepts in conjunction with computer usage and make appropriate decisions regarding actual business problems.

250 Small Business Management 3 hrs.
A study of the fundamental principles involved in the operation of a small business enterprise. The structure, functions, and basic operating principles will be discussed and developed. Prerequisite: Non-BBA students only.

300 Fundamentals of Management 3 hrs.
Theories and techniques in the areas of production, social-environmental influences, organization structure, interpersonal relationships, control and motivation systems. Prerequisite: Econ 201 for BBA candidates.

301 Management Analysis and Behavior (I) 3 hrs.
Management analysis and behavior will be presented and practiced by the student in small task oriented groups working on real problems. Group decision making, problem solving, and business presentations are emphasized. In addition, the student will learn the costs and benefits of assuming different group roles. Prerequisites: Management 200, 300; co-requisite: Management 302.

302 Management Analysis and Behavior (II) 3 hrs.
An extension of Management 301; must be taken with 301.

303 Management Analysis and Organizational Design (I) 3 hrs.
The students develop and experiment with their own model of an organization by assuming different roles and exercising influence in a large task oriented group working on a real problem. The course is designed to give students practice in integrating relevant variables, analyses, and data into an operating system. Prerequisites: Management 301-2; co-requisite: Management 304.

304 Management Analysis and Organizational Design (II) 3 hrs.
An extension of Management 303; must be taken with Management 303.
352 Personnel Management
The personnel function in organizations including manpower needs, staffing and development; organization and individual appraisal; employee compensation and benefits; safety and health; approaches to employee problems; labor relations.

400 Topics in Management
An examination of advanced topical problems in management. Prerequisites: Management 301-304. (Repeatable)

404 Business and Society
A systematic analysis and evaluation of the concepts and institutions, both internal and extrinsic, which shape the role of business in our society. Illustrative topics: Authority and Power, Pluralism, Competition, Freedom of Association, Innovation, Social Responsibility.

420 Forecasting
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
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. Prerequisites: Management 301-304 and permission of department. (Repeatable)

451 Administrative Behavior
A course designed to integrate the contributions and implications of the behavioral sciences to modern business practice to promote and maintain effective human relations for the individual and the group. Extensive use of cases and conference methods is made.

458 Independent Study
Independent research on specialized management topics. Prerequisites: Management 301-304, and consent of instructor. (Repeatable)

490 Honors Seminar
A discussion of selected topics in contemporary management. Prerequisites: Consent of departmental honors committee and instructor. (Repeatable)

491 Independent Honors Studies in Management
Opportunity for independent reading and/or research under the direction of a faculty member. Prerequisites: Consent of departmental honors committee and instructor. (Repeatable)

499 Management Problems
An integrating course intended to give the student an opportunity to solve management problems by bringing together the knowledge gained in the study of areas such as finance, accounting, marketing, economics, management. Prerequisites: Senior standing and all core courses.

500 Management Literature
Studies in specialized areas of the management literature. The students will prepare an original paper on an assigned topic. These papers will be integrated by the class into a single document focused on a selected area of management theory. (Repeatable)

520 Planning for the Future
An exploration of alternative ways of predicting future events, selecting long-range goals, systems-planning for achievement. A variety of forecasting and planning methodologies will be examined. Skill will
be gained in the more common and well-developed methods through class exercises. Graduate students will be expected to develop an independent application in an area of interest.

540 Advanced Statistics 3 hrs.
A second course in statistics complete enough to be used with limited background. Includes probability theory, t, Z, F, and binomial probability distributions, hypothesis testing with sampling theory and Type I, Type II errors, point and interval estimates, statistical inference, comparison tests (two-sample and K-sample), association tests (correlations and regression), and nonparametric tests. Prerequisite: Management 200.

542 Multinational Management 3 hrs.
An examination of management strategy, controls, environmental influences of the multinational corporation with consideration of geographic factors. The management function abroad will be examined in light of the cultural assumptions underlying U.S. management and will deal with the necessary modification for effective operations in a cross cultural environment.

553 Planning and Analysis for Production 3 hrs.
An examination of modern methods of analysis, their relation to the production process and their utilization in management planning. Cases and problems will be utilized. Prerequisites: Economics 201 and Management 200.

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.

557 Inventory Management 3 hrs.
The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisite: Management 200.

564 Simulation Models 3 hrs.
Development of a model for the integration of the functional areas of business to create more successful management policies and organizational structures. Prerequisite: Management 200.

598 Readings in Management 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. (Repeatable). Prerequisite: Written consent of instructor.
Marketing

Robert B. Trader, Head
Zane Cannon
Lowell Crow
Richard E. Embertson
Frances S. Hardin
Jay Lindquist

Brian G. Long
Leonard D. Orr
Conner P. Otteson
Dale L. Varble

190 Social Dynamics of Marketing
3 hrs. Fall, Winter
An analysis of interaction between business and its environment. Special emphasis will be applied to current topics such as pollution, ecology, and consumer satisfaction. No prerequisites. Not open for Marketing major or minor credit.

270 Salesmanship
3 hrs.
An introduction to the principles of selling. Includes study of selling in our present economy, analysis of the steps in a sales demonstration, and a classroom demonstration.

370 Marketing
3 hrs.
Functions, institutions, and problems of marketing examined from the viewpoint of their affect on distribution of goods. Prerequisite: Econ. 201.

372 Purchasing Management
3 hrs. Fall, Winter, Spring
The organization and operation of the purchasing function, responsibilities and policies: problems confronting the purchasing department; relationships with other departments and suppliers. Prerequisite: Mktg. 370.

374 Advertising
3 hrs.
A comprehensive survey of basic principles and practices of advertising in their relationship to the economy, society, and the system of mass communication. Prerequisite: Mktg. 370.

375 Principles of Retailing
3 hrs. Fall, Winter
Designed to give the student an over-all view of the field of retailing. Includes history of retailing, types of retail institutions, store location, layout, fixtures, and equipment; store organization; store records; customer services; personnel management; systems and store protection. Prerequisite: Mktg. 370.

376 Sales Administration
3 hrs. Fall, Winter, Spring
Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting; training; sales communication; territories and quotas; motivation, measuring selling effectiveness. Prerequisite: Mktg. 370.

470 Industrial Marketing
3 hrs. Fall, Winter
A course designed to analyze the problems of marketing industrial goods. Attention is given to market information, market planning, methods of distribution, pricing, and the promotional problems of industrial marketing. Prerequisite: Mktg. 370.

474 Advertising Copy and Layout
3 hrs. Fall, Winter
Study of the theory and practice in the writing, preparation and typographical composition of advertising including the writing of radio, television, magazine, and newspaper copy. Prerequisite: Advertising 374.

476 Retail Merchandising and Promotion
3 hrs. Fall, Winter
Covers the two major functions of retailing, merchandising and promotion. Includes sales and customer
Marketing analysis, merchandising, budgeting, promotional planning, expense control systems and pricing policies. Prerequisite: Retailing 375.

**477 Consumer Behavior**
3 hrs.
Investigate, analyze and interpret the extensive body of research information on consumer behavior considering both the theoretical and practical implications. Prerequisite: Marketing 370.

**478 Quantitative Marketing Applications**
3 hrs.
Provides the marketing student with a basic understanding of fundamental quantitative techniques and shows how these techniques will assist the decision maker in solving marketing problems. Prerequisites: Math 116, Management 200, Marketing 370.

**479 Marketing Internship**
1-6 hrs. Arranged
Cooperative internship training for the BBA degree marketing majors having completed sophomore year. Variable credit at the rate of approximately one credit per 100 hours of internship training acceptable to advisor. May be repeated for a maximum of 6 hours. Term reports required; evaluations completed by executives of firms in which training takes place. Prerequisites: Marketing major; permission of the instructor.

**572 Advertising: Media, Campaigns and Strategies**
3 hrs. Fall, Winter
Evaluation of media and advertising through communications research, analysis and preparation of advertising as a communication tool. Includes theory and practice of media research, media plans, schedules, and strategies. Case studies. Prerequisites: Adv. 374, 474.

**573 Marketing Research**
3 hrs. Fall, Winter, Spring
Designed to include an introduction to market research, the procedures and applications of research, and the accomplishment of a research project. Term project includes selection of problems, preparation of questionnaires, data collection, analysis of data, and final report. Prerequisites: Mktg. 370, Statistics 200.

**574 Marketing Logistics**
3 hrs. Fall, Winter
An analysis of problems relating to the movement, handling and storage of industrial products. Attention will also be given to changing market conditions and industrial structure as they affect the physical distribution of industrial goods. Prerequisite: Mktg. 370.

**575 International Marketing**
3 hrs. Fall, Winter
An examination of the theories and principles of international marketing. Attention directed to related commercial policies, trade practices and procedures, and marketing research tools and techniques required to locate and evaluate foreign markets. Prerequisite: Mktg. 370.

**576 Marketing Strategy**
3 hrs. Fall, Winter, Spring
Identification of marketing problem situations and cause diagnosis with development of appropriate marketing strategies. Stress placed on application of marketing fundamentals to factual case situations and on decisions in a simulated dynamic environment. Communications of findings and strategies emphasized. Cases and computer games used. Senior level.

**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
DAVID TAYLOR
Assistant to the Dean

Departments:
- Blind Rehabilitation
- Counseling and Personnel
- Directed Teaching
- Educational Leadership
- Physical Education
- Special Education
- Teacher Education

Agencies:
- Center for Educational Research
- Educational Resources Center
- Reading Center and Clinic
- REDE Center (Research, Evaluation, Development, Experimentation)
In general, the College of Education performs six functions:
1. Supervises the selection, admission and retention of students in advanced teacher education curricula;
2. Offers professional education courses designed to develop competent, efficient performance in the classroom and within a school system;
3. Offers advanced specialized courses in selected major and minor fields in departments within the college;
4. Offers service courses to students in other colleges within the University;
5. Provides clinical and curricular services to teachers and school personnel; and
6. Conducts experimentation and research at all levels of professional education.

**ALL COLLEGE COURSE**

**399 Field Experience (Community Participation)**

A program of independent study combining academic work in education with social, environmental, civic or political field work. Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

**ADMISSION TO THE TEACHER EDUCATION PROGRAM**

The student who wishes to prepare for the profession of teaching should identify himself as a prospective teacher candidate by declaring at the time of application to the University his intention to follow a Teacher Education curriculum. Students wishing to change their existing curriculum to a Teacher Education Program should make application to the Teacher Education Orientation and Advisement office. (Students wishing to enter Special Education must obtain approval of the Special Education Department.)

**COOPERATIVE TEACHING INTERNSHIP PROGRAM TO PREPARE ELEMENTARY SCHOOL TEACHERS**

The Cooperative Internship Program offers the competent student intending to be an elementary school teacher the opportunity of obtaining an earlier start on a professional career. The 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 in some cases to earn a salary while learning. During intern teaching, the student is in complete control of his own classroom, aided by the guidance and counsel of a master teacher. Students interested in enrolling in this program should apply to the Directed Teaching Center, 2504 Sangren Hall. This program leads to full certification and the bachelor's degree.

**CURRICULA FOR TEACHERS**

The program for prospective teachers consists of three parts: (1) general education, designed to develop those understandings and competencies which make for effective living and good citizenship, (2) advanced specialized study, with major and minor interests in the fields of the student's choice, offered in the various colleges of the University; and (3) professional education courses offered in the college of Education.

In general, prospective teachers choose to work for the State Elementary Provisional Certificate, valid for grades kindergarten through nine, or the State Secondary Provisional Certificate, valid for grades seven through twelve.
Students majoring in Art, Dance, Music, Physical Education and Special Education may be certified to teach this subject in all grades by completing requirements of the Elementary Provisional or Secondary Provisional certificate and the curriculum requirements of the major.

Those preferring to teach in smaller communities may elect the Rural Elementary curriculum which leads to the State Elementary Provisional Certificate.

**ELEMENTARY CURRICULUM**

Bachelor of Arts or Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of Teachers of Kindergarten and Grades 1-8)

**A. Minimum hours required for this curriculum**

122 hrs.

**B. Course Requirements**

1. **General Education Requirement**: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies, is required for Michigan certification.

2. **Elementary Education Minor**

24 hrs.

Requirements and approval for this required minor are available in the Teacher Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have an approved minor slip signed by an approved Elementary Education advisor.

3. **Professional Education**

   - Human Development and Learning 250
   - Teaching and Learning in the Elementary School 300
   - Directed Teaching 470 — 9 hrs., Seminar in Education — 2 hrs., School and Society 450 — 3 hrs. (usually taken concurrently in one semester)

   **21 hrs.**

4. **Physical Education**

   May include PEW 340 — Physical Education for the Elementary Teacher

   2 hrs.

**C. Two minors of 20 hours each or group minors of 24 hours each; or one major of 30 hours or group major of 36 hours are required. This requirement is in addition to the required El. Ed. minor.** (Check catalog descriptions for major and minor requirements.)

Approved majors and minors for the Elementary Education Curriculum (Only programs listed below are acceptable for Elementary Education)

**MAJORS**

- American Studies (AMS)
- Anthropology (ANT)
- Biology (BIO)
- Chemistry (CHM)
- Communication Arts & Sciences (CAS)
- Dance Education (DAN)
- Earth Science (EAR)
- Economics (ECO)
- English (ENG)
- Geography (GEG)
- Geology (GEL)
- Health Education (HED)
- History (HIS)
- Language Department Majors:
  - French (FRE)
  - German (GER)
  - Russian (RUS)

**MINOR**

- Anthropology (ANT)
- Art (ARE)
- Biology (BIO)
- Black American Studies (BAS)
- Chemistry (CHM)
- Communication Arts & Sciences (CAS)
- Dance Education (DAN)
- Earth Science (EAR)
- Economics (ECO)
- English (ENG)
- Environment Studies (EVS)
- Family Life Education (FLE)
- Geography (GEG)
- Geology (GEL)
- Health Education (HED)
- History (HIS)
College of Education

Spanish (SPA)
Mathematics (MAT)
Music (MUS)
Physical Education Elementary Emphasis (PEE)
Physical Education (PEP)

Physics (PHY)

Political Science (POL)
Rural Life (RUL)
Science (SCI)
Social Science (SOS)
Sociology (SOC)
Speech Pathology and Audiology (SPC)

Special Education Majors:
- Emotionally Disturbed (SDC)
- Mentally Handicapped (SMH)
- Orthopedically Handicapped (SCH)
- Visually Handicapped (SBE)

(The Special Education majors require admission to Special Education curriculum)

Theatre Education (THN)

Integrated Creative Arts (CRA)

*International and Area Studies Minors:
- African Studies (AFS)
- Asian Studies (AIS)
- Cross Cultural (CCS)
- Latin American Studies (LAS)
- Slavic Studies (SVS)

Language Arts (ILAM)

*Language Department Minors:
- French (FRE)
- German (GER)
- Russian (RUS)
- Spanish (SPA)

Library Science (LIB)
Linguistics (LIN)
Mathematics (MAT)
Music (MUS)

*Physical Education Minors
- Physical Ed. (PEP)

Physical Education — Elementary (PEE)
- Swimming (SWM)
- Phys. Ed. for Exceptional Child (PEC)
- Recreation (REC)

Physics (PHY)

Political Science (POL)
Science (SCI)
Social Science (SOS)
Sociology (SOC)
Theatre Education (THN)

D. The candidate must satisfy the requirements of the A.B. or B.S. Degree.

*only one minor from department may be used

EMPHASIS IN EARLY CHILDHOOD EDUCATION

Students seeking certification in the elementary school may gain state approval for early childhood education (including teaching in nursery school and kindergarten) by satisfactorily completing the Elementary Education curriculum requirements with the following additional courses and course substitutions:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEED 350</td>
<td>The Young Child, His Family, and His Society</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>TEED 351</td>
<td>Reading and Related Communication Skills for Early Childhood*</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>TEED 355</td>
<td>Learning Experiences for Young Children</td>
<td>3 hrs.</td>
</tr>
<tr>
<td>DT 470</td>
<td>Directed Teaching (Early Childhood)**</td>
<td>5 hrs.</td>
</tr>
<tr>
<td>DT 410</td>
<td>Seminar in Early Childhood Education</td>
<td>1 hr.</td>
</tr>
<tr>
<td>TEED 455</td>
<td>Historical, Social and Philosophical Perspectives on Education for Young Children</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

Students must see one of the advisors for admission to the program. Upon consultation with an advisor and approval of the Certification Office, students may apply part of these credit hours to the professional sequence, as indicated above. Each student in the program will also attend a non-credit seminar, with hours to be arranged in consultation with his advisor. Early consultation with an advisor is recommended.
INTEGRATED CREATIVE ARTS MINOR

The Interdepartmental minor, offered for elementary school teachers, emphasizes the integration of all the arts into the core of the elementary school curriculum, and the development of teacher behaviors in stimulating creating processes in problem-solving. Those who select the minor must be admitted through a personal conference with Dr. Mary Cain. The minor consists of 24 semester hours, distributed as follows:

- Teach. Ed. 230 — The Nature of Creativity .............................................. 4 hrs.
- Music 140 — Music for the Classroom Teacher ........................................ 4 hrs.
- Art 200 — The Creative Process through Art .......................................... 4 hrs.
- Teach. Ed. 430 — Creativity in the Elementary School .............................. 4 hrs.

Students enrolled in the minor must take Teacher Education 430 (Creativity in the Elementary School) after they have taken all other courses in this group.

*The following companion course should also be taken by students in Early Childhood Emphasis: TEED 352 Reading and Related Communication Skills for Middle and Upper grades. (May substitute for TEED 312.) 4 hrs.

**The directed teaching experience, with its accompanying seminar may count as part of the required number of directed teaching hours for certification of the elementary school teacher, and is not an additional student teaching assignment. In all, the student must complete 11 hours of student teaching and seminar for elementary certification.

INTEGRATED LANGUAGE ARTS MINOR

This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of learning. This program satisfies the guidelines of the Michigan Department of Education for competency based programs and provides opportunities for a wide variety of individual interests and alternative learning styles.

The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each semester. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each semester is team taught by an interdisciplinary faculty, and will focus on a particular aspect of language development which will be presented through a balance of lectures, discussions and workshops together with opportunities for student initiated learning.

Students can enter the program in the second semester of their sophomore year and should plan for four sequential semesters. In general, Human Development and Learning, TEED 250 (or its equivalent), is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Offices of the College of Arts and Sciences or the Teacher Education Department and from the Integrated Language Arts (ILAM) Coordinator.

PROGRAM

This 24-hour interdepartment minor for elementary education students consists of four sequential semesters as follows:

Semester 1
ILAM 360 Children and Their Language .................................................. 8 hrs.
An introduction to the interrelated nature of the language arts with emphasis on the linguistic and social-cognitive development of the child. Topics to be covered are: social-cognitive development, language acquisition, speaking and listening, literature for the young child, and the teacher's acquisition and use of observation skills.
College of Education

Semester II
ILAM 361 Oracy and Literacy in the Early Elementary School 6 hrs.
An in-depth continuation of Semester I which emphasizes the relationship of oral language with writing and reading, and the interrelationships within the language arts, and the development of thinking processes through language. A field experience with early elementary children will be included.

Semester III
ILAM 362 Oracy and Literacy in the Later Elementary/Middle School 6 hrs.
An in-depth continuation of Semester II, the emphasis will be on reading, oral language, children's writing and literature, and the development of thinking processes through language. Field work with later elementary/middle school children will be included.

Semester IV
ILAM 460 Studies in the Integrated Language Arts 4 hrs.
This semester is designed by the student, in consultation with the advising faculty, for pursuing in-depth the development, implementation and integration of the language arts program. Attendance at periodic seminars to discuss projects and individual conferences to assess progress, along with related field experiences, are important and integral features of this semester.

KALAMAZOO-PORTAGE ELEMENTARY EDUCATION PROJECT
Advisor: Helen Jennings
Integrated one semester (17 credit hours) full-day program for students preparing to teach in elementary schools is offered fall semesters. These programs combine a portion of student teaching (4 credit hours) with required courses selected from the following list:

- TEED 300 Teaching and Learning .......................................................... 3 hrs.
- TEED 351 “Reading and Related Communication Skills for Early Childhood” ........................................... 4 hrs.
- TEED 352 “Reading and Related Communication Skills for Middle and Upper grades” ....................... 4 hrs.
- TEED 450 School and Society .............................................................. 3 hrs.
- TEED 472 Directed Teaching ................................................................. 4 hrs.

Remaining student teaching requirements may be completed during a spring session.
NOTE: Students who choose a Special Education major must be admitted to the Special Education curriculum. See requirements on page 422.

LIBRARIANSHIP CURRICULUM
Bachelor of Arts or Bachelor of Science Degree
State Elementary or Secondary Provisional Certificate
(For Teacher-Librarians)

A. Minimum hours required for this curriculum 122 hrs.

B. Course Requirements
1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.
2. Teacher Education ................................................................................................................. 21-26 hrs.
   See elementary, junior high and senior high curricula requirements.

   Librarianship as a Profession: Introduction 100
   (Not required but strongly recommended) ................................................................. 2
   Fundamentals of Library Organization 230 ................................................................. 3
   Building Library Collections 510 ................................................................................. 3
   Reference Service 512 ..................................................................................................... 3
   Introduction to Classification and Cataloging 530 ....................................................... 3
   School Media Center Experience 407 ........................................................................... 3
   Reading Interests of Young Adults 542* ....................................................................... 3
   Storytelling 546 ** .......................................................................................................... 3
   Instructional Materials, K-12 416 .................................................................................. 3

4. Humanities ............................................................................................................................ 18-22 hrs.
   Modern foreign language .................................................................................................. 8
   Children's Literature 282 ............................................................................................... 4
   (elementary and junior high)
   English electives (senior high) ......................................................................................... 8
   Communication Arts and Sciences .................................................................................... 3
   Elective ................................................................................................................................. 3
   (junior and senior high)

5. Social Science ....................................................................................................................... 3-9 hrs.
   Political science (government) elective ........................................................................... 3
   History electives ................................................................................................................ 3-6
   (junior high and secondary only)

6. Science
   Elective ................................................................................................................................. 3-4 hrs.
   (elementary and junior high — see curricula requirements)

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

C. Candidates for the secondary provisional certificate must elect a major or group major of
   30 or 36 hours in subjects or subject fields taught in the secondary school; candidates
   for the elementary provisional certificates must elect an additional minor
   or group minor of 20 or 24 hours, and also complete the Elementary Education minor (see Element-
   ary Curriculum).

D. A portion of the Directed Teaching period is spent in a selected school media center.

E. The candidate must satisfy the requirements of the A.B. or B.S. degree.

*The following companion course should also be taken by students in Early Childhood Emphasis: TEED 352 Reading
   and Related Communication Skills for Middle and Upper grades. (May substitute for TEED 312.) 4 hrs.

**The directed teaching experience, with its accompanying seminar may count as part of the required number of directed
   teaching hours for certification of the elementary school teacher, and is not an additional student teaching assignment. In
   all, the student must complete 11 hours of student teaching and seminar for elementary certification.

MIDDLE SCHOOL AND JUNIOR
HIGH SCHOOL CURRICULUM

Bachelor of Arts or Bachelor of Science Degree
State Elementary or State Secondary Provisional Certificate

A program of undergraduate studies to prepare students to teach in Middle and Junior High School
which focuses on teaching-learning processes and content areas which are effective for working with the
older child and the young adolescent in grades 5 through 9. (Student has option of earning elementary
(grades K-9) or secondary (grades 7-12) certification. Elementary certification is recommended.)
College of Education

The program includes a two semester sequence of planned and supervised experiences specifically designed for teaching in the Middle or Junior High School.

PROGRAM REQUIREMENTS MUST BE PLANNED AND APPROVED BY ADVISER.

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

B. **General Education Requirement**: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies, is required for Michigan certification.

C. **Major/Minor Requirements**

   **Elementary Certification Option**
   1. Two minors or group minors (20-24 hours); OR one major or group major (30-36 hours) selected from the following areas: Communication Arts and Sciences, English, Social Science, Mathematics, Science, Foreign Languages.
   2. Elementary Education minor: see advisor for requirements.

   **Secondary Certification Option**
   1. One major or group major.
   2. One minor or group minor.

   Majors and minors must be selected from the following areas: Communication Arts and Sciences, English, Languages, Linguistics (second major only), Social Science, Mathematics, Science.

   It is strongly recommended that majors and minors be chosen from related disciplines. See adviser for acceptable combinations.

D. **Two semester-planned sequence (usually taken in junior year)**

   **Fall Semester**
   - One course from: General Studies 122, 316, OR Sociology 314, 320, 353, 514.
   - CAS 170 Interpersonal Communications I OR CAS 270 Interpersonal Communications II .................................................. 3 hrs.
   - TEED 312 Teaching of Reading Elementary OR TEED 322 Teaching of Reading Secondary ........................................... 3 hrs.
   - TEED 300 Teaching and Learning in Middle Schools .................................................. 3 hrs.
   - TEED 398 Special Studies in Education (topical seminars) ........................................... 4 hrs.
   - Field Experiences (no credit)

   **Winter Semester**
   - TEED 398 Special Studies in Education (Psychology and Guidance of Young Adolescents) ........................................... 2 hrs.
   - TEED 352 Reading and Related Communication Skills for Middle and Upper Grades ........................................... 4 hrs.
   - TEED 450 School and Society .................................................. 3 hrs.
   - TEED 507 Elementary School Social Studies (elementary option OR methods course in major or minor field — secondary option) ........................................... 3 hrs.
   - DT 472 Directed Teaching .................................................. 4 hrs.

E. **Professional Education**
   - TEED 250 Human Development and Learning (required before two semester planned sequence) ........................................... 4 hrs.
   - DT 471 Directed Teaching .................................................. 5 hrs.
   - DT 410 Seminar in Education .................................................. 2 hrs.

   471 and 410 are taken concurrently during senior year. Professional Education must total 21 hours; other professional education requirements are included in two semester planned sequence.

F. **Physical Education** .................................................. 2 hrs.
## BACHELOR OF SCIENCE DEGREE
### ELEMENTARY MUSIC CURRICULUM
#### MAJOR: MUSIC, ELEMENTARY
##### MINOR: ELEMENTARY EDUCATION

Grants certification to teach in elementary grade room and elementary music.

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

**B. Course Requirements**

1. **General Education Requirements** 35 hrs.
   - See University requirements for General Education

2. **Music Major** 40 hrs.
   - Basic Music 160-161 6
   - Aural Comprehension 162-163 2
   - Piano and Voice (120, 121, 220, 221, 320, 321, 122, 123, 100) 10
   - Elementary Music Practicum 244 3
   - Music Literature: select one from 151, 152, 350, 352 4
   - General Music Methods 240 2
   - Graderoom Music Literature 374 3
   - Conducting 215 1
   - Ensembles 5
   - *Music elective(s)* 4
   - Music Convocation 101 (7 semesters) 0

3. **Elementary Education** 24 hrs.
   - An advisor sets up an “individualized” program for each student. Report to Teacher Education Counseling Center, 2305 Sangren Hall.

4. **Teacher Education** 21 hrs.
   - Human Development and Learning 250 4
   - Teaching and Learning 300 3
   - Directed Teaching, Seminar in Education, and School and Society 470, 410, 450 14

5. **Physical Education** 2 hrs.
   - (Includes Physical Education for the Elementary Teacher 340)

*To be selected in consultation with the Music Student Advisor

---

### RURAL ELEMENTARY CURRICULUM

Bachelor of Arts or Bachelor of Science Degree
State Elementary Provisional Certificate

Major attention is given to preparation for teaching in schools located in rural or small community areas — population 2,500 or less.

Students desiring to teach in schools serving these areas select the Rural Life major or two academic minors under the guidance of the Director of Rural Life and Education. Thought is given to the many demands made upon the teacher in the small school. Those preparing to serve the smaller communities in other professional groups, such as ministers, librarians, recreation leaders, etc., either at home or overseas, will find considerable basic work in the curricula of Rural Life and Education.
Rural Elementary Curriculum

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

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Elementary Education Minor ......................................................... 24 hrs.

Requirements and approval for this required minor are available in the Teacher Education Orientation and Advisement Office, 2305 Sangren Hall. All students must have an approved minor slip signed by an approved Elementary Education adviser.

3. Professional Education Sequence .................................................. 16-21 hrs.

   Human Development and Learning 250 .......................................... 4
   Teaching and Learning 300 ......................................................... 3
   Directed Teaching* ................................................................. 9 or 5
   Seminar in Education 410** ...................................................... 2
   School and Society 450 ............................................................. 3


   Rural Sociology 220 ................................................................. 3
   Rural Economics 230 ............................................................... 3
   Rural Life (Seminar) 525 .......................................................... 2
   Curr. Organization in Small Schools 201 ....................................... 3
   Problems of Comm. Schools in Rural Areas 411 ............................ 1-2
   Supervision in Rural Area School (Sem.) 408 ............................... 1-2

5. Physical Education (General)
   (Physical Education 340 will count toward one hour of this) ............... 2 hrs.

C. Either a group major in Rural Life, including Rural Sociology, Rural Economics, Rural Life Seminar, Introduction to the Non-Western World, and 22 additional hours selected from courses offered in liberal arts; or two academic minors in subject fields taught in the elementary school, chosen with the guidance of the Director of Rural Life and Education. In addition to the major or two minors, the Elementary Education minor is required.

D. The candidate must satisfy the requirements for the B.A. or B.S. degree.

Rural Life and Education Curriculum —
Special Program for Education of Career Teachers in Rural and Small Communities

Individuals electing this curriculum will fulfill requirements for the Bachelor’s degree and the Rural Elementary Curriculum as outlined above. Students who qualify will complete a Rural Life major.

An important feature of this program is the teacher intern “earn and learn” provision. The student, upon recommendation of the Director of Rural Life and Education, may teach full time with pay after successfully completing 90 hours of carefully selected courses, including directed teaching, from the curriculum.

The teacher intern remains under close University and local supervision while teaching. He continues his academic and professional studies on a restricted but uninterrupted basis. The internship terminates at the end of two years, by which time all requirements for the degree and certificate must be met.

SECONDARY CURRICULUM

Bachelor of Arts or Bachelor of Science Degree
State Secondary Provisional Certificate
(For the preparation of teachers in Grades 7-12)

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

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Professional Education
   - Human Development and Learning 250 .......................... 4 hrs.
   - Teaching and Learning in Jr. or Sr. H.S. 301 .................. 3 hrs.

3. Physical Education .................................................. 2-8 hrs.

NOTE: 322 Teaching of Reading — Secondary, is recommended for all students in this curriculum.

C. The candidate for the State Secondary Provisional Certificate must present a teaching methods course in a major or minor field.

D. One major of 30 hours or a group major of 36 hours, and one minor of 20 hours or group minor of 24 hours or one second major in subjects or subject fields taught in the Junior and Senior high school. Certain courses in some departments may not be counted toward majors or minors (see course descriptions).

Approved majors and minors for the Secondary Education Curriculum (Only programs listed below are acceptable for Secondary Education)

**MAJORS**

- Agriculture (AGR)
- American Studies (AMS)
- Anthropology (ANT)
- Art Education (includes Drawing and Design minor) (ARE)
- Biology (BIO)
- Business Education (BED)
- Chemistry (CHM)
- Communication Arts & Sciences (CAS)
- Dance Education (DAN)
- Distributive Education (DED)
- Earth Science (EAR)
- Economics (ECO)
- English (ENG)
- Geography (GEG)
- Geology (GEL)
- Health Education (HED)
- History (HIS)
- Home Economics (HEE)

**Industrial Arts Majors:**
- General Industrial Arts (GIA)
- Drafting (DRF)
- Electricity-Electronics (ELT)
- Graphic Arts (GRA)
- Metal Working (MWK)
- Power-Automotives (POW)
- Woodworking (WDK)

**Language Department Majors:**
- French (FRE)
- German (GER)
- Latin (LAT)
- Russian (RUS)
- Spanish (SPA)
- Linguistics (used only as 2nd major) (LIN)
- Mathematics (MAT)
- Music Education (includes vocal or

**MINORS**

- Agriculture (AGR)
- Anthropology (ANT)
- Art (ARE)
- Biology (BIO)
- Black American Studies (BAS)
- Business Education (BED)
- Chemistry (CHM)
- Communication Arts & Sciences (CAS)
- Dance Education (DAN)
- Distributive Education (DED)
- Earth Science (EAR)
- Economics (ECO)
- English (ENG)
- Environmental Studies (EVS)
- Family Life Education (FLE)
- General Business (from Bus. Ed. dept. only) (GBS)
- Geography (GEG)
- Geology (GEL)
- Health Education (HED)
- History (HIS)
- Industrial Arts (same minor areas as listed under major)
- International and Area Studies Minors:
  - African Studies (AFS)
  - Asian Studies (AIS)
  - Cross Cultural Studies (CCS)
  - Latin American Studies (LAS)
  - Slavic Studies (SVS)
- Language Department Minors (same as listed under major)
  - Library Science (LIB)
  - Linguistics (LIN)
- Mathematics (MAT)
- Physical Education Minors
  - Physical Education — (PEP)
College of Education

MAJORS

instrumental minor) (MUS)

*Physical Education Majors
   Physical Education (PEP)
   Health Education (HED)
   Aquatics Education (AQE)
   Recreation (REC)
Physics (PHY)
Political Science (POL)
Psychology (PSY)
Science (need departmental approval) (SCI)
Social Science (SOS)
Sociology (SOC)
Theatre Education (THN)
Vocational Technical Education (VIE)

MINORS

Coaching (CCH)
Swimming (SWM)
Phys. Ed. Exceptional Child (PEC)
Health Education (HED)
Recreation (REC)
Physics (PHY)
Political Science (POL)
Psychology (PSY)
Religions, Academic Study of (ASR)
Science (need departmental approval) (SCI)
Social Science (SOS)
Sociology (SOC)
Theatre Education (THN)
Traffic and Safety Education
Vocational Technical Education (VIE)

*Each of these majors give K-12 certification in that subject

NOTE: Students who choose a Special Education major must be admitted to the Special Education Curriculum.

E. The candidate must satisfy the requirements for the A.B. or B.S. degree.

NOTE: SPECIAL SECONDARY PROGRAM — Integrated Program for the Preparation of Teaching the Economically and Educationally Disadvantaged.

The Teacher Education Department offers a one semester undergraduate program for preparation of teachers for the disadvantaged in secondary schools. Students complete half the directed teaching requirement by participating as student teachers in secondary schools for five half-days each week for the semester; the afternoon program consists of a block of education courses: TEED 300, Teaching and Learning; TEED 322, Teaching of Reading; TEED 450, School and Society; and DT 472, Directed Teaching. Students may elect an additional evening class. The remaining directed teaching requirement may be completed during a spring term. Students interested in this program should contact the advisor: C. Smith.

SPECIAL EDUCATION CURRICULUM

EMOTIONALLY DISTURBED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of the emotionally disturbed.)

A. Minimum hours for this curriculum ......................................................... 130 hrs.
   (If B.A. degree is desired, see Degrees for these requirements)

B. Course Requirements
   1. General Education Requirement: 35 hrs. required for University General Edu-
      cation requirement. An additional 5 hrs. in General Education courses drawn
      from the College of Arts and Sciences (non-professional courses only) and/or
      the College of General Studies is required for Michigan certification.
   2. Communication Arts and Sciences, Language, Literature, Philosophy
      or Religion .......................................................... 4 hrs.
      Children's Literature 282 ........................................ 4
   3. Science, Mathematics, Psychology
      Structure of Arithmetic 150 ..................................... 4
      Psychology I 150 ................................................. 3
      4. Teacher Education .................................................. 13 hrs.
      Human Development and Learning 250 ......................... 4
      Teaching of Reading 312 ...................................... 3
      Elementary School Social Studies 507 ....................... 2
      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. Emotionally Disturbed — Major* .................................. 36 hrs.
   Education of Exceptional Persons 530 .............................. 3
   Practicum in Special Education 531 .................................. 2
   Communication Disorders 200 ......................................... 3
   Programs and Intervention Strategies with the Socially and
     Emotionally Maladjusted 589 ...................................... 4
   Behavior Disorders in School-Aged Learners 588 ................. 3
   Diagnostic and Prescriptive Techniques in Special Education 533
   Curricular and Instructional Provisions for Exceptional Children 534
   Directed Teaching (Special Education) 474 ....................... 8
   Seminar in Education 410 ............................................. 2
   School and Society 450 .............................................. 3

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) ........................................ 4 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.
   *A minimum grade of "C" must be earned in each course listed in the major.

SPECIAL EDUCATION CURRICULUM
MENTALLY HANDICAPPED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of the mentally retarded)

A. Minimum hours for this curriculum .................................. 130 hrs.
   (If B.A. degree is desired, see "Degrees" for these requirements)

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Edu-
   cation requirement. an additional 5 hrs. in General Education courses drawn
   from the College of Arts and Sciences (non-professional courses only) and/or
   the College of General Studies is required for Michigan certification.

2. Communication Arts and Sciences, Language, Literature, Philosophy,
   Religion ................................................................. 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
College of Education

7. Mentally Handicapped — Major*  .......................................................... 36 hrs.
   Education of Exceptional Persons 530 .................................................. 3
   Practicum in Special Education 531 ...................................................... 2
   Communication Disorders 200 ............................................................. 3
   Nature and Needs of the Mentally Retarded 532 ................................... 4
   Behavior Disorders in School-Aged Learners 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 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) ........................................................... 3 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the B.A.
   degree.

*A minimum grade of “C” must be earned in each course listed in the major.

SPECIAL EDUCATION CURRICULUM
ORTHOPEDICALLY HANDICAPPED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of the crippled and homebound)

A. Minimum hours for this curriculum .................................................... 130 hrs.
   (If a B.A. degree is desired, see “Degrees” for these requirements)

B. Course Requirements
   1. General Education Requirement: 35 hrs. required for University General Edu-
      cation requirement. An additional 5 hrs. in General Education course drawn
      from the College of Arts and Sciences (non-professional courses only) and/or
      the College of General Studies is required for Michigan certification.

   2. Communication Arts and Sciences, Language, Literature, Philosophy,
   Religion ......................................................................................... 4 hrs.
   Children’s Literature 282 .............................................................. 4

   Structure of Arithmetic 150 ............................................................... 4
   Psychology I 150 ............................................................................. 3

   4. Teacher Education ................................................................. 11 hrs.
   Human Development and Learning 250 ........................................... 4
   Teaching of Reading 312 ................................................................... 3
   Directed Teaching 471 (Regular Class) ............................................. 4

   5. Fine Arts (Art and Music) ......................................................... 7 hrs.
   Music for the Classroom Teacher 140 .............................................. 4
   Art Education Workshop 150 ......................................................... 3

   6. Practical Arts ................................................................. 2 hrs.
   Arts and Crafts for Teachers 593 ...................................................... 2


7. Orthopedically Handicapped — Major* ........................................... 40 hrs.
   Education of Exceptional Persons 530 ......................................... 3
   Practicum in Special Education 531 ............................................. 2
   Behavior Disorders in School-Aged Learners 588 ............................ 3
   Nature and Needs of the Crippled and Homebound 543 ...................... 4
   Communication Disorders 200 .................................................... 3
   Diagnostic and Prescriptive Techniques in Special Education 533 ....... 4
   Curricular and Instructional Provisions for Exceptional Children 534 .... 4
   Orthopedic and Medical Lectures 524 ......................................... 8
   Directed Teaching (Special Educ.) 474 ....................................... 2
   Seminar in Education 410 ......................................................... 3
   School and Society 450 .............................................................. 2

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 ele-
   mentary school ........................................................................... 20 hrs.

D. Electives (Under Advisement) ..................................................... 2 hrs.

E. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

*A minimum grade of “C” must be earned in each course listed in the major.

SPECIAL EDUCATION CURRICULUM
VISUALLY HANDICAPPED

Bachelor of Science Degree
State Elementary Provisional Certificate
(For the preparation of teachers of the visually handicapped)

A. Minimum hours for this curriculum .............................................. 130 Hrs.
   (If a B.A. degree is desired, see “Degrees” for these requirements.)

B. Course Requirements

1. General Education Requirement: 35 hrs. required for University General Edu-
   cation requirement. An additional 5 hrs. in General Education courses drawn
   from the College of Arts and Sciences (non-professional courses only) and/or
   the College of General Studies is required for Michigan certification.

2. Communication Arts and Sciences, Language, Literature, Philosophy or Re-
   ligion ......................................................................................... 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 (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
### SPECIAL EDUCATION CURRICULUM

**SPEECH PATHOLOGY AND AUDIOLOGY**

**Bachelor of Science Degree**

This curriculum is for students who plan to work in public schools as clinicians with children who have communication disorders. It is pre-professional in nature and intent, designed to prepare students to enter professional training at the graduate level. Its completion does not result in approval for a teaching certificate. That approval requires satisfactory fulfillment of the requirements for the Master’s degree in Speech Pathology and Audiology.

The Department of Speech Pathology and Audiology maintains certain academic and clinical standards. Initial admittance to the department program is to Pre-Speech Pathology and Audiology status. Subsequent admission to the Special Education curriculum requires 1) completion of at least 40 semester hours of acceptable undergraduate course work, 2) early arrangements for the English Skills Test (contact Speech Pathology and Audiology Department for details), 3) satisfactory enrollments in the following two beginning department courses: Orientation to Professional Practice and Anatomy and Physiology of Speech, and 4) departmental approval of the student’s formal application. Students who earn grades of lower than C in more than one departmental course will not normally be permitted to continue as matriculants in the program. Further details about these requirements may be obtained from the department office in the Speech and Hearing Center.

**A. Minimum hours required for this curriculum**

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation to Professional Practice</td>
<td>3</td>
</tr>
<tr>
<td>Anatomy and Physiology of Speech</td>
<td>3</td>
</tr>
<tr>
<td>Speech and Language Development</td>
<td>3</td>
</tr>
<tr>
<td>Phonemics</td>
<td>2</td>
</tr>
<tr>
<td>Bases of Speech and Hearing Science</td>
<td>3</td>
</tr>
<tr>
<td>Phonemic Disorders</td>
<td>2</td>
</tr>
<tr>
<td>Phonatory Disorders</td>
<td>2</td>
</tr>
</tbody>
</table>

**B. Course Requirements**

1. **General Education Requirement:** 35 hrs. required for University General Education requirement. The additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies required for Michigan certification is automatically met by courses required in this curriculum.

2. **Speech Pathology and Audiology — Major**

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation to Professional Practice</td>
<td>3</td>
</tr>
<tr>
<td>Anatomy and Physiology of Speech</td>
<td>3</td>
</tr>
<tr>
<td>Speech and Language Development</td>
<td>3</td>
</tr>
<tr>
<td>Phonemics</td>
<td>2</td>
</tr>
<tr>
<td>Bases of Speech and Hearing Science</td>
<td>3</td>
</tr>
<tr>
<td>Phonemic Disorders</td>
<td>2</td>
</tr>
<tr>
<td>Phonatory Disorders</td>
<td>2</td>
</tr>
</tbody>
</table>
Fluency Disorders 353 ....................................................... 2
Language Disorders in Children 354 ........................................... 2
Hearing Disorders 355 .............................................................. 2
Introduction to Audimetry 357 ............................................... 2
Practicum I 400 ........................................................................ 1
Practicum II 401 ....................................................................... 1
Electives in major area ............................................................... 2

3. Elementary Education — Minor ........................................... 24 hrs.
   Students must contact Office of Orientation and Advisement, Room 2305, Sangren Hall.

4. Psychology ........................................................................... 6 hrs.

5. Teacher Education and Special Education ............................. 27 hrs.
   Human Development & Learning 250 ........................................ 4
   Teaching and Learning (Elem.) 300 ............................................ 3
   Education of Exceptional Persons 530 ........................................ 3
   Behavior Disorders in School-Aged Learners 588 ....................... 3
   Directed Teaching, Seminar in Education and School and Society
   470, 410 and 450 .................................................................... 14

6. Physical Education ................................................................. 2 hrs.
   (PEW 340 may count for 1 hour)

C. During the program the student must satisfactorily complete clinical requirements as specified by
   the Department of Speech Pathology and Audiology.

D. The candidate must satisfy the requirements for the B.S. Degree.

CLINICS
READING CENTER AND CLINIC

Joe R. Chapel, Director

The primary purpose of the Reading Center and Clinic is to provide educational and clinical experiences for 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 participate in the administration of educational and clinical tests and the procedures employed in interviewing children, parents, and school personnel.

University students encountering difficulty in reading or those wishing to improve their reading skills may seek assistance in the Reading Center and Clinic. Referrals come from the students themselves as well as the Counseling Center and members of the faculty. After causal factors have been identified, treatment is provided.

See Teacher Education Department listings for courses offered by Reading Center.
Blind Rehabilitation

Donald Blasch, Chairman
Everett W. Hill
Ruth Kaarlela
Robert O. LaDuke
Elizabeth Lennon
Stanley Suterko
William R. Walkowiak
Marvin Weessies
Lloyd Widerberg

The Department of Blind Rehabilitation offers clinical and educational services to students and other clients who have severe visual impairments and works cooperatively with the Michigan Division of Services for the Blind. Operating in part on grants, primarily from the Office of Social and Rehabilitation Services, Department of Health, Education and Welfare, the Department offers graduate programs in Orientation and Mobility and Rehabilitation Teachers of the Adult Blind. Part of the Department's function is to conduct workshops for people working in the field, provide consulting services and to initiate pertinent research.

Open to Upperclassmen

590 Physiology and Function of the Eye 2 hrs.
The anatomy, structure and function of the eye. Various eye diseases and malfunctions are stressed. The student is given an opportunity to observe all types of eye conditions and eye prostheses.

591 Braille and Other Communication Methods 2 hrs.
Provides students with a basic knowledge of the braille literary code — reading and writing, and an overview of other communication methods available to the visually impaired.

592 Education of the Visually Handicapped 2 hrs.
An overview of the education of visually handicapped children and adults. An introduction to the literature, history, principles, practices and problems in the field, including curricular and methodological adaptations of various educational programs.

593 Methods and Techniques of Teaching Braille and Other Areas of Communication 3 hrs.
Provides students areas of communication essential to the blind, such as: social communication, use of Braille, typing, script writing, electronic devices and other media. Opportunity for supervised practical application of methods will be afforded to the student.

594 Principles of Orientation and Mobility 3 hrs.
An examination and application, of the fundamental principles underlying the acquisition of sensory information by severely visually impaired individuals.

597 Introduction to Cecutiency 2 hrs.
Exploration of ways to assess the functional use of residual vision. Methods and means of increasing the functional use of residual vision and defining its limitations. Prerequisite: BLRH 590.

599 Gerontology 2 hrs.
The course offers an overview of the characteristics, circumstances and needs of the aging population of the United States, and explores the types of services available to meet their needs. The course will focus upon the demography of the aged, the physiological changes, and chronic diseases of aging, the social and economic aspects of aging, the psychological changes which come with age, and a review of the community resources which serve the aged.
The Department of Counseling and Personnel offers work in the fields of counseling and personnel. Most of the courses are open to graduate students only, but the following courses are open to qualified undergraduates.

580 Principles and Philosophy of Guidance 2 hrs.
An introductory course for elementary and secondary teachers and others interested in guidance. A thorough investigation of the philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.

581 Interpretation and Use of Tests in Guidance 2 hrs.
Designed to familiarize students with various psychological tests and scales that may be used in school guidance programs. Tests are taken and scored by students, and the results are interpreted and evaluated.

583 Guidance Workshop 1-4 hrs.
Designed for teachers and counselors who wish to study particular guidance problems and procedures in relation to their local guidance program. (C-Card required)

584 Elementary School Guidance 2 hrs.
Designed to give teachers, administrators and elementary counselors an understanding of the principles and techniques of guidance in elementary schools.
Courses within this Department are designed primarily to integrate the theory and practice of teaching in a laboratory situation. Students should confer with academic advisors in their major and minor fields as well as advisors within the Department of Directed Teaching to be sure that they have met departmental as well as University requirements for entrance into Directed Teaching. Students with irregularities in their professional work or with advanced credit in education will need to meet with advisors in the Department as early as possible.

Transfer students who are seeking University honors may wish to delay their Directed Teaching until their final semester in the University because some of the courses within the Department are graded credit/no credit.

The Department also assigns students for professional laboratory experiences as a part of the required Teacher Aide Participation Program. In addition, the Department sponsors a tutorial program.

313 Problems in Elementary Education 3 hrs.
(Used for the Cooperative Internship Program)
This course is designed to deal with problems of immediate concern to beginning teachers — discipline, group activity, teacher-pupil planning, and other problems dealing with teaching in the elementary school.

410, 450, 470 Integrated Professional Education 14 hrs.
For all Seniors whose programs will permit them to devote one semester entirely to professional education. A unified course for seniors which is based on needs and problems of students while doing their directed teaching. Prerequisite: TEED 250 and 300, 301, or equivalent; 2.0 average in all education courses and in overall average, as well as in teaching major or minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

410 Seminar in Education
(Taken in conjunction with Directed Teaching)
Students work individually and in groups on the kinds of problems faced in directed teaching situations in classroom, school and community. Other problems to be faced later as full-time teachers are considered. Suggestions and guidance are afforded, by staff members and by resource persons.

450 School & Society 3 hrs.
This course is concerned with the utilization of change in society as a force in directing American education. The course is directed toward modern problems in education as well as a futuristic look at its possible development. Course content centers around analysis of the influences which such areas as the following have upon American education: political, legal, economic, social, psychological, historical, philosophical. Consideration is given to the individual's role in the change process in education. An interdisciplinary approach is used.
470 Directed Teaching 9 hrs.

Students devote a minimum of four and one-half days per week for one semester to Directed Teaching. They are expected to have experience in both the curricular and extra-curricular program of the school in which they teach. All students expecting to do Directed Teaching should enroll at the Department of Directed Teaching well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: TEED 250 and 300, 301, or equivalent; 2.0 average in all education courses and in overall average, as well as in teaching major or minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

471 Directed Teaching 1-8 hrs.

Only for seniors who have completed most of their professional course work prior to the senior year. Similar to description for 470. Students should enroll at the Department of Directed Teaching for Directed Teaching 471, 472, or 474 well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: 2.0 average in all education courses and in overall average, as well as in major and minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

472 Directed Teaching 4-9 hrs.

Only for seniors who have previously fulfilled a part of their requirement in Directed Teaching. Similar to description for 471. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

474 Directed Teaching 4-8 hrs.

Only for students specializing in special education. Candidates must be approved by the Head of the Special Education Department. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.
Educational Leadership

Rodney W. Roth, Chairperson
Harold W. Boles
Mary Anne Bunda
James A. Davenport
Gerald Martin
James Sanders
Carol F. Sheffer

This department offers curricula in Line Administration, Staff Administration, and Program Leadership, leading to a degree of Master of Arts, Specialist in Education, or Doctor of Education. While most of the department’s courses, seminars, studies, etc., are intended for graduate students, programs of studies may be outlined and pursued by advanced undergraduate students whose career goals include positions as leaders in the many and varied educational agencies that are operative in society today. Interested students should see the Graduate Bulletin for more detail.

Physical Education

General

All undergraduate students must participate in general activity physical education beginning with the first semester or session of residence, until a minimum of two hours is completed. Classes meet two hours weekly for one semester of credit.

Exceptions:

1. Any student 30 years of age or older is not required to take physical education. (122 hours required for graduation)
2. A student in the marching band may count band participation towards 2 semesters of general physical education.
3. A veteran (defined as one having served one year’s continuous active duty) will be exempt from the general physical education requirement.
4. A transfer student must enroll in general physical education during the first semester or session of residence at Western and thereafter each semester or session until the 2 hour requirement is completed.
5. Only a student with a severe physical disability will receive a medical waiver from the requirement. A student with a temporary or permanent physical disability may receive counseling concerning selection of courses suited to his/her limitation. A physical examination by a Health Center physician is the first step in the counseling procedure. The procedure does not have to be followed if the student feels he/she can select two courses without medical advice. The physical examination must be given during the first semester of residence if a student wishes to follow the Medical Recommendation procedure. A copy of the procedure may be obtained from the Health Center, Office #1 Oakland Gymnasium or the Main Office, Gary Physical Education Center.
6. A varsity team member may receive up to 2 credits in general physical education by enrolling in the appropriate course in the PEGN 400 series. (List follows 300 level courses.)
7. Only one Dance course may be used to fulfill the general physical education graduation requirement.
8. ROTC Cadets are to enroll in PEGN 175 Military Fitness I and PEGN 175 Military Fitness II to fulfill the general physical education requirement. Permission required from Captain Madison, ROTC.
Restrictions:
1. Up to eight hours of general physical education will be accepted as credits toward graduation.
2. A freshman or sophomore student may not enroll in more than one hour of general physical education in any one semester.
3. A course cannot be repeated for credit without written authorization from the Coordinator of the General Physical Education Program to the Academic Records Office. PEGN 175 Special Activities may be repeated under different course titles, i.e. 175 Cycling, 175 Military Fitness, 175 Ice Dance, etc.

COURSES IN GENERAL PHYSICAL EDUCATION

All courses are co-ed unless designated men only — women only
Course descriptions may be obtained from the general physical education office.

PEGN 100 level courses are open to all students and emphasize the beginning skills in the activity given.
The student with some experience in activities marked* — Beginners Only should enroll in 200/300 level courses.

PEGN 200 level courses are open to all students who have completed a 100 level course in the activity or the equivalent.

PEGN 300 level courses are open to all students desiring additional experience in an activity and who have completed the 200 level course or permission of instructor to enroll.

** = Prerequisite 249 or Red Cross Intermediate Card
College of Education

322  Golf — Intermediate ........... 1 hr.
350  W.S.I. — current Life
     Saving Certificate required 2 hrs.
354  Swimming — Intermediate

Springboard Diving ........... 1 hr.
355  Swimming — Intermediate
     Synchronized ............... 1 hr.
360  Tennis — Intermediate ........... 1 hr.

A varsity athlete may receive PEGN credit by enrollment and completion of these courses. (1 credit hour each) Enrollment by permission of instructor

400  Baseball
401  Basketball
402  Bowling
403  Cross Country
404  Field Hockey
405  Football
406  Golf
407  Gymnastics
408  Ice Hockey
409  Soccer
410  Softball
411  Swimming
412  Synchronized Swimming
413  Tennis
414  Track/Field
415  Volleyball
416  Wrestling

One of the following Dance courses may be used:

DANCE
102  Jazz Dance I ............... 1 hr.
112  Social Dance Forms ........... 1 hr.
122(124)Recreational (International)
     Dance ........................ 1 hr.
123  Contemporary Dance I ....... 1 hr.
116  Ballet I ..................... 1 hr.
117  Ballet II ..................... 1 hr.
124  Contemporary Dance II ....... 1 hr.
202  Jazz Dance II ................ 1 hr.
228  Improvisation ............... 1 hr.
Physical Education

Faculty

Mardell Anderson          Frances Ebert          Fred Orlofsky
Donald Boven              Jean Friedel         Richard Raklovits
Mary Brown                George Hobbs         Harold Ray
Bill Chambers             Joseph Hoy           Orin Richburg
Billye Ann Cheatum        J. Arthur Jeyvert    William Rowekamp
J. Patrick Clysdale       Jack Jones           Merle Schlosser
Charles Comer             Janet Kanzler        John Shaw
Harriett Creed            Opal Klammer        Richard Shilts
Robert Culp               Margaret Large       Norma Stafford
George Dales              Linda Law            Barbara Stephenson
Ruth Davis                Patricia Lemanski     Fred Stevens
Fred Decker               Ruth Ann Meyer       Richard Walker
David Diget               John Miller           Ronald Winter
F. William Doolittle      Margie Jeanne Miner  Robert Wyman
Eleanor Douglass          John Newton          Roger Zabik

The year of 1976-77 will be one of change and transition from two separate (men/women) undergraduate programs to a single coeducational department.

The revised professional programs are based on the concepts of (1) balanced preparation which enables the student to later specialize at the graduate level, (2) exposure to practical experiences throughout the professional sequence, (3) many elective choices of specific courses, and (4) continual review of curricular offerings by students and faculty.

Students who desire specialized professional preparation may select from the following:

MAJORS
1. Physical Education
2. Physical Education — Elementary Emphasis
3. Aquatics Education
4. Health Education
5. Recreation
6. Coaching Minor
7. Health Education
8. P.E. For The Exceptional Child
9. P.E. — Elementary Emphasis
10. P.E. — Secondary Emphasis
11. Recreation
12. Sports Medicine
13. Swimming

MINORS

NOTE TO TRANSFER STUDENTS:

With departmental approval, transfer courses from four year schools, and appropriate lower division courses from community colleges may be included in majors and minors. However, a minimum of 12 semester hours for a major and 9 for a minor must be taken at Western Michigan University. It is recommended that PEPR 344 (3) and PEPR 345 (3) be included in the hours taken at Western Michigan University.
### PHYSICAL EDUCATION MAJOR (40 hours)

**Hours required for this Curriculum**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Required Cognates</strong></td>
<td></td>
<td><strong>127</strong></td>
</tr>
<tr>
<td>Biology 107</td>
<td>OR Biology 101</td>
<td>12</td>
</tr>
<tr>
<td>Biology 210</td>
<td>Biology 240</td>
<td>4*</td>
</tr>
</tbody>
</table>

**2. Required Professional Courses**

**Academic Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 150</td>
<td>Foundations of Health, Physical Education, and Sports</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 250</td>
<td>Cultural Bases of Physical Education and Sports</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 344</td>
<td>Teaching Physical Education in the Elem. School</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 345</td>
<td>Teaching Physical Education in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 440</td>
<td>Nature and Bases of Motor Skills</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Foundations of Sports Injuries</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 392</td>
<td>Measurements and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 595</td>
<td>Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 590</td>
<td>Exercise Physiology</td>
<td>2</td>
</tr>
</tbody>
</table>

*(NOTE: The term "men" or "women" as applied to the major only indicates the combination of courses to be taken by that sex. Students graduating under catalogs previous to 1976-77 will have this distinction made. Students graduating under the 1976-77 catalog will have one major for both men and women as all classes will be co-ed with the exception of contact sports. These students will not graduate according to the programs following labeled "men" or "women" but will receive credit in any of the courses taken toward the new major, 1977-78.)*

Men: Elect a minimum of one course from any three Groups I — III. The remaining hours are elected as desired from groups I — VA. (18 hours.)

**GROUP I: Adapted Physical Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 320</td>
<td>Physical Education for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 321</td>
<td>Therapeutic Needs &amp; Programs for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 420</td>
<td>Testing &amp; Developing Programs for the Exceptional Child</td>
<td>3</td>
</tr>
</tbody>
</table>

**GROUP II: Coaching Technique Series**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 235</td>
<td>Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 337</td>
<td>Coaching Series (repeatable)</td>
<td>2-3</td>
</tr>
<tr>
<td>PEPR 535</td>
<td>Principles &amp; Problems of Coaching</td>
<td>2</td>
</tr>
</tbody>
</table>

**GROUP III: Recreation Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 270</td>
<td>Recreational Leadership</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 275</td>
<td>Recreational Programming</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 276</td>
<td>Outdoor Education</td>
<td>2</td>
</tr>
</tbody>
</table>

**GROUP IV: Health Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 314/315</td>
<td>Elementary/Secondary School Health &amp; Safety</td>
<td>3</td>
</tr>
<tr>
<td>HEC 220</td>
<td>Introduction to Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>HEC 212</td>
<td>Foods for Man</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 514</td>
<td>Health Education, Materials &amp; Methods</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 516</td>
<td>Issues in Health Education</td>
<td>2</td>
</tr>
<tr>
<td>TEED 555</td>
<td>Alcohol Education</td>
<td>2</td>
</tr>
</tbody>
</table>

**GROUP V: Additional Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 101-109, 130-135</td>
<td>Activity Series</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 236</td>
<td>Officiating Series</td>
<td>1</td>
</tr>
<tr>
<td>PEGN350</td>
<td>WSI</td>
<td>2</td>
</tr>
</tbody>
</table>
### Physical Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 268</td>
<td>Organization &amp; Administration of Intramural Sports</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 439</td>
<td>Field Experience in Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 489</td>
<td>Field Experience in Athletic Training</td>
<td>2</td>
</tr>
</tbody>
</table>

**WOMEN:**

**Activity 3**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAN 135</td>
<td>Movement Activities in Education</td>
</tr>
<tr>
<td>PEPR 101</td>
<td>Basic Games &amp; Movement Skills</td>
</tr>
<tr>
<td>PEPR 236</td>
<td>Officiating Series</td>
</tr>
</tbody>
</table>

**GROUP I: Dance:** Select three courses from the following

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAN 102</td>
<td>Beginning Jazz</td>
</tr>
<tr>
<td>OR</td>
<td>Intermediate Contemporary Dance</td>
</tr>
<tr>
<td>DAN 122</td>
<td>Recreational Dance</td>
</tr>
<tr>
<td>DAN 123</td>
<td>Beginning Contemporary Dance</td>
</tr>
<tr>
<td>DAN 112</td>
<td>Social Dance Forms</td>
</tr>
</tbody>
</table>

**GROUP II: Swimming:** Select two courses at your own swimming level

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGN 2</td>
<td>Swimming courses from general program</td>
</tr>
</tbody>
</table>

**GROUP III: Team Sports:** Proficiency in all. Maximum credit hours toward major

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 104</td>
<td>Soccer, Speedball, Flag Football</td>
</tr>
<tr>
<td>PEPR 105</td>
<td>Field Hockey</td>
</tr>
<tr>
<td>PEPR 109</td>
<td>Volleyball</td>
</tr>
<tr>
<td>PEPR 106</td>
<td>Basketball</td>
</tr>
<tr>
<td>PEPR 107</td>
<td>Softball</td>
</tr>
</tbody>
</table>

**GROUP IV: Individual Sports:** Maximum credit hours toward major

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 103</td>
<td>Beginning Gymnastics (Pre-req. 102 or perm. of instr.)</td>
</tr>
<tr>
<td>PEPR 132</td>
<td>Track and Field</td>
</tr>
<tr>
<td>PEGN 101</td>
<td>Archery</td>
</tr>
<tr>
<td>PEGN 102</td>
<td>Badminton</td>
</tr>
<tr>
<td>PEGN 122</td>
<td>Golf</td>
</tr>
<tr>
<td>PEPR 131</td>
<td>Tennis</td>
</tr>
</tbody>
</table>

**GROUP V: Coaching & Advanced techniques:** Select one from the 337 series: 2-3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>Speed Swim/Diving</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>Synchronized Swim (3)</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>Tennis</td>
</tr>
<tr>
<td>Softball</td>
<td>Track &amp; Field</td>
</tr>
<tr>
<td></td>
<td>Volleyball</td>
</tr>
</tbody>
</table>

Proficiency tests will be offered in the physical education professional activity courses. The proficiency examination procedure is available in departmental office.

Teaching Assistant: Assist in the teaching of one general activity courses prior to student teaching. No credit.

### PHYSICAL EDUCATION/ELEMENTARY EMphasis

**Bachelor of Science Degree**

State Elementary and Secondary Provisional Certificate

Advising Chairperson: Margie J. Miner

The Elementary Physical Education Major prepares the graduate to enter a professional career as a teacher of physical education on both the elementary and secondary levels. This course of study concentrates upon the developmental tasks of the elementary school child with unique activities which provide for the child's optimum growth. Required courses emphasize the elementary physical education program with a wide range of electives allowing the student flexibility to choose according to her individual needs and interests.

Majors are to have directed teaching experience on both the elementary and secondary levels and are to complete the education sequence as required by the Department of Teacher Education. The student will
complete a minimum of 15 clock hours of observing and working with young people on both the elementary and secondary level prior to student teaching. These experiences are included in PEPR 344 and PEPR 345.

<table>
<thead>
<tr>
<th>Hours required for this curriculum</th>
<th>127</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Required Cognates</strong></td>
<td></td>
</tr>
<tr>
<td>Biology 107</td>
<td>4*</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>Biology 101</td>
<td>4*</td>
</tr>
<tr>
<td>Biology 210</td>
<td>4*</td>
</tr>
<tr>
<td>Biology 240</td>
<td>4*</td>
</tr>
<tr>
<td>TEED 230</td>
<td>4*</td>
</tr>
</tbody>
</table>

| **2. Required Professional Courses** | 40 |
| Please, note in course descriptions when courses are offered and the suggested sequence of course work. | |
| **Academic Courses**               | 25-26 |
| PEPR 180-181 First Aid             | 1-2  |
| PEPR 150 Foundations of Health, Physical Ed. & Recreation | 2 |
| PEPR 276 Outdoor Education         | 2   |
| PEPR 595 Analysis of Movement in Sports | 2 |
| PEPR 250 Cultural Bases of Physical Education | 2 |
| PEPR 320 P.E. for the Exceptional Child | 3 |
| PEPR 590 Exercise Physiology       | 2   |
| PEPR 440 Nature and Bases of Motor Skills | 2 |
| PEPR 392 Measurement & Evaluation in P.E. | 3 |
| PEPR 344 Teaching P.E. in the Elementary School | 3 |
| PEPR 345 Teaching P.E. in the Secondary School | 3 |

| **Required Activity Courses**      | 8   |
| PEPR 102 Stunts, Tumbling, Trampoline |     |
| OR                                | 1   |

*Applicable to total General Education requirement.

- PEPR 103 Gymnastics
- DAN 122 Recreational Dance
- PEPR 104 Soccer, Speedball, Flag Football
- PEPR 101 Basic Games & Movement Skills
- PEPR 132 Track and Field
- DAN 204 Teaching Dance in Elementary School

| Electives                        | 7   |
| Elected from the following courses and/or other PEPR/PEGN courses with permission of advisor. | |
| PEPR 109 Volleyball              | 1   |
| PEPR 106 Basketball Must select one | 1 |
| PEPR 107 Softball                | 1   |
| PEPR 131 Tennis                  | 1   |
| OR                               |     |
| PEGN 102 Badminton               | 1   |
| PEGN 105 Bowling                 | 1   |
| PEGN 106 Camp Craft              | 1   |
| PEGN 139 Relaxation              | 1   |
| OR                               |     |
| PEGN 165 Yoga                    | 1   |
| PEGN Swimming — at own level      | 1   |
| PEPR 174 Recreational Leadership of Arts & Crafts | 2 |
| OR                               |     |
| IE 190 Industrial Arts for Elementary Teacher | 3 |
| TEED 355 Learning Exp. Young Children | 3 |

Teaching Assistant: Assist in the teaching of one general activity course prior to student teaching. No credit.
AQUATICS EDUCATION

Bachelor of Science Degree
State Secondary Provisional Certificate

Advising Chairperson: Barbara Stephenson

The graduate in Aquatics Education will be qualified to conduct a total swimming program in a large high school or recreational setting, including the coaching of swimming and synchronized teams as well as teaching all levels of swimming.

Majors are to have directed teaching experience at the secondary level and are to complete the education sequence as required by the Department of Teacher Education.

Hours required for this Curriculum ................................................................. 127

1. Required Cognates ......................................................................................... 12
   Biology 107 ...................................................................................................... 4*
   OR
   Biology 101 ..................................................................................................... 3*
   Biology 210 ..................................................................................................... 4*
   Biology 240 ..................................................................................................... 4*

2. Required Professional Courses ........................................................................ 35
   Please note in course description when courses are offered and the suggested sequence of course work.

   Academic Courses .......................................................................................... 21
   PEPR 125 Introduction to Aquatic Instruction .................................................. 3
   PEPR 227 Show Production .............................................................................. 1
   PEPR 337 Coaching & Advanced Technique Series — Speed Swim. & Diving
       prerequisite PEPR 125 .............................................................................. 3
   PEPR 337 Coaching & Advanced Technique Series — Synchronized Swim.
       prerequisite PEPR 125 .............................................................................. 2
   PEPR 595 Analysis of Movement .................................................................... 2
   PEPR 325 Swimming for the Exceptional Child ................................................. 3
   PEPR 590 Exercise Physiology .......................................................................... 2
   PEPR 392 Measurement & Evaluation in Physical Education .......................... 2
   PEPR 380 Foundations of Sports Injuries ......................................................... 3

   Activity Courses .............................................................................................. 9
   DAN 123 Beginning Contemporary Dance ...................................................... 1
   PEPR 134 Small Craft .................................................................................... 2
   PEPR 102 Stunts, Tumbling, Trampoline .......................................................... 1
   OR
   PEPR 103 Gymnastics (with perm. of instructor) ............................................. 1
   PEGN 251 Swimming — Skin/Scuba Diving ...................................................... 2
   PEGN 253 Swimming — Speed Swimming ..................................................... 1
   PEGN 254 Swimming — Springboard Diving ................................................. 1
   OR
   PEGN 354 Swimming — Intermediate Springboard Diving .............................. 1
   PEGN 255 Swimming — Synchronized ........................................................... 1
   OR
   PEGN 355 Swimming — Intermediate Synchronized ...................................... 1

   Electives .......................................................................................................... 5
   PEGN 350 Swimming — Water Safety Instructors ......................................... 2
   PEPR 235 Theory of Coaching ......................................................................... 2
   PEGN 354 Swimming — Intermediate Springboard Diving ............................ 1
   PEGN 355 Swimming — Intermediate Synchronized ...................................... 1
   PEPR 236 Officiating Synchronized Swimming ............................................. 1
   PEPR 236 Officiating Speed Swimming & Diving .......................................... 1
   PEPR 440 Nature/Bases of Motor Skills ......................................................... 2
College of Education

Participation
Aqua Sprites — 1 yr., no credit
Speed Swimming Team or Diving Team — 1 season, no credit
Teaching Assistant — 1 semester, no credit
*Applicable to total General Education requirement.

HEALTH EDUCATION
Health Education Group Major

Bachelor of Science Degree
State Elementary and Secondary Provisional Certificate
Advising Chairperson: Margaret S. Large

Hours Required for this Major
36

The health education major is a program to prepare health educators who can influence the psychological, sociological, and biological development of individuals and groups to effectively meet the health needs of society.

The major is designed so graduates may enter first level positions in both schools and community agencies and qualify for graduate work.

Students planning to major in health should consult the department advisor promptly after choosing this major, and usually not later than the sophomore year.

Course Requirements:

1. General Education 35 hours required
2. Physical Education ......................................................... 2
3. Recommended: Students who wish to substitute other courses should consult the advisor in advance:
   Required Cognates .......................................................... 10
 PSY 120 Introduction to Psychology ...................................... 3
 OR
   190/150
 SOC 200 Principles of Sociology ......................................... 3
 OR
   BIO 107 Biological Science .............................................. 4
 OR
   BIO 101 ........................................................................ 4*
4. Required Courses ............................................................. 28
 PEPR 100 Health for Modern Man ....................................... 4
 PEPR 211 Community Health — Public Health I .................. 3
 PEPR 314 Elementary School Health and Safety Education .... 3
 OR
 PEPR 315 Secondary School Health and Safety Education
 PEPR 411 Public Health II .................................................. 3
 PEPR 412 Administration in Health Education ...................... 3
 BIO 205* The Human Body in Health and Disease ............. 4
 BUS 288/386 Records Management/Office Management .... 2/3
 EDUC 399 Field Experience .............................................. 2
 PEGR 514 Methods and Materials in Health Education ....... 2
 PEGR 516 Issues in Health Education ................................ 2
5. Electives ................................................................. 8
 Courses must be selected with the consent of advisor

Suggested Courses
 BIO 412 Microbiology ...................................................... 4
 BUS 292 Consumer Principles and Practices ...................... 3
 HEC 212 Foods for Man .................................................... 3
 HEC 220 Sex Education: Introduction to Human Sexuality .... 3
RECREATION

Bachelor of Arts Degree or Bachelor of Science Degree

The Recreation Major is designed to prepare students to assume leadership and/or administrative roles in public or private recreation agencies and organizations. The 19 hours of electives within this course of study allows the student flexibility in preparing for a specific phase of recreation. Students will also complete a supervised internship of at least three months duration consecutively. The option of Teacher Certification (21 hours in place of PEPR 479 Recreation Internship and PEPR 478 Seminar in Recreation) provides the student with the opportunity to be licensed to teach Recreation if they so elect.

Hours required for this curriculum .............................................................................. 122

General Education Courses ......................................................................................... 35

1. Required Professional Courses ................................................................................. 29

(Please note in course descriptions when courses are offered and the suggested sequence of course work.)

PEPR 170 Introduction to Recreation .............................................................. 3
PEPR 270 Recreational Leadership (Prerequisite or corequisite 170) .............. 2
PEPR 275 Recreational Programming (Prereq. 270) ........................................ 3
PEPR 370 Recreation Practicum (Prereq. 170-270-275) ............................. 3
PEPR 375 Organization and Administration of Recreation (Prereq. 170-270-275-370) ................................................................. 3
PEPR 470 Recreational Facilities and Areas ....................................................... 3
(Prereq. 170-270-275-370)
PEPR 478 Seminar in Recreation ........................................................................ 4
PEPR 479 Internship in Recreation ...................................................................... 8

2. Elective Courses ...................................................................................................... 19

Group I. Program Skills
A. Aquatics Area (Not more than 4 courses)
   PEGN 250 Senior Life Saving ............................................................................. 2
   PEGN 350 Water Safety Instructors ..................................................................... 2
   PEPR 155 Introduction to Aquatic Instruction .................................................... 3
   PEGN 107 Canoeing .............................................................................................. 1
   PEGN 141 Sailing .................................................................................................. 1
   PEGN 251 Skin/Scuba Diving .............................................................................. 2
   PEGN 355 Synchronized Swimming .................................................................... 1
   PEGN 253 Speed Swimming ................................................................................ 1
   PEGN 254 Springboard Diving ............................................................................ 1

B. Sports Area (Not more than 8 courses)
   PEGN/PEPR Team Sports (Not more than 4 — no repeats) ............................ 4
   PEGN/PEPR Ind. & Dual Sports (Not more than 4 — no repeats) ...................... 4
   PEPR 236 Sports Officiating (Not more than 4) ............................................... 4
   PEPR 337 Adv. Techniques & Coaching (Not more than 2) ............................... 4
C. **Arts & Crafts Area** (Not more than 4 courses)
   - **PEPR 174** Rec. Leadership of Arts & Crafts ........................................... 2
   - **IED 190** Industrial Arts for Elem. Tchr. ..................................................... 3
   - **OT 110** General Crafts .................................................................................. 3
   - **IED 198** OT Woodworking ............................................................................... 3
   - **ART 239** Metal Smithing .................................................................................. 3
   - **ART 110 (I II) Drawing** .................................................................................. 3
   - **ART 238** Jewelry ............................................................................................. 3
   - **ART 240** Painting ............................................................................................. 3
   - **OT 103** Ceramics ............................................................................................. 3
   - **IED 170** Ind. Crafts Techniques .................................................................... 3

D. **Music & Drama Area** (Not more than 4 courses)
   - **MUS 140** Music for the Classroom Teacher .................................................. 4
   - **MUS 290** Recreational Music ....................................................................... 2
   - **CAS 564** Creative Drama for Children ......................................................... 4
   - **CAS 220** Intro. to Theatre ............................................................................. 3
   - **CAS 224** Play Productions ............................................................................. 3
   - **CAS 126** Theatre Crafts ................................................................................ 3
   - **LIB 546** Story Telling ..................................................................................... 3

E. **Outdoor Skills Area** (Not more than 4 courses)
   - **PEPR 172** Camp Leadership ......................................................................... 3
   - **PEPR 276** Outdoor Education ......................................................................... 3
   - **PEGN 106** Campercrafts ............................................................................. 2
   - **PEGN 133** Orienteering & Backpacking ................................................................ 1
   - **PEGN 143** Cross Country Skiing ................................................................. 1
   - **BIOL 234** Outdoor Science ............................................................................ 4
   - **BIOL 105** Envir. Biology .............................................................................. 3
   - **BIOL 530** Envir. Educ. .................................................................................. 3

**GROUP II. Administrative Skills — Not more than four courses**
   - **PEPR 368** Organization & Administration of Intramurals ................................. 2
   - **CAS 130** Public Speaking ............................................................................... 3
   - **MGT 250** Small Business Management ....................................................... 2
   - **BEAS 288** Records Management ................................................................... 2
   - **BEAS 556** Office Management ....................................................................... 3
   - **BEAS 242** Business Communications .......................................................... 3
   - **MGT 102** Computer Usage .......................................................................... 3
   - **ACCT 201** Accounting ................................................................................. 3
   - **GEOL 350** Principles of Conservation & Environmental Management ................. 3
   - **GEOL 556** Studies in Land Use Planning ....................................................... 3
   - **GEOL 554** Outdoor Recreation: Resources and Planning .................................. 3
   - **ECON 319** Environmental Economics .......................................................... 3
   - **AGR 323** Landscape Design ......................................................................... 3

**GROUP III. Community Organization Skills — Not more than four courses**
   - **PEGR 516** Values Clarification ....................................................................... 2
   - **SW 572** Community Agency Resources ....................................................... 2
   - **SW 562** Community Organization in Urban Areas .......................................... 3
   - **SOC 210** Modern Social Problems ............................................................... 3
   - **SW 464** Problem Solving in Gerontology ..................................................... 3
   - **PEGR 572** Recreation for the Aged ............................................................... 2
   - **SOC 352** Introduction to Gerontology ............................................................ 3

**GROUP IV - General Electives**
   - **PEPR 180/181** First Aid .............................................................................. 1-2
   - **OR**
   - **PEGR 500** Studies in H.P.E.R. ..................................................................... 1-3
   - **PEGR 598** Readings in H.P.E.R. .................................................................. 1-2
# PHYSICAL EDUCATION MAJOR — COACHING MINOR

Designed to qualify the physical education major to coach interscholastic and intercollegiate athletic teams. The coaching minor will provide instruction in the sports which are currently emphasized by the Michigan Interscholastic Sports Program: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics, and golf.

<table>
<thead>
<tr>
<th>Hours Required for this Minor</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Courses</strong></td>
<td></td>
</tr>
<tr>
<td>PEPR 235 Introduction to Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 535 Principles and Problems of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 439 Field Experience (Pre-req. Coaching &amp; Adv. Techniques Course)</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 400 Varsity Athletic series OR</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 335 Team Manager Participation</td>
<td>1</td>
</tr>
<tr>
<td><strong>Professional Electives</strong></td>
<td>14</td>
</tr>
<tr>
<td>PEPR 337 Advanced Techniques and Coaching Series — Prerequisites: Must have had first level course (s) or permission of instructors. Elect 8 hours (must include at least one team sport and include at least one individual sport)</td>
<td>8</td>
</tr>
</tbody>
</table>

**TEAM**
- Basketball: 2 Hrs.
- Field Hockey: 2 Hrs.
- Baseball or Softball: 2 Hrs.
- Volleyball: 2 Hrs.
- Football: 2 Hrs.
- Soccer: 2 Hrs.
- Ice Hockey: 2 Hrs.

**INDIVIDUAL**
- Gymnastics: 2 Hrs.
- Tennis: 2 Hrs.
- Track and Field: 2 Hrs.
- Speed Swim/Div.: 3 Hrs.
- Synchronized Swim: 2 Hrs.

PEPR 236 Officiating — Select two of the following officiating courses to complete the 14 hrs. of Professional Electives: 2 Hrs.
- Basketball
- Field Hockey
- Gymnastics
- Baseball
- Speed Swimming
- Volleyball
- Softball
- Football

PEPR 101-109 130-135 Professional Activity Courses: 4 Hrs.

# COACHING MINOR — NON-MAJOR

This minor is a SECOND MINOR ONLY. It does NOT certify a student to teach physical education. The coaching minor will provide instruction in the sports which are currently emphasized by the Michigan Interscholastic Sports Programs: basketball, field hockey, track and field, swimming, diving, tennis, volleyball, softball, gymnastics and golf.

<table>
<thead>
<tr>
<th>Hours Required for this minor</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Required Cognates Bio. 210 and 240</td>
<td></td>
</tr>
</tbody>
</table>
### College of Education

#### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 235</td>
<td>Introduction to Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 535</td>
<td>Principles and Problems of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 590</td>
<td>Exercise Physiology</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 595</td>
<td>Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Foundations of Sports Injuries</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 439</td>
<td>Field Experience (Pre-req. — Coaching &amp; Adv. Tech. Course)</td>
<td>2</td>
</tr>
<tr>
<td>PEGN 400</td>
<td>Varsity Athletic Series OR</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 335</td>
<td>Team Manager Participation</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Professional Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 337</td>
<td>Advanced Techniques &amp; Coaching Series — Prerequisites: Must have had first level course(s) or permission of instructors. Elect 6 hours (must be one team sport and one individual sport)</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Team Hours

<table>
<thead>
<tr>
<th>Sport</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>2</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>2</td>
</tr>
<tr>
<td>Baseball or Softball</td>
<td>2</td>
</tr>
<tr>
<td>Volleyball</td>
<td>2</td>
</tr>
<tr>
<td>Football</td>
<td>2</td>
</tr>
<tr>
<td>Soccer</td>
<td>2</td>
</tr>
<tr>
<td>Ice Hockey</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sport</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gymnastics</td>
<td>2</td>
</tr>
<tr>
<td>Tennis</td>
<td>2</td>
</tr>
<tr>
<td>Track and Field</td>
<td>2</td>
</tr>
<tr>
<td>Speed Swim/Div.</td>
<td>3</td>
</tr>
<tr>
<td>Synchronized Swim.</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Officiating

<table>
<thead>
<tr>
<th>Sport</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>1</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>1</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>1</td>
</tr>
<tr>
<td>Baseball</td>
<td>1</td>
</tr>
<tr>
<td>Speed Swimming</td>
<td>1</td>
</tr>
<tr>
<td>Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>Softball</td>
<td>1</td>
</tr>
<tr>
<td>Football</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Professional Activity Courses

PEPR 101-109, 130-135 professional activity courses

*Applicable to total General Education requirement.

### HEALTH EDUCATION GROUP MINOR

A group minor is offered in Health Education. It is open to all students and is especially appropriate for those specializing in Elementary Education, in Special Education and in Secondary Education with majors in such areas as Biology, Home Economics, Physical Education, Psychology and Sociology. The Health Education group minor consists of 24 hours. The program is designed to offer courses in multidisciplinary areas and to meet state certification standards.

Cognates — Students should elect Biology 107 — 4 semester hours (Biological Science) as part of the distribution program in general education.

#### Hours Required for this minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 100</td>
<td>Health for Modern Man</td>
<td>4</td>
</tr>
<tr>
<td>PEPR 314</td>
<td>Elementary School Health &amp; Safety Ed.</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEPR 315</td>
<td>Secondary School Health &amp; Safety Ed.</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEPR 211</td>
<td>Community Health</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEGR 514</td>
<td>Health Education Materials and Methods</td>
<td>2</td>
</tr>
<tr>
<td>PEGR 516</td>
<td>Issues in Health Education</td>
<td>2</td>
</tr>
</tbody>
</table>
Elective Courses ................................................................. 12-13

1. Basic Sciences ............................................................. 4
   Biology 205 Human Body in Health & Disease .................. 4
   Biology 210 Mammalian Anatomy .................................. 4
   Biology 240 Human Physiology ....................................... 4
   GSCJ 133 Issues in Social Biology ................................. 4

2. Behavioral Sciences ..................................................... 6
   PSY 150 Behavioral Modification ................................. 3
   PSY 190 General Psychology ........................................ 3
   SOC 100/200 Principles of Sociology ............................. 3
   CAS 170 Interpersonal Communication ............................ 3
   SW 210 Social Work Services & Prof. Roles .................... 3
   TEED 350 The Young Child, His Family & His Society ........ 3

3. Health Education Aspects of Man and His Environment .... 3-6
   HEC 212 Foods for Man ................................................ 3
   HEC 220 Sex Education: Introduction to Human Sexuality .... 3
   PEPR 180/181/380 First Aid/Foundations of Sports Injuries .. 1-3
   PEPR 516 Issues in Health Education .............................. 2-4
   TEED 340 Safety Education ............................................ 3
   TEED 555 Alcohol Education .......................................... 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 all courses listed in section 3 for Physical Education Majors and Special Education Majors.

Hours Required for this Minor ........................................... 21

1. General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies is required for Michigan certification.

2. Required Cognates ....................................................... 8
   Biology 107 .................................................................. 4*
   OR
   Biology 101 .................................................................. 4*
   Biology 210 .................................................................. 4*

3. Required Courses .......................................................... 16
   PEPR 132 Track and Field .............................................. 1
   PEPR 320 Physical Education for the Exceptional Child .... 3
   PEPR 321 Therapeutic Needs & Programs for the Excep. Child 3
   PEPR 420 Testing and Developmental Programs for the Excep. Child 3

   Physical Education Majors
   SPED 530 Education of Exceptional Persons .................... 3
   SPED 588 Behavior Disorders in School Aged Learners ........ 3

   Special Education Majors
   PEPR 102 Stunts, Tumbling, Trampoline ......................... 1
   OR
   PEPR 103 Beginning Gymnastics (Perm. of Inst.) ............... 1
   DAN 135 Movement Activities in Education ..................... 1
   PEPR 101 Basic Games & Movement Skills ....................... 1
   PEPR 344 Teaching Physical Education in the Elementary School 3
# MINORS

## PHYSICAL EDUCATION/ELEMENTARY EMPHASIS

<table>
<thead>
<tr>
<th>Category</th>
<th>Course Description</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Cognates</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 107</td>
<td></td>
<td>4*</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 101</td>
<td></td>
<td>4*</td>
</tr>
<tr>
<td>Biology 210</td>
<td></td>
<td>4*</td>
</tr>
<tr>
<td>TEED 230</td>
<td></td>
<td>4*</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>Electives selected by student subject to approval of advisor.</td>
<td>5</td>
</tr>
<tr>
<td>PEPR 325</td>
<td>Swimming for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>SPED courses</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEGN</td>
<td>Additional activity courses</td>
<td>1-3</td>
</tr>
</tbody>
</table>

*Applicable to total General Education requirement.

Hours Required for this minor: 21

<table>
<thead>
<tr>
<th>2. Required Professional Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic</strong></td>
</tr>
<tr>
<td>PEPR 276 Outdoor Education</td>
</tr>
<tr>
<td>PEPR 595 Analysis of Movement in Sports</td>
</tr>
<tr>
<td>PEPR 320 Physical Education for the Exceptional Child</td>
</tr>
<tr>
<td>PEPR 344 Teaching P.E. in the Elementary School</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>PEPR 102 Stunts, Tumbling, Trampoline</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>PEPR 103 Beginning Gymnastics (Perm. of Instructor)</td>
</tr>
<tr>
<td>PEPR 132 Track &amp; Field</td>
</tr>
<tr>
<td>DAN 122 Recreational Dance</td>
</tr>
<tr>
<td>DAN 204 Teaching Dance in the Elementary School</td>
</tr>
<tr>
<td>PEPR 101 Basic Games and Movement Skills</td>
</tr>
<tr>
<td>Electives</td>
</tr>
</tbody>
</table>

Elect from the following courses and/or other PEPR/PEGN courses with permission of advisor.

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGR 102 Badminton</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEGN 131 Tennis</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 104 Soccer, Speedball, Flag Football</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 139 Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEGN 164 Yoga</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 109 Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 106 Basketball</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 107 Softball</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 180-181 First Aid</td>
<td>1-2</td>
</tr>
</tbody>
</table>
SECONDARY EDUCATION MINOR

Hours Required for this minor ........................................................................................................ 22

1. Cognates .................................................................................................................................. 22
   Biology 107 ............................................................................................................................. 4*
   OR
   Biology 101 ............................................................................................................................. 4*
   Biology 210 ............................................................................................................................. 4*
   Biology 240 ............................................................................................................................. 4*

2. Required Professional Courses ................................................................................................. 22
   Academic .................................................................................................................................. 12
   PEPR 150 Foundations of Health, Physical Ed. & Recreation ................................................. 2
   PEPR 595 Analysis of Movement in Sports .............................................................................. 2
   PEPR 590 Exercise Physiology ................................................................................................. 2
   PEPR 392 Measurement & Evaluation in Physical Education ................................................. 3
   PEPR 345 Teaching of Physical Education in Secondary School ......................................... 3
   (Recommended to be taken Junior year)

   Activity .................................................................................................................................. 10

   Required .................................................................................................................................. 2
   PEPR 101 Basic Games & Movement Skills ............................................................................ 1
   PEPR 236 Elect one officiating course ....................................................................................... 1

   Dance: Elect 2 semester hours from the following: ................................................................. 2
   DAN 102 Beginning Jazz ........................................................................................................... 1
   OR
   DAN 123 Beginning Contemporary Dance ............................................................................... 1
   DAN 122 Recreational Dance .................................................................................................... 1

   Individual Sports: Elect 4 courses from the following:
   PEGN 101 Archery .................................................................................................................. 2
   PEGN 102 Badminton .............................................................................................................. 2
   PEGN 122 Golf .......................................................................................................................... 2
   PEPR 131 Tennis ...................................................................................................................... 2
   PEGN 250 Swimming — Life Saving ....................................................................................... 2
   PEGN 350 Swimming — W.S.I. .............................................................................................. 2
   PEPR 102 Stunts, Tumbling, Trampoline ............................................................................... 2
   PEPR 103 Beginning Gym (Prereq. PEPR 102 or permission of instructor) ......................... 2
   PEPR 132 Track & Field .......................................................................................................... 2

   Team Sports: Elect 2 semester hours from the following:
   PEPR 104 Soccer, Speedball, Flag Football .......................................................................... 1 hr. each
   PEPR 105 Field Hockey & Flag Football ................................................................................ 1
   PEPR 109 Volleyball .............................................................................................................. 1
   PEPR 106 Basketball ............................................................................................................... 1
   PEPR 107 Softball .................................................................................................................... 1

RECREATION MINOR

The Recreation Minor is designed to prepare students to assume leadership roles in public or private recreation agencies and organization. The 10 hours of electives within this course of study allows the student flexibility in preparing for a specific phase of recreation. The option of Teacher Certification (21 hours additional) provides the student with the opportunity to be licensed to teach Recreation if they so elect.
College of Education

Hours Required this minor .................................................. 24

1. Required Professional Courses ........................................... 14

(Please note in course descriptions when courses are offered and the suggested sequence of course work.)

PEPR 170 Introduction to Recreation ...................................... 3
PEPR 270 Recreational Leadership (Prereq. or coreq. 170) ........ 2
PEPR 275 Recreational Programming (Prereq. 270) ................ 3
PEPR 370 Recreation Practicum (Prereq. 170-270-275) ...... 3
PEPR 375 Organization and Administration of Recreation (Prereq. 170-270-275-375) 3

2. Elective Courses (From not more than two groups) .................. 10

GROUP I. Program Skills

A. Aquatics Area (Not more than 4 courses)
PEGN 250 Senior Life Saving ................................................. 2
PEGN 350 Water Safety Instructors ........................................ 2
PEPR 155 Introduction to Aquatic Instruction ......................... 3
PEGN 107 Canoeing ............................................................. 1
PEGN 141 Sailing ............................................................... 1
PEGN 251 Skin/Scuba Diving .................................................. 2
PEGN 355 Synchronized Swimming ......................................... 1
PEGN 253 DSpeed Swimming ................................................. 1
PEGN 254 Springboard Diving ............................................... 1

B. Sports Area (Not more than 8 courses)
PEGN/PEPR Team Sports (Not more than 4 — no repeats) .......... 4
PEGN/PEPR Ind. & Dual Sports (Not more than 4 — no repeats) 4
PEPR 236 Sports Officiating (Not more than 4) ....................... 4
PEPR 337 Adv. Techniques & Coaching (Not more than 2) .......... 4

C. Arts & Crafts Area (Not more than 4 courses)
PEPR 174 Rec. Leadership of Arts & Crafts ......................... 2
IED 190 Industrial Arts for Elem. Tchr. ................................. 3
OT 110 General Crafts ....................................................... 3
IED 198 OT Woodworking .................................................... 3
ART 239 Metal Smithing .................................................... 3
ART 238 Jewelry .............................................................. 3
ART 110 (111) Drawing ....................................................... 3
ART 240 Painting ............................................................. 3
OT 103 Ceramics .............................................................. 3
IED 170 Ind. Crafts Techniques ........................................... 3

D. Music & Drama Area (Not more than 4 courses)
MUS 140 Music for the Classroom Teacher ............................. 4
MUS 290 Recreational Music ................................................ 2
CAS 564 Creative Drama for Children ................................... 4
CAS 220 Intro. to Theatre .................................................... 3
CAS 224 Play Productions ................................................... 3
CAS 126 Theatre Crafts ...................................................... 3
LIB 546 Story Telling ......................................................... 3

E. Outdoor Skills Area (Not more than 4 courses)
PEPR 172 Camp Leadership .................................................. 3
PEPR 276 Outdoor Education ............................................... 2
PEGN 106 Campercraft ....................................................... 1
PEGN 133 Orienteering & Backpacking .................................. 1
PEGN 143 Cross Country Skiing ............................................ 1
BIOL 234 Outdoor Science .................................................. 4
BIOL 105 Envr. Biology ..................................................... 3
BIOL 530 Envr. Educ. ........................................................ 3

GROUP II. Administrative Skills — Not more than four courses
PEPR 368 Organization & Administration of Intramurals .......... 2
CAS 130 Public Speaking ................................................... 3
MGT 250 Small Business Management .................................. 2
BEAS 288 Records Management ........................................... 2
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEAS 556</td>
<td>Office Management</td>
<td>3</td>
</tr>
<tr>
<td>BEAS 242</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>MGT 102</td>
<td>Computer Usage</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201</td>
<td>Accounting</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 350</td>
<td>Principles of Conservation &amp; Environmental Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 556</td>
<td>Studies in Land Use Planning</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 554</td>
<td>Outdoor Recreation: Resources and Planning</td>
<td>3</td>
</tr>
<tr>
<td>ECON 319</td>
<td>Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGR 323</td>
<td>Landscape Design</td>
<td>3</td>
</tr>
</tbody>
</table>

GROUP III. Community Organization Skills — Not more than four courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGR 516</td>
<td>Values Clarification</td>
<td>2</td>
</tr>
<tr>
<td>SW 572</td>
<td>Community Agency Resources</td>
<td>2</td>
</tr>
<tr>
<td>SW 562</td>
<td>Community Organization in Urban Areas</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Modern Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SW 464</td>
<td>Problem Solving in Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>PEGR 572</td>
<td>Recreation for the Aged</td>
<td>2</td>
</tr>
<tr>
<td>SOC 352</td>
<td>Introduction to Gerontology</td>
<td>3</td>
</tr>
</tbody>
</table>

GROUP IV. General Electives — Not more than four courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 180</td>
<td>First Aid</td>
<td>1-2</td>
</tr>
<tr>
<td>PEPR 181</td>
<td>PEGR 598</td>
<td>1-2</td>
</tr>
<tr>
<td>PEGR 500</td>
<td>Studies in H.P.E.R.</td>
<td>1-3</td>
</tr>
</tbody>
</table>

ATHLETIC TRAINING MINOR
(Non-Teaching) (20-24 Hours)

I. Required Core (All Students):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.Ec. 210</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>Bio. 400</td>
<td>Pharmacology or equiv</td>
<td>4</td>
</tr>
<tr>
<td>PEPR 489</td>
<td>Field Experience — Athletic Training</td>
<td>2</td>
</tr>
<tr>
<td>O.T. 320</td>
<td>Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>PEGR 580</td>
<td>Studies in Athletic Training Topic I: Prev., Diag., &amp; Treatment of Inj.</td>
<td>2</td>
</tr>
<tr>
<td>Topic II:</td>
<td>Athl. Trng. Techniques</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 380</td>
<td>Found. of Spts. Inj</td>
<td>3</td>
</tr>
<tr>
<td>Bio. 210</td>
<td>Mammalian Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>Bio. 240</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
</tbody>
</table>

II. Required Core Addendum: (Required if not included in student’s major or first minor)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio. 210</td>
<td>Mammalian Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>Bio. 240</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
</tbody>
</table>

III. Electives: 4-8

A. Basic Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio. 210</td>
<td>Mammalian Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>240</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>GSSC 133</td>
<td>Issues in Social Biology</td>
<td>4</td>
</tr>
<tr>
<td>Chem. 101</td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>109</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>Phys. 106</td>
<td>Elementary Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

B. Behavioral Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psych. 105</td>
<td>Behavioral Modification</td>
<td>3</td>
</tr>
<tr>
<td>190</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 200</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Interpersonal Communicat.</td>
<td>3</td>
</tr>
<tr>
<td>S.W. 210</td>
<td>Social Work Studies</td>
<td>3</td>
</tr>
<tr>
<td>TEED 350</td>
<td>The Young Child. His Family &amp; His Society</td>
<td>3</td>
</tr>
</tbody>
</table>
### SWIMMING MINOR

#### Hours Required for this Minor

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Requirement</td>
<td>35</td>
</tr>
<tr>
<td>Additional 5 hrs. General Education courses (non-professional courses only)</td>
<td></td>
</tr>
<tr>
<td>College of General Studies</td>
<td></td>
</tr>
<tr>
<td>Michigan certification</td>
<td></td>
</tr>
</tbody>
</table>

#### Required Cognates

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 107</td>
<td>4*</td>
</tr>
<tr>
<td>OR Biology 101</td>
<td>4*</td>
</tr>
<tr>
<td>OR Biology 240</td>
<td>4*</td>
</tr>
<tr>
<td>PEPR 125 Introduction to Aquatic Instruction</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 337 Coaching &amp; Adv. Technique Series — Speed Swim &amp; Div. Pre-req. PEPR 125</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 337 Coaching — Adv. Techniques Series — Synchronized Swim. Pre-req. PEPR 125</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 595 Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 325 Swimming for the Exceptional Child</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Activity

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAN 123 Beginning Contemporary Dance</td>
<td>4</td>
</tr>
<tr>
<td>PEGN 253 Swimming - Speed</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 254 Swimming - Springboard Diving</td>
<td>1</td>
</tr>
<tr>
<td>OR PEGN 354 Swimming - Int. Springboard Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEGN 255 Swimming - Synchronized</td>
<td>1</td>
</tr>
<tr>
<td>OR PEGN 355 Swimming - Int. Synchronized</td>
<td></td>
</tr>
</tbody>
</table>

#### Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGN 251 Swimming — Skin/Scuba Diving</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 235 Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 227 Show Production</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 236 Officiating Speed Swim. &amp; Diving</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 236 Officiating Synchronized Swimming</td>
<td>1</td>
</tr>
<tr>
<td>PEPR 440 Nature/Bases of Motor Skills</td>
<td>2</td>
</tr>
<tr>
<td>PEM 380 Foundations of Sports Injuries</td>
<td>3</td>
</tr>
</tbody>
</table>

Participation is required in Aqua Sprites — one year, speed swimming/diving team — one season, and teaching assistant — one semester

*Applicable to total General Education requirement.
SPECIAL ACADEMIC COURSES

241 Physical Education and Recreation for Teachers 2 hrs.
This course is open only to teachers. Topics included in the course are: Program planning, making of games and equipment, accident prevention, basic motor skills. Practice in games, stunts, rhythms and recreational activities will be included. Offered by extension only.

PHYSICAL EDUCATION

PROFESSIONAL ACTIVITY COURSES

101 (143-W & 245-M) Basic Games and Movement Skills 1 hr. Fall, Winter, Spring
102 (120-W) Stunts, Tumbling, Trampoline 1 hr. Fall, Winter
103 (141-W) Gymnastics 1 hr. Fall, Winter
104 (130-W) Soccer, Speedball, Flag Football 1 hr. Fall, Spring
105 (131-W) Field Hockey 1 hr. Fall
106 (146-W) Basketball 1 hr. Winter, Spring
107 (148-W) Softball 1 hr. Fall, Spring
108 (140-W) Baseball 1 hr. Fall, Spring
109 (142-W) Volleyball 1 hr. Fall, Spring
110 (144-W) Track and Field 1 hr. Fall, Spring
111 (146-W) Wrestling 1 hr. Fall, Winter
112 (140-W) Tennis 1 hr. Winter, Spring
113 (144-W) Football 1 hr. Fall, Spring
114 (137-W) Small Craft 1 hr. Fall
115 Ice Hockey 2 hrs. Fall, Spring
116 Ice Hockey 1 hr. Fall, Winter

PHYSICAL EDUCATION ACADEMIC COURSES

125 (155-W) Introduction to Aquatic Instruction 3 hrs. Winter
An introduction to aquatic instruction including methods, materials, and conduct of aquatic programs. Prerequisite: 350.

150 (190-W & 150-M) Foundations of Health, Physical Education and Recreation 2 hrs. Fall
An introduction to the University, the profession, and an attempt to assist the student in making a realistic appraisal of his/her own aptitudes and capabilities relevant to the profession via actual testing of personal competencies.

170 (370-M) Introduction to Recreation 3 hrs. Fall, Winter
An introduction to the field of recreation and the role of leisure in modern society including current trends, job opportunities in various settings, programing, and leadership.

172 Camp Leadership 3 hrs. Fall (even) Spring (odd)
The investigation of the responsibilities of the counselor in the camp. Exploration of the aims and values of the total camp program are emphasized.

174 Recreational Leadership of Arts and Crafts 2 hrs. Fall (odd)
This course includes inexpensive arts and crafts suitable for large and small groups. Emphasis will be on the planning, preparation, organization and direction of craft programs for children and adults.

180 (150-W) First Aid — Multi-media 1 hr. Fall, Winter, Spring
The course teaches the elements of first aid so that the student can perform the necessary skills required in the event of required emergency care. The multi-media instruction system is used. This course gives the Red Cross multi-media certification. Open to all students.
College of Education

181 (150-W) First Aid 2 hrs. Fall, Winter, Spring
The standard course in first aid techniques leading to Red Cross certification. Open to all students.

227 (253-W) Show Production 1 hr. Winter
Advanced choreography and swim show management. Prerequisite: PEPR 337.

235 (160 M & W) Theory of Coaching 2 hrs. Fall, Winter
Introduction to coaching includes basic principles, covers State Athletic Handbook, budgets, scheduling, facilities, liability, public relations, relationships with staff, faculty, students, parents, press, etc.

236 (265-W & 244-M) Officiating Series 1 hr. Fall, Winter, Spring
The discussion and application of rules and officiating techniques. The student is required to officiate in out-of-class athletic programs. Prerequisites: Must have had the first level activity or permission of instructor.

Fall Semester
- Men's Basketball
- Football
- Field Hockey
- Softball

Winter Semester
- Women's Basketball
- Gymnastics
- Volleyball

Odd Years
- Speed Swimming/Diving
- Wrestling

Spring Semester
- Baseball
- Synchronized Swimming

250 (295-W) Cultural Bases of Physical Education 2 hrs. Fall, Winter
The application of history, principles, sociology and philosophy of H.P.E.R. to the current movements and trends in the profession. Prerequisite: PEPR 150.

270 (274-W) Recreational Leadership 3 hrs. Fall, Winter
A course studying the skills, knowledge and techniques necessary to conduct social recreational programs for all ages. Creative and effective leadership stressed through observations, participation and the leading of activities. Prerequisite: PEPR 170 or permission of instructor.

275 Recreational Programming 3 hrs. Fall
A study of the goals development and evaluation of programs in recreational settings. Practical experience in ascertaining needs and scheduling activities to meet goals will be emphasized. Prerequisite: PEPR 270.

276 (276-W & 270-M) Outdoor Education 2 hrs. Fall (odd)
A course in the philosophy, methods, and materials of outdoor education emphasizing outdoor education activities for children and youth.

300 (300-W) Seminar Series 1-4 hrs.
Designed to provide an opportunity for qualified students to examine and discuss a subject area in field of common interest. Enrollment by written permission of the Chairperson of Department.

320 (296-W & 242-M) Physical Education for the Exceptional Child 3 hrs. Winter
The activities and games used in corrective, adaptive, and developmental programs for children with mental or physical handicaps and those with learning disabilities. An emphasis will also be placed on activities for children with perceptual handicaps and on activities to argument academic learning. Prerequisite: PEPR 101.

321 (356-W) Therapeutic Needs & Programs for the Exceptional Child 3 hrs. Fall
The evaluation, interpretation and planning of therapeutic and rehabilitation programs for the handicapped child. Emphasis is placed on programs for the orthopedically handicapped, the cerebral palsied, the epileptic, the blind and such conditions as multiple sclerosis, muscular dystrophy, rheumatic fever and cardiac disorders. Prerequisites: BIO 210, PEPR 320, SPED 530
Physical Education

325 (350-W) Swimming for the Exceptional Child 3 hrs. Fall
The study of physical and learning disabilities, values of swimming, and teaching techniques for these disabilities. Includes experience teaching exceptional children.

335 (220-W) Team Manager Participation 1 hr. Fall, Winter, Spring
Students will participate as a student assistant, i.e., attend all practices, scheduled events, score, chart, do other pertinent duties the coach directs. This requirement is waived for students who have been members of an intercollegiate team and a substitute elective is made for this requirement. Coaching minors or permission of instructor.

337 (260-W & 330-M) Coaching & Advanced Technique 2-3 hrs. Fall, Winter, Spring
Coaching and advanced skills, selection of a team, preparation, officiating and conducting competitive events. Prerequisites: Must have had first level course(s) or permission of instructor.

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track/Field, Football, Baseball, Tennis</td>
<td>Softball, Speed Swimming/Diving (3)</td>
<td>Softball, Synchronized Swimming, Volleyball</td>
</tr>
<tr>
<td>Even Years</td>
<td>Winter</td>
<td>Spring</td>
</tr>
<tr>
<td>Field Hockey, Synchronized Swimming, Volleyball</td>
<td>Basketball, Gymnastics, Volleyball</td>
<td>Tennis, Baseball</td>
</tr>
<tr>
<td>Odd Years</td>
<td>Winter</td>
<td>Spring</td>
</tr>
<tr>
<td>Winter</td>
<td>Wrestling</td>
<td></td>
</tr>
</tbody>
</table>

340 Physical Education for the Elementary Classroom Teacher 1 hr. Fall, Winter, Spring
This course is structured for the future elementary classroom teacher and/or special education teacher. It provides experience in the participation and teaching of appropriate elementary physical education movement activities in the areas of basic skills, stunts and tumbling, simple games and sports, rhythms, and classroom correlated activities. This course is not for physical education majors or minors.

344 (394-W & 246-M) Teaching Physical Education in the Elementary School 3 hrs. Fall, Winter
Concepts and practices that actuate the sequential development of an elementary physical education program are examined. Methods of instruction, program planning and evaluation are explored. Each student must reserve one half day each week for a participation experience in an elementary school. Prerequisites: PEPR 101, 102 or 103, 132, DAN 135 or 204.

345 (396-W & 390-M) Teaching Physical Education in the Secondary School 3 hrs. Fall, Winter
A study of the total secondary school program in physical education including curriculum, organization and public relations. Emphasis in the course is on current teaching methods. A minimum of 15 hours of practice with secondary school students is required for which the student should save at least two blocks of time weekly. Prerequisites: PEPR 150, 102 or 103, 1 dance, 2 individual and 2 team sports. Student should enroll in TEED 301 same semester.

368 (368-W & 260-M) Administration and Organization of Intramural Sports 2 hrs. Fall, Winter
The problems, policies, finances, eligibility, awards, officiating, publicity, and procedures related to the intramural program.

370 (400-W & 490-M) Recreation Practicum 3 hrs. All Semesters
The practical field experience. The individual approach to practical field experiences in recreation for the normal and handicapped. Enrollment by written permission of the Chairperson of the Department of Physical Education. Prerequisites: PEPR 275

375 (370-W & 371-M) Organization & Administration of Recreation 3 hrs. Fall
The study of methods of organization in recreational programs and agencies at local, state and federal levels with emphasis on administrative procedures concerning personnel, facilities-areas, legalities, financing, and supervision. Prerequisites: PEPR 370.
380 (461-W & 280-M) Foundations of Sports Injuries 3 hrs. Fall, Winter
Basic first aid and emergency concepts, sports injury prevention, recognition, initial and follow-up care are studied. Principles/techniques are presented in a lecture and laboratory instructional format. Prerequisite: BIO 240.

Covers evaluation techniques in terms of understanding, interpretation, and application with emphasis on administration, selection and use of tests; interpretation of results through statistical procedures; analysis of tests available in the field and techniques for developing knowledge and skills tests.

420 (493-W) Testing & Developmental Programs for the Exceptional Child 3 hrs. Winter
A study of the developmental programs of various leaders in the field and the adaptation of these theories to practical situations in the local community. The various methods of assessing the exceptional child will be discussed and practiced. Students will be involved with testing children, establishing programs for children and assessing the results of the program. Prerequisites: BIO 210, PEPR 320, SPED 430, 588.

440 (391-W) Nature and Bases of Motor Skills 2 hrs. Fall, Winter
Describe and analyze the characteristic motor development patterns and evaluate the potential of children's motor performance. Emphasis will be placed on the introduction and explanation of the psychomotor domain. Prerequisite: BIO 240 or permission of instructor.

478 Seminar in Recreation 4 hrs. All Semesters
(Taken in conjunction with PEPR 479 Internship in Recreation) Students work individually with the kinds of problems faced in recreation programs in the community. Other problems to be faced later as full time recreation leaders are considered. Suggestions and guidance is afforded by staff members and resource persons. Prerequisite: Permission of Instructor.

479 Internship in Recreation 8 hrs. All Semesters
Students devote a minimum of three consecutive months duration, at which time they have experience in both the administrative and program areas in which they serve. All students expecting to serve this Internship should enroll during the semester it is to be done. Enrollment by written permission of the Chairperson of the Department of Physical Education. Prerequisite: Required Professional Core Courses — 17 hrs. Approval of Advisor.

535 (561-M) Principles and Problems of Coaching 2 hrs. All Semesters
Various dimensions and forces affecting coaching are identified and explored including educational implications of sports and coaching, vital relationships, motivation, emotions, behavior, discipline, selecting and evaluating personnel, scientific principles and systems of training, and problems involved with athlete-school-public. PEPR 235 or permission of instructor.
Physical Education

572 Recreation of the Aging
An overview of aging especially as it relates to leisure pursuits and organized recreation. Includes observation, participation and leadership of recreational activities or programs for retirees, nursing homes, senior citizens housing units and clubs. Suggested Prerequisite: Course in Gerontology

580 Studies in Athletic Training
Topic 1: Prevention, Diagnosis, and Treatment of Injuries. A lecture/demonstration course concerned with the prevention diagnosis, and treatment of sports type injuries. Prerequisites: BIO 210, 240, PEPR 380

Topic 2: Athletic Training Techniques. Laboratory practice in taping, bandaging, immobilization, transportation, emergency care techniques. An in-depth paper is required. Prerequisite: PEPR 380, PEGR 580 — Topic 1

Topic 3: Physical Conditioning and Rehabilitation Exercises. Scientific basis for remedial exercises and conditioning programs involving the building of endurance and strength are explained and related to current trends in competitive athletics. Prerequisites: Completion or concurrent enrollment in one of the following: PEGR 590 Exercise Physiology, PEGR 580 — Topic 1, or permission of the instructor.

590 (390-W & 390-M) Exercise Physiology
The mechanics of muscular contraction, nerve impulse conduction, oxygen exchange and circulatory efficiency are discussed. Basic principles concerning the adaptation of the human body to stress in the form of strenuous physical exercise are applied to training and conditioning. Prerequisites: BIO 240

595 (294-W & 275-M) Analysis of Movement in Sports
The study of the internal and external forces that affect the human body at rest and in motion. Special attention is given to the application of mechanical kinesiology to physical education and sports activities. Prerequisite: BIO 210

598 Readings in Health, Physical Education, and Recreation
Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Prerequisite: Approval of the Chairperson of the Department of Physical Education.

HEALTH EDUCATION ACADEMIC COURSES

(Course descriptions in italics are open to all students.)

100 Health for Modern Man (An Introduction to Health)
The focus of this introductory health course is to assist students in achieving an awareness of optimal physical, mental, and social health in a changing environment. This course combines T.V. lectures and small group seminars. Freshmen and Sophomores only.

211 (275-W) Community Health — Public Health I
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.

314 (342-W) Elementary School Health & Safety Education
This course is directed toward prospective elementary school teachers. It is designed to provide knowledge and experiences related to the total school health program.

315 (343-W) Secondary School Health & Safety Education
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.
411 (410-W) Health Education: Public Health II 3 hrs. Winter (odd)

This course will analyze the relationships of public health programs, preventive medicine, and health education; techniques of group motivation and dynamics; the role of the health educator in group procedures and community organization; indigenous health problems, their pathology, treatment and control; principles of epidemiology; and public health aspects of chronic and acute disease; and special health care programs. Prerequisite: PEPR 211

412 (412-W) Health Education: Administration in Health Education 3 hrs. Fall (even)

The purpose of this course is to introduce the student to leadership roles and administrative skills as they relate to health education.

514 Methods and Materials in Health Education 2 hrs.

Lectures and demonstrations with emphasis on the effective health supervision of school children, the principles and practices of health teaching in the various grades, and the interrelation of this teaching with that of other subjects in this curriculum. Prerequisite: PEPR 314 or consent of advisor.

516 Issues in Health Education 1-3 hrs.

The focus will be placed on current health issues. May be designed to deal with one issue or several.

Drugs & Narcotics  Bio Feedback
Venereal Diseases  Stress Release
Cardiovascular Health  Parenting
Patient Education  Health Careers
                  Consumer Health
Special Education

Joseph J. Eisenbach, Head
Julianne Clarke
Alonzo Hannaford
Barbara L. Loss
Elizabeth Patterson

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
See p. 000

502 Educational Provisions for the Learning Disabled
3 hrs.
This course is specifically designed for prospective teachers who are interested in identifying and instructing learning disabled children and youth in a regular classroom setting. Emphasis will be placed on (1) identifying the exceptional pupil; (2) developing an educational profile which reveals the learner’s strength and weaknesses; (3) identifying and describing methods and materials utilized in teaching the learning disabled individual. Open to all students except majors in Special Education curricula. Prerequisites: TEED 250, 312, junior standing and consent of Department.

512 Workshop in Special Education
2-4 hrs.
Designed for teachers, counselors, psychologists, social workers and others interested in studying selected aspects of special education at appropriate locations, such as state hospitals and special schools. A variety of instructional experiences are provided, including conferences. Credit not applicable toward a graduate degree in Special Education.

530 Education of Exceptional Persons
3 hrs.
Deals with the problems and methods involved in the adjustment and training of exceptional persons in the schools — the mentally retarded, the gifted, the crippled, the deaf, the blind, the emotionally disturbed, the socially maladjusted, and the mentally handicapped. Prerequisite: Junior standing and consent of Department.

531 Practicum in Special Education
2 hrs.
Students enrolled in this course will be assigned to special classes in public or residential schools serving exceptional children and youth. Observation and participation will be combined with weekly seminars. Undergraduate students majoring in special education are required to enroll in Special Education 530 and 531 concurrently. Admission to this offering will be determined by the number of placement opportunities available. Prerequisite: TEED 250 and consent of Department.
532 Nature and Needs of the Mentally Retarded 4 hrs.
A course especially intended for teachers of mentally retarded individuals. Also recommended for school counselors, psychologists, social workers and other auxiliary personnel. Course objectives include an understanding of the causes, diagnoses, classification and interpretation of mental deficits. Prerequisite: Spec. Educ. 530 and consent of Department.

533 Diagnostic and Prescriptive Techniques in Special Education 4 hrs.
A thorough study of educational diagnostic instruments and techniques will precede the student's utilization of these measures in evaluating exceptional persons in his 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 the Crippled and Homebound 4 hrs.
Study of educational, psychological, and therapeutic needs of crippled persons and the role of allied disciplines in meeting these needs. Prerequisites: Special Education 530 and consent of Department.

588 Behavior Disorders in School-Aged Learners 3 hrs.
Deals with the psychoeducational aspects of disturbed or disturbing behavior as related to the school program. Issues and problems associated with normal development, concepts of diagnosis, and the incidence of maladjustment will be reviewed. The characteristics, causes, diagnosis, and treatment of the effects of such conditions in children as psychoneurosis, mental subnormality, juvenile delinquency, psychosis, learning disability, and social dissonance will be examined in terms of their educational implications. Therapeutic, environmental, and classroom interventions will be presented and strategies for prevention will be analyzed. Prerequisites: Special Education 530 and consent of Department.

589 Programs and Intervention Strategies for the Socially and Emotionally Maladjusted 4 hrs.
This course, open to majors in Special Education curricula, will emphasize techniques and procedures applicable to socially-emotionally maladjusted individuals in various special or public school settings. Current theories, contemporary programs and trends in behavioral change and management will be reviewed and discussed. Prerequisites: Special Education 588 and consent of Department.
Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to take a minimum of 21 hours of professional courses in teacher education, plus a methods course offered in the major or minor field; students in elementary education are required to complete 21 hours in professional education courses. A "C" average or better must be earned in required professional courses.

Elective courses are available in the following fields: elementary education, secondary education, rural life and education, special education, methods of teaching, foundations of education, and related areas. Certain special-methods courses are available in other departments of the university.

Students take the block of Integrated Professional Education courses 410, 450, and 470 during either semester or the combined spring and summer sessions of their senior year. Students with irregularities in their professional work or with advanced credit in education should confer with the Teacher Education orientation and advisement office at the earliest possible date. Those majoring in certain fields requiring continuous study throughout the senior year may, upon application to the Department of Directed Teaching, be permitted to take 450 during the other semester of that year.

**TEACHER EDUCATION (TEED) COURSES**

**100 Introduction to Education**

This course is designed to provide an early introduction to the profession of teaching and to the educational services present in communities of the state and nation. Field trips, observations, audio-visual materials, resource persons, tests and personal inventories are used to acquaint students with the purposes and functions of education in American society, and to help students make intelligent choices of areas of specialization within the profession. Course meets three hours a week for two hours credit.

**102 Techniques of Learning and Adjustment**

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.
College of Education

104 Effective Reading for College Students 2 hrs.
Designed to show the student how to make more effective use of text and reference books in academic subjects. Attention is given to chapter reading, vocabulary building, problem solving, concentration and critical reading. Group and individual conferences are provided.

201 Curriculum Organization in Small Schools 3 hrs.
A study of the objectives of education as related to rural children and rural needs and teaching practices leading toward these objectives. Students experience through observation and participation the development of materials suitable for use in small schools.

220 Rural Sociology 3 hrs.
A study of life in the rural environment — local, regional and world wide, including cultural factors; population trends; impact of industrialization; family, village, community; social institutions, agencies and organizations; educational, recreational, religious, health and government facilities. Magazines, pamphlets, and other sources supplement textbooks.

230 The Nature of Creativity 4 hrs.
An interdisciplinary course dealing with creativity as a human function central to man's behavior, institutions and environment. Team-taught by faculty members from the departments of Art, Communication Arts and Sciences, Music, Physical Education (Women), and Teacher Education.

231 Rural Economics 3 hrs.
Basic economic principles are considered in terms of rural conditions — local, national, international. Economic interpretations are given topics found in local school's curricula, conservation, taxes, insurance, consumer education, cooperatives, agricultural extension, services, etc.

250 Human Development and Learning 4 hrs.
This course traces the development of human beings from conception to maturity. Consideration is given to those factors which facilitate or inhibit normal progress in the areas of physical, emotional, social and intellectual development. Attention is also given to the development of the self-concept for the purpose of helping students to become more aware of themselves and of their relationships with others. Students are required to observe and/or participate with children and/or youth during the semester enrolled. The method, purpose and location of such experiences shall be determined by the instructor.

300 Teaching and Learning (Elementary) 3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; non-instructional duties of the teacher in school and community. Prerequisite: TEED 250.

301 Teaching and Learning (Secondary) 3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management non-instructional duties of the teacher in school and community. Prerequisite: TEED 250.

310 Stories for Childhood 2 hrs.
A study of stories and poems suitable to childhood. Classroom practice in story telling.

311 Reading Workshop 3 hrs.
The basic purpose of the workshop will be to study typical classroom reading problems. Tools useful in identifying problems, materials available, and techniques for the teaching of reading will be examined and experimented within the classroom. Special consideration will be given to a case study of one severe reading problem.
312 The Teaching of Reading (Elementary)  
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.  

3 hrs.

322 The Teaching of Reading (Secondary)  
This course deals with methods and materials for improving reading in the junior and senior high school. Both developmental and remedial procedures are stressed.  

3 hrs.

340 General Safety Education  
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.  

3 hrs.

350 Young Children, Their Families, and Their Society  
A study of the effects of family, peer group, and society on the development of young children. Emphasis will be placed on family styles and child-rearing practices, and their effects on learning and other behavior. Family constellations, the learning of sex-roles, the effects of divorce, and similar phenomena will be studied. Consideration will be given to the effect of cultural and sub-cultural differences on early childhood development, and students will look at the contemporary American scene as it affects young children. Prerequisite: TEED 250.  

3 hrs.

351 Reading and Related Communication Skills for Early Childhood  
A study of the young child's verbal and non-verbal language, and how he records and interprets language. An awareness of the relationship of experience to language development, and of the many approaches to reading. Emphasis will be placed on an examination and evaluation of current reading programs for young children, as well as on experiences in selecting books, story-telling, writing for and with children, and the production of a wide variety of audio-visual materials to be used with children.  

4 hrs.

352 Reading and Related Communication Skills for Middle and Upper Grades  
A study of the multi-ethnic language of this age group, and of how these youngsters record and interpret language. Emphasis will be placed on an examination and evaluation of reading, programs in current use, on skills for teaching reading, and on individualized learning. Grouping for learning, skills for reading in the content fields, testing, and remedial techniques will be stressed. Emphasis will be placed on book selection, story-telling, creative writing, and the production of a wide variety of audio-visual materials to be used in selected classrooms.  

4 hrs.

355 Learning Experiences for Young Children  
This course is designed to help students become skillful in diagnosing learning needs and in designing, practicing, and evaluating learning experiences for young children. Emphasis will be placed on the importance of play to young children's learning. Students will receive practice in producing stimulating experiences, environments, and materials for young children's concept development.  

3 hrs.

398 Special Studies in Education  
With variable topics and variable credit, this course is designed for undergraduates who, by virtue of their special interest or concerns, find it desirable to pursue in greater depth topics of problems related to children's educational development. The course will be offered under the following conditions: (1) that a written outline of the offering be approved by the Department Chairman, and (2) that prior arrangement be made with a faculty member or faculty members. The course offers variable credit from one through six semester hours. Students may repeat the course, so long as topics differ. Each offering of 398, Special Studies in Education, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 398 may be applied toward meeting professional program requirements.  

1-6 hrs.

408 Supervision in Rural Area Schools  
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.  

1-2 hrs.
411 Problems of Community Schools in Rural Areas 1-2 hrs.
An analysis of the community school-reorganization of school districts; functions of the local intermediate and state boards of education; school building planning, supplies, equipment, professional organizations, school law, public relations and other topics. Prerequisite: TEED 201.

416 Later Elementary Education 3 hrs.
A study of the characteristics and needs of pupils in the later-elementary grades and of the materials and methods of instruction.

430 Creativity in the Elementary School 4 hrs.
A synthesis of the principles developed in the Integrated Creative Arts minor, as applied to teaching and learning at the Elementary school level. Emphasis is placed on the integration of creative processes in elementary school curriculum and instruction on the teacher as problem-solver, and on the creation of structures which accommodate individualization of instruction and creative problem-solving in children. Team-taught by faculty members from the Departments of Art, Communication Arts and Sciences, Dance, Music, and Teacher Education.

442 Fundamentals of Driver Education 2 hrs.
Fundamentals, principles, practices, objectives, and subject matter content of high school Driver Education and Traffic Safety. Methods of teaching in the classroom. First of four required courses to certify Driver Education teachers. Prerequisites: Junior level and valid driver’s license.

450 School and Society 3 hrs.
Course content includes such matters as social, political, and economic influences on education; historical and philosophical backgrounds of present-day education; changes and trends in education; and current problems in education.

455 Historical, Social, and Philosophical Perspectives on Education for Young Children 3 hrs.
A review of the history and philosophy of early childhood education in its social setting, with an application to today’s programs for young children. Students will visit, appraise, and critically evaluate a variety of programs for young children. Experiences will be provided in designing and evaluating programs in the light of philosophy and specific objectives. Ways of administering and financing programs for young children will be considered.

502 Curriculum Workshop 1-6 hrs.
Opportunity provided for teachers, supervisors and administrators in selected school systems to develop programs of curriculum improvement. This may include short-term offerings to resolve a particular curricular problem, as well as long-range curriculum studies. A wide variety of resources is used for instructional purposes, including several specialists, library and laboratory facilities, field trips, audiovisual materials and the like. Each offering of 502, Curriculum Workshop, will be given an appropriate subtitle, which will be listed on the student’s official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 502 may be applied towards a Master’s degree.

506 Teaching in Adult Education 3 hrs.
This course is designed to provide teachers with a knowledge of special situations incurred in the teaching of adults. Included also are techniques of interpersonal communications with adults, as well as a practical exercise in the designing of learning experience for adults. Extensive use will be made of audiovisual media, experts in the field, and field observation in adult learning activities. The course should be helpful to administrators in planning in-service programs for their own staff.

507 Teaching of Social Studies in the Elementary Schools 3 hrs.
This course is designed to help teachers understand the role of the social studies in the elementary school, gain insight into important considerations in the selection of content and discover how to guide and assess the learning of children in this field. Planning social studies experiences and ways of working with children in a classroom setting will be emphasized.
508 Parent Education
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
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
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. Prerequisites: TEED 312 or 322 and permission of instructor.

514 Nursery-Kindergarten Education
This course will acquaint the students with the history and present-day status of nursery school and kindergarten education. Consideration will be given to the organization, equipment, curriculum and approved teaching procedures.

520 Implications of Piaget's Research for Curriculum Design
Provides the student with an understanding of the structure of the intellect developed by Piaget and examines the implications of this structure for the design of the curriculum. Some practical work will be combined with a study of the research on which Piaget has built his theory of intellectual development.

525 Rural Life
Critical study of recent books in rural social life. Consideration is given to individual problems related to social aspects of community life. Special problems are selected for study by each student. Field work is encouraged. Prerequisite: TEED 220.

527 Instructional Planning in Accountability Context
The purpose of the course is to assist the student in developing an understanding of models of accountability in education; in writing educational goals and performance objectives; in using various assessment procedures to determine the needs of the learner and the extent to which objectives have been achieved; and in determining appropriateness of instructional procedures for specified educational goals.

530 Introduction to Career Education
This course is designed to acquaint teachers with the concepts of career education. Course work is centered on ways and means to incorporate career education into the existing curriculum structure at all levels of instruction.

535 Introduction to Teaching the Disadvantaged
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
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.
College of Education

544 Psychology of Driver Education 2 hrs.
Psychological and perceptual aspects of the driver and traffic safety. The role of the teacher in influencing driver behavior. Research in traffic safety. Prerequisite: TEED 442.

548 Audiovisual Media I 3 hrs.
An introduction to audiovisual media as effective means for achieving educational objectives in presentational, interactive, and individualized modes of instruction. Emphasizes evaluation, selection, production, and classroom use of commercially available and locally produced instructional materials. Students are expected to participate in laboratory experiences in which they produce materials such as mounted and laminated pictures and displays, overhead projection transparencies, audio tapes and photographic slides, and to demonstrate proficiency in the operation of audiovisual equipment. In addition to texts, each student should plan to spend $15 or more for supplies and have the use of a simple camera. Limited to 20 students.

549 Audiovisual Media II 3 hrs.
A continuation of TEED 548, in which teachers and media specialists consolidate basic audiovisual skills and deal in depth with more advanced processes and techniques. Laboratory experiences may include production of complex transparencies, photographic slides, filmstrips, and prints, super 8 films, audio and video tapes, duplicated materials, and more sophisticated charts, posters, and displays. A systematic production planning process is emphasized, with consideration given to evaluating effectiveness of media and to requirements for operating a school building level media center. In addition to texts, each student should expect to spend $15 or more for supplies and should have the use of a versatile camera. Limited to 15 students. Prerequisite: TEED 548 or equivalent experience.

550 Photography Workshop 1-3 hrs.
Intended to sharpen visual perception while improving technical skills, this laboratory course emphasizes photography as a creative and expressive medium of visual communication. Each student is expected to produce new photographs each week and to submit one or more mounted enlargements for group critique at each class meeting. Each student must have the use of appropriate equipment and should expect to spend $25 or more for supplies. Although no prerequisite is required, it is helpful to have had some experience with basic darkroom processes. May be repeated up to a total of six credits. Limited to 15 students.

552 Comparative Education 3 hrs.
This course is intended to provide students with an introduction to the field of comparative/cross-cultural education. The education philosophy and goals, curricula, administrative structure, educational technology, financing and methods of instruction characteristic of selected European countries are examined and compared to parallel features of the American educational system.

555 Alcohol Education 2 hrs.
Deals with problems of alcohol education in the school and community, with special emphasis on teaching methods and procedures, relationships with governmental and social agencies and administration of the program.

560 Practicum: Sociological and Psychological Foundations of Teaching the Disadvantaged 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. Prerequisite: 312 or permission of instructor.
587 Educational Therapy in Reading

A study is made of the psychological, sociological and physiological factors affecting children's reading ability, together with laboratory application of such knowledge in the prevention, diagnosis and treatment of reading problems. Open only to experienced teachers by permission of the instructor. Prerequisites: 312, 586 or permission of instructor.

588 Evaluation in Education

Designed to develop skills, techniques, attitudes and understandings involved in the measurement and evaluation on individual learning and development as well as in the appraisal of the total school program. Emphasis is placed on the construction, use and interpretation of formal and informal evaluation devices, and upon the development of a philosophy of evaluation as an integral part of learning.

597 Reading and Related Language Experiences

A study of the current research in the many aspects of language which are involved in the process of effective reading.

598 Selected Reading in Education

Designed for highly qualified students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental adviser and instructor.
College of Fine Arts

ROBERT HOLMES,
Dean

ROBERT H. LUSCOMBE,
Assistant Dean

Departments:
Art
Dance
Music
Theatre
College of Fine Arts

The College of Fine Arts offers a variety of curricula and subjects in the principal interest areas of the visual and performing arts.

In Art, major concentration is possible in painting, sculpture, photography, graphic design, print-making, ceramics, textile design, jewelry, art history, and multi-media art. Each program is designed to prepare students for graduate or professional work. One may also elect an Art major with certification to teach Art at the elementary and secondary levels.

In Dance, two undergraduate degrees are offered: a Bachelor of Science which prepares students to teach dance in the public schools, K-12; and a Bachelor of Arts in applied dance. In the latter program, one may choose among four areas of concentration: contemporary, ballet, jazz, or theatre.

In Music, programs are available in applied music, composition, music education, music history, music therapy, and theory, providing certification at both the elementary and secondary school levels.

In Theatre, programs lead to the Bachelor of Arts and Bachelor of Science degrees, both of which provide the option to earn certification to teach theatre at the secondary school level. The Department also participates with other University departments in offering a music theatre program, a fine arts minor, and a theatre as an elective option.

Students are encouraged to inquire about curricular combinations not listed specifically in the catalog such as arts management and other inter-departmental programs.

In the belief that arts understanding, involvement, and appreciation are an important part of a liberal education, the College of Fine Arts offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciational curricular and co-curricular activities, such as general art and art history courses, dance, musical ensembles, and theatre productions.
INTRODUCTION

The Department of Art offers many programs with various purposes and objectives. These are described under the heading of each program below.

The Department is affiliated with the National Association of Schools of Art and the College Art Association and subscribes to the recommendations of these organizations.

The various programs are designed to promote the education of good artists and artists-teachers, and to increase artistic awareness among students in other areas. Extra curricular activities include many exhibitions, lectures by visiting artists, a student operated gallery, and individual studios for advanced BFA candidates. There are approximately 500 undergraduate and 50 graduate art majors active during the academic year. Approximately 100 art degrees are awarded annually.

PROGRAMS

The Department of Art offers programs leading to the following three degrees: Bachelor of Fine Arts with a major in one of the areas of the department, Bachelor of Arts or Bachelor of Science with a major in Art, Bachelor of Science with a major in Art Teaching. All three programs are within the Art curriculum, which is composed of the General Education requirements of the University and the Art Major requirements of the B.A., B.S. or B.F.A. degrees.

The Department of Art also offers courses for students in other areas, and two programs satisfying the minor requirement of other curricula.

For specific information see the description of each program below.

ADMISSIONS

Admissions of Art majors are limited by the size and capacity of the Department to 150 new students per year. Admission of freshmen is currently based on the chronological priority of the applications. Admission of transfer students is determined by review of a portfolio of art work.

TRANSFER CREDIT

Transfer students are required to submit a portfolio for transfer credit evaluation of art courses from other institutions one semester prior to enrollment. The application for admission as an art major includes the transfer evaluation procedure. (Portfolios for admission or transfer credit cannot be evaluated between April and August inclusive.) For portfolio requirements please write to: Screening Committee, Department of Art.

Transfer credit is granted for all courses taken at accredited institutions either for specific WMU equivalent courses or as general art credit.
College of Fine Arts

ADVISING

For information on the office hours of the current curriculum advisors for art majors please call (616) 383-0407. Advisors supervise each student's total program and provide academic and professional guidance. All art majors are required to see an art advisor as soon as they are on campus and at least once yearly thereafter.

MISCELLANEOUS

Grading
Art majors receiving a grade of D or E in a required course must repeat the course.

Exhibition Requirement
Each Bachelor of Fine Arts major must present a graduating exhibition as stated in Art 413 in the B.F.A. degree requirements. The B.F.A. candidate is to arrange such an exhibition in consultation with his major advisor. The Department of Art may retain one work of art from each student for the departmental collection.

Studios
Advanced undergraduates are occasionally given individual studios. All other students may work in the regular classroom studios at night and on Saturdays. The department and its instructors cannot be responsible for student work left in studios after the end of each semester or term. Studio classes are usually limited to 15 to 20 students.

PROGRAMS OF STUDY

Bachelor of Fine Arts Degree/Major in a Specific Area 74 credit hours in Art
This degree is designed for qualified students who intend to become professional artists or pursue graduate study in art. Art majors must make a 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 each November 1 and March 7.

Major areas: Art History, Ceramics, Graphic Design, Jewelry and/or Metalsmithing, Multi-Media Art, Painting, Photography, Printmaking, Sculpture, Textile Design, Art Teaching. (Art Teaching majors must complete the requirements of one of the studio majors in addition to the certification requirements of the College of Education.)

The requirements of the Art curriculum of the College of Fine Arts have to be satisfied. Seventy-four hours in Art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

- 14 hours in the basic program (110, 111, 114, 115, 121)
- 15 hours in Art History including 220, 221
- 6 hours in Advanced Drawing (210, 310)
- 2 hours in the Art Seminar (525)
- 15-24 hours in the major area (example: Painting 240, 340, 440, 540, etc.)
- 11-20 hours in other elective and required art courses determined in consultation with the major advisor.
- 2 hours in Graduate Presentation (413). Approval of this by a reviewing committee is necessary for the granting of the BFA degree.

Bachelor of Arts or Bachelor of Science Degree/Art Major 52 credit hours in Art
This program is designed for the Liberal Arts-oriented students who want to major in the visual arts. It provides maximum flexibility in terms of electives in art and non-art courses. (Professionally oriented art students may start in this program and apply for admission to the B.F.A. after completing 30 hours in Art.)

The requirements of the Art curriculum of the College of Fine Arts have to be satisfied. Fifty-two hours in Art satisfy both the major and the minor requirements of this curriculum and are distributed as follows:

- 14 hours in the basic program (110, 111, 114, 115, 121)
- 9 hours in Art History including 220, 221
- 6 hours in Advanced Drawing (210, 310)
- 2 hours in the Art Seminar (525)
- 21 hours in Art electives, including 9 hours in one of the department's ten areas of concentration.
Bachelor of Science Degree/Art Teaching Major

This program is intended to develop artist-teachers certified to teach art at the elementary and secondary levels and prepared to continue their studies at a graduate school.

The requirements of the Secondary Curriculum of the College of Education must be satisfied. Sixty-one credit hours in art satisfy the major and minor requirements of this curriculum and are distributed as follows:

14 hours in the basic program (110, 111, 114, 115, 121)
9 hours composed of: drawing (210); art history (220, 221)
12 hours in art education (252, 352, 452, 552)
12 hours in one area of concentration as defined in the B.F.A. program, except art history
14 hours in elective art courses, determined in consultation with the departmental advisor

One semester of directed teaching in art, preferably in both elementary and secondary situations. All art certification students must have a permit to student teach from the art education advisor before doing directed teaching.

Art Minor

This program is designed to expose the student to the field of art and satisfies the minor requirement of the Liberal Arts, Arts and Sciences, or Education curricula.

14 hours in the basic program (110, 111, 114, 115, 121)
10 hours in art electives

Art History Minor

This program is designed for liberal arts students interested in art history and satisfies the minor requirements of the Liberal Arts and Arts and Sciences curricula. The eighteen credit hours are distributed as follows:

6 hours of Art History 220 and 221
12 hours of electives chosen from the remaining art history courses in the department, in consultation with the Art History advisor.

Art Courses for Non-Art Majors or Minors

Elementary Education majors are advised to take Art 130, 140 or 150 except for those students in the Integrated Creative Arts minor who are required to take Art 200.

Any course with no prerequisites may be taken by non-art students. Those seeking a broadly inclusive studio experience in art are advised to take Art 130 and/or 140. The Art Survey 120, Art 130, 140, and Art History 220 and 221 as well as selected 500 level art history courses, are open with no prerequisites to non-art majors and can satisfy the humanities requirements of General Education.

Basic Program

Courses required of all majors and minors in art as prerequisites to other advanced courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>111 Drawing</td>
<td>3</td>
</tr>
<tr>
<td>114 Design</td>
<td>3</td>
</tr>
<tr>
<td>115 Design</td>
<td>3</td>
</tr>
<tr>
<td>121 Art Survey</td>
<td>2</td>
</tr>
</tbody>
</table>

Fine Arts MINOR

The Department of Art is one of the academic units participating in the Fine Arts minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes.

ART DEPARTMENT COURSE OFFERINGS

(Course descriptions in italics are approved for General Education purposes.)

110 Drawing

College of Fine Arts

111 Drawing
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
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
Continuation of Design 114 with emphasis on color theory and the mechanics of color organization. Prerequisite: Art 114.

114 Design
Continuation of Design 114 with emphasis on color theory and the mechanics of color organization. Prerequisite: Art 114.

120 Art Survey
An introduction to the language of art, art theory, aspects of art, and form analysis from a topical point of view. Not for Art majors or minors.

121 Art Survey
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 majors or minors only.

130 Studio Experience — (3-D)
A course designed for the non-art student as an enriching experience in three dimensional media; to include clay, wood, metal, and other sculptural materials. This course may not be elected by majors or minors in art or art education. It is designed primarily for the General Degree or Education student who wishes to have some experience in art.

140 Studio Experience — (2-D)
A course designed for the non-art student as an enriching experience in two dimensional media; to include painting, drawing and other graphic media. May not be elected by majors or minors in art or art education.

150 Art Education Workshop
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
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
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.

215 Three Dimensional Design
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
An historical survey of art from pre-historic ages to the Renaissance.

221 History of Art
An historical survey of art from the Renaissance through the contemporary period.

230 Ceramics
A course devoted to a survey of pottery process including handbuilding, technical information and a limited experience with the potters wheel. Prerequisite: Basic Program.

231 Sculpture
Introduction to sculptural concepts and techniques in clay, plaster and wood. Prerequisite: Basic Program, Art 210 or 210 concurrently.
232 Craft Design 3 hrs.
A course stressing creativity in the design of products through the use of varied materials. Prerequisite: Basic Program.

234 Textile Design 3 hrs.
An introductory survey of textiles to include weaving, spinning, stitchery, hooking, macrame, silk screen printing, tie-dye and batik. Prerequisite: Basic Program.

235 Multi-Media Art 3 hrs.
Various forms of art that deviate from conventional media, such as light, kinetic and performance art. Prerequisite: Permission of instructor.

237 Studio Equipment 3 hrs.
An introduction to the proper use and care of shop equipment to include hand and power tools. Students generally use hardware, canvas, and sheet metal in a succession of class problems but wood is the major material. Prerequisite: Basic Program.

238 Jewelry 3 hrs.
A survey of jewelry processes to include cutting, soldering, casting, stonecutting, and the use of appropriate equipment. Prerequisite: Basic Program.

239 Metalsmithing 3 hrs.
Instruction in forming copper, brass, and sterling with hammer techniques. Introduction to design concepts relating to jewelry, domestic and sculptural objects. Prerequisite: Basic Program.

240 Painting I 3 hrs.
An introduction to the techniques and expressive possibilities of painting. Prerequisite: Basic Program, 210 or 210 concurrently.

241 Intaglio and Relief 3 hrs.
A fundamental exposure to the techniques of Intaglio and Relief printing and an introduction to Print esthetics. Prerequisite: Basic Program.

242 Watercolor Painting 3 hrs.
A survey of the application, techniques, and limitations of the water color painting medium. Prerequisite: Basic Program.

243 Lithography 3 hrs.
A basic, confidence-building, introduction to Lithography through Aluminum Plate techniques. Fundamental discussion of Stone lithography and esthetic possibilities of the medium. Prerequisite: Basic Program.

245 Graphic Design 3 hrs.
An introduction to problem solving for visual communication through typographic images. The fundamentals of calligraphy, typography, and typographic design are investigated in experimental and practical projects. Incorporates research in the communicative potential of color and structure. Prerequisite: Basic Program.

248 Photography 3 hrs.
Introductory course covering the function of the camera, exposure meter, lenses, b/w films, processing and printing. Emphasis is placed upon perceptive imagery and development of a technical proficiency. Prerequisite: Basic Program.

252 Art Education Workshop (Majors) 3 hrs.
A studio course involving projects, media and materials, handled on an aesthetic level but appropriate for the creative and maturational ability of the K-12 art student. Prerequisites: Basic Program, Art major status.

305 Inter-Related Arts Process: Art, Dance, and Music 3 hrs.
Art; dance, and music will be dealt with as the expressive means at the core of the creative and educative process. The student will be exposed to the craftsmanship of each art form, the experiences of creating in each art form, and the experience of synthesizing art forms so that each form contributes to the aesthetic value of the final product.

310 Intermediate Drawing 3 hrs.
Drawing as the study of form and as a conclusive aesthetic statement. Model available during approximately 1/2 of the class meetings. Prerequisite: 210.
330 Ceramics
Continuation of 230 with opportunity for concentration in the medium. Some experiment in glazing. Prerequisite: Art 230.

331 Sculpture
Development of individual sculpture direction. All media. Prerequisite: Art 231, 310 or 310 concurrently.

332 Craft Design
A continuation of Craft Design 232. Prerequisite: Art 232.

334 Textiles
Advanced work in textile design allowing for specialization with a material or technique surveyed in 234. Prerequisite: Art 234.

335 Multi-Media Art
Continuation of 235. Prerequisite: Permission of Instructor.

338 Jewelry and Metalwork
Advanced work in the jewelry processes. Prerequisite: Art 238.

339 Metalsmithing
Continuation of 239, broadening the design and technical experience. Prerequisite: Art 239.

340 Painting II
Continuation of Art 240. Prerequisites: Art 240, 310 or 310 concurrently.

341 Intaglio and Relief
An intermediate course continuing the investigation of basic and advanced Intaglio and Relief techniques with the introduction of color printing. The artist-student should begin to discover and adapt media and/or techniques (or synthesis of media and/or techniques) appropriate to individual esthetic intentions. Prerequisite: Art 241.

342 Watercolor
Advanced problems in watercolor techniques to include composition. Prerequisite: Art 242.

343 Lithography
An intermediate investigation of Lithography based on basic skills with the introduction of color printing and other advanced techniques. The artist-student should begin to discover methods and techniques adaptable and appropriate to his esthetic intent. Prerequisite: Art 243.

345 Graphic Design
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: Art 245.

348 Photography
Introduction to the view camera, color processing/printing, and various studio lighting techniques involved in product photography. Emphasis is placed upon exploring the potential of color photography and the development of individual imagery. Prerequisites: Art 248 and ownership of a 35mm slr or 2½ x 2½ camera.

352 Preparation for Art Teaching (Elementary)
A teaching laboratory course designed to familiarize the elementary art teacher with teaching philosophies, methods and creative teaching procedures using varied media, and materials. Emphasis is placed upon qualitative art programming in the elementary school. Prerequisites: Art 252 and art major status.

410 Advanced Drawing
Continuation of Art 310. Prerequisite: Art 310.

413 Graduating Presentation
Preparation and presentation of graduating exhibition, portfolio and oral examination or written thesis, with the assistance of the student’s major advisor. Evaluation by a departmental reviewing committee. Prerequisite: Senior standing, B.F.A. candidacy.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
</table>
| 430        | Ceramics                                         | 3 hrs.
|            | Continuation of 330 with some experience in stacking and firing procedures. Prerequisite: Art 330. |
| 431        | Sculpture                                        | 3 hrs.
|            | Continuation of 331. Emphasis on welding and sheet metal techniques. Prerequisites: Art 331, 310. |
| 434        | Textiles                                         | 3 hrs.
|            | Continuation of 334. Prerequisite: Art 334.      |
| 435        | Multi-media Art                                  | 3 hrs.
|            | Continuation of 335. Prerequisite: Permission of instructor. |
| 438        | Jewelry                                          | 3 hrs.
|            | Advanced work in the jewelry processes. Prerequisite: Art 338. |
| 439        | Metalsmithing                                    | 3 hrs.
|            | Continuation of 339 with emphasis on developing awareness and strength in personal direction. Prerequisite: Art 339. |
| 440        | Painting III                                     | 3 hrs.
|            | An intermediate course introducing a variety of contemporary techniques and media. This course emphasizes the matching of technique and medium to the characteristics of the desired image. Prerequisites: Art 310, 340. |
| 441        | Intaglio and Relief                              | 3 hrs.
|            | Advanced exploration of Intaglio and Relief media on a semi-independent level into specific areas appropriate to the individual artist-student's needs. Prerequisite: Art 341. |
| 442        | Watercolor                                       | 3 hrs.
|            | Watercolor problems with the introduction of mixed media. Prerequisite: Art 342. |
| 443        | Lithography                                      | 3 hrs.
|            | Advanced exploration of Lithography on a semi-independent level into specific areas appropriate to the individual artist-student's needs. Prerequisite: Art 343. |
| 445        | Graphic Design                                   | 3 hrs.
|            | The fundamentals and procedures of graphic design for sequential, three-dimensional and serial forms. Problems in design continuity and coordination are explored through editorial, corporate identity, campaign, product, and packaging design. Incorporates investigation of graphic design processes and papers. Prerequisite: Art 345. |
| 448        | Photography                                      | 3 hrs.
|            | Investigations into the application of photography as visual communication for industrial, architectural, journalistic, illustrative, documentary, and experimental purposes. Prerequisite: Art 348. |
| 452        | Preparation for Art Teaching (Secondary)         | 3 hrs.
|            | A teaching laboratory course specifically designed to familiarize the middle and high school art teacher with philosophies, methods and creative teaching procedures using varied media and materials. Emphasis is placed upon qualitative art programming in the secondary school. Prerequisites: Art 352 and Art major status. |
| 500        | Independent Studies                              | 1-6 hrs.
|            | An opportunity for qualified undergraduates to elect an area of special interest and pursue it in depth. Prerequisite: Permission of instructor. Repeatable for credit. |
| 510        | Drawing                                          | 3 hrs.
|            | Continuation of Art 410. Prerequisite: Art 410. Repeatable for credit. |
| 520        | Independent Study in Art History                 | 2-3 hrs.
|            | Problems in art history from ancient times to the present selected by the individual student in consultation with the instructor. Prerequisites: Art 220, 221 and a 500 level course in the area of interest; permission of instructor. Repeatable for credit. |
| 521        | Topics in Art History: Variable Topics           | 3 hrs.
|            | Investigation of changing topics in Art History in class or seminar sessions by advanced students. Course title varies from term to term. Prerequisites: Art 220, 221 for majors. None for other students. Repeatable for credit under a different title. |
525 Seminar in Art
Investigation and discussion of contemporary philosophies of art and their relationship to each student's work. Prerequisite: Junior Art Major. Credit/No Credit only.

529 Advanced Ceramics
Advanced work in ceramics including glaze calculation. Prerequisite: Art 430.

530 Ceramics
Advanced work in ceramics on an independent basis. Prerequisite: Art 529. Repeatable for credit.

531 Sculpture
Continuation of Sculpture 431. Emphasis on bronze and aluminum casting and related techniques. Prerequisite: Art 431. Repeatable for credit.

534 Textiles
Continuation of 434 with advanced work in textile design. Prerequisite: Art 434. Repeatable for credit.

535 Multi-media Art
Continuation of 435. Prerequisite: Permission of instructor. Repeatable for credit.

538 Jewelry
Continuation of 438; advanced work in jewelry processes. Prerequisite: Art 438. Repeatable for credit.

539 Metalsmithing
Continuation of 439. Prerequisite: Art 439. Repeatable for credit.

540 Painting IV
Continuation of Painting III. Prerequisites: Art 410, 440. Repeatable for credit.

541 Printmaking Workshop
An advanced seminar for qualified undergraduates to engage in successful exploration of Printmaking media appropriate to each art-student's esthetic needs. Repeatable for credit. Prerequisite: Art 441 or 443.

542 Watercolor
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: Art 442. Repeatable for credit.

545 Graphic Design
Continuation of Art 445. Prerequisite: Art 445. Repeatable for credit.

548 Photography
Professional development through research in advanced projects. Prerequisite: Art 448. Repeatable for credit.

552 Preparation for Art Teaching
A course dealing with: the current problems in issues on the social scene which affect teaching and learning in the visual arts at all levels of the public school; the creative person, product, process, and press (environment); phenomena of perceptual learning; the actual construction of an operant art curriculum for the elementary, middle, and high school programs. Prerequisites: Art 452, and art major status.

553 Independent Studies in Art Education
An arranged elective course in which the student investigates and researches a problem, a project, or trends in art education. (Not to be taken in place of required art education courses). Prerequisite: 252, 352, 452, 552, and permission of the art education chairman. This course is open to graduate and non-degree level students.

560 Arts Education for the Elementary Teacher
A studio course for the elementary classroom teacher to provide experiences in qualitative elementary art and integrated arts programming in the elementary public school. (Repeatable for credit.)

581 History of Ancient Art
Selected topics from the art and architecture of ancient Egypt, the ancient Near East, the Aegean proto-Greek, Classical and Hellenistic Greece, Etruria, and Rome to the Early Christian period. Prerequisite: Art 200 for Art majors and minors, none for other students.

583 History of Medieval Art
Discussion of art and architecture from the decline of the Roman Empire through the Gothic Period
(3rd-13th Centuries). Prerequisites: Art 220 for Art majors and minors; none for other students.

585 History of Renaissance Art
The development of art through the early Renaissance to the Late Renaissance and Mannerism. Some of the major artists discussed are: Giotto, Donatello, DaVinci, Michelangelo, Titian, Van Eyck, Brueghel and Durer. Prerequisites: Art 220 and 221 for Art majors and minors, none for other students.

586 History of Baroque Art
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
Major developments, such as Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism are discussed. Key figures whose works lie at the roots of modern art are considered in relationship to their times. Prerequisites: Art 220 and 221 for Art majors and minors; none for other students.

589 History of 20th Century Art
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
Major developments in printmaking, including origins of woodcut and engraving. Renaissance and Baroque master etchers and engravers (Durer, Rembrandt). Lithography in the 19th century (Delacroix, Daumier, Toulouse-Lautrec). 20th century printmaking. Prerequisites: Art 220 and 221 for Art majors and minors; none for other students.

593 History of Ameridan Art
Art in the United States from the Colonial Period to the present. Topics discussed are: Colonial portraiture and Copley; the evolution of 19th and 20th century painting, sculpture with emphasis on the work of Stuart, Cole, Bingham, Homer, Eakins, Ryder, Saint-Gaudens, Zorach, Marin, Pollock, and recent developments. Prerequisites: Art 220 and 221 for Art majors and minors; none for other students.

594 History of Afro-American Art
Painting and sculpture in the United States by Americans of African ancestry from the Colonial period to the present. Includes examination of the African art background and the continuation of African art traditions and skills in America. Prerequisites: Art 220 and 221 for Art majors and minors; none for other students; Junior standing required.

596 Survey of World Architecture
A general introduction to the development of architectural styles including European, Asian, and Pre-Columbian. Considers the evolution of styles and their cross-cultural relationships.

597 History of Modern Architecture
Major developments in architecture since c. 1750 with emphasis on late 19th and 20th century developments in domestic and commercial architecture and city planning in the West and in Asia. Special consideration given the works and influences of Wright, Le Corbusier, and Mies van der Rohe.
Programs

Degrees: Bachelor of Arts or Bachelor of Science with major in Dance.

Three majors and five minors are offered in the Department of Dance. They are:

1. Major in Dance (40 credit hours)
   a. Major for students planning to teach Dance
   b. Performance Dance Major: Contemporary Emphasis
   c. Performance Dance Major: Ballet Emphasis

2. Minor in Dance (24 credit hours)
   a. Minor for students planning to teach Dance
   b. Contemporary Dance Minor
   c. Ballet Dance Minor
   d. Jazz Dance Minor
   e. Theatrical Dance Minor

Introducing Dance courses are offered for non-majors/minors. Some of these partly fulfill graduation requirements in Physical Education.

Advising

DANCE DEPARTMENT
WALWOOD UNION: (616) 383-4049

Upon admission to the University, major and minor dance students should complete a declaration form of their major or minor from the secretary in the Department of Dance and be assigned a personal departmental advisor. Each semester, advisors will meet with students to prepare them for their next semester’s registration. Each student should complete his major slip with his advisor during his junior year and secure a graduation audit statement before registration for the final semester.

Miscellaneous

Jury

Teaching Major in Dance: During the sophomore year the student must pass a performance and oral jury and prior to student teaching will pass a performance, oral and teaching jury.

Performance Majors in Dance: During the sophomore year the student must pass an oral and performance jury and during the junior year must pass an oral, performance and choreographic jury.

Minors: Teaching minors must pass an oral and teaching jury prior to student teaching. Performance dance minors have no jury requirement.

Extra-University Study

Students are encouraged to study with professional concert dancers whenever possible and to afford themselves the opportunity for study with artists-in-residence on Western’s campus for which a limited number of scholarships are available.

MAJORS IN DANCE

Teaching Major in Dance

A student must complete all General Education requirements as outlined in this bulletin. Within these requirements, dance majors should select Biology 107, Biology 210 and Teacher Education 230.

Requirements in the Department of Teacher Education shall be completed for this degree as described under Secondary Curriculum in the College of Education.
(Refer to p. 35 in this bulletin regarding certification.)

**Required Courses in Technique**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 223</td>
<td>Contemporary Dance III</td>
<td>1</td>
</tr>
<tr>
<td>DANC 323</td>
<td>Intermediate Contemporary</td>
<td>2</td>
</tr>
<tr>
<td>DANC 423</td>
<td>Advanced Contemporary</td>
<td>3</td>
</tr>
<tr>
<td>DANC 202</td>
<td>Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC 116</td>
<td>Ballet I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 122</td>
<td>Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228</td>
<td>Improvisation in Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

**Required Courses in Theory**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 100</td>
<td>Foundations of Dance Ed.</td>
<td>2</td>
</tr>
<tr>
<td>DANC 182</td>
<td>Introduction to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 282</td>
<td>Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>DANC 341</td>
<td>Creative Movement in the Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>DANC 342</td>
<td>Teaching of Dance in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>DANC 482</td>
<td>Non-literal Approach to Choreography</td>
<td>2</td>
</tr>
<tr>
<td>DANC 500</td>
<td>Dance History &amp; Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PEW 392</td>
<td>Measurement and Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>Either:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEW 294</td>
<td>Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>DANC 290</td>
<td>Kinesiology for the Dancer</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives:** (6-7 hours) From courses in the Dance Department with consent of the dance academic advisor.

**Initial Jury:** During the sophomore year, the student must pass a performance and an oral jury.

**Final Jury:** The student must pass an advanced performance and oral jury, as well as a teaching jury, prior to student teaching.

**University Dancers or Dancer's Workshop:** Student must participate in workshop activities and performance auditions each semester on campus after declaration of major, up to six semesters.

**Performance Dance Major: Contemporary Emphasis**

A student must complete all General Education requirements as outlined in this bulletin. Within these requirements it is suggested that he enroll in Teacher Education 230.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 223</td>
<td>Contemporary Dance III</td>
<td>1</td>
</tr>
<tr>
<td>DANC 323</td>
<td>Intermediate Contemporary</td>
<td>2</td>
</tr>
<tr>
<td>DANC 423</td>
<td>Advanced Contemporary</td>
<td>3</td>
</tr>
<tr>
<td>DANC 102</td>
<td>Jazz Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 116</td>
<td>Ballet I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228</td>
<td>Improvisation in Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 350</td>
<td>Performance</td>
<td>1-2</td>
</tr>
<tr>
<td>Approval of Chairman</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Three hours of credit from any of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 150</td>
<td>Dancer's Workshop</td>
<td>1</td>
</tr>
<tr>
<td>DANC 250</td>
<td>University Dancers</td>
<td>1-3</td>
</tr>
<tr>
<td>DANC 480</td>
<td>University Ballet Theatre Company</td>
<td>2-3</td>
</tr>
<tr>
<td>DANC 550</td>
<td>Western Michigan Repertory Dance Co.</td>
<td>2-3</td>
</tr>
</tbody>
</table>
### Required Courses in Theory

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 182</td>
<td>Introduction to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 282</td>
<td>Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>DANC 482</td>
<td>Non-literal Approach to Choreography</td>
<td>2</td>
</tr>
<tr>
<td>DANC 500</td>
<td>Dance History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>DANC 525</td>
<td>Special Studies in Historical Dance</td>
<td>2</td>
</tr>
<tr>
<td>DANC 548</td>
<td>Dance &amp; the Related Arts</td>
<td>3</td>
</tr>
<tr>
<td>DANC 588</td>
<td>Dance Production</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives:** 8-9 hours from courses in the Dance Department, with consent of the dance academic advisor.

**Initial Jury:** During the sophomore year, the student must pass an oral and performance jury.

**Final Jury:** During the junior year, the student must pass an advanced oral and performance jury, as well as a choreographic jury.

### Performance Dance Major: Ballet Emphasis

A student must complete all General Education requirements as outlined in this bulletin. Within these requirements it is suggested that he enroll in Teacher Education 230.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 216</td>
<td>Ballet III</td>
<td>1</td>
</tr>
<tr>
<td>DANC 316</td>
<td>Intermediate Ballet</td>
<td>2</td>
</tr>
<tr>
<td>DANC 416</td>
<td>Advanced Ballet</td>
<td>3</td>
</tr>
<tr>
<td>DANC 102</td>
<td>Jazz Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 123</td>
<td>Contemporary Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 128</td>
<td>Pantomime</td>
<td>1</td>
</tr>
<tr>
<td>DANC 227</td>
<td>Character Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 327</td>
<td>Ballet for the Male Dancer</td>
<td>1</td>
</tr>
<tr>
<td>DANC 425</td>
<td>Special Studies in the Ballet</td>
<td>1-3</td>
</tr>
<tr>
<td>DANC 427</td>
<td>Pointe Technique</td>
<td>1</td>
</tr>
<tr>
<td>DANC 527</td>
<td>Pas de Deux</td>
<td>1</td>
</tr>
<tr>
<td>DANC 150</td>
<td>Dancer’s Workshop</td>
<td>1</td>
</tr>
<tr>
<td>DANC 250</td>
<td>University Dancers</td>
<td>1-3</td>
</tr>
<tr>
<td>DANC 480</td>
<td>University Ballet Theatre</td>
<td>2-3</td>
</tr>
<tr>
<td>DANC 550</td>
<td>Western Michigan Repertory Dance</td>
<td>2-3</td>
</tr>
</tbody>
</table>

### Required Courses in Theory

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 182</td>
<td>Intro. to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 500</td>
<td>Dance History &amp; Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>DANC 525</td>
<td>Special Studies in Historical Dance</td>
<td>2</td>
</tr>
<tr>
<td>DANC 548</td>
<td>Dance &amp; the Related Arts</td>
<td>3</td>
</tr>
<tr>
<td>DANC 588</td>
<td>Dance Production</td>
<td>3</td>
</tr>
</tbody>
</table>

Two hours credit from any of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 382</td>
<td>Choreography for the Ballet</td>
<td>2</td>
</tr>
</tbody>
</table>
Dance

DANC 482 Non-literal Approach to Choreography .......................... 2  Prereq: 182 or consent
DANC 582 Dance Thesis ..................................................... 2  Prereq: consent of advisor

Electives: 10 hours from courses in the Dance Department with consent of the dance academic advisor.
Initial Jury: During the sophomore year, the student must pass an oral and performance jury in the ballet.
Final Jury: During the junior year, the student must pass an advanced oral and performance jury in the ballet.

MINORS IN DANCE

Teaching Minor in Dance

Students must meet all General Education requirements as outlined in this bulletin. Within these requirements it is suggested that dance minors select Biology 107, 210 and Teacher Education 230.

A student within this minor should be an education major within another subject area.

Required Courses in Technique:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 223 Contemporary Dance III</td>
<td>1</td>
</tr>
<tr>
<td>DANC 323 Intermediate Contemporary</td>
<td>2</td>
</tr>
<tr>
<td>DANC 423 Advanced Contemporary</td>
<td>3</td>
</tr>
<tr>
<td>DANC 202 Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC 122 Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228 Improvisation in Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

Required Courses in Theory:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 100 Foundations of Dance Ed.</td>
<td>2</td>
</tr>
<tr>
<td>DANC 182 Intro. to Choreography</td>
<td></td>
</tr>
<tr>
<td>DANC 282 Dance Accompaniment</td>
<td>2</td>
</tr>
<tr>
<td>PEW 392 Measurement &amp; Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>PEW 294 Analysis of Movement</td>
<td>2</td>
</tr>
<tr>
<td>DANC 290 Kinesiology for the Dancer</td>
<td>3</td>
</tr>
</tbody>
</table>

Either:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 341 Creative Movement for the Elementary School</td>
<td>4</td>
</tr>
<tr>
<td>DANC 342 Teaching of Dance in the Secondary School</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives: To complete a 24-hour minor, with consent of the dance academic advisor.
Jury: The student must pass an oral and teaching jury prior to student teaching.

University Dancers or Dancer's Workshop: Student must participate for two (2) semesters.

Contemporary Dance Minor

Each student must meet all General Education requirements as outlined on page 21 of this bulletin. Within these requirements it is suggested he enroll in Teacher Education 230.

Required Courses in Technique:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 223 Contemporary Dance III</td>
<td>1</td>
</tr>
<tr>
<td>DANC 323 Intermediate Contemporary</td>
<td>2</td>
</tr>
<tr>
<td>DANC 423 Advanced Contemporary</td>
<td>3</td>
</tr>
<tr>
<td>DANC 102 Jazz Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228 Improvisation in Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

Prereq: 124 or consent of advisor
Prereq: 223
Prereq: 323
Prereq: 102 or consent of advisor
Prereq: 233
Prereq: 223 or consent of advisor

Prereq: Biology 210
Prereq: Biology 210

Prereq: 124 or consent of advisor
Prereq: 223
Prereq: 323
Prereq: 223 or consent of advisor

College of Fine Arts

Either:
DANC 122 Recreational Dance ........................................... 1
DANC 116 Ballet I ......................................................... 1

Either:
DANC 150 Dancer’s Workshop ............................................. 1
DANC 250 University Dancers ............................................. 1

Required Courses in Theory
DANC 182 Intro. to Choreography ...................................... 3
DANC 282 Dance Accompaniment ......................................... 2
DANC 548 Dance & the Related Arts ................................... 3

Either:
DANC 500 Dance History & Philosophy ................................ 3
DANC 525 Special Studies in Historical Dance Styles ............... 2

Electives: 3-4 hours from courses in the Dance Department with consent of the dance academic advisor.

Ballet Minor

Each student must meet all General Education requirements as outlined on page 21 of this bulletin. Within these requirements it is suggested he enroll in Teacher Education 230.

Required Courses in Technique: credit hours
DANC 216 Ballet III ...................................................... 1
Prereq: 117 or consent of advisor
DANC 316 Intermediate Ballet ........................................... 2
Prereq: 216 or consent of advisor
DANC 416 Advanced Ballet ................................................ 3
Prereq: 216 or consent of advisor

Either:
DANC 102 Jazz Dance I .................................................. 1
DANC 123 Contemporary Dance I ....................................... 1
Prereq: 216 or consent of advisor
Two hours credit from any of the following:
DANC 128 Pantomime ..................................................... 1
Prereq: 216 or consent of advisor
DANC 227 Character Dance ................................................ 1
Prereq: 216 or consent of advisor
DANC 327 Ballet for the Male Dancer ................................... 1
Prereq: 216 or consent of advisor
DANC 425 Special Studies in the Ballet ................................ 1-2
Prereq: consent of advisor
DANC 427 Pointe Technique .............................................. 1
Prereq: consent of advisor
DANC 527 Pas de Deux .................................................... 1
Prereq: consent of advisor

Either:
DANC 150 Dancer’s Workshop ............................................. 1
Prereq: audition only
DANC 250 University Dancers ............................................. 1

Required Courses in Theory Credit Hour
DANC 548 Dance and the Related Arts ............................... 3
Prereq: 500, 525 or consent of advisor
DANC 588 Dance Production .............................................. 3

Either:
DANC 500 Dance History & Philosophy ................................ 3
DANC 525 Special Studies ................................................ 2

Electives: 5-6 hours from courses in the Dance Department, with consent of the dance academic advisor.
### Jazz Dance Minor

Each student must meet all General Education requirements as outlined on page 21 of this bulletin. Within these requirements it is suggested he enroll in Teacher Education 230.

#### Required Courses in Technique

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 202 Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC 302 Intermediate Jazz</td>
<td>2</td>
</tr>
<tr>
<td>DANC 303 Jazz Workshop</td>
<td>2</td>
</tr>
<tr>
<td>DANC 123 Contemporary Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 225 Special Studies in Jazz (Tap)</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228 Improvisation in Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

Either:
- DANC 116 Ballet I
- DANC 122 Recreational Dance

Either:
- DANC 150 Dancer’s Workshop
- DANC 250 University Dancers

#### Required Courses in Theory

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 182 Intro. to Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 588 Dance Production</td>
<td>3</td>
</tr>
</tbody>
</table>

Either:
- DANC 500 Dance History & Philosophy
- DANC 525 Special Studies in Historical Dance Styles

Electives: 5-6 hours from courses in the Dance Department, with consent of the dance academic advisor.

### Theatrical Dance Minor

Each student must meet all General Education requirements as outlined on page 21 of this bulletin. Within these requirements it is suggested he enroll in Teacher Education 230.

#### Required Courses in Technique

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 102 Jazz Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 116 Ballet I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 122 Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>DANC 123 Contemporary Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC 228 Improvisation in Dance</td>
<td>1</td>
</tr>
</tbody>
</table>

Two hours from the following:
- DANC 117 Ballet II
- DANC 124 Contemporary Dance II
- DANC 202 Jazz Dance II
- DANC 216 Ballet III
- DANC 223 Contemporary Dance III
- DANC 302 Intermediate Jazz

Either:
- DANC 128 Pantomime
- DANC 225 Special Studies in Jazz (Tap)
**College of Fine Arts**

**Required Courses in Theory**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 182</td>
<td>Intro. to Choreography</td>
<td>3</td>
<td>Prereq: consent of advisor</td>
</tr>
<tr>
<td>DANC 328</td>
<td>Stage Dance Forms</td>
<td>2</td>
<td>Prereq: 122 or 227 and either 182 or CAS 320</td>
</tr>
<tr>
<td>DANC 525</td>
<td>Special Studies in Historical Dance Styles</td>
<td>2</td>
<td>Prereq: 328 or consent of advisor</td>
</tr>
<tr>
<td>DANC 528</td>
<td>Musical Theatre Workshop</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DANC 588</td>
<td>Dance Production</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

One hour credit from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 350</td>
<td>Performance</td>
<td>1</td>
<td>Prereq: consent of advisor</td>
</tr>
<tr>
<td>DANC 400</td>
<td>Practicum</td>
<td>1</td>
<td>Prereq: consent of advisor</td>
</tr>
<tr>
<td>DANC 582</td>
<td>Thesis</td>
<td>1</td>
<td>Prereq: consent of advisor</td>
</tr>
</tbody>
</table>

**Electives:** 2 hours from courses in the Dance Department, with consent of the dance academic advisor.

**University Dancers or Dancer's Workshop:** The student must participate for two (2) semesters.

**FINE ARTS MINOR**

The Department of Dance is one of the academic units participating in the Fine Arts Minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes. For full information, see p. 511 of this bulletin.

**DANCE DEPARTMENT COURSE OFFERINGS**

100  Foundations of Dance Education  
Investigation of selected topics relative to the prospective dance educator.  

102  Jazz Dance I  
An introduction to jazz technique. The emphasis is placed on movement isolation, percussive dynamics, and strong rhythmic awareness.  

112  Social Dance Forms  
Attention is given to efficient body mechanics, rhythmic structure and basic dance steps. A study of traditional ballroom dance steps, mixers, and the dance styles of today.  

116  Ballet I  
An introduction to ballet technique for the beginning student  

117  Ballet II  
A development of ballet technique above the introductory level. Ballet combinations are learned to emphasize sequence of material used. Prerequisite: 116 or consent of advisor.  

122  Recreational Dance  
Investigation of folk, square and social forms of dance, with a concentration on overlapping dance skills.  

123  Contemporary Dance I  
An introduction to the art of contemporary dance, primarily concerned with the development of technique.  

124  Contemporary Dance II  
The development of contemporary dance technique above the introductory level. Prerequisite: 123 or consent of advisor.  

128  Pantomime  
The study of movement in its relationship to the dramatic situation.  

135  Movement Activities in Education  
A study of movement activities and methods applicable to various types of educational experiences and age levels.
150 Dancer's Workshop
Practical experience in the development of technique and performance skills for repertory and quick study. Attendance required prior to 250 University Dancers' auditions. When a student has participated 2 full semesters, 1 hour of credit will be granted. May be repeated for credit up to 4 hours.

182 Introduction to Choreography
The study of, and experimentation in, compositional principles of dance. Competency in contemporary dance technique and improvisation is a suggested preparation. Prerequisite: consent of advisor.

200 Dance Notation
A study of labanotation — a practical system of recording human movement for purposes of analysis and reading. The course includes reading (interpretation), theory and practice. Prerequisite: 216, 282 and 323.

202 Jazz Dance II
Further development of the jazz dancer in the 1st year level. Aspects of performance techniques are introduced with an increased emphasis in style. Prerequisite: 102 or consent of advisor.

204 Teaching of Dance in the Elementary School
Concerned with methods and techniques of teaching dance to elementary age children. Laboratory experience provides an opportunity for practical application. Should not be elected by students taking DANC 341.

216 Ballet III
An introduction to ballet technique for the beginning student. Prerequisite: 117 or consent of advisor.

223 Contemporary Dance III
The exploration of contemporary dance technique for the student who has experience in beginning levels of this dance form. Prerequisite: 124 or consent of advisor.

225 Special Studies in Jazz
Practical studies in jazz not offered as separate courses. Examples of possible topics include the following: tap dance; Afro-American dance. May be repeated for credit up to 6 hours.

227 Character Dance
A course designed to train the dancer in the theatrical folk dance of European countries. Prerequisite: 216 or consent of advisor.

228 Improvisation in Dance
The extemporaneous exploration of motion through neuro-muscular logic. Interaction resulting from such stimuli as sound, space, force, props and ideas, provides a deeper understanding of the temporal and spatial relationships of the self to others through motion. Prerequisite: 223 or consent of advisor.

250 University Dancers
Open to all University students by application. Audition for this group will include performance in various dance styles. Studio Evenings and Annual Concert of Dance experiences will take place through further choreographic and rehearsal auditions. When a student has participated 2 full semesters, one hour credit will be granted. May be repeated for credit up to 4 hours. Prerequisite: By audition only.

282 Dance Accompaniment
The study of the visual and rhythmic analysis of the composition of dance movement, the creation of new instruments and the exploration of new ways to use them for accompanying movement. The culmination of the course is an original musical composition for dance. Prerequisite: 323

290 Kinesiology for the Dancer
This course is designed for the dance student who does not have a major or minor in Physical Education. It is concerned with analysis of movement from an anatomical and mechanical point of view, with special attention given to the problems of dance technique. Prerequisite: Biology 210.

300 Seminar in Dance
To be attended by students enrolled in DANC 582 or elected for one hour credit. The content of the seminar varies to provide an opportunity for qualified students to examine and discuss areas of common interest within the discipline.
302 Intermediate Jazz
Further development of a jazz technique on the intermediate level, emphasizing movement isolations, sequential coordinations, dynamics, aspects of performance and the development of ensemble awareness. Prerequisite: 202

303 Jazz Workshop
Provides an opportunity to create and perform jazz compositions on the pre-professional level in different jazz styles. Intensive training in ensemble awareness is emphasized. May be repeated for credit. Prerequisite: 302.

316 Intermediate Ballet
Ballet technique emphasizing a great variety of steps. Classical technique and its application to movement in combinations is stressed. Prerequisite: 216 or consent of advisor.

323 Intermediate Contemporary Dance
The study of contemporary dance technique designed for the student seeking greater proficiency and versatility. Prerequisite: 223.

325 Special Studies in Contemporary Dance
A study of dance styles not included as a separate course. Also offered with a visiting instructor or artist-in-residence. Includes a style which would otherwise not be available.

327 Ballet for the Male Dancer
The specified training in the tour de force of the male dancer. Prerequisite: 216 or consent of advisor.

328 Stage Dance Forms
Investigation and practice of dance as it has been and is being used for theatre presentation such as in vaudeville, plays, musical comedies. Prerequisite: 122 or 227 and either 182 or CAS 320.

341 Creative Movement in the Elementary School
This course is open to students in the Integrated Creative Arts Minor and explores the principles, materials and techniques of creative movement for elementary school children. A concentrated study is made of how children discover movement and explore problem-solving within their own physical abilities. Lecture, participation, observation and laboratory experience are provided.

342 Teaching of Dance in the Secondary School
An investigation into procedures for presentation of information related to the dance forms most commonly taught at the secondary school level. Prerequisite: 122, 202 and 323.

344 Dance for the Exceptional Child
Study of movement possibilities and their use in dance therapy. Emphasis on methods, techniques, and practical laboratory experience.

350 Performance
An experience in student-choreographed or faculty-choreographed concert material. Registration to occur after performance has been completed. May be repeated for credit up to 8 hours. Prerequisite: consent of advisor.

382 Choreography for the Ballet
The study and practical application of ballet movement into a finished work. Prerequisite: 182 and 316 or consent of advisor.

400 Practicum
An individual approach to a practical field experience in dance. Through reading and practice the student will have an opportunity to explore a topic or problem of interest in the dance areas. Prerequisite: consent of advisor.

416 Advanced Ballet
Ballet technique for the more experienced student in the classical idiom. Style within the technique is strongly emphasized. May be repeated for credit. Prerequisite: 316 or consent of advisor.

423 Advanced Contemporary Dance
The advanced study of contemporary dance technique with emphasis on ensemble awareness. May be repeated for credit. Prerequisite: 323.
425 Special Studies in Ballet
Studies in ballet not offered as a separate course. Examples of possible topics for study include the following:

a. Survey and Selection of Music for the Ballet
b. Ballet Repertory
c. Opera Ballet
d. Pre-Classic Dance Forms

Repeatable for credit up to 6 hours. Prerequisite: consent of advisor.

427 Pointe Technique
The specialized training of the female dancer in the art of pointe work. Prerequisite: 316 or consent of advisor.

450 Repertory
A study of, and experience in, previously choreographed dances with an intensive analysis of style, structure and form. May be repeated for credit. Prerequisite: 302 and 323.

470 Ballet Company Class
Designed for the ballet student at the professional level. An advanced technique and proficiency in performing is necessary. All ballet dancers who are members of the University Ballet Theatre Company shall take this as a required technique class. May be repeated for credit up to 8 hours. Prerequisite: consent of Ballet Master.

480 University Ballet Theatre Company
Comprised of members of the performing ballet group of the Dance Department. Dancers will have experience performing and rehearsing in a professional company environment. Members of the company will be selected by audition or permission of the ballet master, and shall attend DANC 470. Repeatable for credit up to 8 hours. Prerequisite: by audition or consent of Ballet Master.

482 Non-literal Approach to Choreography
A non-literal approach to design in dance through the study of varied use of time, space and dynamics in solo and group choreography. Prerequisite: 182 or consent of advisor.

500 Dance History and Philosophy
The history of Dance through the philosophies of man from primitive cultures to the contemporary concert dancer.

525 Special Studies in Dance History
Studies in dance history not offered as separate courses. Examples of topics for study include the following: Afro-American Dance; Contemporary Dance in the 20th Century; Classic and Romantic Ballet; Vaudeville, Broadway and the Movies; Dance in the East and Far East; Survey of Dance as Social Comment.

527 Pas de Deux
The training of ballet dancers in the art of partnering. Prerequisite: consent of advisor.

528 Musical Theatre Workshop
Designed for students from dance, music and theatre orientations who wish to learn the concepts, methods, techniques, organizational and communicational approaches useful in creating effective production of musical theatre. An understanding of the integration of dance, music and theatre elements is provided through lectures, discussions, demonstrations and student-directed scenes from musical theatre pieces. Course is team-taught by faculty members from the departments of Dance, Music and Theatre. Prerequisite: 328 or consent of advisor.

540 Repertory Company Class
Designed for the dance student at the professional level. An advanced technique in ensemble performing is necessary. All members of the Western Michigan Repertory Dance Company shall take this as a required technique class. Repeatable for credit up to 4 hours. Prerequisite: Western Michigan Repertory Dance Company members or consent of Company Director.

548 Dance and the Related Arts
Related study of cross-sections of art disciplines at various points in the historical development of man. Assumes prior knowledge of historical and philosophical development of at least one of the disciplines. Prerequisite: 500, 525 or consent of advisor.
550 Western Michigan Repertory Dance Company 2-3 hrs.
The Company is a major performing ensemble which provides master classes, lecture-demonstrations and concerts in various dance styles on and off campus. The nature of these activities requires that members show proficiency in the areas of performance, improvisation, teaching, public speaking and composition. Membership involves a series of auditions and is open only to members of the University Dancers. Members shall attend DANC 540. May be repeated for credit up to 8 hours. Prerequisite: by audition only.

582 Graduating Presentation 1-3 hrs.
Preparation and presentation of an advanced project in dance, to be either a written paper or the performance or choreography of a major dance work. An oral examination is included. To be taken by B.F.A. candidates in their senior year. Prerequisite: consent of advisor.

588 Dance Production 3 hrs.
Study of the production aspects of dance and related types of performance situations. Aspects of management including budget, publicity and programming as well as technical aspects of scenery, lighting, sound, costuming and make-up are considered.

598 Readings in Dance 1-4 hrs.
Advanced students with good academic standing may elect to independently pursue a program of readings in areas of special interest. Prerequisite: consent of advisor.

599 Non-reading Independent Study in Dance 1-4 hrs.
Advanced students with good academic standing may elect to independently pursue the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: consent of advisor.
INTRODUCTION

In America today the responsibility to carry on a vital tradition of the musical profession falls increasingly upon the university. The music faculty of Western Michigan University seeks to fulfill this responsibility through creative performance, composition, scholarship, and community service. Above all, we strive in our teaching to produce students who share the excitement of music as a living art, who possess the wisdom to appreciate and the courage to defend the highest artistic ideals, who will bring the finest in music to their fellow men with skill and dedication.

The Department of Music is a member of the National Association of Schools of Music. The requirements for entrance and for graduation are in accordance with the published regulations of NASM and the National Council for Accreditation of Teacher Education. The Department's program in music therapy is certified by the National Association of Music Therapists.

PROGRAMS

The Department of Music offers courses of study which lead to the Bachelor of Music, the Bachelor of Science, and the Bachelor of Arts degrees. The Bachelor of Music degree is highly professional, offering the student an opportunity to elect a major in Applied Music, Composition, Music Education, Music History, Music Theatre, Music Theory, and Music Therapy. The Bachelor of Arts degree affords the student the opportunity to major in music and minor in some non-music area of study. All requirements for these degrees in music may be completed within the 122 semester-credit-hour minimum which is required for a degree at Western.

Three majors carry certification upon completion of degree requirements: the Bachelor of Music with a major in Music Therapy carries certification as a Registered Music Therapist upon completion of a six-month internship; the Bachelor of Music with a major in Music Education carries certification to teach music in the public schools, grades K-12; the Bachelor of Science carries certification to teach in the elementary classroom and/or to teach as a music specialist in the elementary classroom, grades K-8.

A music minor program is offered through the Department of Music for students who have a background in music and who wish to extend their formal education in that field of study. Two programs of study lead to a music minor, one for the elementary education student (24 hours), and one for the student who is not seeking teaching certification (18 hours). Those students seeking a music minor must secure a minor slip from the Student Advisor in the Department of Music in order that the declaration of the minor be official. Official declaration of the music minor must be made prior to registration for the final eight hours of music course-work which will apply to that minor. The student who does not read music will be required to complete MUS 159 — Music Fundamentals before commencing course-work leading to the music minor.

The Department of Music is one of the academic units participating in the Fine Arts minor, a program available for students who want to increase their appreciation of the arts and develop some understanding of aesthetics and artistic processes.
College of Fine Arts

ADMISSIONS

Admission to Western Michigan University is granted only by the Admission Office for undergraduate students. Application forms may be obtained by writing to the Admissions Office.

Enrollment in a music curriculum is contingent upon admission to the University and approval of the Department of Music. Department approval is obtained through the music audition and testing program. The student may proceed by making application to the University at which time he will be notified about the audition and testing program in the Department of Music, or he may request an opportunity to audition and be tested prior to making application to the University by obtaining an Audition Request Form from the Department of Music. The student is urged to commence application procedures early in his senior year, or in his final year at a community college.

Approval to become a music major is based upon the student's background in music, as demonstrated in his major instrument or voice, the student's musical aptitude, as measured by the Gaston Test of Musicality, and upon his academic abilities, reflected in his grade-point-average and various scholastic test scores as they are available. Efforts are made to evaluate the student on the basis of his musical potential and not upon his desire to enter a specific professional area of music. All students commence a major in music with common "core" requirements and are, therefore, considered for entry into the major with this common basis in mind.

Students who are considering becoming a music major should have a good background in applied music (instrumental or vocal study and performance). Preparation in piano, as a secondary instrument, is also helpful to the student, but not a requisite. Prior to entry into Basic Music 160, which is required of all music majors in their first year of study, the student must demonstrate his knowledge of fundamentals. A fundamentals examination will be administered at the time the student is initially advised about classes he must take.

The Department of Music has been gratified with its audition and testing program. The program has helped many students make a more intelligent choice regarding their educational career. Many have been helped toward avoiding entering a field in which they do not have the necessary foundation or talent to be successful, while others have been encouraged to pursue an education in music in order to fully develop talents which they have discovered through the audition and tests which were administered. Further information regarding admission to a music curriculum may be obtained by writing the Music Student Advisor in the Department of Music. The Department welcomes the opportunity to confer with prospective students, parents, and counselors regarding educational goals and plans.

TRANSFER CREDIT

Music credit from another institution is normally acceptable providing course substance is equivalent to a similar course required in the student's curriculum at Western and the student has earned a grade of C or better in that course. No credit hours exceeding the number granted for parallel work at Western will be accepted for transfer from another institution. In order to earn a Bachelor of Music degree from Western Michigan University, a student may not transfer more than thirty-three (33) semester credit hours in music courses taken at a non-four-year institution toward music curriculum requirements. If the "Performance Electives" requirement has not been completed at the time of the transfer, at least two of the remaining hours must be completed in major ensembles. Advisors will assist transfer students in finding ways of applying credit hours, not applicable to music curriculum requirements, toward General Education electives or free electives.

All music credit to be transferred is tentative and is conditioned upon the successful completion of one semester's work at Western. Three areas — applied music, theory, and piano proficiency for non-pianists — are, by nature, skills courses which require competency at one level before the student is ready for the next level of course in a sequence. This competency can only be determined by demonstration and/or examination which precludes the automatic transfer of credit in these areas.

When a transfer student is auditioned for approval to become a music major he will be placed at an applied music level which is equivalent to his proficiency. This level is defined in terms of year and semester so that the student is enabled to compute the amount of applied credit that is being transferred. Piano proficiency examinations may also be administered at the time of the admission audition and testing program for the non-pianist who wishes to transfer credit in secondary piano study.

If the transfer student has basic theory courses which he wishes to have transferred toward curricular requirements, he will have an opportunity to demonstrate competence through examinations which will be
Music administered in the advising process. Areas of basic theory for which examinations may be taken are: Aural Comprehension, Fundamentals, Harmony, Forms, and 20th Century Techniques.

For further information regarding the transfer of music credits contact the Music Student Advisor in the Department of Music.

The transfer student who has completed two years of music education prior to entry to Western Michigan University will automatically be accepted in the major of his choice if he qualifies under the following guidelines:

1. Providing he earns a minimum grade-point-average of 3.25 in the first two courses taken in the area of his major if he elects Applied Music, Music History, Music Theory or Composition.
2. The student electing a major in Music Education or Music Therapy must earn a minimum grade-point-average of 3.0 in course-work in the area of his major in order to be recommended for his internship (Music Therapy) or for a directed teaching assignment (Music Education).
3. The transfer student who elects Music History, Music Theory, Composition, Applied Vocal or Secondary Music-Vocal must take a Piano Placement Examination before admission to those curricula in order to project the feasibility of the completion of the keyboard proficiency requirements in those curricula.

ADVISING

Advisors: Donald Bullock and Donald Para
Appointments: 104 Maybee Hall (616-383-0913)

The Department of Music provides counseling for all music students through a full-time student advising service. The Music Student Advising Office provides one-stop advising for all students in a music curriculum. Advice on general education and major/minor requirements can be provided by consulting with a single Music Student Advisor. Only when a student pursues a minor outside of the Department of Music is an appointment required with another advisor.

The office of the Music Student Advisor is primarily maintained for the purpose of providing academic counseling. Personal guidance is often provided by the Advisor, and matters which are beyond his/her qualifications will be referred to persons and offices on- and off-campus which are capable and qualified to assist.

Graduation requirements must be completed as stipulated in the University Catalog which is in effect at the time the student is admitted. Requirements may not be added in the midst of the student's enrollment, but he/she may take advantage of course and curriculum alterations which may occur while work on the degree is in progress if these changes enhance his/her education. Each student is responsible for knowing the requirements which must be completed for the degree, and for taking the steps necessary for completion of requirements. All music students are urged to take advantage of the advising services in the Department of Music for assistance in making educational choices and for interpretation of requirements as they are stated in the Catalog.

MISCELLANEOUS

Special (non-academic) requirements for graduation fall in the area of recital performance and recital attendance. Since these are non-academic areas, completion of these requirements is not reflected on the student's transcript and, therefore, requires graduation clearance from the Music Student Advisor.

The requirement for recital attendance: All music majors are required to attend Music Convocations each semester they are in residence. Each student is allowed to be absent from one Convocation per semester. Without exception, only one absence per semester will be excused. Any absences beyond "one" will be recorded in the student's file. Absences must be made up by attending other Department of Music concerts and recitals in which the student is not a participant. Absences in the student's record which have not been made up will prevent him from graduation.

The requirement (s) for recital performance are as follows:
1. Bachelor of Music candidates with a major in Applied Music must present a Senior Recital which is approved by and acceptable to the faculty of the respective applied area.
2. Bachelor of Music candidates with a major in areas other than Applied Music must present at least one successful solo performance on a student recital (scheduled public recitals, convocations, or area recitals) prior to graduation. Individual students may be required to give additional performances on student recitals at the discretion of their private teachers.

Prerequisite to performance on any student recital shall be a recommendation by the student's applied teacher. Prerequisite to the presentation of Junior and/or Senior Recitals is an approved hearing of that
College of Fine Arts

recital by the student's area faculty. Recitals should be scheduled in the Office for Concerts and Special Events as far in advance as possible.

**Competency Examinations** are available to students who qualify for advanced placement or a waiver of requirements in music courses, even if no formal education at the college level may have been completed. Common areas of competency are applied music, secondary instruments, and music theory. Regular examinations are scheduled in these areas to allow qualified students to demonstrate competency.

In the event that a student demonstrates competency in an area of study which is required in the curriculum, he/she may elect two alternatives for fulfilling degree requirements: (1) request a waiver of the requirement and elect an equivalent number of hours in music courses of his/her choice; or (2) receive credit for the course(s) in which competency is demonstrated by paying an examination fee according to the schedule approved by the Board of Trustees.

**Scholarships and Grants in Music** are awarded each year by the Department of Music. Awards are made on the basis of musical talent and/or scholastic achievement. New students are eligible for consideration for these stipends at the time of their audition for admission to the music curriculum. Currently enrolled students apply and audition for awards and renewal of awards during the Winter Semester.

For a listing of music grants and scholarships and application forms, contact the Student Advisor in the Department of Music. Early application for awards is advised.

Music majors may also be eligible for any number of general University scholarships as described in the **General Information Bulletin**.

**PROGRAMS OF STUDY**

When a student is admitted to the music curriculum he has not yet declared a major area of concentration. Before any student may declare his major area of concentration he must complete requirements in the music "core", which are courses required commonly of all music majors, regardless of professional or vocational interests in the field. Core requirements will normally be taken in the first two years. For students who are interested in an in-depth introduction to the two professions for which this university offers certification courses, an opportunity will be provided for them to register for **FIELD EXPERIENCE** courses in Music Education and Music Therapy.

**Core Requirements - Bachelor of Music Degree**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Convocation 101 (7 semesters)</td>
<td>0</td>
</tr>
<tr>
<td>*Applied Music 200, 300 (see Electives below)</td>
<td>14</td>
</tr>
<tr>
<td>Basic Music 160, 161, 260, 261</td>
<td>11</td>
</tr>
<tr>
<td>Aural Comprehension 162, 163, 259</td>
<td>3</td>
</tr>
<tr>
<td>Theory Elective (see Electives below)</td>
<td>2</td>
</tr>
<tr>
<td>*Music History and Literature 270, 261, (see Electives below)</td>
<td>8</td>
</tr>
<tr>
<td>*Performance Elective (see Electives below)</td>
<td>8</td>
</tr>
<tr>
<td>Piano Class 120, 121</td>
<td>2</td>
</tr>
<tr>
<td>Conducting 215</td>
<td>1</td>
</tr>
<tr>
<td>General Education electives</td>
<td>35</td>
</tr>
<tr>
<td>Major Area of Concentration</td>
<td>13-41</td>
</tr>
<tr>
<td>Free electives to make a minimum total of 122 semester credit hour</td>
<td></td>
</tr>
<tr>
<td>Music Clearance (verification of completion of recital performance and attendance requirements)</td>
<td></td>
</tr>
<tr>
<td>*Music Therapy majors are required to complete only 8 hours of Applied Music 200 (including successful completion of a Sophomore Hearing) 6 hours of Music History 270-271, and 4 hours of Performance Electives.</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

**Performance electives** may be selected from the following list of courses:

1. All students are required to elect four semesters of a major ensemble.
3. The remaining four semester hours of performance electives may be selected from the following: 106, 107, 108, 109, 110, 111, 112, 114, 119, 190, 191, 210, 211, 212, 218, 219, 300, 317, 517

The student is expected to complete one performance elective during each term of enrollment.

**Theory electives** may be selected from the following: 262, 360, 361, 366, 367, 466, 518, 560, 561, 566, 567, 568, 569
Music History/Literature electives may be selected from the following list of courses: 350, 352, 375, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581

Applied Music Option
Six hours of Applied Music may be used in the junior and senior years to support the student's professional major, providing he has passed his "Sophomore Hearing" and has the joint approval of his performance area and his major area. Students are encouraged to invent independent study projects which may fulfill elective requirements in the above categories. The student must secure approval of a faculty member to supervise the project and of the Music Advisor for application of the project toward curricular requirements.

Electing a Major Area of Study - Bachelor of Music Degree
Music majors will elect a major area of concentration in their fourth semester of study. All areas of concentration are open to the music major and he may freely elect the area of his choice by completing a form provided by the Music Student Advisor. The student will automatically be accepted in the area of his choice if he qualifies under the following guidelines:
1. Providing the student has a minimum grade-point-average of 3.25 in "Core" music courses - required in the first two years.
2. Providing he has a minimum grade-point-average of 3.25 in "Core" courses which are in the same area as his elected major (i.e., Applied Music Major must have at least a 3.25 average in applied music courses required in the first two years; Music History majors must have at least a 3.25 average in music history and literature courses required in the first two years; Music Theory-3.25 in theory courses; Composition - 3.25 in composition courses.)
3. Since no courses "in the area of the elected major" are required in the first two years in Music Education and Music Therapy, a student may freely elect either of these curricula, but he must earn a minimum grade-point average of 3.0 in course-work, in the area of his major in order to be recommended for his internship (Music Therapy) of for a directed teaching assignment (Music Education).

If the student does not automatically qualify for the area of his choice according to the guidelines outlined above, his application will be submitted to the faculty committee in the area of his choice for approval. In the event that approval is denied and the student does not qualify for any other major area of concentration, the Student Advisor will outline the course-work in music which may be applied toward the Bachelor of Arts degree with a major in music.

Music Education: Instrumental Major
Grants certification to teach music at any grade level (K-12)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Methods (elect from: 240, 344, 345, 346)</td>
<td>4</td>
</tr>
<tr>
<td>Instrumental Conducting &amp; Literature 331</td>
<td>2</td>
</tr>
<tr>
<td>Instrument Classes (elect from: 128-139, 227-229)</td>
<td>6</td>
</tr>
<tr>
<td>Teacher Education 250, 301</td>
<td>7</td>
</tr>
<tr>
<td>Directed Teaching Block 410, 450, 470</td>
<td>14</td>
</tr>
</tbody>
</table>

Before the student will be recommended for Directed Teaching he/she must have completed courses in the major with a minimum G.P.A. of 3.0. The application for a directed teaching assignment must be made in the Directed Teaching Department prior to one full semester before the assignment is to begin.

Wind/Percussion students must complete two semesters of Marching Band 109 in fulfilling Physical Education requirements.

Music Education: Vocal Major
Grants certification to teach music at any grade level (K-12)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Methods (elect from: 240, 340, 347)</td>
<td>4</td>
</tr>
<tr>
<td>Choral Conducting &amp; Literature 330</td>
<td>2</td>
</tr>
<tr>
<td>*Piano Class 320-321</td>
<td>2</td>
</tr>
<tr>
<td>Professional Electives (elect from 230-232, Piano, 545)</td>
<td>4</td>
</tr>
<tr>
<td>Teacher Education 250, 301</td>
<td>7</td>
</tr>
<tr>
<td>Directed Teaching Block 410, 450, 470</td>
<td>14</td>
</tr>
</tbody>
</table>

Before the student will be recommended for Directed Teaching he/she must have completed courses in the major with a minimum G.P.A. of 3.0. The application for a directed teaching assignment must be made in the Directed Teaching Department prior to one full semester before the assignment is to begin.

*Students whose principal applied instrument is piano or organ must substitute Voice Class 122-123.
Music Education: Classroom Music

Grants certification to teach music at any grade level (K-12)

Note: This program stresses the non-performance aspects of music education K-12. It is not designed to prepare conductors of vocal and instrumental ensembles at the secondary level.

Credit Hours

Music Methods 240, 373 ......................................................... 6
Professional electives (elect from; 122, 126, 244, 279, 290, 320-321, 347, 374, 434) ..................................................... 5
Teacher Education 250 and 300 or 301 .................................. 7
Directed Teaching Block 410, 450, 470 ................................... 14

Before the student will be recommended for Directed Teaching he/she must have completed courses in the major with a minimum G.P.A. of 3.0. The application for a directed teaching assignment must be made in the Directed Teaching Department prior to one full semester before the assignment is to begin.

*The Classroom Music Major must pass a piano proficiency examination equivalent to the standard for Advanced Piano Class 321. If the student's proficiency in piano is weak he/she is urged to elect additional piano study under the "Applied Music Option," "Professional Electives," or "Free Electives." If piano is the major instrument, the student must substitute Voice Classes 122-123 for Piano Classes 120-121.

Music Therapy Major

Courses in Music Therapy 281, 290, 380, 382, 383, 480, 481, 490, 543 ......................................................... 16
Piano Class 220, 221, 320, 321 ................................................. 4
Voice Class 122, 123 .......................................................... 2
Instruments of the Band and Orchestra 279 (or) Percussion Class 130 plus one additional instrument class .................. 2
Professional Electives (choose from 126, 128, 129, 131, 132, 133, 134, 135, 136, 137, 138, 139, 240, 366, 569, Applied Music 300, Applied Organ 100-piano majors only, Performance Electives (see Electives above) .................................................. 5
Psychology 150, 160, 250, and an elective in Psychology or Special Education ......................................................... 12

The student must achieve a 3.0 G.P.A. in the therapy major in order to be recommended for the Music Therapy Internship 481.

To satisfy certification requirements for NAMT the student is advised to elect courses in Sociology and Anthropology for General Education, a course in Dance for Physical Education and a course in Arranging for the Theory Elective.

Applied Music: Instrumental Major

In order to be permitted to major in applied music the student must achieve a minimum G.P.A. of 3.25 in Applied Music 200 or be admitted by audition.

Credit Hours

Applied Music (in addition to Core requirements) 300 ......................................................... 6
Performance Electives (in addition to Core requirements; see Electives above) ................................................. 3
Chamber Music 218 ............................................................. 2
Composition 262 .............................................................. 2
Senior Recital (required for Music Clearance) ......................................................... 0

Applied Music: Vocal Major

In order to be permitted to major in applied music the student must achieve a minimum G.P.A. of 3.25 in Applied Music 200 or be admitted by audition.

Credit Hours

Applied Music (in addition to Core requirements) 300 ......................................................... 6
Performance Electives (in addition to Core requirements; see Electives above) ................................................. 1
Opera Workshop 317 ............................................................. 2
Advanced Piano Class 220, 221, 320, 321 .................................. 4
Senior Recital (required for Music Clearance) .............................................................. 0
Music Theory

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition 262</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Musicology 570-571</td>
<td>2</td>
</tr>
<tr>
<td>Music Theory electives (see Electives above)</td>
<td>5</td>
</tr>
<tr>
<td>Seminar in Music Theory 466 (2 semesters)</td>
<td>4</td>
</tr>
<tr>
<td>Music History/Literature elective (see Electives above)</td>
<td>4</td>
</tr>
<tr>
<td>Counterpoint 560-561</td>
<td>4</td>
</tr>
<tr>
<td>Orchestration 567-568</td>
<td>4</td>
</tr>
</tbody>
</table>

All Bachelor of Music: Music Theory candidates must pass a piano proficiency examination as outlined below.

*Composition

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition 262-263</td>
<td>4</td>
</tr>
<tr>
<td>Acoustics 566</td>
<td>3</td>
</tr>
<tr>
<td>Seminar in Composition 362</td>
<td>8</td>
</tr>
<tr>
<td>Seminar in Electronic Composition 364</td>
<td>8</td>
</tr>
<tr>
<td>Professional electives (choose from 100, 130, 567, 568, Music History/Literature electives, Art History courses 20th Century Literature courses)</td>
<td>4</td>
</tr>
<tr>
<td>Analysis of 20th Century Music 367</td>
<td>2</td>
</tr>
</tbody>
</table>

*The Composition major must have previous composition experience before he can be admitted to a Composition Major. He may acquire this experience by transferring approved credit in Composition from another institution or by successful completion of Composition 262-263. All Bachelor of Music: Composition candidates are required to present a Senior Recital consisting of thirty minutes of original compositions which are an outgrowth of the candidate’s course-work and which have been approved by the Composition faculty.

All Bachelor of Music: Composition candidates must pass a piano proficiency examination as outlined below.

Music History

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>German 200-201</td>
<td>8</td>
</tr>
<tr>
<td>Introduction to Musicology 570-571</td>
<td>6</td>
</tr>
<tr>
<td>Musicology and Research 575-576</td>
<td>4</td>
</tr>
<tr>
<td>Music Theory elective (see Electives above)</td>
<td>2</td>
</tr>
<tr>
<td>Music History/Literature electives (see Electives above)</td>
<td>11</td>
</tr>
</tbody>
</table>

All Bachelor of Music: Music History candidates must pass a keyboard proficiency examination as outlined below.

Keyboard Requirements for Composition, Theory and Music History Majors

All composition, theory and Music History majors must demonstrate keyboard competency as a graduation requirement, or for admission to candidacy for a graduate degree. Competency examinations will be administered by a jury of faculty members from the Keyboard Area and from the Area of the Student’s major.

The student should be prepared to present “readings” of a wide range of literature with reasonable accuracy and musical integrity rather than attempt to achieve a performance level with a few compositions. Sight-reading ability is also expected.

Functional skills related to the student’s major shall be examined as follows:

Theory/Composition

1. Ability to harmonize at sight. Level: Oxford Folk Song Sight-singing Series-Book III.
2. Play harmonized ascending and descending major and minor scales - all keys.
3. Ability to demonstrate in context the following:
   a. All diatonic triads and seventh chords, including all inversions.
   b. Chromatic chords including the following: secondary dominants, borrowed chords, augmented
sixth chords, augmented dominants and augmented dominant seventh chords, the Neapolitan sixth chord, diminished seventh chords, and half-diminished seventh chords.

Music History

1. Two compositions of contrasting style at the level of Bach Two-Part Inventions or Bartok Mikrokosmos, Vol. III or IV. One composition must be selected from the Baroque or Classical repertoire; the other from the Romantic or Contemporary period.
2. Score-reading. Emphasis shall be placed on reading from string quartet scores.
3. Sight reading of piano music which is easier than the level of literature which the student is performing.

Music Theatre Major

Advanced Piano Class 220-221 2
Music Theatre Productions 545 2
Music Theatre Practicum 516 2
Dance Classes (elected from 102, 123, 126, 128, 182, 228, 325, 328) 5
Theatre Minor 20

To complete a minor in Theatre the student must complete 20 semester hours of work in Theatre courses, including 170 Interpersonal Communications I. Other courses may be selected by the student in consultation with a Theatre Staff Advisor. Declaration of the Theatre minor must be made to the Theatre Department.

Professional electives (choose from: 279, 317, 320, 321, 330, 331) 5

Teacher Certification

Students wishing to receive certification to teach music in the public schools (K-12) must complete the following courses:
TEED 250, 300, 301, 410, 450, 470

*If these courses are elected under "Professional electives" in the Music Theatre major, they will apply toward the teacher certification requirements.

CAS 561 is required for the Theatre minor if the student is completing teacher certification requirements.

BACHELOR OF ARTS DEGREE

Music Curriculum

I. General Education electives ................................................................. 35
II. Physical Education (Marching Band 109 substitutes) ........................................ 2
III. A major in music:
Music Convocation 101 (6 semesters) .................................................. 0 credit hours
Applied Music 200 ................................................................. 8 credit hours
Basic Music 160-161, 260-261 .................................................... 11 credit hours
Aural Comprehension 162-3, 259 ..................................................... 3 credit hours
Piano Class 120-121 ................................................................. 2 credit hours
Music History/Literature 270-271 ..................................................... 6 credit hours
Performance electives (major ensemble) .......................................... 4 credit hours
Music electives ................................................................. 16 credit hours
IV. A minor in another department in University ........................................... (minimum) 15*
V. Free electives ......................................................................... 22

122 Total

*In the event that the credit hours for the minor requirements established by the Department which offers that minor are greater than 15, the students may make an appropriate adjustment in the hours allowed for free electives.
Music-Theatre Program

The Music Department and Theatre offer a reciprocal program which provides students with the opportunity to combine these two areas of study. In addition to the above requirements for I. General Education, II. Physical Education, and III. Music major, the student would complete the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>IV. Minor in CAS (Theatre emphasis)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interpersonal Communication I-170 (3 hours)</td>
</tr>
<tr>
<td></td>
<td>Electives to be selected in consultation with a Theatre Area Advisor (17 hours)</td>
</tr>
<tr>
<td></td>
<td>(CAS 561 is required for an Education Minor in CAS)</td>
</tr>
<tr>
<td></td>
<td>Declaration of a CAS Minor must be made to the CAS Department</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>V. Dance Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Selected from: 102, 123, 126, 182, 223, 325, 328</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>VI. University electives to make a total of 122 hours</th>
</tr>
</thead>
</table>

| Credit Hours | VII. | For the student who is enrolled in the General Curriculum of the College of Arts and Sciences there will be an option to complete requirements for a Bachelor of Arts degree or a Bachelor of Science degree. To be awarded a Bachelor of Arts degree, the student, in completing requirements as outlined above, must have completed at least 70 hours of General Education, Language and Literature, Science, and Social Science, including at least eight hours in one foreign language. If two or more years of high school preparation in one foreign language are presented for entrance, the requirements for foreign language may be waived. The student completing requirements as outlined above, including a minimum of 40 hours in General Education, Language and Literature, Science, and Social Science, is eligible for the Bachelor of Science degree. |

BACHELOR OF SCIENCE DEGREE

Elementary Education — Music

As described under the College of Education section of this catalog.

MUSIC MINOR

Requirements for the elementary education student:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Fundamentals of Music 159</th>
<th>Basic Music 160</th>
<th>Aural Comprehension 162</th>
<th>*Piano Class 120-121</th>
<th>General Music Methods 240</th>
<th>Elementary Music Practicum 244</th>
<th>Graderoom Music Literature 374</th>
<th>Secondary instrument/voice study (private or class)</th>
<th>**Music electives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

24 hours

Requirements for students who will not receive a teaching certificate:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Fundamentals of Music 159</th>
<th>Basic Music 160</th>
<th>Aural Comprehension 162</th>
<th>Music Literature electives</th>
<th>**Music electives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

18 hours

*The student may demonstrate competency in piano classes by registering for a piano proficiency examination through the Music Student Advisor. A waiver of the piano requirements means that the student will fulfill his 24-hour minor program by taking two additional hours of music electives.

**A maximum of 2 semester hours in music ensembles may be applied toward a music minor.

NOTE: THE DEPARTMENT OF MUSIC DOES NOT OFFER A MINOR FOR STUDENTS WHO WILL RECEIVE SECONDARY TEACHING CERTIFICATION.
College of Fine Arts

MUSIC DEPARTMENT COURSE OFFERINGS

(Course descriptions in italics are approved for General Education purposes)

Ensembles

105 Campus Choir (Director: J. Frey) 1 hr.
A choral ensemble which emphasizes the recreational aspects of ensemble singing. A minimal schedule of informal performances is maintained on-campus and in the community. Membership is open to all students without audition. Credit/No Credit only.

106 Men's Glee Club 1 hr.
An ensemble of male vocalists which develops general musicianship and provides training in ensemble singing. Performances are presented on-campus and in the community. Membership is open to all male students without audition.

*107 Women's Chorus (Director: W. Hahnenberg) 1 hr.
An ensemble of female vocalists which develops general musicianship and provides training in choral singing. Performances are presented on-campus and in the community. Membership by audition.

*108 Collegiate Singers (Director: M. Ivey) 1 hr.
A choral ensemble which develops general musicianship and provides training in choral singing. Performances are presented on-campus and in the community. Membership by audition.

109 Marching Band (Director: C. Bjerregaard) 1 hr.
The University Marching Band is the major performing ensemble for Fall football activities. Positions are open to all students who play wind or percussion instruments. Music Education: Instrumental majors who play a wind or percussion instrument are required to take this course during two Fall semesters. (Credit in Marching Band may be substituted for P.E. credit.) Membership is by audition.

110 Symphonic Band (Director: C. Bjerregaard) 1 hr.
An organization which performs a wide range of symphonic band literature. This group furnishes music at many University events. Membership by audition.

111 University Orchestra (Director: H. Butler) 1 hr.
The orchestra is open to all students who have had a reasonable amount of orchestra experience. Many fine compositions are studied and played during the year, and the orchestra joins with other campus organizations in joint programs. Instruments are available for the use of students. Membership is by audition.

*112 University Chorale (Director: M. Ivey) 1 hr.
An advanced choral ensemble which maintains a very active performance schedule on-campus and in the community as well as throughout Michigan and surrounding states. Membership by audition.

114 Wind Ensemble (Director: C. Bjerregaard) 1 hr.
An organization which performs a wide range of literature for the modern wind ensemble. This group performs both on and off campus. Membership by audition.

119 Varsity Vagabonds (Director: E. Carter) 1 hr.
A mixed vocal ensemble which specializes in popular and folk music. Activities include quartets, dance routines, and instrumental groups. A very active performance schedule is maintained on-campus and in the community, as well as in Michigan and out-of-state. Membership by audition.

*Grand Chorus — A large ensemble which performs choral/orchestral compositions. Participation is required of members of the University Chorale, Collegiate Singers, and Women's Chorus, but membership is open to other singers with the consent of the conductor.
210 Jazz Lab Band (Directors: R. Davidson, T. Kynaston) 1 hr.
This organization affords the student an opportunity to develop in all areas of modern jazz and dance music. Concerts may be given both on and off campus. The band may also provide music for some athletic events.

211 Studio Accompanying (Coach: P. Rappeport) 1 hr.
A laboratory experience in accompanying solo music. Students will be assigned three to four hours of varied studio accompanying per week. This course may be repeated for credit not to exceed a total of two semester hours.

212 New Music Ensemble (Director: R. Zupko) 1 hr.
A performing organization which is committed to the performance of music and mixed media works in the avant garde style. The ensemble is open to vocalists and instrumentalists on an audition basis.

218 Instrumental Chamber Music 1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e., string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

219 Vocal Chamber Ensemble 1 hr.
Small vocal ensemble(s) which emphasize research and limited performance of specialized repertoire of one or various periods of music. Admission by permission of the instructor.

317 Opera Workshop (Director: W. Appel) 1 hr.
A production experience in the acting, singing, accompanying, and producing of musical theatre. The class is offered each semester and culminates in the performance of an opera or operatic scenes. Open to advanced singers, pianists, and persons interested in production techniques. Admission is by personal interview with the instructor.

512 New Music Ensemble (Director: R. Zupko) 1 hr.
A performing organization which is committed to the performance of music and mixed media works in the avant arde style. The ensemble is open to vocalists and instrumentalists on an audition basis.

516 Music Theatre Practicum 1 hr.
A production experience in music theatre. Each semester culminates in an opera or musical comedy production. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. May be repeated for credit.

517 Collegium Musicum (Director: J. Boucher) 1 hr.
Performance of early Western music. Open to all students of the University. Additional transcription, arranging, editing, and conducting of early music is required of Music History majors. Graduate students may count not more than two hours of this course for graduation. Membership by audition.

518 Instrumental Chamber Music 1 hr.
Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, i.e. string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

519 Vocal Chamber Ensemble 1 hr.
Small vocal ensemble(s) which emphasize research and limited performance of specialized repertoire of one or various periods of music. Admissions by permission of the instructor.
Applied Music

Private lessons (applied music) in organ, piano, voice and all orchestral and band instruments are offered to all university students to the extent that instructor time and practice facilities are available. Priority in applied music study is given first to music majors, second to music minors, and third to students wishing to take the study on an elective basis. All students who take private lessons must always register for applied music by reporting to the Music Office to be placed on the reserve list, after which that course must be requested by the students through the standard pre-registration or final registration procedures. Students are required to make arrangements for a lesson time with the private teacher in the first days of classes each term. Every student should have a lesson during the first week of the term. Final examinations are required of all students in applied music. Examinations will be heard and graded by a panel of members of the music faculty.

Students who register for one hour of credit per semester receive one twenty-five minute lesson per week. Students who register for 2-4 hours of credit per semester receive one fifty-minute lesson per week. Registration for credit beyond two hours implies additional materials to be covered through extra practice. No additional fee beyond tuition is charged.

100 Applied Music 1-2 hrs.
This level of applied music indicates private music study at a fundamental level. Neither audition nor examination is required for admission to this level of study. Credit earned may be applied to a Bachelor of Music degree only by special arrangement through the Department of Music.

200 Applied Music 1-2 hrs.
This level of applied music indicates “lower division” standing for music students who have been approved for this level through auditions or jury examinations. A maximum of two credits per semester may be earned at this level.

201 Sophomore Hearing 1 hr.
An examination in applied music. Must be passed to qualify for upper-level applied study.

300 Applied Music 1-3 hrs.
This level of applied music indicates “upper division” standing in applied music and is used to designate junior and senior level applied music. A maximum of three credits per semester may be earned at this level.

301 Senior Hearing 1 hr.
An examination in upper-level applied music. All Wind-Percussion majors must pass this examination to be cleared for graduation.

501 Master Class 2 hrs.
The study of literature, performance practices, and techniques for a specified musical medium (instrument or voice). Individual performance assignments will be made appropriate to each student’s level of accomplishment. Class meetings may vary from small groups of students with common performance levels to meetings of the entire class for the purpose of dealing with materials and techniques common to all performers. The class may be repeated for credit.

Music Classes

101 Music Convocation No Credit
A series of special musical events required of music majors. Programs include lectures and recitals by faculty, selected students, and guest artists.

120 Piano Class 1 hr.
A basic course required of music majors and minors who have inadequate proficiency on piano. Opportunity is provided for some individual instruction. Recommended for piano majors to gain knowledge of piano class instruction.

121 Piano Class 1 hr.
A continuation of 120.
122 Voice Class
A study of the fundamental processes of breath control and tone production, providing some individual instruction in preparing and singing standard song literature. The course is designed to benefit students interested in solo and choral singing.

123 Voice Class
A continuation of 122. Repertoire will include early English songs and seventeenth and eighteenth century Italian songs as well as other standard literature, with a minimum of five songs to be memorized during the semester.

126 Beginning Guitar Class
This course is intended for teachers who wish to acquire the basic skills necessary to use guitar for accompaniment of singing in the classroom. In addition to learning the basic chord patterns and various types of strums, the course includes techniques of teaching and leading songs. The student will be required to own, purchase, or have access to a non-amplified guitar.

128 Violin Class
This course is designed to acquaint the student with basic problems encountered in playing the violin, including terminology and conventions of string performance. The course is intended for students with a piano or vocal major in Public School Music who are occasionally faced with the need to include string groups in the preparation of operettas, cantatas, or solo accompaniments.

129 String Class
A thorough examination of all string instrument performance, pedagogy, materials, methods and maintenance. For wind and percussion majors in Public School Music.

130 Percussion Class
Fundamentals of percussion instrument pedagogy and performance. The student is required to perform on the snare drum in an acceptable manner and to demonstrate a working knowledge of percussion instruments, including methods and materials, care and maintenance, and the function of the percussion section in a band or orchestra. For music majors only.

131 Flute Class
Fundamentals of flute pedagogy and performance. For music majors only.

132 Oboe Class
Fundamentals of oboe pedagogy, performance and reed-making. For music majors only.

133 Clarinet Class
Fundamentals of clarinet pedagogy and performance. For music majors only.

134 Bassoon Class
Fundamentals of bassoon pedagogy, performance, reed-making, and instrument maintenance. For music majors only.

135 Saxophone Class
Fundamentals of saxophone pedagogy and performance. For music majors only.

136 Trumpet Class
Fundamentals of trumpet pedagogy and performance. For music majors only.

137 French Horn Class
Fundamentals of French horn pedagogy and performance. For music majors only.

138 Trombone Class
Fundamentals of trombone pedagogy and performance. For music majors only.
139 Tuba Class

Fundamentals of tuba pedagogy and performance. For music majors only.

140 Music for the Classroom Teacher

Designed for elementary education students without regard to previous musical training. Students are prepared to use music functionally and developmentally in the elementary classroom through singing, through playing the piano and informal instruments, and through responding to music rhythmically. Creative aspects and values of music are emphasized, and materials are studied in relation to their future uses in the classroom.

Students who need special help in singing are required to enroll in 141. Prerequisite: Ed. 230 for Elementary Teachers in Creative Arts minor. Otherwise no prerequisite.

141 Vocal Clinic for Non-Singers

No Credit

Students are taught to sing through the development of pitch and breath control. Prerequisite: Must be enrolled in 140.

142 Piano for Classroom Teachers

A beginning piano course for elementary education students who are not majors or minors in music. Emphasizes the fundamentals of music through the medium of the keyboard. Provides some opportunity for individual instruction.

150 Music Appreciation: Live Music

An introduction to music and music literature in conjunction with attendance at music concerts and recitals on campus. Classroom discussion and readings will guide the student through a variety of listening experiences that will stimulate his perception and enjoyment of music on a visual as well as aural level. This approach will also insure a wide sampling of musical styles and media while encouraging the student to become more aware of his musical surroundings. A schedule of the musical events required for the semester will be issued during the first week of the semester.

151 Music Appreciation: Jazz/Pop

A study of the development of Jazz and its importance as an American art form. The course includes a survey of the beginnings of Jazz as a blending of the musical cultures of Africa and Europe. The development of Jazz from the late nineteenth century to the present will be traced. Current trends in Jazz and Rock, as well as electronic influences in contemporary Pop Music will be emphasized. Studies will include sociological and cultural trends and their influence on the evolution of the various styles and forms of Jazz and Pop. Implications for the future will be considered.

152 Music Appreciation: Rock and Electronic Music

A study of rock and electronic music from a cultural and musical point of view. Essentials of rock harmony, melody, rhythm, and instrumentation will be presented. The following will also be dealt with: The Moog synthesizer — its use in rock, electronic, and commercial music; demonstration of the techniques of sound alteration using components of the synthesizer; recording studio techniques, tape editing and recording; live demonstrations of rock and electronic music. Throughout the course an attempt will be made to deal with the esthetic principles behind rock and electronic styles and to relate these to the student's own experience. Parallel cultural developments in the allied arts will also be studied.

159: Fundamentals of Music

A study of fundamentals, including notation, scales, intervals, basic chord construction, and the rhythmic/metric aspects of music. This course is open to all students as an introductory study in music theory.

160 Music: Fundamentals of Music

A study of traditional harmony through partwriting and analysis including the inversions of diatonic triads and dominant seventh chords. Prerequisite: Acceptance as a music major and the passing of a qualification examination in music fundamentals.
161 Basic Music
A continuation of 160. Includes the study of secondary dominants, augmented sixth chords, borrowed chords, and modulation to foreign keys. Prerequisite: 160 with the grade of C or better.

162 Aural Comprehension
Training in the basic skills of music reading and ear training. Prerequisite: Acceptance into Basic Music 160.

163 Aural Comprehension
A continuation of 162. Prerequisite: 162 with a grade of C or better.

190 Accompanying
Supervised experience in accompanying vocal and instrumental music, both solo and ensemble.

191 Accompanying
A continuation of 190. Prerequisite: 190.

215 Conducting
A course in the fundamentals of conducting, including beat patterns, various gestures for attack, release, phrasing, etc., use of the left hand, and score-reading. The student will be afforded a variety of experiences, i.e. conducting exercises for video-taping, conducting practice laboratories, etc. Prerequisite: One year of music theory and ear-training.

220 Advanced Piano Class
A continuation of 120-121. Prerequisite: 120-121 or consent of instructor.

221 Advanced Piano Class
A continuation of 220.

227 Violin Class
A specialized course for the string major presenting the techniques and materials of violin. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string majors.

228 Cello Class
A specialized course for the string major presenting the techniques and materials of cello. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string majors.

229 String Bass Class
A specialized course for the string major presenting the techniques and materials of string bass. Students also attend the pedagogy lectures given in String Class 129. Prerequisite: string major.

230 English, Italian and Latin Diction
A phonetic approach to the pronunciation of these languages designed for singers and choral directors. The performance of the language utilizes the vocal literature of major composers in the respective fields of vocal literature.

231 French Diction
A phonetic approach to the pronunciation of French designed for singers. The performance of the language utilizes the song literature of major composers of the French chanson.

232 German Diction
A phonetic approach to the pronunciation of German designed for singers. The performance of the language utilizes the song literature of major composers of German lieder.
240 General Music Methods

A study and survey of sequential musical experiences in general music classes in grades K-8. The course will include education objectives, philosophical concepts, instructional methods and materials and various innovative approaches used in the general music class. Administration and implementation of the class will be examined. The course is especially designed to acquaint the student with various teaching techniques. Each student will have an opportunity to participate in general music classes in area schools one-half day a week. Prerequisite: 160-161.

244 Elementary Music Practicum

This course is designed to meet the needs of the elementary music teacher in the areas of theory and piano. Special emphasis is given to keyboard facility in accompaniments in the elementary classroom, harmonizations of melodies, the playing of rhythms, modulations, and a continuation of ear-training. Prerequisite: 160-161.

259 Aural Comprehension

Continuation of 163. Prerequisite: 163.

260 Basic Music

A continuation of Basic Music 161 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of the composition and performance of several original works in specific forms, employing a variety of vocal and instrumental combinations. Prerequisite: 161 with a grade of C or better.

261 Basic Music: 20th Century Techniques

Basic compositional techniques such as ostinato, bi-tonality, metric modulation, klangfarbenmelodie, twelve-tone serialization and special techniques of instrumental sound production. Prerequisite: 161 with a grade of C or better.

262 Composition

Beginning work in composition, with emphasis on the development of short works utilizing small instrumental combinations. Attention is given to melodic, rhythmic and harmonic devices. Prerequisite: 161, or permission of instructor.

263 Composition

A continuation of 262.

270 Music History and Literature

A brief study of non-Western music cultures, and a survey of Western music from earliest times to the eighteenth century.

271 Music History and Literature

A survey of Western Art music from the eighteenth century to the present time.

279 Instruments of the Band and Orchestra

Students survey the string, woodwind, brass and percussion instruments commonly used in the band and orchestra. The major aim of the course is to make the student aware of the unique sound which characterizes each instrument and how that sound is produced. In developing his perception and discrimination in this regard, the student investigates such things as the acoustical properties of the instruments, the correct formation of the embouchure for the brasses and woodwinds, the techniques of bowing string instruments, and the physical attributes required to perform successfully on certain instruments. All will learn the proper techniques for playing various percussion instruments commonly used in the classroom and be given the opportunity to explore one or more of the brasses and woodwinds.

280 Field Experience in Music Education

Class meetings will be devoted to establishing a philosophy of music education as it exists in the total education program in the public schools. Criteria for recognizing qualities of successful music teachers will
be established. Observation and participation in public school classrooms and rehearsals shall be an integral part of this course. This course will be ten weeks in length.

281 Field Experience in Music Therapy
Class meetings will be devoted to the study of the history and development of music therapy, the function of music in a total therapeutic program, and of disability areas using music. Participation in music on hospital wards and with exceptional children shall be an integral part of this course. The course will be ten weeks in length.

290 Recreational Music
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.

291 Functional Piano
Designed to develop pianist's ability to invent and organize musical ideas at the piano. Emphasis is placed on the use of piano in children's rhythmic activities, the harmonization and transposition at sight of songs with appropriate accompaniment, and the improvisation of music in various forms.

292 String Technology
An introduction to string instrument maintenance and repair, the course is designed to train the music teacher in rudimentary repairs and adjustments of an emergency nature which may arise in the teaching situation. Not intended to train repairmen.

320 Advanced Piano Class
A continuation of 220-221. Prerequisite: 221.

321 Advanced Piano Class
A continuation of 320. Prerequisite: 320.

330 Choral Conducting and Literature
The fundamentals of choral conducting are presented, including patterns and rehearsal techniques. The study and selection of literature appropriate to various levels of junior and senior high school choirs is included. Each student will be sent into the local schools during the part of the course in order to work with younger students.

331 Instrumental Conducting and Literature
Beginning homogenous and heterogenous methods will be used with students acting as conductor-teachers and playing secondary instruments. Literature appropriate to various levels of junior and senior high school bands and orchestras will serve as materials for conducting with students performing on major instruments. Each student will have the opportunity to rehearse with the Symphonic Band at least once, and will be sent into local schools during part of the course to work with younger students.

332 Choral Conducting
A continuation of 330 with added emphasis on rehearsal and choral conducting techniques, choral literature (selection, conducting), voice classification and selection. Prerequisite: 330.

340 Teaching Vocal Music in the Schools
Extensive involvement with actual teaching of vocal music in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of vocal music. The student will be acquainted with such administrative duties as scheduling, budget, fund-raising, equipment purchase, and public relations. Technical problems such as the changing voice and voice testing will be discussed. Matters relating to job seeking and professional growth will also be covered.

342 Organization and Administration of Church Choral Groups
A course designed for vocal teachers who may be involved in the directing of church choirs. A short history and philosophy of church music and an extensive survey of church music literature. Prerequisite: 240 for music majors; otherwise, no prerequisite.
344 Teaching Wind/Percussion Instruments in the Schools 2 hrs.
Extensive involvement with actual teaching of band music in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of instrumental music. The student will be acquainted with such administrative duties as budget, fund-raising, equipment purchase and inventory, instrument maintenance and repair (including actual experience with repair), and public relations. Job seeking and professional growth will also be discussed.

345 Teaching String Instruments in the Schools 2 hrs.
Extensive involvement with actual teaching of string music in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of instrumental music. The student will be acquainted with such administrative duties as budget, fund-raising, equipment purchase and inventory, instrument maintenance and repair (including actual experience with repair), and public relations. Job seeking and professional growth will also be discussed.

346 Marching Band Techniques 2 hrs.
The student will be exposed to and required to work with the planning and charting of halftime shows. This experience will include arranging and methods of working with students in learning a show. One requirement of the course will be the planning and execution of at least one show with a local high school band. The student will also learn techniques appropriate to street parades.

347 Music in the Humanities in Secondary Schools 2 hrs.
This course attempts to prepare the music student to participate in the teaching of humanities in secondary schools. The student learns to participate in setting the goals, content, and techniques for the humanities program.

350 American Music 4 hrs.
A survey of the diverse styles of the music of the United States from the Pilgrims to the present. The development of popular music and jazz will be explored as well as that of church, band, and concert music. Folk song and regional styles will be observed as social-musical statements. Cultural change in this country's history will be viewed from the perspective of its musical heritage. Ability to read music is not required.

352 Non-Western Music 4 hrs.
A study of the traditional music of China, Japan, Southeast Asia, India and the Arabic countries, as well as of the non-literate cultures around the world, such as American Indian, Australian Aborigine, African, and Micronesian. One or several cultures will be selected for close study and a particular attempt will be made to understand the customs and attitudes of a people through their music.

360 Style Analysis 2 hrs.
Prerequisite: Music 260 with a grade of C or better. An analytic study of the larger forms from the instrumental and vocal repertoire.

361 Style Analysis 2 hrs.
Prerequisite: Music 360 with a grade of C or better. A continuation of Music 360.

362 Seminar in Music Composition 2 hrs.
Original work in composition accompanied by study and analysis of advanced twentieth century compositions and creative concepts. May be repeated for credit. Prerequisite: MUS 263

364 Seminar in Electronic Music Composition 2 hrs.
Original electronic music composition including a study of studio techniques since 1950, application of studio technique to sound production, and the operation of the synthesizer as a performance instrument. Advanced students will develop and submit an outline of a compositional project. The student will be assigned a number of hours weekly for independent work in the studio for realization of the project, which will receive periodic guidance and criticism from the instructor. May be repeated for credit. Prerequisite: MUS 263
366 Instrumental Arranging  
A course designed to give the student experience in arranging music for instrumental groups with emphasis placed on making effective use of the resources available in the average junior high and high school music situation. Prerequisite: 161.

367 Analysis of 20th Century Music  
An analytical study of major works of the 20th century. Prerequisite: 261 with a grade of C or better. May be repeated for credit.

368 Survey-Review of Basic Music  
The course consists of a review of chromatic harmony through writing and analysis with emphasis on correlation and reconciliation of the various terminologies used in music theory. This course may not be applied as credit earned toward degree requirements in Music. Credit/No Credit only.

373 Creating Music in the Classroom  
Students create a variety of sounds at many levels. They compose, arrange, conduct, perform and evaluate. The course is taught by three music educators each of whom provides a unique focus. Experiences center around techniques which can be used to help students of all ages realize their creative music potential.

374 Graderoom Music Literature  
Designed to meet the needs of the elementary teacher in music literature and application in the classroom. Included are: (1) works of great composers in relation to the age and culture; (2) native and foreign folk music; (3) historical development, structure, timbre and use of instruments. Prerequisite: 140 or 240.

375 Twentieth Century Music Literature  
A chronological survey of twentieth century music literature through listening and analysis.

380 Psychology of Music  
Physical, psychological and physiological aspects of sound and systems of tonal relationships. The effects of music on the individual and the consideration of music as a form of communication; the nature and measurement of musicality; the nature of musical memory; the underlying bases for musical taste and for aesthetic experience in music with emphasis on cultural influences. Prerequisite: Psychology I.

382 Influence of Music on Behavior  
A study of the relationship between music and personality and of the function of music in personality adjustment and development. The study of research methods shall be pursued through analysis and evaluation of published studies, and skills essential to research shall be developed. Prerequisite: Psychology I.

383 Observation and Measurement in Music Therapy  
Overview of techniques of behavior measurement and accountability paired with actual clinical observations.

384 Music in Special Education  
Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmic, and creative activities in classes for mentally and physically handicapped. The student learns functional use of piano and informal instruments. Values of musical activities for all exceptionalities are emphasized. For Special Education majors only. Substitutes for MUS.140.

466 Seminar in Music Theory  
Research projects in music theory. Research methods and analytic discipline are stressed. Study will be focused in an area of the student's need or interest.
College of Fine Arts

467 Seminar in Music Theory
A continuation of 466. Prerequisite: 466.

470 Classroom Procedures in Theory
Literature and methodology for the teaching of Theory with analysis of several representative texts. Observation and participation in the basic music courses are an integral part of the course.

471 Classroom Procedures in Theory
A continuation of 470. Prerequisite: 470.

480 Music Therapy Methods and Materials
Survey of materials available for use in music therapy programs and methods of adapting such materials to institutional use. Study of publications and techniques developed specifically for use in music therapy programs. Prerequisite: Music therapy major.

481 Music Therapy Internship
A six-month internship at an approved state mental hospital.

490 Undergraduate Workshop in Special Problems
2 hrs.

Designed for students interested in some special field or music not formally listed for instruction. All special problems must be approved by the Chairman of the Music Department, but may be under the direct guidance of any member of the Music faculty. This course may be elected as many as three times.

Open to Upperclassmen and Graduate Students

518 Improvisation
A course in the fundamentals of instrumental improvisation. Assignments will be made in such areas as improvisation in the early music tradition, improvisation on given melodic, harmonic, and/or rhythmic materials, as well as "free" improvisations. Prerequisite: MUS 161 or 165.

530 Advanced Choral Conducting
Supervised experience in conducting vocal ensembles. The student may be called upon to prepare an ensemble for public performance. Prerequisite: MUS 330.

531 Advanced Instrumental Conducting
Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: MUS 331.

540 Elementary School Music
Emphasizes the place of music in the curriculum and the use of music in the day-to-day activities in the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

541 Music Supervision and Consultation
A study of the structuring and implementation of a music education program in the schools, in terms of three organizational relationships: the music administrator or supervisor, the scheduled music teacher, and the unscheduled music consultant. Relation of music specialist to classroom teacher.

542 Studies in Music Education
Topic 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 Research in the Psychology of Music
Development and employment of research methods and techniques applied to the psychology of music.
Experimental projects will be required in areas dealing with music and/or musical behavior. Prerequisite: MUS 380.

544 Analysis and Evaluation of Music Education Materials  
A study of the theoretical bases for, and practice in, analyzing and evaluating music for use in music education programs.  
2 hrs.

545 Music Theatre Productions  
A course in the techniques of acting, singing, dancing, and producing of musical theatre. Students will be divided into small groups, each group having been assigned to produce scenes or acts from the standard musical theatre repertory. Assignments in these groups will include choreographing, blocking action, directing the music, performing, stagecraft, and other activities essential to the production. Prerequisite: Junior standing.  
2 hrs.

551 Music Literature: Western Art Music  
A survey of Western European composers and musical styles from the Middle Ages to the present. Forms such as the Lied, Mass, motet, concerto, sonata and symphony as used by the well-known composers of traditional "art" music will be listened to and discussed. Acquaintance will also be made with musical styles, modes, harmonies, and rhythms as well as with a great variety of musical instruments. Examples from art, architecture, and literature will be compared with music to illustrate corresponding tendencies within the main style epochs (e.g. Renaissance, Classic, Romantic).  
4 hrs.

560 Counterpoint  
A study of the contrapuntal techniques of the 18th, 19th and 20th centuries. Written assignments are closely correlated with the contrapuntal styles of significant composers. Prerequisite: 261 with grade of C or better.  
2 hrs.

561 Counterpoint  
A continuation of 560. Prerequisite: 560.  
2 hrs.

562 Advanced Composition  
A study of twentieth century techniques in composition with original work in vocal and instrumental forms. Prerequisite: MUS 460 or 660.  
2 hrs.

563 Advanced Composition  
A continuation of MUS 562.  
2 hrs.

566 Musical Acoustics  
A course designed for the music student. Discussion as well as laboratory demonstrations of such principles as: simple vibrating systems; waves and wave propagation; complex vibrations; resonance, intensity and loudness levels; tone quality; frequency and pitch; intervals and scales; tuning and temperament; auditorium and room acoustics; and psycho-acoustics.  
3 hrs.

567 Orchestration  
A study of the characteristics of instruments, and of arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: 261.  
2 hrs.

568 Orchestration  
A continuation of 567. Prerequisite: 567.  
2 hrs.

569 Jazz  
A comprehensive study of jazz as a musical art from both a theoretical and historical perspective. Special attention to the musical contribution of black Americans, outstanding jazz composers and performers. Study of the "blues," jazz melodic and harmonic structures, arranging for jazz ensembles, the art of improvisation and rhythmic analysis. Prerequisite: 161 with a grade of "C" or better.  
2 hrs.
570 Introduction to Musicology  
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  
A continuation of MUS 570.

572 Baroque Music (1600-1750)  
A survey of the choral and instrumental music of the Baroque masters such as J. S. Bach and G. F. Handel. Special attention to the development of style from monody through harmonic polyphony. Prerequisite: MUS 270 and 271.

573 Classical Music (1750-1800)  
Examination of the chief works of Mozart and Haydn, with intensive study of symphonic form and the development of the classic opera. Prerequisites: MUS 270 and 271.

574 Romantic Music (1800-1910)  
Music of the important composers of the period beginning with Beethoven, along with the historical, cultural, and political background of the era. Special attention is given to the development of Nationalism. Prerequisites: MUS 270 and 271.

575 Musicology and Research  
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  
A continuation of MUS 575.

577 Symphonic Literature  
A survey of music written for symphony orchestra during the Classic and Romantic periods.

578 Chamber Music Literature  
A survey of chamber music literature of the Classic and Romantic periods.

579 Operatic Literature  
A survey of opera from 1600 to the present.

580 Solo Literature: (topics)  
Solo literature for a specific medium (voice, piano, violin, etc.) will be studied from a theoretical, historical, and performance point of view. Topics to be announced. May be repeated for credit. Prerequisite: MUS 270-271.

581 Choral Music Literature  
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

590 Studies in Pedagogy  
Topics to be announced. Selection will be made from the following: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. May be repeated for credit.

593 Piano Technology  
An introduction to piano technology in which various aspects of the technician's art are investigated. Important topics covered include mechanics of the musical scale, art of tuning in equal temperament, and
construction of modern grand and vertical pianos. The course is designed to give the student valuable insights into the field of piano technology in order that he might intelligently purchase and care for this instrument. Not intended to train tuners.

598 Readings in Music
Graduate students may enroll in this course after consultation with the graduate adviser.

FINE ARTS MINOR

Advisers:
Art T. D. Argyropoulos — 1429 Sangren Hall
Dance Janet Stillwell — 2 Walwood Union
English Tom Small — 918 Sprau Tower
Humanities Ted Marvin — 2093 Friedmann Hall (Coordinator)
Music Don Para — 102 Maybee Hall
Theater David Karsten — 214 Sprau Tower

The Fine Arts minor program is available for students who want to increase their appreciation of the arts and develop some understanding of the working and creative attitudes of artists in various areas. This program allows flexibility in the choice of courses and can be adjusted, with the counsel of the program advisers, to focus on each student's individual interests.

Six departments from the Colleges of Fine Arts, Arts and Sciences, and General Studies sponsor the Fine Arts minor: Art, Dance, English, Humanities, Music, and Theater.

Each student's program should include:
1. A minimum of 24 credit hours chosen from the list of recommended courses, or other courses suggested by one of the program advisers.
2. Courses from at least three of the participating departments.
3. At least one course focusing on appreciation, one providing practical experience in an art, and one dealing with inter-relationships between arts.
4. No more than three courses from any one department.

Students interested in this minor are urged to contact one of the six advisers as early as possible. A minor slip is required.

Recommended Courses:
Art: 120, 130, 140, 220, 221, 305
Dance: 102; 123, 228, 300, 500, 548
English: 110, 150, 210, 266, 340, 344
Humanities (General Studies): 102, 200, 201, 202, 203, 204, 207, 208, 209, 300, 301
Music: 150, 164, 165, 350, 351, 352, 373
Theatre: Thea 200 (CAS 220) Thea 222 (CAS 222)
Thea 250 (CAS 224) Thea 290 (CAS 228)
Thea 300 (CAS 320) Thea 395 (CAS 328)
Thea 500 (CAS 520)

Philosophy: 312

Certain other courses from these departments may be included in the minor with the approval of one of the advisers.
INTRODUCTION

The Department of Theatre offers programs leading to Bachelor of Arts and Bachelor of Science Degrees. Students should refer to degree and general education requirements within this catalog for specifics. The Department of Theatre concentrates on undergraduate programs which stress the interdependency of academic and production experiences, the importance of theatre fundamentals, and the significance of a broad theatre background.

Opportunities for participation in the production program begin with the freshman year. The Department presents eight to ten faculty-directed major productions each year, including music theatre. Additional plays, student-directed, are presented in the directing classes and the laboratory theatre program. All regularly enrolled university students in good academic standing are eligible to participate in these productions.

Students may gain additional experiences working with the Student Advisory Troupe, an elected group of student representatives that meets regularly with the theatre faculty, and with the local chapter of Theta Alpha Phi, a national theatre honorary fraternity.

ADMISSIONS

Enrollment in the theatre curriculum is contingent upon admission to the University and the approval of the Department of Theatre. Information regarding admission and transfer of credit to a theatre curriculum may be obtained by contacting the theatre student advisor in the Department of Theatre, Shaw Theatre.

ADVISING

Student Advisor: Dr. David Karsten
Shaw Theatre: (616) 383-1760

The departmental student advisor will assist any student enrolled in the University with course selections in theatre. Students who decide to declare theatre as their major or minor must complete a major or minor slip. They should confer with the theatre student advisor, who will help in planning their program of study, by the time they have completed one-third of their theatre course work. It is departmental policy to accept no more than 18 hours of transferred credit toward a non-teaching major, 12 hours of transferred credit for a teaching major, and 9 hours of transferred credit toward a minor.

MISCELLANEOUS

Performance Attendance

The productions of the University Theatre are considered laboratory extensions of classroom experiences. Classroom discussions and lectures often center upon a current production. All theatre students, staff and faculty attend a public performance of each presentation unless they are participating in the production. Students enrolled in theatre classes may purchase a coupon book for tickets of admission, each semester, at a reduced rate, from the University Theatre box-office. Cost, approximately $5.00 per semester.

Course Number Changes

The Department of Theatre joins the College of Fine Arts this year, following a long and distinguished
The Theatre history in the Department of Communications Arts and Sciences of the College of Arts and Sciences. To facilitate understanding of course number changes, the prefix THEA will indicate new course numbers (THEA 110) and the prefix CAS courses as they were listed in previous catalogs (CAS 121). Course content remains unchanged. The course description for Creative Dramatics for Children, CAS 564, is found on page 257 of this catalog.

PROGRAMS OF STUDY

The Department of Theatre offers curricula including two majors, a minor, and participates with other University departments in offering a music theatre program, a fine arts minor and theatre as an elective option.

The majors are:

1. A major for students not planning to teach.
   50 Credit hours in Theatre
   This program is designed for students who want to prepare for graduate study in theatre or advanced, specialized professional training. It offers a program combining a broad background in theatre with the possibility of concentration in acting, directing or technical production. An area of concentration, if selected, may not exceed 18 of the 35 hours of electives.
   
   Required Courses Credit Hours
   Introduction to Theatre (THEA 200/CAS 220) ........................................ 3
   Play Production (THEA 250/CAS 224) ........................................ 3
   Script Analysis (THEA 275/CAS 229) ........................................ 3
   Theatre Backgrounds (THEA 370/CAS 327) ........................................ 3
   Development of Theatre Art (THEA 570/CAS 527) ........................................ 3
   Electives arranged with Department advisor ........................................ 35

2. A major for students planning to teach and direct theatre programs in secondary or elementary schools.
   30 Credit Hours in Theatre
   Required Courses Credit Hours
   Introduction to Theatre (THEA 200/CAS 220) ........................................ 3
   Play Production (THEA 250/CAS 224) ........................................ 3
   Script Analysis (THEA 275/CAS 229) ........................................ 3
   Theatre Backgrounds (THEA 370/CAS 327) ........................................ 3
   A methods course and electives to be arranged with Department advisor ........... 18

A student selecting this major must elect a minor in a teachable subject area other than Speech. Courses in the Communication Arts and Sciences Department and courses in Theatre constitute one teachable area, Speech, according to the certification code of the State Department of Education.

The Theatre major in education who elects a minor in CAS in order to enhance prospects for employment in the public schools must elect a second minor in a different subject area (such as English). One methods course in a teachable subject area is required.

NOTE: To teach Speech in a school accredited by the North Central Association, Speech teachers are required to have either 24 semester hours in Speech or 20 semester hours in Speech and 4 semester hours in English. Courses in Theatre and Communication Arts and Sciences are counted as courses in Speech. All teachers to be certified must meet requirements of the University, the College of Education, and the State Board of Education.

Theatre Minor

   24 Credit Hours

In this program the student is exposed to several theatre areas. It is flexible and may be individualized to meet the needs and interest of the student. Courses required include: THEA 200/CAS 220, THEA 250/CAS 224, THEA 275/CAS 229, and 15 hours arranged with the Department advisor.

Music Theatre Program

The Department of Theatre and the Department of Music offer a reciprocal program which provides students with the opportunity to combine a music major with a theatre minor or a theatre major with a music minor. Students interested in knowing more about the options available in this program should contact the theatre student advisor, Dr. David Karsten in Shaw Theatre, or Mr. Donald Bullock, Room 104-A, Maybee Hall.
College of Fine Arts

Fine Arts Minor

The Department of Theatre is one of the academic units participating in the Fine Arts Minor, a program available for students who wish to increase their appreciation of the arts and develop some understanding of aesthetics, and artistic processes.

Theatre as an Elective

The Department offers courses for students who want to explore specific areas of theatre, broaden their background and appreciation of theatre and/or acquire skills in a particular area.

Recommended Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explorations in Performing (THEA 110/CAS 121)</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Theatre (THEA 200/CAS 220)</td>
<td>3</td>
</tr>
<tr>
<td>Play Production (THEA 250/CAS 224)</td>
<td>3</td>
</tr>
<tr>
<td>Stage Makeup (THEA 230/CAS 225)</td>
<td>3</td>
</tr>
<tr>
<td>Script Analysis (THEA 275/CAS 229)</td>
<td>3</td>
</tr>
<tr>
<td>Improvisational Theatre (THEA 310/CAS 321)</td>
<td>3</td>
</tr>
<tr>
<td>Theatre Backgrounds (THEA 370/CAS 327)</td>
<td>3</td>
</tr>
<tr>
<td>Script Writing (THEA 376/CAS 329)</td>
<td>3</td>
</tr>
</tbody>
</table>

Introduction to Theatre, THEA 200/CAS 220, may be used to satisfy a General Education requirement.

THEATRE DEPARTMENT COURSE OFFERINGS

(Course description in Italics is approved for General Education purposes)

THEA 110 Explorations in Performing (CAS 121) 3 hrs.
Exploring the individual's powers of expression and communication of feelings, experience, and awareness. Designed for both students who want further performance training as well as for those whose interest is primarily their personal growth.

THEA 120 Theatre Crafts (CAS 126) 3 hrs.
A beginning course in theatre crafts, including scenery, properties, costume, lighting, sound, makeup, and box office. (Lab fee: approx. $5.00)

THEA 146 Voice for the Stage (CAS 320) 3 hrs.
Techniques for the training and use of the actor's voice on stage.

THEA 200 Introduction to Theatre (CAS 220) 3 hrs.
Considers theatre as a part of the individual's cultural heritage and liberal arts background. Student's attend theatre performances and have opportunities to participate in University Theatre. (Lab fee: approx. $10.00 for required play attendance at seven to ten evening theatre performances throughout the community.)

THEA 230 Stage Makeup (CAS 225) 3 hrs.
Study and practice of the basic principles and techniques of stage makeup. (Lab fee: approx. $18.00)

THEA 240 Acting I (CAS 222) 3 hrs.
Study and practice of the basic principles and techniques of the actor.

THEA 250 Play Production (CAS 224) 3 hrs.
An introductory course in the principles and practices of play production. Recommended for Secondary Education majors and minors in CAS, English, and Theatre. (Lab fee: approx. $10.00)
THEA 255  Directing I (CAS 223)  3 hrs.
Functions of the play director as teacher, interpreter, coordinator, and collaborator. Focus is upon
principles and problems of directing on the proscenium stage. Students prepare and direct one short
realistic play. Prerequisite: THEA 240 (Lab fee: approx. $3.00)

THEA 275  Script Analysis (CAS 229)  3 hrs.
The study of representative plays from the standpoint of the theatre artist. Emphasis on thorough
examination of the play script preparatory to production.

THEA 290  Theatre Practicum (CAS 228)  1-3 hrs.
Supervised experience in one or more areas of theatre through direct contact with the University
Theatre program. Nature of involvement determined by student teacher contact. May be repeated for
credit up to a maximum of six semester hours. Prerequisite: consent of instructor.

THEA 300  Special Topics in Theatre: Variable Topics (CAS 320)  3 hrs.
An investigation of topics of special interest related to theatre. Repeatable for credit under a different
title. Examples of topics for study include:

a. Black Theatre
b. Informal Drama for Jr. High
   and/or Sr. High
c. Dance Drama
d. Dialects
e. Mime
f. Movement
g. Oriental Theatre
h. Puppetry
i. Styles in Acting
j. Youth Theatre

THEA 310  Improvisational Theatre (CAS 321)  3 hrs.
Study and practice of the concerns and techniques of improvisational theatre. Emphasis on the
development of the spontaneous and creative abilities of individual students and on the development of
extemporaneous group theatre.

THEA 325  Stagecraft (CAS 324)  3 hrs.
A beginning course in technical production including the planning and construction of stage scenery,
and laboratory work in University Theatre productions. Prerequisites: THEA 120, THEA 250 or consent
of instructor. (Lab fee: approx. $5.00)

THEA 335  Costume I (CAS 325)  3 hrs.
Study of costume history from Egyptian through 17th century. Includes study of design techniques.
Prerequisite: THEA 250 or consent of instructor. (Lab fee: approx. $15.00)

THEA 336  Costume II (CAS 326)  3 hrs.
Study of costume history from the 18th through 20th centuries, including costumes from opera, ballet
and ethnic groups. Continued development of design and rendering skills. Prerequisite: THEA 335 or
consent of instructor. (Lab fee: approx. $15.00)

THEA 340  Acting II (CAS 322)  3 hrs.
An intermediate course in techniques for the actor with emphasis on characterization. Prerequisites:
THEA 146, THEA 240, THEA 275 or consent of instructor.

THEA 355  Directing II (CAS 323)  3 hrs.
A continuation of Directing I. Special emphasis on problems and techniques of directing on the thrust
and arena stages. Students prepare and direct one short realistic play and one short nonrealistic play.
Prerequisites: THEA 250, THEA 255, THEA 275 or consent of instructor. (Lab fee: approx. $3.00)
THEA 370 Theatre Backgrounds (CAS 327) 3 hrs.
A survey of theatre history. Acting styles, playwriting, theatre design and audience taste are major areas of study.

THEA 376 Script Writing (CAS 329) 3 hrs.
A course in the fundamentals of writing comedy and drama for theatre and television.

THEA 395 Summer Theatre (CAS 328) 2, 4, 6 hrs.
Workshops providing students with opportunities to concentrate on various activities of theatre production. Study of a specific topic is integrated with practical experience in a laboratory approach. Some workshops may culminate in performances. Students may enroll for one or more workshops depending on individual needs, interests and schedules. Number of credits and length of workshop determined by focus of topics studied. See summer schedule of classes for specific offerings, prerequisites and lab fees. Topics may include:
  a. Acting
  b. Costuming
  c. Design
  d. Directing
  e. Improvisation
  f. Lighting and Sound
  g. Make-up
  h. Management
  i. Technical Theatre

THEA 422 Stage Design (CAS 424) 3 hrs.
A basic course in stage design including lighting and settings. Includes laboratory practice in staging University Theatre productions. Prerequisite: consent of instructor. (Lab fee: approx. $5.00)

THEA 426 Stage Lighting (CAS 320) 3 hrs.
A course of practical application of the principles of lighting and sound for the theatre in the university theatre production program.

THEA 490 Individualized Study in Theatre (CAS 398) 1-3 hrs.
Designed to enable advanced students to initiate, plan and execute projects in particular aspects of theatre. Must be planned in collaboration with a member of the theatre faculty who will act as supervising teacher. Not designed to replace other theatre courses. Up to six hours may be accumulated. Projects may involve study and research in an area of special interest, special performances or other creative activities, or assisting theatre instructor in the classroom. Prerequisite: consent of departmental chairperson and supervising instructor.

THEA 500 Studies in Theatre: Variable Topics (CAS 520) 3 yrs.
Selected topics within the broad range of theatre. Emphasis upon concepts, theory and advanced skills. Repeatable for credit under a different title. Examples of topics for study include:
  a. Advanced Directing
  b. Advanced Makeup
  c. Advanced Technical Theatre
  d. Design for the Theatre
  e. Developmental Theatre Service
  f. Informal Drama for Jr./Sr. High
  g. Story Theatre
  h. Theatre Administration
  i. Theatre Production
  j. Touring Theatre

THEA 535 Costume Creation (CAS 525) 3 hrs.
Study and practice of costume style and design through construction, fabric painting, and decorative surfaces. Prerequisites: THEA 120, THEA 335, THEA 336 or consent of instructor. Students are required to supply their own materials.
THEA 540 Acting Studio (CAS 522) 3 hrs.
An advanced course in the art of acting with emphasis on the individual needs of the student actor. Prerequisite: consent of instructor. (Lab fee: approx. $5.00)

THEA 550 Musical Theatre Production (CAS 524) 3 hrs.
Focuses on concepts, methods, organization, and communication principles useful to directors, musical directors, choreographers in creating effective musical theatre productions, particularly in the school and community situation. Team-taught by instructors from music, dance, and theatre. Prerequisite: THEA 255 or consent of instructor.

THEA 570 Development of Theatre Art (CAS 527) 3 hrs.
A survey of the development of theatre art and its relationship to the concurrent development in other arts. Recommended for students considering graduate work in the fine arts. Prerequisite: THEA 370 or consent of instructor.

COLLEGE OF FINE ARTS

The Department of Theatre does not offer a graduate degree in Theatre. The graduate courses listed below, however, are offered and may be taken as cognate or elective courses in degree programs of the university where permitted.

Open to Upperclassmen and Graduate Students

TH 500 Studies in Theatre: Variable Topics (CAS 520) variable
Selected topics within the broad range of theatre. Emphasis upon concepts, theory and advanced skills. Repeatable for credit under a different title. Examples of topics for study include:
- a. Advanced Directing
- b. Advanced Makeup
- c. Advanced Technical Theatre
- d. Design for the Theatre
- e. Developmental Theatre Service
- f. Informal Drama for Jr. and Sr. High
- g. Story Theatre
- h. Theatre Administration
- i. Theatre Production
- j. Touring Theatre

TH 535 Costume Creation (CAS 525) 3 hrs.
Study and practice of costume style and design through construction, fabric painting, and decorative surfaces. Prerequisites: 120, 335, 336 or consent of instructor. Students are required to supply their own materials.

TH 540 Acting Studio (CAS 522) 3 hrs.
An advanced course in the art of acting with emphasis on the individual needs of the student actor. Prerequisite: consent of instructor. Lab fee: approx. $5.00.

TH 550 Musical Theatre Production (CAS 524) 3 hrs.
Focuses on concepts, methods, organization, and communication principles useful to directors, musical directors, choreographers in creating effective musical theatre productions, particularly in the school and community situation. Team-taught by instructors from music, dance and theatre. Prerequisite: 255 or consent of instructor.

TH 570 Development of Theatre Art (CAS 527) 3 hours
A survey of the development of theatre art and its relationship to the concurrent development in other arts. Recommended for students considering graduate work in the fine arts. Prerequisite: 370 or consent of instructor.
TH 620 Seminar in Theatre: Variable Topics (CAS 620) 2, 4, 6 hrs.

Study of interrelated aspects of historical and contemporary theatre. Various topics. See schedule of classes. Prerequisite variable.

TH 628 Summer Theatre (CAS 628) 2, 4, 6 hrs.

A series of workshops providing students with opportunities to concentrate on various activities of theatre production. Study of a specific topic is integrated with practical experience in a laboratory approach. Some workshops may culminate in performances. Students may enroll for one or more workshops depending on individual needs, interest, and schedules. Number of credits and length of workshop determined by focus of topic studied. See Summer Schedule of Classes for specific offerings. Prerequisite: Variable (see schedule of classes). Topics may include:

a. Acting
b. Costuming
c. Design
d. Directing
e. Improvisation
f. Lighting and Sound
g. Makeup
h. Management
i. Technical Theatre

TH 620 Seminar in Theatre: Variable Topics (CAS 620) 2, 4, 6 hrs.

Study of interrelated aspects of historical and contemporary theatre. Various topics. See schedule of classes. Prerequisite variable.
College of General Studies

NORMAN C. GREENBERG, Dean

Academic Areas:
Humanities
Science
Social Science
College of General Studies

The College of General Studies offers students the choice of entering programs in which they can learn to integrate the perspectives and develop the skills necessary to fulfill the role of broadly prepared, flexible, and perceptive persons. Its courses are concerned primarily with the integration of knowledge, the interrelationships among the various disciplines and the interdependence of the various ways of knowing and learning. While the conventional departments may also advance these "interdisciplinary" concerns, this College makes such concerns the major focus of its programs.

GOALS OF THE COLLEGE OF GENERAL STUDIES

1. The goals of the College of General Studies will be compatible with the goals of the University.
2. The most comprehensive goal of the College of General Studies is to assist students in developing the ability to think critically and to engage successfully in intellectual pursuits. The General Studies program seeks to engender the disposition to seek knowledge and the habit of bringing knowledge of all kinds to bear on decision making.
3. The College of General Studies will assist students in developing confidence in their ability to make judgments while acquiring a willingness to reconsider their judgments in the light of new insights, information, and patterns of values.
4. The College of General Studies will acknowledge positively more than one mode of inquiry and encourage exploration of cross- and or trans-disciplinary interests and programs of study.
5. The College of General Studies will develop and maintain a coherent program which assists students in developing a responsible awareness of themselves as human beings and of their social and physical environments.

Within the framework of these goals the faculty of the College has developed Integrated Programs to provide a closely knit means for students to satisfy the general education requirement. In addition, individual courses have been developed by the faculty to provide opportunity, within the General Education Distribution Program, for students to experience the transdisciplinary approach to knowledge and thought.

A student in an Integrated Program should discover it to be a unique and concise way of satisfying the general education requirement. Series of integrated courses have been developed around thematic perspectives which in the course of study would provide the student with broad and recognizable frames of reference for the integration of knowledge. It is hoped that the student would therefore perceive ways which will assist him in integrating and applying the information he receives in more specific disciplines.

Unless otherwise noted, all General Studies courses have been approved for General Education purposes.

Additional information concerning each of the Programs or any of the specific courses described below can be obtained from the office of the Dean of the College of General Studies.

Integrated Programs

Lawrence J. Israel, Coordinator

INTEGRATED PROGRAMS

The College of General Studies is composed of a group of scholars who were gathered together to deal specifically with rapidly expanding knowledge, and the increasing numbers of ways such new knowledge impinges on other knowledge, both new and old. The essential purpose of the Integrated Programs is to acquaint the student with results of interdisciplinary work of a very broad nature and to thus avoid what is commonly called "tunnel-vision" or an inability to see anything outside a very narrow perspective. The developers of the Integrated Programs come from just about every type of academic discipline. The College of General Studies has mathematicians, sociologists, historians, physicists, artists, biologists, et al., who work together to produce courses that include not only the latest knowledge, but also include the broad perspective that can be acquired through such an interdisciplinary effort.
Each Integrated Program consists of broad interdisciplinary courses and each is designed to help the student make more sense out of an increasingly complex world. The programs are designed to cover the entire undergraduate experience; since, as students grow their perceptions grow concurrently.

Particular attention is paid to the beginner in the program. Individualized attention and advising is provided at all levels, but especially at the earlier levels, in order to assist the student to make the best possible choices from the diversity that is general education at Western. The faculty of the Integrated Programs take a special responsibility for each of their students and are willing and able to help each student plan a series of general education courses that make particular sense and have particular cogency for that particular individual. Both the faculty and the students in the Integrated Programs have the unusual opportunity to participate in the joint activities of a unique group from many interests; over an extended period of time. It is this close, and long range, contact that is one of the major strengths of the Integrated Program.

What does an Integrated Program do for students and how does it work? There are two Integrated Programs:

PROGRAM A — The Integrating Perspective
PROGRAM B — Student Planned Inquiry

INTEGRATED PROGRAM A:
THE INTEGRATING PERSPECTIVE

This Integrated Program consists of four parts:

PART I: An entry course
PART II: Three interdisciplinary courses
PART III: A Non-Western world course
PART IV: Optional sequences of courses

PART I: A four hour course — GINT 155, In Pursuit of Awareness

This course is designed to accomplish four ends:
1. The course provides for the student an awareness of self — what the extensions of human capability can be, the limitation of being human, and a general exploration of the inner, subjective self.
2. The course provides insight to that world or system that is beyond the confines of the individual self and explores the systemic qualities of the world and the people in it.
3. The course ties together the self and system and shows the interaction of self with system. The interface or plane or intersection between the individual and the system is examined. Alternatives for altering this interface are explored.
4. The course serves as a general introduction for entry into the rest of the Integrated Program.

PART II: The Integrating Matrix — Three courses (12 semester hours).

The matrix is composed of nine courses. The courses take the three perspectives of self, world and their combination (the reciprocal) and examine these in the context of one of the three broad areas of knowledge (the sciences, social sciences and humanities). The student must take three courses from the matrix. In order to represent each of the perspectives, there must be one course from each column and one course from each row. (See chart below).

PART III: One four hour course — GENL 304, Introduction to the Non-Western World.

A course in the Non-Western World is required of all students at Western. GENL 304 is taught in the College of General Studies and is an interdisciplinary course with an integrated faculty.

PART IV: 15 Semester hours — Student Selected.

With the assistance of a College of General Studies adviser, the student may select:
1. Additional courses from Part II and/or
2. Sequences of courses from the Distribution Program.

Special sequences of courses have been developed within the College of General Studies. For instance, a sequence of courses in Women's Studies. The student may also take GINT 195 and/or GINT 196 from Integrated Program B.
INTEGRATED PROGRAM B:
STUDENT-PLANNED INQUIRY

One of the ways you can meet Western's General Education requirement is to plan your own program of courses and projects, based on a topic of your own choosing. The Student-Planned Inquiry Program provides an opportunity for you to do just that.

The Methods of Inquiry course introduces you to the methods of designing your own education by asking effective questions and locating the best available information. The projects and courses selected constitute the general education program for that student. These are programs specifically tailored to your own needs and are built around your experience and interests. GINT 195 — Methods of Inquiry helps develop the skills you will need to make the most of the University and your education. You start by learning about the resources of the University and the community and how these can be used to your own best advantage.

In PART II the student is helped to begin implementing the course of study and projects decided upon in PART I. Notice that alternatives are already mentioned since not all student-planned inquiry can be satisfied in the same manner.

Unless you learn to investigate things on your own, your education will stop when you leave college. If that happens, where will you be ten years from now? The data indicate that you will change occupations approximately five times during your lifetime. Learning how to take best advantage of your opportunities will certainly make these changes easier for you.

PART III assures that you have a balanced program. It also includes the University wide Non-Western World requirement.

PART IV provides an opportunity for any student to take advantage of the Student-Planned Curriculum. The advisers in Integrated Program B are available to help individuals plan their entire university experience without the formalities of the usual major or minor.

PART IV: STUDENT-PLANNED CURRICULUM (optional)

See description of this program in the University Catalogue. Students may extend their topic of Inquiry into a four-year Bachelor's degree program without the usual requirements of a Major or Minor.

In summary, the Integrated Programs provide a variety of advantages that cannot be had elsewhere:

1. There is a planned sequence of events that helps make sense and meaning out of general education for each student.
2. There is individual attention paid to each student by a faculty who get to know the individual students.
3. Classes in Integrated Programs usually have a group of students who are known to each other.
4. First preference for enrollment is given those who are members of Integrated Programs.
5. Professional and faculty counseling is available at all times to all Integrated Program members. You just need to ask for it.
6. Integrated Program courses are not unrelated events in General Education. There is planned continuity and sequence in both Integrated Programs.

NOTE: For additional information regarding these programs call 383-0941, Office of the Dean, College of General Studies, 2090 Friedman Hall.

DESCRIPTION OF COURSES
FOR INTEGRATED PROGRAMS

155 In Pursuit of Awareness 4 hrs.

It is assumed that people want to make a difference for having lived at all, to be noticed, to be taken into account. This course links that wish into awareness in action — a critical consciousness is useful for effectively making a difference. Models of alert insight are available, and are offered. Opportunities are provided for the students to check out the usefulness of these models in terms of their own goals and expectations. (Also approved for the distribution program).
165 The Twentieth Century Experience. I: From the Victorian to the Aspirin Age (1890-1933) 4 hrs.

This course presents an interdisciplinary survey of the Western and non-Western worlds at the beginning of the twentieth century. Victorian manners and morals, the birth of modern art, the first movies, the emergence of Freudian psychoanalysis, the quantum theory and relativity, the last great surge of imperialism, World War I, the Russian and Chinese Revolution, the origins of Fascism, the Roaring Twenties, and the Great Depression — all these and more constitute one of the most eventful periods in mankind’s history.

166 The Twentieth Century Experience. II: From the Third Reich to the Third Millenium (1933-2000) 4 hrs.

This course presents an interdisciplinary survey of the recent past, contemporary situation, and future prospects of the Western and non-Western worlds. The Great Depression, the Rise and Fall of Nazi Germany, World War II, the Cold War, nuclear weapons, the Arab-Israeli conflict, Vietnam, Existentialism, Behaviorism, the pop culture explosion, New Wave Cinema, the energy crisis, Futurology — all these and more constitute one of the most chaotic yet creative periods in mankind's history; our own time.

175 Environments of Man 4 hrs.

This course deals with man's natural, social, and personal environments. It is designed to acquaint students with the methods of inquiry used in different disciplines and the broad issues which man currently is facing and will face in the future. (Also approved for the distribution program.)

180 Technology in Culture: Past and Present 4 hrs.

An introductory course which gives a brief historical study of the technology from the 17th Century to the present, defining technology and its various aspects, relating technology to other segments of our culture and defining some of the advantages of modern technology as well as some of the problems that now face us.

195 Methods of Inquiry 4 hrs.

An introduction to independent study techniques, with emphasis on asking questions and locating sources of information. Students will design an independent study project and do some preliminary investigation in their field of interest.

196 Frames of Reference 4 hrs.

This course widens a student's original topic by relating it to the concepts and methods of a variety of disciplines. Study projects will be designed as integrated programs of General Education. This course is designed as part of a two-course sequence with GINT 195.

197 Inquiry Seminar 4 hrs.

For students engaged in Inquiry projects designed in GINT 195 or GINT 196. Faculty guidance and support in an informal structure. This seminar is repeatable for credit.

FOR GENERAL PURPOSES

100 Ways of Knowing 4 hrs.

Students will investigate the differences and similarities among the ways of knowing in the sciences, the social sciences, and the humanities. Students will explore types of evidence, laws of logic, inferential processes and the application of these as tools of critical inquiry, to contemporary issues and problems, particularly those operating among fact, attitude, value, and action.

101 Yesterday, Today, and Tomorrow 4 hrs.

A readings-discussion course which will examine the trends and movements of the immediate past that continue to shape the present and conditionally affect the future. Students will be asked to do a considerable amount of writing in order to examine their own past and present experiences, toward the objective of envisioning a desirable and workable future.
College of General Studies

141 Workshop: Language Skills 2 hrs.
Designed primarily for those whose skills are academically inadequate, the workshop is planned to aid students in developing their facility with language. It focuses on the structure and diction of academic discourse, with special emphasis on writing. Favorable habits of proofreading, editing, and usage are encouraged. Students may use the workshop to facilitate writing assignments from other courses, whenever practicable. No letter grades will be given; credit is earned whenever acceptable facility in the language skills is demonstrated; a grade of "Credit" is awarded at the end of the semester during which credit is earned. Enrollment is by permission. Does not count for General Education.

222 The Status of Women 4 hrs.
This course is designed as a general exploration of the content and the effect (including affect) of the traditional definition of "woman." Attention is given to such sources as law, religion, literature and art, mass media, psychology, biology, and social conventions, and to the social processes which transmit and reinforce sex role behavior.

241 Library Resources 3 hrs.
Students will be introduced, through lectures, projects and exercises, to materials, methods and people that can help them find what they want in the library. They will become acquainted with (1) library organization, including the card catalog (2) forms of publication — books, documents, periodicals, microforms, etc. (3) indexes, bibliographies, on-line computer retrieval systems, and other reference tools which aid in the pursuit of information (4) strategies for using the library effectively. All of this is intended to help students with their course work and to pursue their personal and career interests in the future.

299 Independent Study in General Studies 1-8 hrs.
Various extra-classroom activities, including independent reading or research under the direction of a faculty member or projects associated with field experience or travel of recognized educational value. Prior arrangement with a faculty member and prior approval of a General Studies Area Chairman and the office of the Dean of the College. May be repeated for credit.

304 Introduction to the Non-Western World 4 hrs.
A survey of the traditional cultures of certain major societies which have developed essentially apart from the stream of Western civilization. This is followed by an analysis of the Western impact on these societies and their reactions thereto, and by a study of contemporary social, economic, and political problems of Non-Western countries.

331 The Many Faces of Nature 4 hrs.
A lecture-discussion course designed to explore the dominant Western attitudes toward nature as they have been expressed during the past 2600 years and as they are manifested in the cultural patterns of today. The extent to which homocentrism and egocentrism, emanating from both the Classical Greek tradition and the Judeo-Christian tradition, have shaped these attitudes will be central to this investigation.

399 Field Experience 2-8 hrs.
This course is for students who wish to pursue a program of independent study combining academic work with social, civic or political field work. Prerequisites: a written outline of the student's project, approved by a faculty supervisor, and approval from the office of the Dean. Elective credit only.

499 Independent Study in General Studies 1-8 hrs.
Various extra-classroom activities, including independent reading or research under the direction of a faculty member or projects associated with field experience or travel of recognized educational value. Prior arrangement with a faculty member and prior approval of a General Studies Area Chairman and the office of the Dean of the College. May be repeated for credit.
Humanities Area

Phillip D. Adams, Chairperson
Harold O. Bahlke
Lynwood H. Bartley
Joseph M. Condic
Joan Crandall
Beverly P. David
Audrey Davidson
Richard dePeaux
Howard Dooley
James M. Ferreira
Reginald Gammon
Michael Geis
Arnold Gerstein
Gilda Greenberg
Richard Joyce
Robert M. Larson
F. Theodore Marvin
Arnold Masunungure
Harvey Overton
Dale H. Porter
Stephen Schicker
Larry tenHarmsel
Chung-Hei Yun

The major concern in all courses offered by the Humanities Area is the fundamental question: what does it mean to be a human being? We examine, especially through historical perspectives, a spectrum of other persons' intellectual, emotional, spiritual, and imaginative responses to this basic question. We explore a whole range of values associated with those responses for the purpose of providing a comparative basis for one's own discrimination and choice.

All courses offered by the Humanities Area are interdisciplinary, and each deals with man's mythic and artistic responses, his cultural symbols. Our emphasis is frequently on the arts, but our approach is not so much a comparative or interrelated study of the arts (where the main concerns lead ultimately to questions about the arts and their form and style) as it is a matter of employing the arts to gain particular insights into the nature of man as he responds to his cultural environment. Our approach necessarily involves more than a concern for the arts. Since our primary concern involves the question of what it means to be a human being, and since answering such a question also involves an examination of man's cultural context, all of the traditional humanistic disciplines may be involved in our courses. Moreover, in many of our courses, we find it necessary to extend into the Sciences and Social Sciences in order to delineate and/or corroborate a given cultural idea.

Humanities Area courses may be used to satisfy requirements in the Fine Arts Minor.

DESCRIPTION OF COURSES

102 Direct Encounter with the Arts 4 hrs.
A course which adopts a sensory approach to the Humanities by introducing the student to his cultural world, and by guiding him through first-hand experiences in a number of art areas: cinema, photography, theater, sculpture, music, poetry, dance, and architecture. Based on these experiences, the student will discuss the individual and/or group reaction to the experience with individual instructors, write a journal or response paper, and participate in seminar-workshops. There will be a course charge in lieu of textbooks.

200 The Arts in the Twentieth Century 4 hrs.
This course is a comprehensive examination of selected arts of modern Western culture (four from among the following: architecture, dance, film, literary arts, music, painting, and sculpture) demonstrating their relationship to the major intellectual and social currents of the twentieth century. The emphasis in the course is on helping the students discover meaningful ways to respond to the arts by stimulating them to develop their own powers of observation and critical response through the materials and activities of the course.
College of General Studies

201 The Popular Arts 4 hrs.
This course focuses upon one or more of the popular arts of contemporary Western culture, demonstrating significant relationships to several of the major intellectual currents of the twentieth century. Stress will be laid on the merits of the popular arts as aesthetic and as social products, and the student will be called upon to make use of a new consciousness of this portion of his surroundings.

202 The Arts in the Global Village 4 hrs.
This course will show how forms of expression developed in one culture can influence those of another and how ideas are transformed by being shared across boundaries.

203 Uses of the Past in the Present 4 hrs.
A comparison of themes, structures, symbols, and techniques which appear in the arts of the past and have reappeared on a more or less regular basis throughout history up to and including the present. The course will deal with at least three of the following arts: literature, painting, music, sculpture, dance, theater, architecture, and film.

204 Practicum 4 hrs.
This course is not designed to serve as an introduction to the practice of any art; rather, it is intended to serve the non-specialist by stimulating his interest in himself and in the world around him, by involving the students intimately in the process of aesthetic creation, and by exposing them to practitioners in three of the following areas: dramatics, film, graphics, music, new media, three-dimensional forms, visual arts, and writing. The Practicum is united thematically so that the three individual experiments in the arts will have a common foundation.

205 The Arts and Cultures of Africa 4 hrs.
An introduction to African cultures through a study of the most significant concepts and arts which reflect the uniqueness of Africa. The course will focus on the student's knowledge of the relation of these arts and cultures to himself.

207 Secular Arts of Asia 4 hrs.
An introduction to the secular arts of India, China, and Japan which reflect distinctive cultural, aesthetic, and ideological patterns not directly related to the major organized religions.

208 The Arts and Culture of India 4 hrs.
An historical introduction to the evolution of Indian thought and art utilizing those modes of artistic expression which reflect the unique South Asian World View.

209 The Arts and Culture of Black America 4 hrs.
An introduction to the Afro-American culture through a study of the significant concepts and arts which reflect Black America. The course will focus on the student's knowledge of himself in relation to an increasing awareness of the arts of this subculture.

300 Search for Meaning 4 hrs.
A unified study of the Humanities in the Western tradition, from classical times to the Renaissance, at moments of high cultural achievement.

301 Search for Meaning 4 hrs.
A unified study of the Humanities in the Western tradition, from the Renaissance through modern times, at moments of high cultural achievement.

302 American Culture 4 hrs.
A study of significant issues in American life focusing on the relationship of the individual to society as seen from the perspectives of literature, the arts, and social and political theory.
303 African Traditions
An interdisciplinary introduction to the origins, nature and development of traditional African art, cultures and philosophies, and their impact on other cultures.

305 The Changing Faces of Buddha
A study of the dynamic interaction between Buddhist values and rapid social change in southern and eastern Asia. Special emphasis on recent political expressions of this ancient religious tradition.

306 Asian Traditions
A study of the most significant arts and ideas in the many cultural traditions of Asia. Select examples will be compared with each other and with the student’s own cultural heritage.

315 Human Communication
An investigation of the processes by which man uses symbol systems, centrally concerned with both personal and cultural communication behavior. The course is intended to increase understanding of an sensitivity to communication processes and their limitations through increasing the student's consciousness of his own communication behavior and through exposing him to the ideas of various communication specialists.

316 Mass Media: Messages and Manipulation
An examination of mass communication in general and of a variety of mass media in particular. Students will consider the processes, effects, and functions of mass media through considering relevant scholarship from such diverse fields as sociology, history, psychology, anthropology, art, and literature, and the student’s personal response to these will be analyzed.

400 The Twenties
A study of one of the most creative and explosive decades in modern times. The growth of jazz and modern art, Prohibition, the New Woman, the Klan, the Red Scare, the movies — all this and more serve as a prescription for our own times.

401 The Creative Process
This course will analyze the process through which symphonies, poems, photographs and other works of art are created. The analysis will then be extended to a range of phenomena beyond the arts, including subjects of student concern.

402 Towards 2000: Utopian Visions and Futurism
A discussion course which introduces the student to the classic literature of utopias and contemporary futurology, covering utopias of escape and reconstruction from Plato to Skinner, the anti-utopias of Huxley and Orwell, and futurist views of the world of the 21st century.

403 How It Really Happened
This course examines the problem of representing the truth about historical events through the eyes of historians, novelists, painters, filmmakers and other artists. It emphasizes criteria for judgment rather than “right” answers.

404 America Since World War II
A study of the critical issues in American culture since the Second World War as embodied in the art, literature, and social movements of the last three decades. The Beat Generation, the Black Revolution, Abstract Expressionism, Pop and Conceptual Art, and the impact of existentialism on traditional values will be examined to determine how they can expand our understanding of the present.

405 Myths and Man
The purpose of this course is to study man as a myth-making being. The course will analyze several basic mythic structures that man uses to create a universe in which there is meaning and purpose. These myths will be studied in art, literature, music, film and/or related materials.
Nations and tribal societies have clearly defined characteristics, often transcending or engendering artistic styles, which enable us to speak of phenomena such as "the Italian spirit," "the Russian temperament," "the typically American," "the Japanese character," or "the African mind." Several cultures will be examined in an attempt to define such cultural dispositions. Various artistic products will be discussed with the major focus on the art of music.

407 The Creating Audience

A study which will examine the perspectives of individual artists in relationship to their art and the audience. This course proposes to analyze the artistic process from the context of individual involvement both as artist and audience, culminating in a discussion of active and passive audience participation in the creative process in the works of such men as John Cage and Robert Rauschenberg.

408 Marx, Mao and the Chinese Tradition

A study of Chinese organic thought, as expressed in art and philosophy, and its Western interpretations. The course focuses upon the way this mode of thought and its interpretations relate to the development of Mao's domestic and foreign affairs.

409 Architecture and Man

An examination of architecture, particularly modern architecture, in its relation to man and the man-made environment from a humanistic perspective — the possible contribution of architecture to the good life.

410 Art and Technology

An inquiry into the contemporary visual and musical arts as they relate to technology.

411 Women: Past, Present and Future

This course will concern itself with the subject of "women" as a legitimate field for scholarly inquiry in order to establish the facts and explore the myths of woman's role in Western Culture. The approach will be interdisciplinary: historical for background, biological to explore facts versus myths, artistic models, literary tradition, changing social forces and the contemporary world of female consciousness.

412 Southern Thought and Culture

An examination of the uniqueness of the South as a civilization and as a reflection of American Society as a whole. Topics will range from religious revivalism and slavery in the Old South to fundamentalist and segregationist practices in the New South, while also discussing outstanding Southern writers, including Faulkner, Warren, Caldwell, Page, and Glasgow.

413 Modern African Artists

An examination of the creative arts (such as sculpture, music and dance) and the cultural and philosophical developments and adaptations in contemporary Africa against the background of world history and world cultures.

501 Humanities Workshop: Variable Topics

This course is designed to permit the granting of appropriate credit for participation in workshops and institutes sponsored by the Humanities Area of the College of General Studies. Humanities Workshop may be repeated for credit, upon a change in topic, for a maximum of 6 hours credit. This course may not be used to satisfy the University's General Education requirements.
An important part of the general education of a person is an understanding of the science and technology which have had such a tremendous impact on our daily lives and on the shaping of our culture. The main emphasis of some Science Area courses is comprehension of the development of scientific thought and the relationship of science to other aspects of our cultural development. Other courses consider recent discoveries and technological advances. Also considered are the possible environmental or social consequences of applying these advances. The scientific knowledge necessary to understand the new technology is presented. This is followed by exploration of different points of view and the evolution of alternate solutions in terms of practical considerations and moral and ethical values. Other courses are directed toward students in elementary education. Science concepts and processes are considered in the context of new elementary science programs which see science as a vital part of the general education of children.

**DESCRIPTION OF COURSES**

107 **Planetary Science in Elementary Education**  
4 hrs.  
An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites) Not recommended for science majors.

130 **Social Issues in Physical Science**  
4 hrs.  
A course designed to look at current science related problems of society having their factual core of knowledge in the physical sciences. Sufficient understanding of this knowledge is acquired to give non-scientists an understanding of the trade-offs resulting from alternative attempts to solve a problem. Emphasis will be placed on understanding the scientific enterprise, how it relates to modern technology, and how both relate to people and to societal issues.

131 **Physical Science in Elementary Education**  
4 hrs.  
This course is designed to introduce students to some of the broad concepts of physical science and to the methods of inquiry that have been useful in developing these concepts. Student experiences are designed to further understanding of the inter-relationships between the physical sciences and society, as well as those between the physical sciences and elementary general education, and will be taught in laboratory groups no larger than thirty.

132 **Aims and Achievements of Science**  
4 hrs.  
This course is designed as a broad philosophical and historical view about science in general. It examines the aims or goals of science and compares these to the achievements of the scientific enterprise, as well as demonstrating the inter-relationships between science and other aspects of our culture.
133 Issues in Social Biology 4 hrs.
This course involves a study of some recent advances in biology and medicine, their social and ethical implications, and the public policy problems raised by such questions as organ transplantation, drugs, controlling population size, genetic engineering, controlling environmental factors affecting health and disease, and the ethical and moral concerns implicit in these.

330 Radiation, Society and Man 4 hrs.
This course is designed as an introduction to basic ideas of ionizing-radiation and radiation sources and how the use of ionizing-radiation affects society and the individual. The course will use lectures, discussions, laboratory work, independent, and small-group study.

A lecture-discussion course designed to explore the interplay between the growth of scientific ideas and the cultural milieu from which they came. Attention will be directed towards the question, “What is the nature and shape of the universe and man’s relationship to it?” by focusing upon the Copernican Revolution in astronomy and its ultimate impact on post-Renaissance Europe.

431 Science as a Cultural Process: The Darwinian Revolution 4 hrs.
A lecture-discussion course designed to explore the interplay between the growth of scientific ideas and the cultural milieu from which they came. Pre-Darwinian views of man’s “place in nature” will be investigated together with the Darwinian Revolution in the life sciences, the opposition to it, and the far-reaching influence of Darwin’s ideas during the past one hundred years.

432 Science and Parascience 4 hrs.
The goal of this course is to examine open mindedly several “alternate visions” of the nature and origin of human life in the light of science’s attitudes and objectives. Topics examined: astrology, future-prediction, “harmonies” between entities, ESP, telepathy, the aura, PK, UFOs, extraterrestrial life, ancient astronauts, and others.

433 Science, Technology, and Society 4 hrs.
This course consists primarily of seminars and discussions centering on scientific and technological impacts upon contemporary society, viewed from a variety of perspectives. One objective will be to assist the student in acquiring knowledge about current scientific and technological problems.

434 Biomedical Ethics and Society 4 hrs.
This course concentrates on contemporary scientific and ethical issues in biomedicine. Some issues involved are: new reproductive technologies and their appropriate use; experimentation on human subjects (the meaning of informed consent, risks and benefits); new technologies to extend life and the quality of the life extended; biological engineering; death, transplantation, and resource allocation; ethical aspects of biomedical innovation.
Social Science Area

Nita Hardie, Chairperson
Syed Abedin
Carlene Bagnall
Ted Bank
Robert Brewer
Ken Byerly
Do Young Chang
Sushi Datta-Sandhu
Dave DeShon
Thomas Dube
Gilda Greenberg
Norman Greenberg
Francis Gross
Bruce Haight
Barbara Havira
Arthur Helweg
Charles Houston
Lawrence Israel
Pat Klein
Hung Peng Lee
George LeBonte
Minoru Mochizuki
Evan Richards
Ira Rutherford
Visho Sharma
Larry Tyler
Dick Williams
Karen Yinger

The primary focus of social science is the realm of human experience. Within this field of study, special concern is the analysis of the social processes which link all human beings. The empirical, data-based approach which characterizes social scientific inquiry seeks to foster a better understanding of the emergence and nature of the regularities of human life.

The main objective in the teaching-learning process is to facilitate the development of social self-consciousness, an awareness that individuals experience life, define and express their humanity within a human group which is part of a larger social network. To achieve this, social science courses are designed to provide the student an opportunity to examine: the cultural relativity of behavior, ideas and values as well as the dynamic and continuing processes by means of which these are diffused across cultures; the idea that humanness has a socially determined and historical, as well as individual basis; the view that there are reciprocal influences of environmental settings, cultural processes, social forces and individual expression; the view that the social processes of any group tend to define the limits of individual activity; the importance of an empirical analysis of private and social perspectives as well as the predictions which these permit; perspectives which go beyond the specificities of the regular social science disciplines; and, experience-based views of social reality which are placed into juxtaposition with one or more theoretical formulations of social processes, the views of fellow students, and those of the instructor.

DESCRIPTION OF COURSES

121 Dimensions of Human Behavior 4 hrs.
A series of learning experiences designed to explore the social, psychological, and cultural dimensions of human behavior, using both individual and group approaches to learning. The emphasis is upon the dilemmas and strengths of a person which stem from processes which impose restraints upon social behavior.

122 Dynamics of Race and Culture 4 hrs.
An analysis of the origins, development, and consequences of "Race" as a significant concept in the contemporary world. Subject matter will emphasize the reciprocity of environment, culture, social forces, and the individual.

123 Human Society 4 hrs.
A study of the biological and social aspects of human diversity. Discussions of the structure of society and its institutions will give special attention to such contemporary topics in the American scene as values, political and economic systems, ethnic relations, environmental quality.
160 Man the Explorer
The focus is upon the quest and human drama in exploration, the on-going research that occurs at the frontiers of knowledge in various disciplines. Multi-media lectures, demonstrations and opportunities for independent study.

162 Mainstreams of World Cultures
An examination through time and space of selected world cultures at high points of accomplishment in developing arts and philosophies of life.

220 Background of the Contemporary World
An inquiry into the “roots” of our contemporary world. The course examines, against a background of rapid technological and social change, key movements, ideologies, institutions, events, and personalities of the 20th century, emphasizes the complex links among these factors, and supplies a coherent framework for further study of current world affairs.

224 Americans Called Indians
A study of the results of European encroachments in the New World on native peoples, focusing on those in the geographic area of the United States. Cultural myths and fallacies about native Americans will be explored and the perpetuation of common stereotypes in theology, popular literature, politics, and in the social sciences will be examined.

225 Alternate Life Styles
The focus of this course will be upon the interpersonal relationships that do not follow the traditional life style patterns (i.e., coupling, marriage, nuclear family). Psychological and sociological frameworks will be used to examine several alternative life styles, such as communes, “group marriage,” and women’s collectives.

255 Self-Image and Images of Social Reality
An inquiry into the nature of self-images, their social origin and growth and the nature of one’s perceptions of the political, social and economic world. The aim of the course is to bring about an understanding of the factors which influence perceptions and an increased knowledge of the form and quality of self-images of the social world.

256 Beyond Survival
As Rene Dubos has suggested, the real issue is not “Will man survive?” but rather “What can be the quality of life available to the survivors?” This question will form the substance of the content of this course.

260 World Exploration
Course content is partly determined by the students; focus is upon recent findings at the frontiers of research in many fields, and particularly upon the active involvement of the students in exploring the world around them. Multi-media lectures, seminars, and student-planned expeditions to nearby areas of special interest.

321 Minority Groups and Human Rights
A general study of the multi-national society in the United States dealing with racial-ethnic groups, designated as minorities, such as the American Indian, the Mexican-American, the Oriental, and the Black American. The course will focus on the cultural and biological process of human differentiation, formation of minority-majority populations, social forces and institutions, and contemporary minority cultures and their viewpoints.

323 American Ethnic Groups
Attention will focus primarily upon ethnic groups in the urban setting. Particular emphasis is placed on mainstream American beliefs and values expressing ethnic stereotypes, such as “Melting Pot versus Salad Bowl,” “the American Dream,” and “ethnic backlash.” The course deals with the experiences of ethnic groups not usually treated in race relations classes.
355 Post-Freudian Thought
A course designed to help the student gain a knowledge of man's life as a quest. Selected post-Freudian thinkers, each of whom is concerned with the hidden motivational factors in man's life, are studied in order to shed light on man's search for meaning and productivity.

360 Explorations in Urban Environments and Ecological Studies
Cultural and human ecologies of urban environments; a study of man in his total environment from the humanistic perspective, particularly the urban experience and its environmental implications; an exploration of the variety of alternative life styles and adjustments that are possible in the urban environment. Out-of-class field study can be arranged additionally for up to 4 credit hours upon approval by the instructor and appropriate administrative officers.

363 Cross Cultural Exploration of Human Consciousness
The differing ways that humans define and experience reality; world views and self-concepts in various cultures. The principles and practices of Eastern disciplines, and those of other exotic cultures, are examined in the light of Western science. Students are introduced to recent findings at the frontiers of cross-cultural research in transpersonal psychology, psychiatry, parapsychology, and biofeedback technology. Lectures and discussions with occasional guest speakers.

371 Non-Western Societies in the Modern World: East Asia
An analysis of the distinctive "style" of the civilizations of East Asia. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the interrelationship between technology, social structure, and ideology.

372 Non-Western Societies in the Modern World: Southeast Asia
An analysis of the distinctive "style" of the civilizations of Southeast Asia. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.

373 Non-Western Societies in the Modern World: South Asia
An analysis of the distinctive "style" of the civilizations of South Asia. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.

374 Non-Western Societies in the Modern World: The Middle East and North Africa
An analysis of the distinctive "style" of the civilizations of The Middle East and North Africa. The types of transitions being made in this area from a traditional to a modern society will be explored through an examination of the inter-relationship between technology, social structure, and ideology.

375 Non-Western Societies in the Modern World: Sub-Saharan Africa
An analysis of the distinctive "style" of the civilizations of Sub-Saharan Africa. The types of transition being made in this area from a traditional to a modern society will be explored through an examination of the interrelationship between technology, social structure, and ideology.

421 Protest Movements and Counter Culture
A study of contemporary (especially American) socio-cultural conflict and change. Because of the controversial and complex nature of the topics, the seminar will focus upon the investigation of selected protest movements and counter cultures.

422 Technology and Culture
An inquiry into contemporary technology, ranging from "the pill" to the computer, and the impact of modern technology on key aspects of culture. Focus will be upon those technological processes which are part of the contemporary community. Attention will be paid to future as well as present implications of technological development.
423 Role Portrayal in the Mass Media 4 hrs.
An analysis of the content of various types of the mass media, emphasizing sex-role and ethnic-role portrayals in television, popular magazines, films, and popular song lyrics. It is important that the students enrolling in the course have access to television.

424 Science, Mysticism and Creative Mythology 4 hrs.
A comparative study of Oriental and Occidental mythologies with respect to their mystical, cosmological, sociological and psychological functions. Investigations center upon altered states of consciousness, changes in scientific views of life, the relevance of archetypal processes to cultural forms, parapsychology and an introduction to general systems theory.

455 Personal World Views 4 hrs.
The world view of the student and some basic perspectives on the construction of world views in general are the chief concerns of this course. The origins, patterns and possible resolutions of existential crises arising from world views in conflict are investigated in terms of secularization and sacralization, belief and alienation and anxiety, and courage. These themes are approached through the perennial experiences of laughter, play, hope, damnation, and order.

460 Field Experience in Environmental and Ecological Studies 4-6 hrs.
Cultural and natural environments in ecological perspective; a hard look at past, present and future options open to man in his use and misuse of planet earth, together with an exploration into the relatively new frontiers of inner and outer space. Lectures, seminars and field trips.

471 Minorities in the Non-Western World 4 hrs.
An analysis of social and cultural dynamics of minority communities and the determinants and consequences of inter-community relations in pluralistic societies with special reference to points of tension and possibilities of harmony in the fluid context of changing social systems.
The Graduate College

GEORGE G. MALLINSON, Dean
RICHARD T. BURKE, Associate Dean
SID DYKSTRA, Associate Dean

School of Librarianship
THE GRADUATE COLLEGE

The Graduate College offers a wide variety of programs leading to the master's, specialist and doctoral degrees.

The University has sixty-one master's degree programs. Master of Arts degrees are awarded in twenty-five programs in the following general categories within the College of Education: Audiovisual Media, Blind Rehabilitation, Counseling and Personnel, Curricula in Teaching, Early Childhood Education, Educational Leadership, Special Education, Teaching in the Community College, Teaching the Economically and Educationally Disadvantaged, Teaching in the Elementary School, Teaching in the Middle or Junior High School, and Teaching of Reading. Nineteen other educational programs at Western also lead to the Master of Arts degree: Anthropology, Art, Biology, Chemistry, Communication Arts and Sciences, Dance, Economics, English, Geography, History, Home Economics, Modern and Classical Languages, Mathematics, Medieval Studies, Physics, Political Science, Psychology, School Psychology, Sociology, and Speech Pathology and Audiology. The University also offers the Masters of Science degree in Accountancy, Biostatistics, Business, Computer Science, Earth Science, Geology, Librarianship, Operations Research, Paper Science and Engineering, Statistics, and Technology, as well as the Master of Business Administration, Master of Fine Arts, Master of Music, Master of Occupational Therapy, Master of Public Administration and Master of Social Work degrees.

In 1960 programs leading to the Specialist in Education degree were introduced. Upon completion of a sixth-year program, this degree is offered in Educational Leadership, Counseling and Personnel, Special Education, and School Psychology. In addition, the University offers Specialist in Arts degrees in Business Education, History, Librarianship, Mathematics, and Science Education.

Doctoral programs were initiated in 1966 and were fully accredited by the North Central Association in 1971. Five of these programs, those in Chemistry, Mathematics, Science Education, Sociology and Psychology, lead to the Doctor of Philosophy degree. The Doctor of Education degree is offered in Counseling and Personnel, Educational Leadership, and Special Education.

Please refer to The Graduate College Bulletin for further information on these programs.
The 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 curriculum may meet certification requirements for teacher-librarianship by taking the undergraduate minor in library science and a subject-matter major (or minor in the elementary curriculum). The Librarianship minor consists of the following courses: 100, 230, 416, 510, 512, 530, and 542 or 546. School Media Center Experience 407 is required during the last year of work. A portion of the Directed Teaching assignment is also spent in one of the cooperating school media centers. A course in audiovisual media is highly recommended.

A departmental laboratory containing books and other materials in library science and related fields is provided in the School of Librarianship.

## PRE-PROFESSIONAL CURRICULUM

Bachelor of Arts or Bachelor of Science Degree

Candidates in the College of Arts and Sciences who enroll in the Librarianship Curriculum must fulfill the requirements for the B.A. or the B.S. degree including: (1) general education; (2) a major in a subject field; and (3) a minor in librarianship.

A typical pre-professional library science program of studies follows:

### Course Requirements:

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total hours required for this curriculum</td>
<td>122</td>
</tr>
<tr>
<td>1. General Education requirements</td>
<td></td>
</tr>
<tr>
<td>2. Humanities</td>
<td></td>
</tr>
<tr>
<td>Modern Language</td>
<td>8</td>
</tr>
<tr>
<td>English electives</td>
<td>8</td>
</tr>
<tr>
<td>Communication Arts &amp; Sciences 130</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>3. Science</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>4. Social Sciences</td>
<td></td>
</tr>
<tr>
<td>Government elective</td>
<td>3</td>
</tr>
<tr>
<td>History elective</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 200</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>5. Librarianship</td>
<td></td>
</tr>
<tr>
<td>Librarianship as a Profession: Introduction 100</td>
<td>2</td>
</tr>
<tr>
<td>Fundamentals of Library Organization 230</td>
<td>3</td>
</tr>
<tr>
<td>Building Library Collections 510</td>
<td>3</td>
</tr>
<tr>
<td>Reference Service 512</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Classification and Cataloging 530</td>
<td>3</td>
</tr>
<tr>
<td>Reading Interests of Young Adults 542 or Storytelling 546</td>
<td>3</td>
</tr>
<tr>
<td>or Teacher Ed. 548</td>
<td></td>
</tr>
<tr>
<td>6. Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>7. Electives and Departmental Requirements for Subject Major</td>
<td></td>
</tr>
</tbody>
</table>
DESCRIPTION OF COURSES
UNDERGRADUATE

100 Librarianship as a Profession: Introduction* 2 hrs. Fall, Winter
   An introductory survey to acquaint students with the various types of services offered in the modern library as a social, cultural and educational institution. Students will be able to explore areas of interest, to observe various activities performed in selected libraries, and to discuss current issues with notable librarians.

230 Fundamentals of Library Organization 3 hrs. Fall, Winter
   A study of the practical methods for acquisition, processing and circulation of books and other materials and the maintenance of essential business records. Emphasis on simple organization of library materials for effective use in schools and small public libraries.

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

416 Instructional Materials, K-12* 3 hrs. Winter
   Identification and characteristics of media which support classroom instruction in the elementary and secondary schools. Introduction to broad range of print and non-print materials and the process of evaluation in the light of instructional needs.

UPPERCLASSMEN AND GRADUATE STUDENTS

506 Introduction to Computers 1 hr. Fall, Winter
   Flow charts and computer programs will be prepared in the BASIC LANGUAGE to be run on a digital computer. Prerequisite: 1½ yrs. h.s. algebra or Math 100.

510 Building Library Collections 3 hrs. Fall, Winter

512 Reference Service* 3 hrs. Fall, Winter
   Introduction to a variety of materials which can serve as sources of reference and bibliographic information. Critical examination and evaluation of reference materials is a basic emphasis. Attention is given to organization and methods of reference services in libraries.

530 Introduction to Classification and Cataloging 3 hrs. Fall, Winter
   Introduction to basic cataloging and classifying principles and procedures. Includes theoretical study and practical application of descriptive cataloging, rules for determining main and secondary entries, subject cataloging, and classifying according to the Dewey Decimal Classification scheme. Processing non-book materials and the development, use and maintenance of library catalogs are included. Laboratory experience is required.

542 Reading Interests of Young Adults* 3 hrs. Fall, Winter
   Study of the fields of literature suited to the interests of young people. Students are given opportunity through wide reading to develop principles and standards for the selection of the book collection. Includes an introduction to methods of stimulating broader reading interests and conducting group book discussions with young people.
546 Storytelling*

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

Offers a program for the advanced student for independent study in a special area of interest. Arranged in consultation with the advisor.

*Open to students in other departments.
The Division of Continuing Education

The Division of Continuing Education offers off-campus class opportunities to persons who wish to pursue their education on a part-time basis. Increasing numbers of men and women are becoming interested and involved in adding to their educational backgrounds for a variety of reasons — to improve career opportunities, to supplement past educational experience, to meet certification requirements, for personal satisfaction and stimulation.

In response to the needs of this new adult student body, Western's continuing education activities have been expanded to include extension courses for both undergraduate and graduate credit, correspondence courses, conferences, short courses and seminars for teachers, business, industrial and community leaders, and other interested adults. A special program for continuing education for women has been established. Course offerings in the sixteen southwestern Michigan counties served by Western's Division of Continuing Education are planned in conferences between departmental representatives and continuing education administrators who continuously analyze student needs and requests.

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

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

In the field of adult education the Division offers 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.

The central office of the Division of Continuing Education is located in Walwood Union, East Campus, Western Michigan University, Kalamazoo. Off-campus services are channeled through four Centers located as follows: Battle Creek Regional Office at the Kellogg Community College, 450 North Avenue; Benton Harbor Regional Office, 777 Riverview Drive, Building B; the University Consortium, 105 N. Division Street, Grand Rapids; Muskegon Regional Center, 3308 Glade Street.

GENERAL UNIVERSITY STUDIES

The Division of Continuing Education has developed a new kind of bachelor's degree program for adult students who are unable to take their courses on campus. This degree program has been given the title General University Studies Curriculum. In planning this new approach to earning a bachelor's degree, the Division has emphasized the concepts of off-campus scheduling, of part-time participation, and of flexibility of course selection. The General University Studies Curriculum especially serves the student with a community college background. Courses may be taken both on- and/or off-campus.

The specific course requirements will vary depending upon the Area of Concentration selected by the student. All student programs must be planned by the student with the academic advisor for the Area of Concentration in which the student wishes to major.

General requirements for a bachelor's degree in the General University Curriculum include:

1. 122 semester hours of college level credit of which at least 60 must be taken in an institution offering a 4-year college degree program, 30 semester hours of which must be taken through Western Michigan University.

2. Completion of a planned Area of Concentration involving at least 45 semester hours of credit.

3. Completion of the General Education requirements of 35 semester hours of work. This work does not have to be exclusive of work included in the Area of Concentration.

Students completing this curriculum may earn either a BA or BS depending upon the subject matter content of their Area of Concentration.

Arrangements for consultation with advisors about the programs will be provided at the student's convenience. Inquiries about any of the programs and activities provided by the Division of Continuing Education should be directed to either the Divisional Office at Western Michigan University, Kalamazoo, or the the off-campus centers.
AREAS OF CONCENTRATION

I. American Studies

Completion of this Area of Concentration provides a bachelor of arts degree for students interested in a broad examination of the American scene. The student who has completed two years at a community college or four-year institution and has developed an interest in Humanities, Fine Arts, or Social Science may wish to be admitted to this program. This program should be particularly valuable for those whose primary interest in attaining a degree is to build into one program a variety of courses taken to broaden one's understanding and appreciation of American life and institutions. Although the program is primarily non-vocational, it will provide a useful background for a number of career-oriented professional degree programs such as public administration, social work, and business administration.

General Requirements: Meet the general requirements established for the General University Studies Curriculum.

Subject Matter Fields: The candidate will select courses from the following subject matter fields in fulfilling the requirements for the American Studies Area of Concentration:

A. English
B. History
C. Political Science
D. Art, Music, Dramatics
E. Sociology, Social Work, Economics
F. Philosophy, Religion, Anthropology
G. Other (with approval of advisor)

Area of Concentration (Minimum of 45 credit hours): Only courses related to the American experience may be chosen:

A. At least two courses each in four of the subject matter fields listed above. Minimum: 25 hours
B. A preparatory seminar in American Studies which will introduce the student to interdisciplinary studies. This course may be accomplished through independent study if a preparatory seminar is not available. Should be taken at about the mid-point in the program. 3 hours
C. At least eight hours of laboratory and/or individual study in American culture. Designed to encourage imaginative and innovative application of previous study, this work may draw on local resources, as in the case of regional history and/or community arts, or it may deal with more general aspects of American experience. Students may arrange credit in a variety of ways: community workshops and/or independent studies involving directed research, travel projects, craft work, community service, etc. Preparatory seminar or workshop in American Studies or correspondence courses History 318 or 308 prerequisite to project.
D. An additional nine hours in one of the four fields chosen from above, thereby bringing the total hours in that particular field to fifteen. Minimum: 9 hours

MINIMUM TOTAL HOURS OF FIELD: 45 hours

II. Environmental Studies

Completion of the requirements for this Area of Concentration provides a bachelor of science degree. This program is designed to stimulate the student's interest in the continuing study of life processes and styles, and to provide a basis for understanding the environmental quandry. The student who has attained an associate of science degree or its equivalent in a community college, or who has achieved through a combination of experience and study a comparable level of preparation will be qualified to enter this program.

The Environmental Studies program is designed to assist the student to define, analyze, and evaluate the nature of environmental problems: to prepare for a leadership role in community environmental education and action; to make professional contributions in resolving environmental problems.

General Requirements: Meet the general requirements established for the General University Studies Curriculum. Complete a 45 hour concentration in Environmental Studies. Students are encouraged to complete a traditional academic major which may be a part of or in addition to the 45 hour concentration.
Division of Continuing Education

Subject Matter Fields:

A. Required Courses

ENVS 109, Introduction to Environmental Studies — 1 semester hour
OR
ENVS 110, Fundamentals of Environmental Studies — 3 semester hours
and
ENVS 400, Senior Seminar in Environmental Studies — 3 semester hours

B. Core Courses (Students should select at least three of the following courses or their approved substitutes. Majors in Anthropology, Biology, Chemistry, Geography, or Physics may not use their respective core course as part of their EVS Program.)

Anthropology 100, Man in Evolutionary Perspective — 3 hours
Biology 105, Environmental Biology — 3 hours
Chemistry 140, Introductory Environmental Chemistry — 4 hours
General Studies 360, Explorations in Urban Environments and Ecological Studies — 4 hours
Geography 350, Principles of Conservation and Environmental Mgmt. — 3 hours
Physics 102, Physics and the Environment — 3 hours

C. Elective Courses

The balance of a student program is determined by the student, generally with the help of the Program Advisor. It is recommended that the student choose courses which appear in the University Catalogue designed to complete the requirements of the major in such related disciplines as Anthropology, Biology, Economics, Geography, Geology or Political Science. A list of electives approved for use in the Environmental Studies Program may be found on page 200.

III. Health Studies

Completion of the requirements for this Area of Concentration provides a bachelor of science degree. Special emphasis is placed on broadening the skills of the registered nurse, dental hygienist, respiratory therapist, and radiologic technologist.

This program should be valuable for the student who wishes to develop his or her background of health studies to improve professional opportunities in management, social work, teaching or communications in the health field.

General Requirements: Meet the general requirements established for the General University Studies Curriculum.

Area of Concentration:

A. 15 hours of work taken from previous training.
B. 15 hours of work earned in health related subjects.
C. 15 hours in some related skill area such as teaching, management, social work, or communications.

NOTE: Credit for work taken in a nursing training program up to 62 hours may be included in the degree.

Additional credit may be accepted if it was taken at a four-year institution and will relate to the program.

IV. Social Science Studies

The bachelor of arts degree is conferred for the completion of the requirements for this Area of Concentration, except for students in Criminal Justice who will receive a bachelor of science. The student who has completed two years at a community college or four-year institution and has developed an interest in the Social Sciences to the extent that he is considering a related vocation field may wish to consider this program.

This program provides career-related preparation for students interested in or employed in public service occupations such as corrections and police work, social service (not certified), state and local governments, and other programs identified with urban problems. This area has value for adults interested in the study of public issues, politics, and social questions.

General Requirements: Meet the general requirements established for the General University Studies Curriculum.

Area of Concentration:

A. 12 semester hours taken from the following courses or their approved equivalents

Anthropology  220 or 240
Economics  150 or 201
Geography  205 or 215
Political Science  100
Psychology 150  
Social Work 200  
Sociology 200 or 300  

B. A minimum of 33 semester hours of additional social science credit taken in courses offered by the Departments of Anthropology, Economics, Geography, Political Science, Psychology, Social Work, and Sociology.

These courses must be approved by the counselor for the program subject to review by the Committee.

C. Subject to the above qualification these 33 hours may be:

1. Interdisciplinary — drawn from a number of the departments.
2. Disciplinary — drawn from a single social science discipline.
3. Applied — identified with the needs of a particular area of study; i.e., Public Administration, Sociology of Education, Social Science Research Techniques or Applied Social Service.

Students who have completed an Associate degree in Law Enforcement, Public Safety or Police Service and who desire to complete their work off-campus should emphasize the following interdisciplinary pattern in preparing for an Area of Concentration in Criminal Justice.

Subjects should elect three semester hours each from Political Science, Sociology, Psychology and Social Work. A minimum of 23 semester hours of additional Social Science credit taken in courses related to the student's program.

Maximum 10 hours from Associate Degree Program. (Remainder of 62 hours to be given credit as meeting general education requirements or as electives)

V. Technical-Scientific Studies

A bachelor of science degree is offered for students interested in technical studies which include the study of aviation, automotive technology, electronics, manufacturing, supervision and industrial vocational education. A student may wish to consider this program who has completed a two-year vocation-technical study program at a community college or a student who has achieved a comparable level of preparation through a combination of experience and study.

This program should be of interest to those students who wish to build into a program a variety of courses which further develop their present skills. The program is highly career oriented and will assist in career advancement, particularly in the areas of manufacturing and industrial education.

General Requirements: Meet the general requirements established for the General University Studies Curriculum.

Area of Concentration: The Area of Concentration will include 45 hrs. of instruction chosen from such areas as:

Graphics  
Materials and Processing  
Technical Analysis  
Electrical Engineering  
Transportation Technology  
Manufacturing Management  
Mechanical Engineering  

Students interested in industrial education (i.e., teachers in skill centers) may substitute such areas as:

Industrial Arts  
Drawing  
Graphic Arts  
Metal Working  
Woodworking  
Auto Mechanics  

Up to 15 hrs. of the 45 hrs. may come from work taken prior to entering Western Michigan University. Some of the credit may be earned through evaluation of previous experience, examination and non-accredited training.

However at least 15 of the 45 hrs. must be earned through classes taken either on campus or through continuing education.

Students desiring certification as teachers in vocational-technical areas must take additional professional courses in methods course construction and evaluation.

Elective Credit: One of the general requirements for this curriculum is that each student complete at least 30 hours of credit through Western Michigan University (see General University Studies, general requirements). This may include credit given for experience, through examinations and for non-accredited
training. However at least one three hour course in addition to the 15 hours identified above must be earned through Western classes taken either on or off campus.

VI. Applied Liberal Studies

This Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree program is available to those who have completed vocational training programs at a community college, technical institute or business school and for whom acquisition of a Bachelor's degree would enhance achievement of career aspirations and the quality of life they experience. Credit earned in previous programs will be considered for possible inclusion as part of the student's 122 required hours.

This program should be of particular interest to those adults who, through previous formal study and practical experience, are eligible for promotion to positions of supervisory, managerial or executive responsibility but who lack the formal educational qualifications necessary for such advancement.

General Requirements: Meet requirements established for the General University Studies Curriculum. Complete the Applied Liberal Studies concentration consisting of no less than 45 semester hours.

Area of Concentration: Up to 15 hours of work taken previously may be applied toward completion of the concentration. No less than six (6) hours should be selected from three of the following six topical areas:

- Environmental Concerns
- Human Relations Concerns
- Technical Skills Mastery
- Community Concerns
- Communication Skills
- International Concerns

Acceptance of credit in this program for work accomplished prior to admission does not imply transferability to other degree programs in Western Michigan University.

Availability of Program: This program may be completed on campus or through the Battle Creek, Benton Harbor, Grand Rapids or Muskegon Regional Centers. For further information please contact your nearest W.M.U. Continuing Education Center.
WESTERN MICHIGAN UNIVERSITY

FACULTY 1976-1977

Abedin, Syed Z., 1970, Assistant Professor of Social Science
B.A., M.A., Aligarh Muslim (India); M.A., Ph.D., Pennsylvania

Adams, David W., 1956, Professor of Teacher Education
B.A., Ohio Wesleyan; M.A., Ed.D., New York

Adams, Phillip D., 1964, Associate Professor and Area Chairman, Humanities
B.A., Western Michigan; M.A., Ph.D., Ohio; F.R.S.A.

Agor, Weston Harris, 1974, Adjunct Associate Professor of Political Science
Ph.D., Wisconsin

Aker, Ugar, 1975, Instructor in Economics
B.A., Robert College (Turkey); M.A., Wayne State

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

Alessi, Galen J., 1974, Adjunct Associate Professor of Political Science
Ph.D., Wayne State

Allgood, William T., 1969, Assistant Professor of Music
B.M., East Carolina; M.M., Illinois

Alvarez, Elsa, 1964, Associate Professor of Spanish
M.A., Iowa; Ph.D., Havana; Ph.D., Michigan State

Anderson, M. Joy, 1968, Assistant Professor of Occupational Therapy
B.A., David Lipscomb College; Certificate in Occupational Therapy, Texas Woman's; M.A., Western Michigan

Anderson, Mardell, 1968, Instructor in Physical Education
B.S., M.A., Western Michigan

Anderson, Robert H., 1937, Associate Professor of Chemistry
B.A., Baker; M.A., Ph.D., Columbia

Anderson, Stephen T., 1974, Instructor in Management
B.S., Central Michigan; M.A., Western Michigan

Andrews, Frances E., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Michigan State

Appel, William C., 1965, Associate Professor of Music
B.S., State Teachers of Indiana (Pa.); M.Mus., Indiana

Apple, Loyal E., 1966, Lecturer in Blind Rehabilitation
B.A., William Jewell

Argyropoulos, Triantafilos, 1964, Associate Professor of Art
B.S., M.F.A., Michigan

Armstrong, J. William, 1969, Assistant Professor of Teacher Education
B.S., Northwestern; Ed.D., Indiana

Asher, Eaton J., Jr., 1954, Professor of Psychology and Director, Institutional Research
B.S., Kentucky; M.S., Ph.D., Purdue

Atkins, Michael B., 1971, Assistant Professor of Industrial Education
B.S., M.S., East Texas State; Ed.D., Texas A & M

Avery, Reginald S., 1973, Assistant Professor of Social Work
B.S., North Carolina A & T State University; M.S.W., George Williams

Bach, Shirley, 1964, Associate Professor of Natural Science
B.S., Queens College; Ph.D., Wisconsin

Baechtold, Marguerite, 1967, Associate Professor of Librarianship
B.A., Montclair; B.S.L.S., Columbia; Ed.S., Western Michigan

Bagnall, Carlene, 1975, Assistant Professor of Social Science
B.A., Western Michigan; M.A., Ph.D., Michigan

Bahlke, Harold O., 1962, Professor of Humanities
B.Ed., Wisconsin State; M.A., Ph.D., Minnesota
Faculty

Bailey, Frederick S., 1958, Assistant Professor of Teacher Education
B.S., M.A., Western Michigan; Ph.D., Michigan State

Bailey, Keith D., 1955, Assistant Professor of Directed Teaching
B.S., M.A., Western Michigan

Bailey, Thomas C., 1970, Assistant Professor of English
B.A., Oberlin; M.A., Missouri; Ph.D., Washington University

Baker, Don R., 1972, Instructor in Music
B.A., Adrian; M.Ed., Indiana University of Pennsylvania

Baker, Lee O., 1954, Professor and Head, Department of Agriculture
B.S., Wisconsin State (Platteville); M.S., Wisconsin; Ed.D., Michigan State

Baldwin, Elizabeth E., 1964, Associate Professor of Anthropology
B.A., Wellesley; M.A., Radcliffe; Ph.D., Harvard

Balik, Robert, 1974, Assistant Professor of General Business
B.S., Loras College; M.B.A., Utah

Bank, Theodore Paul II, 1967, Associate Professor of Social Science
B.S., M.S., Michigan

Barstow, Robert H., 1965, Associate Professor and Director, School of Social Work
B.A., Western Michigan; M.S.W., Michigan

Bartle, Lynwood H., 1963, Assistant Professor of Humanities
B.S., Eastern Michigan; M.A., Western Michigan

Batch, Nicholas, 1972, Assistant Professor of General Business
A.B., Michigan; J.D., Wayne State; M.B.A., Western Michigan

Bate, Harold L., 1964, Professor of Speech Pathology and Audiology
B.A., Butler; M.A., Florida; Ph.D., Wisconsin

Beam, Henry H., 1975, Assistant Professor of Management
B.S.E., Princeton; M.S.E.E., M.B.A., Ph.D., Michigan

Beck, Roy A., 1967, Assistant Professor of Communication Arts and Sciences
B.S., Southeast Missouri State; M.S., Southern Illinois

Beech, Beatrice, 1967, Assistant Professor, Library
B.A., Michigan State; M.S.L.S., Western Michigan

Beech, George T., 1960, Professor of History
B.A., Michigan State College; Ph.D., Johns Hopkins

Behm, Harley D., 1967, Professor and Chairman, Department of Transportation Technology
B.S., Northern Montana; M.Ed., Ed.D., Missouri

Bendix, John L., 1955, Professor of Industrial Education
B.S., University of Wisconsin-Stout; M.A., Minnesota; Ed.D., Indiana

Benne, Max E., 1964, Associate Professor of Agriculture
B.S., M.S., Ed.D., Michigan State

Bennett, Roger A., 1965, Associate Professor of Natural Science
B.S.E. (E.E.) Michigan; M.S., Western Michigan; P.E.

Bennett, William S., Jr., 1968, Professor of Sociology
B.A., Denison; M.A., Ph.D., Missouri

Bemdi, Donald C., 1962, Professor of Chemistry
B.S., Ph.D., Ohio State

Bernhard, John T., 1974, PRESIDENT and Professor of Political Science
B.S., Utah State; M.A., Ph.D., University of California at Los Angeles

Berneis, Regina F., 1965, Assistant Professor of Librarianship
B.A., Wayne State; M.A., Western Michigan

Bernstein, Eugene M., 1968, Professor of Physics
B.S., M.A., Ph.D., Duke University

Berry, Ivor, 1974, Adjunct Clinical Assistant Professor of Obstetrics and Gynecology
B.S., M.D., Michigan

Betz, Robert L., 1961, Professor of Counseling and Personnel
B.A., Albion; M.S., Illinois; Ph.D., Michigan State

Beukema, Henry J., 1943, Professor of Industrial Engineering
B.S., Western Michigan; M.S., Michigan

Beuving, Leonard J., 1970, Assistant Professor of Biology
B.A., M.A., Ph.D., California (Berkeley)

Bibza, Irene S., 1965, Assistant Professor of Home Economics
B.S., Carnegie Institute of Technology; M.S., Auburn
Bischoff, Guntram G., 1965, Associate Professor of Religion
University of Bonn, University of Gottingen; B.D., Th.D., Princeton Theological Seminary

Bjerregaard, Carl, 1968, Associate Professor of Music
B.Mus., Western Michigan; M.M., Michigan State

Bladt, Dorothy L., 1968, Associate Professor of Teacher Education
B.S., University of Chicago; M.S., Ed.D., Northern Illinois

Blagdon, Charles A., 1957, Assistant Professor of Business Education and Administrative Services
B.A., Kalamazoo; M.A., Michigan State

Blasch, Donald, 1961, Professor and Chairman, Department of Blind Rehabilitation
B.E., Northern Illinois; M.A., Chicago

Bieko, Robert L., 1968, Associate Professor of Mathematics
B.A., Kutztown State College of Pennsylvania; M.A., Ph.D., Pennsylvania State

Bliss, James R., 1968, Associate Professor of General Business
B.A., Nebraska Wesleyan; J.D., Michigan

Blocksmma, Ralph, 1970, Adjunct Professor of Speech Pathology and Audiology
B.A., Calvin; M.D., Michigan

Bluman, Dean E., 1970, Associate Professor of Mechanical Engineering
B.A., Hiram; B.S.M.E., Carnegie Institute of Technology; M.S., Michigan State; Ph.D., West Virginia; P.E.

Bodine, Gerald L., 1957, Assistant Professor of Teacher Education
B.S., Wisconsin State (Milwaukee); M.A., Northwestern

Boettcher, Richard E., 1969, Professor of Social Work
B.A., Augustana; M.S.W., Washington; Ph.D., Minnesota

Boles, Harold W., 1961, Professor of Educational Leadership
B.S., Indiana State; M.A., Ph.D., Ohio State

Booker, Gene S., 1960, Professor of Management
B.S., Ball State; M.A., Ph.D., Indiana

Boothroyd, Gregory W., 1970, Assistant Professor, Counseling Center
B.A., M.A., Western Michigan; Ph.D., Michigan

Borr, Earl, 1957, Associate Professor of Teacher Education
B.S., M.A., Western Michigan

Bosco, James J., 1965, Professor of Teacher Education
B.Ed., Duquesne; M.Ed., Pittsburgh; Ed.D., Columbia

Boucher, Joan Ann, 1966, Assistant Professor of Music
B.M., M.M., Chicago Musical; Ph.D., Boston

Boughner, Robert, 1967, Associate Professor of Industrial Engineering and Assistant Dean, College of Applied Sciences
B.S.I.E., Wayne State; M.B.A., Western Michigan

Bouma, Donald H., 1960, Professor of Sociology
B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Bournazos, Kimon, 1965, Professor of Business Education and Administrative Services
B.S., M.S., Ph.D., Michigan State

Boven, Donald E., 1953, Associate Professor of Physical Education
B.S., M.A., Western Michigan

Bowers, Robert S., 1937, Professor of Economics
B.A., Kansas Wesleyan; M.A., American; Ph.D., Wisconsin

Bowman, Harold E., 1974, Adjunct Professor, Medical Technology Program
B.S., M.D., Indiana

Bowman, Joel, 1975, Assistant Professor of Business Education and Administrative Services
B.A., M.A., Ph.D., University of Illinois

Boyd, David J., 1973, Assistant Professor of Accountancy
B.B.A., Notre Dame; M.B.A., Detroit; C.P.A., Michigan

Bradfield, Leila A., 1970, Assistant Professor of Sociology
B.S., M.S., Ph.D., Cornell University

Brail, Frederick R., 1958, Associate Professor of Teacher Education
B.S., Central Michigan; M.A., Ohio State

Braithwaite, Lloyd, 1968, Associate Professor of Sociology and Social Work
B.A., M.Crim; D.Crim., California (Berkeley)

Branchaw, Bernadine, 1971, Assistant Professor of Business Education and Administrative Services
B.A., College of St. Francis; M.S., Ed.D., Northern Illinois
Faculty

Brashear, Robert M., 1969, Assistant Professor of Teacher Education
B.S., Memphis State; M.R.E., Southwestern Seminary; M.Ed., Texas Christian; Ph.D., Texas

Brawer, Milton J., 1960, Professor of Sociology
B.A., Harvard; Ph.D., Columbia

Breed, Sterling L., 1956, Associate Professor, Counseling Center
B.S., M.A., Western Michigan

Breisach, Ernst A., 1957, Professor and Chairman, Department of History
Matura, Realgymnasium Knittelfeld and Vienna VII; Ph.D., Vienna; Dr. rer. oec., Hochschule fuer Welthandel

Breisach, Herma E., 1967, Assistant Professor, Library
Matura, Oberschule fuer Maedchen, Vienna IV; M.L.S., Western Michigan; Ph.D., Vienna

Brennan, Margaret Jane, 1965, Professor of Home Economics
B.S., Western Michigan; M.A., Columbia; Ed.D., Pennsylvania State

Brenton, Beatrice, 1969, Assistant Professor of Teacher Education
B.S., University of Wisconsin; M.A., Ph.D., Michigan State

Brewer, Richard, 1959, Professor of Biology
B.A., Southern Illinois; M.S., Ph.D., Illinois

Brewer, Robert N., 1970, Instructor in Social Science
B.S., Utah

Brink, Lawrence J., 1940, Associate Professor of Industrial Education and Director, Printing Services
B.A., Western Michigan; M.A., Michigan

Brown, Alan S., 1955, Professor of History
B.A., M.A., Ph.D., Michigan

Brown, Arthur L. II, 1974, Adjunct Clinical Instructor of Surgery
B.A., Princeton; M.D., Columbia

Brown, Charles T., 1948, Professor of Communication Arts and Sciences and Director, Center for Communication Research
B.A., Westminster; M.A., Ph.D., Wisconsin

Brown, Donald J., 1960, Associate Professor of Chemistry
B.A., Ph.D., Syracuse

Brown, Helen, 1947, Associate Professor of Dance
B.S., M.A., Northwestern

Brown, Mary C., 1965, Assistant Professor of Physical Education
B.A., M.S., Syracuse

Brown, Russell W., 1951, Associate Professor of Music
B.P.S.M., Oklahoma State; M.Mus.Ed., Notre Dame

Bruce, Phillip L., 1963, Associate Professor of Industrial Education
B.S., M.S., Kansas State College of Pittsburg; Ed.D., Missouri

Brune, Elmer J., 1956, Associate Professor of Industrial Engineering
B.S., M.A., Western Michigan

Brunhumer, Walter J., 1957, Professor of History
B.A., M.A., Marquette; Ph.D., Northwestern

Buckley, Joseph T., 1970, Associate Professor of Mathematics
B.S., Boston College; Ph.D., Indiana

Buckner, Michael J., 1968, Assistant Professor, Library
B.S., M.S., Michigan State; M.L.S., Western Michigan

Bullmer, Kenneth, 1970, Assistant Professor of Counseling and Personnel
B.S.B.A., Washington; M.A., Michigan; Ed.D., Indiana

Bullock, Donald P., 1963, Professor of Music
B.M.E., M.M., Colorado

Bunda, Mary Anne, 1974, Associate Professor of Educational Leadership
B.S., M.Ed., Loyola; Ph.D., Illinois (Urbana)

Burdick, William L., 1949, Professor of General Business
B.A., Milton; M.B.A., Ph.D., Wisconsin

Burian, William A., 1969, Professor of Social Work
B.S., John Carroll; M.S.W., Boston College; Ph.D., Chicago

Burke, John T., 1962, Professor and Head, Department of Accountancy
B.S., Carroll; M.A., Ph.D., Michigan State; C.P.A., Wisconsin

Burke, Richard T., 1964, Associate Professor of History, and Associate Dean, The Graduate College
B.A., M.A., Boston; Ph.D., Northwestern

Burns, James W., 1968, Associate Professor of Teacher Education
B.S., Central Connecticut; M.Ed., Ed.D., Pennsylvania State
Burns, Mary E., 1969, Professor of Social Work
B.A., M.S.W., Michigan; Ph.D., Chicago

Burrell, Robert B., 1974, Adjunct Clinical Instructor of Medicine
B.A., M.D., Ohio State

Bush, Mary Anne, 1974, Assistant Professor of Occupational Therapy
B.S., Central Michigan; M.A., Western Michigan

Buthala, Darwin A., 1970, Associate Professor of Biology
B.S., South Dakota State; M.A., Oklahoma State; Ph.D., Iowa State

Butler, Herbert, 1960, Professor of Music
American Conservatory of Music; Eastman School of Music; B.M., M.M., Indiana

Butler, Mary, 1973, Adjunct Assistant Professor of Music
B.M., M.M., Indiana

Buys, William E., 1964, Professor of Communication Arts and Sciences
B.A., Albion; Ph.M., Ph.D., Wisconsin

Byerly, Kenneth B., 1970, Assistant Professor of Social Science
B.A., LaVerne College; B.D., Bethany Theological Seminary

Byler, Arvon D., 1963, Associate Professor of Industrial Education
B.S., M.A., Western Michigan; Ph.D., Michigan State

Cain, Mary A., 1962, Professor of Teacher Education
B.A., Michigan; M.A., Western Michigan; Ph.D., Michigan State

Callan, Edward T. O.D., 1957, Professor of English
B.A., Witwatersrand; M.A., Fordham; D.Litt. et Phil., University of South Africa

Cannon, Zane, 1965, Assistant Professor of Marketing
B.S., M.A., Western Michigan

Caplinger, James L., 1974, Adjunct Professor of Social Work
B.A., J.D., Ohio State

Capozzi, Captain Roy M., 1973, Assistant Professor of Military Science
B.A., Canisius; M.S., Western Michigan

Cardenas, Mercedes R., 1966, Associate Professor of Spanish
M.A., Michigan State; Ed.D., Havana; Ph.D., Michigan State

Carey, Thomas A., 1974, Instructor in Management
B.B.A., Notre Dame; M.B.A., Ed.D., Western Michigan

Carley, David D., 1964, Associate Professor of Physics
B.A., Western Michigan; M.S., Michigan; Ph.D., Florida

Carlson, Bernadine P., 1953, Assistant Professor of English
B.A., M.A., Western Michigan; Ed.D., Michigan

Carlson, Lewis H., 1968, Associate Professor of History
B.A., M.A., Michigan; Ph.D., Michigan State

Carlson, Norman E., 1963, Associate Professor of English
B.A., Carleton; M.A., Ph.D., Rutgers

Carlson, William A., 1966, Professor of Counseling and Personnel

Carney, John M., 1966, Associate Professor of Art

Carroll, Hardy, 1970, Assistant Professor of Librarianship
B.A., Guilford; B.D., Hartford Theological Seminary; M.S.L.S., Drexel Ph.D., Case Western Reserve

Carter, Edward R., 1974, Adjunct Clinical Instructor of Obstetrics and Gynecology
B.S., Kalamazoo; M.D., Michigan

Carter, Elwyn F., 1945, Professor of Music
B.A., Alma; M.A., Ed.D., Columbia

Caruso, Phillip P., 1967, Assistant Professor of Economics
B.A., M.A., Michigan State

Castel, Albert E. III, 1960, Professor of History
B.A., M.A., Wichita; Ph.D., Chicago

Cha, Ellen, 1966, Assistant Professor, Library
B.A., Korea; M.A., Bucknell; M.A.L.S., Michigan

Chambers, Bill M., 1960, Associate Professor of Physical Education
B.A., Kentucky; M.A., Marshall

Chang, Do Young, 1971, Associate Professor of Social Science
B.A., M.A., Ph.D., Michigan
Faculty

Chapel, Joe R., 1965, Associate Professor of Teacher Education and Reading Center and Clinic
B.A., Western Michigan; M.A., Michigan State

Chapin, David, 1972, Professor and Chairman, Department of Sociology
B.A., Amherst; M.A., Ph.D., Princeton

Chartrand, Gary, 1964, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Chase, Ronald B., 1973, Associate Professor of Geology
B.A., DePauw; M.S., Ph.D., Montana

Cheatum, Billye Ann, 1967, Associate Professor of Physical Education
B.S., Oklahoma College of Women; M.S., Smith; Ph.D., Texas Women's University

Chiapuris, John P., 1975, Instructor in Anthropology
B.A., M.A., Michigan

Christensen, Arthur L., 1959, Assistant Professor of Directed Teaching
B.A., Michigan; M.A., Western Michigan

Clark, Michael J., 1971, Assistant Professor of Speech Pathology and Audiology
B.A., Oberlin; M.A., Ph.D., Michigan

Clark, Samuel L., 1948, Professor of Political Science and Director, The Honors College
B.A., Ph.D., Chicago

Clarke, A. Bruce, 1967, Professor and Chairman, Department of Mathematics
B.A., Saskatchewan; M.S., Ph.D., Brown

Clement, Frederick L., 1974, Adjunct Clinical Instructor of Surgery
M.D., Toronto

Clysdale, J. Patrick, 1958, Associate Professor of Physical Education and Assistant Director of Athletics
B.S., M.A., Western Michigan

Coates, Sue S., 1975, Professor and Chairman, Department of Home Economics
B.S., Washington; M.Ed., Ed.D., Missouri

Cohen, Martin, 1960, Assistant Professor of Librarianship
B.A., Harvard College; B.S., Simmons; M.A., Boston Teachers College

Cole, Roger L., 1959, Professor and Chairman, Department of Modern and Classical Languages
B.A., M.A., Ph.D., Michigan

Coleman, Edith W., 1971, Assistant Professor, Counseling Center
B.S., Detroit; M.A., Ed.D., Wayne State

Comaromi, John P., 1970, Associate Professor of Librarianship
B.A., M.A.L.S., M.A. (English), Ph.D., Michigan

Combs, William W., 1962, Professor of English
B.A., Mississippi; M.A., Ph.D., Harvard

Comer, Charles D., 1968, Assistant Professor of 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

Connable, Tenho, 1974, Adjunct Instructor in Mathematics
B.S.E., Michigan; M.S., Western Michigan

Cooke, Dean W., 1966, Professor of Chemistry
B.S., Ph.D., Ohio State

Cooley, John R., 1968, Associate Professor of English
B.A., M.A., Syracuse; Ph.D., Massachusetts

Cooney, Seamus, 1971, Associate Professor of English
B.A., University College (Dublin); M.A., Indiana; Ph.D., California (Berkeley)

Copps, John A., 1959, Professor of Economics
B.S., M.S., Ph.D., Wisconsin

Cordier, Mary, 1967, Assistant Professor of Teacher Education
B.A., Northern Iowa; M.A., Michigan State; Ed.S., Western Michigan

Cordier, Sherwood S., 1956, Professor of History
B.A., Juniata; M.A., Yale; Ph.D., Minnesota

Cornish, Wendy L., 1967, Assistant Professor of Dance
B.S., Michigan; M.A., Western Michigan

Cothran, Tilman C., 1972, Professor of Sociology and Associate Dean, College of Arts and Sciences
B.A., A.M. & N. College; M.A., Indiana; Ph.D., Chicago

Cottrell, June, 1970, Assistant Professor of Communication Arts and Sciences
B.S., M.A., Western Michigan
Faculty

Coutant, Victor, 1966, Professor of German and Classics
B.A., M.A., Ph.D., Columbia

Cowden, David J., 1969, Assistant Professor of Teacher Education
B.S., M.S., Northern State; Ed.D., South Dakota

Coyne, Monique Y., 1969, Instructor in French
B.A., M.A., Western Michigan

Crandal, Joan T., 1974, Assistant Professor of Humanities
B.A., Michigan State; M.A., Aquinas; Ph.D., Michigan State

Crane, Loren D., 1965, Associate Professor of Communication Arts and Sciences
B.A., Brigham Young; M.A., Ph.D., Ohio State

Crawley, Brenda Joyce, 1974, Assistant Professor of Social Work
B.A., California (Northridge); M.S.W., Illinois

Creed, Harriett K., 1967, Assistant Professor of Physical Education
B.S., Chattanooga; M.S., Tennessee

Cremin, William M., 1975, Assistant Professor of Anthropology
B.S., M.A., Northern Illinois

Cronk, Caspar, 1973, Assistant Professor of Geology
B.A., Harvard; Ph.D., Ohio State

Crowell, Ronald A., 1966, Assistant Professor of Teacher Education
B.A., Michigan State; M.A., Toledo

Cudney, Milton R., 1964, Professor, Counseling Center
B.S., Western Michigan; M.A., Michigan; Ph.D., Ohio State

Culp, Robert L., 1957, Assistant Professor of Physical Education
B.A., Kalamazoo; M.A., Western Michigan

Cummings, John W., 1962, Associate Professor of Transportation Technology
B.S., Lewis; M.A., Chicago Teachers College

Curf, David H., 1966, Professor of Teacher Education
B.F.A., Ohio; M.S., Ed.D., Indiana

Curran, Cyril J., 1974, Adjunct Clinical Assistant Professor of Psychiatry
M.D., Royal College

Curtis-Smith, Curtis, 1968, Assistant Professor of Music
B.M., M.M., Northwestern

Cutbirth, Nancy, 1971, Assistant Professor of English
B.A., Stanford; M.A., Ph.D., Texas

Czuchna, Paul, 1967, Assistant Professor of Speech Pathology and Audiology
B.S., Western Michigan; M.A., Miami

Dadlani, Gurdino G., 1969, Associate Professor of Social Work and Director of Admissions and Student Financial Aid for Social Work
B.A., Baroda College (India); M.S.W., University of Baroda (India); M.Sc., Western Reserve

Dahliberg, Kenneth A., 1966, Associate Professor of Political Science
B.A., Northwestern; M.A., Stanford; Ph.D., Colorado

Dales, George G., 1953, Professor of Physical Education
B.S., Miami; M.A., Michigan

Daniels, James E., 1963, Associate Professor of Accountancy
B.S.B.A., Kansas State of Pittsburg; M.B.A., Ph.D., Arkansas

Dannenberg, Raymond A., 1956, Professor and Chairman, Department of Distributive Education
B.S., Western Michigan; M.A., Ph.D., Michigan

Darling, Dennis E., 1967, Assistant Professor of Industrial Education
B.S., Stout State; M.A., Ball State; Ph.D., Michigan State

Datta-Sandhu, Suhashni, 1972, Instructor in Social Science
B.A., M.A., Western Michigan

Davenport, James A., 1957, Associate Professor of Educational Leadership
B.A., M.A., Western Michigan; Ed.D., Columbia

Davy, Cynthia J., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Wayne State; M.A., Eastern Michigan; Ed.D., Wayne State

David, Beverly R., 1972, Assistant Professor of Humanities
B.A., M.A., Western Michigan

Davidson, Audrey, 1967, Assistant Professor of Humanities
B.A., M.A., Wayne State; Ph.D., Minnesota
Davis, Alvin J., 1973. Adjunct Assistant Professor of Speech Pathology and Audiology
B.S., Bloomsburg State College; M.S., Pennsylvania State

Davis, Charles, Jr., 1967. Associate Professor of Electrical Engineering
B.S.E.E., Michigan State; M.S.E.E., Michigan; Ph.D., Michigan State

Davis, Robert S., 1965. Associate Professor and Chairman, Department of English
B.A., Indiana; M.A., Ph.D., Claremont

Davis, Ronald W., 1966. Assistant Professor of History
B.A., Bowling Green; M.A., Ph.D., Indiana

Davis, Ruth M., 1961. Professor of Physical Education
B.S., M.Ed., Bowling Green; Ph.D., Ohio State

Dawson, William, 1974. Adjunct Lecturer in Speech Pathology and Audiology
Associate in Engineering, Franklin

Day, Phyllis J., 1975. Assistant Professor of Social Work
B.A., M.S.W., M.A., Michigan

Day, Robert B., 1965. Professor of Industrial Engineering
B.Sc., M.Sc., (Met.E.) Cincinnati; D.Sc. (Met.E.), Colorado School of Mines; P.E.

Dease, Luther R., 1970. Adjunct Assistant Professor of Teacher Education and Director, Project '73
B.S., Lincoln; M.A., Western Michigan

Deckard, Thomas L., 1974. Instructor in Transportation Technology
B.S., M.S., Western Michigan

Decker, William A., 1974. Adjunct Clinical Assistant Professor of Psychiatry
B.S., Western Michigan; M.D., Wayne State

Del Deur, Henry, 1974, Adjunct Professor, Medical Technology Program
B.S., Chicago; M.D., Chicago Medical

Deluca, Joseph V., 1966, Associate Professor of Art
B.S., M.A., Bowling Green State; M.F.A., Michigan State

Demetrakopoulos, Stephanie, 1971. Assistant Professor of English
B.A., Portland State; M.A., Ph.D., Minnesota

Denenfeld, Philip S., 1956. Professor of English and Associate Vice President for Academic Affairs
B.A., Wayne State; M.A., Ph.D., Northwestern

dePeaux, Richard J., 1969. Associate Professor of Humanities
B.S., M.F.A., Wisconsin

Derby, Stanley K., 1955. Professor of Physics
B.S., Chicago; M.S., Ph.D., Michigan

DeShon, David S., 1964. Associate Professor of Social Science
B.A., William Jewett; M.B.A., Kansas City; Ph.D., University of Missouri (Kansas City)

Deur, Raymond C., 1943. Assistant Professor of Biology
B.S., Western Michigan; M.A., Michigan

DeYoung, Ronald C., 1970, Associate Professor of Business Education and Administrative Services
B.S., M.A., Western Michigan; Ed.D., Northern Illinois

Dickason, David G., 1966, Associate Professor of Geography
B.A., College of Wooster; M.A., Pittsburgh; Ph.D., Indiana

Dickie, Kenneth E., 1967, Associate Professor of Teacher Education
B.S., M.S., Stout State; Ed.D., Indiana

Dick, Richard J., 1966, Associate Professor and Chairman, Department of Communication Arts and Sciences
B.S., M.S., Emporia Kansas State; Ph.D., Michigan State

Diget, David K., 1970, Assistant Professor of Physical Education
B.S., Michigan State; M.A., Western Michigan

Dilworth, John B., 1968, Assistant Professor of Philosophy
B.A., Ph.D., Bristol

Doezema, Geraldine, 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Calvin

Dooley, Howard J., 1970, Assistant Professor of Humanities
B.A., M.A., Ph.D., Notre Dame

Doolittle, F. William, 1964, Associate Professor of Physical Education and Director, Mike Gary Fund
B.S., Ohio State; M.A., Eastern Michigan
Dotson, Allen C., 1964, Associate Professor of Physics  
B.S., Wake Forest; Ph.D., North Carolina

Doty, Captain Donald W., 1976, Assistant Professor of Military Science  
B.S., Texas A. & M., M.A., Pepperdine University

Douglas, Roscoe A., 1965, Associate Professor of Mechanical Engineering  
B.S., M.A., Western Michigan

Douglas, Eleanor N., 1948, Associate Professor of Physical Education  
B.S., Boston; M.A., Western Michigan

Douma, Rollin G., 1970, Assistant Professor of English  
B.A., M.A., Ph.D., Michigan

Drennan, Ollin J., 1964, Professor of Natural Science  
B.A., Northeast Missouri State Teachers; B.S., Missouri Valley; M.S., Bradley; Ph.D., Wisconsin

Druker, Marvin J., 1970, Assistant Professor of Political Science  
B.A., Michigan; M.A., Ph.D., Wisconsin

Drzick, Kathleen E., 1965, Assistant Professor of English  
B.A., Nazareth; M.A., Western Michigan

Dube, Thomas M.T., 1970, Assistant Professor of Social Science and Teacher Education  
B.A., University of Lesotho; U.E.D., University of South Africa; M.A., Chicago; M.S., Long Island; M.A., Michigan State; Ed.D., Rochester

Duesing, Erick C., 1975, Instructor in Economics  
B.A., M.A., University of Missouri (Columbia)

Dull, Elizabeth H., 1970, Assistant Professor of Art  
B.F.A., North Carolina; Ph.D., Northwestern

Dumlao, Gerald, 1966, Assistant Professor of Art  
B.F.A., Cleveland Institute of Art; M.F.A., Cranbrook Academy of Arts

Dwarikesh, D.P.S., 1968, Associate Professor of Linguistics  
M.A. (Hindi), M.A. (Sanskrit), Agra (India); M.A. (Linguistics), Calcutta (India); Ph.D., Chicago

Dyar, Captain Lance P., 1973, Adjunct Professor of Transportation Technology  
B.S., Michigan Technological; M.S., Colorado State

Dybek, Stuart, 1973, Instructor in English  
B.S., M.A., Loyola; M.F.A., Iowa

Dykstra, Sidney, 1964, Associate Professor of Educational Leadership and Associate Dean, The Graduate College  
B.A., Calvin; M.A., Ph.D., Michigan

Earhart, H. Byron, 1966, Associate Professor of Religion  
B.D., M.A., Ph.D., Chicago

Ebert, Frances H., 1963, Associate Professor of Physical Education  
B.S., Wisconsin State (LaCrosse); M.S., Indiana

Ebling, Benjamin, 1965, Professor of French  
B.A., Western Michigan; M.A., Michigan; Ph.D., Ohio State

Ebling, Moyra; 1967, Assistant Professor, Counseling Center  
B.A., Western Michigan; M.A., Ohio State

Ede, David, 1970, Assistant Professor of Religion  
B.A., St. Olaf; B.D., Luther Theological Seminary; M.A., McGill

Edwards, Adrian C., 1964, Professor of General Business  
B.Comm., St. Francis Xavier; M.B.A., Detroit; Ph.D., Ohio State

Edwards, Sandra, 1975, Assistant Professor of Occupational Therapy  
B.S., Florida; M.A., Western Michigan

Ehingenburg, Paul J., 1969, Associate Professor of Mathematics  
B.A., Hope; M.A., Kansas; Ph.D., Kentucky

Eichenlaub, Val L., 1958, Professor of Geography  
B.A., Western Michigan; M.A., Michigan; Ph.D., Ohio State

Eisenbach, Joseph J., 1961, Professor and Head, Department of Special Education  
B.S.B.A., Kansas State Teachers; M.S., Kansas State; Ed.D., Wayne State

Eisenberg, Robert C., 1967, Associate Professor of Biology  
B.S., Northwest Missouri State; M.S., Ph.D., North Carolina State

Ellin, Joseph S., 1962, Associate Professor of Philosophy  
B.A., Columbia; M.A., Ph.D., Yale

Ellinger, Herbert E., 1944, Associate Professor of Transportation Technology  
B.S., Western Michigan; M.A., Michigan
Faculty

Fisher, John M., 1969, Assistant Professor of Paper Science and Engineering
B.A., Bethany (W.Va.); M.A., Clark; Ph.D., Chicago

Embs, Ardith B., 1966, Assistant Professor of Librarianship
B.A., Kalamazoo; M.S.L., Western Michigan

Engelke, Hans, 1961, Professor and Associate Director, Library
B.M., M.M., Chicago Musical College; M.A., Chicago; Ph.D., Southern California

Engels, Carl J., 1953, Associate Professor of Natural Science
B.S., Wisconsin State (Oshkosh); M.A., Michigan

Engemann, Joseph G., 1960, Associate Professor of Biology
B.A., Aquinas; M.S., Ph.D., Michigan State

Engle, Kenneth B., 1962, Professor of Counseling and Personnel
B.A., Western Michigan; M.A., Michigan; Ed.D., Michigan State

Engstrom, Robert H., 1959, Professor of Art
B.A., M.A.; Michigan State

Erhart, Rainer R., 1965, Associate Professor of Geography
B.A., Eastern Michigan; M.A., Ph.D., Illinois

Erickson, Edsel L., 1965, Professor of Sociology and Teacher Education
B.S., Central Michigan; M.A., Ed.D., Michigan State

Erickson, Robert L., 1963, Professor of Speech Pathology and Audiology
B.A., Omaha; M.A., Nebraska; Ph.D., State University of Iowa

Everett, Frederick, 1960, Professor of Accountancy
B.A., University of Northern Iowa; M.A., University of Iowa; C.P.A. Iowa

Falk, Arthur E., 1964, Associate Professor of Philosophy
B.A., Fordham; M.A., Ph.D., Yale

Falk, Nancy A., 1966, Associate Professor of Religion
B.A., Cedar Crest; M.A., Ph.D., Chicago

Farnan, Lindsay G., 1948, Associate Professor of Industrial Education
B.S., New York State; M.S., Iowa State University of Science and Technology, Ames

Farris, Howard E., 1967, Associate Professor of Psychology
B.S., M.A., Western Michigan; Ph.D., Michigan State

Fatzinger, Frank A., 1951, Professor of Psychology
B.A., M.A., Lehigh; Ph.D., Purdue

Faustman, Marcella S., 1949, Professor of Music
B.S., M.A., Columbia

Feirer, John L., 1940, Professor and Head, Department of Industrial Education
B.S., Stout State; M.A., Minnesota; Ed.D., Oklahoma

Felkel, Robert W., 1971, Assistant Professor of Spanish
B.S., M.A., Boston College; Ph.D., Michigan State

Fenton, Mary Frances, 1966, Assistant Professor of Teacher Education
B.F.A., Oklahoma; M.A., Western Michigan

Ferreira, James M., 1971, Assistant Professor of Humanities
B.A., M.A., Northeastern; Ph.D., Minnesota

Fialkow, Lawrence A., 1973, Assistant Professor of Mathematics
B.A., Brandeis; Ph.D., Michigan

Ficsor, Gyula, 1967, Associate Professor of Biology
B.S., Colorado State; Ph.D., Missouri

Filtingham, Wallace, 1964, Associate Professor of Industrial Education
B.S., M.A., Western Michigan

Fink, Robert R., 1957, Professor and Chairman, Department of Music
B.M., M.M., Ph.D., Michigan State

Fishbach, Gerald F., 1973, Associate Professor of Music
B.F.A., Wisconsin (Milwaukee); M.M., Illinois; D.M.A., Iowa

Fisher, John M., 1969, Assistant Professor of Paper Science and Engineering
B.S., Louisiana State; B.S., Purdue; M.S., Western Michigan

Fisher, Wayne R., 1976, Adjunct Clinical Instructor in Speech Pathology and Audiology
B.S., M.A., Western Michigan

Fisk, Franklin G., 1969, Associate Professor of Natural Science and Teacher Education
B.S., M.S., Ph.D., Kansas
Fitch, W. Chester, 1968, Professor of Industrial Engineering and Dean, College of Applied Sciences
B.S., Montana State; M.S., Ph.D., Iowa State; P.E.

Flagler, David G., 1975, Adjunct Clinical Assistant Professor of Neurology
B.S., Beloit, M.D., Baylor College of Medicine

Flaspholer, Ronald J., 1965, Associate Professor and Chairman, Department of Natural Science
B.S., M.S.T., Missouri; Ph.D., Michigan

Fleischhacker, Daniel, 1965, Associate Professor of Theatre
B.A., B.S., M.A., Minnesota; Ph.D., Michigan State

Flynn, John P., 1970, Professor of Social Work
B.A., M.S.W., Michigan; D.S.W., Denver

Foote, J. Lindsay, 1965, Associate Professor of Chemistry
B.S., Miami; Ph.D., Case Institute of Technology

Forseff, Louise, 1962, Professor, Counseling Center
B.A., Lake Erie; M.A., Western Michigan; Ph.D., Michigan State

Foster, Lee N., 1974, Adjunct Professor, Medical Technology Program
M.D., Northwestern

Fowler, Dona J., 1965, Associate Professor of Biology
B.S., M.S., Ph.D., Purdue

Fox, William S., 1959, Associate Professor of Social Science (Arts and Sciences)
B.S., M.A., Western Michigan

France, June S., 1975, Assistant Professor of Directed Teaching
B.S., M.A., Western Michigan

Frattallone, Joseph A., 1965, Associate Professor of Art
B.S., B.A., Cincinnati; M.A., Miami; Ed.D., Indiana

Freeman, Caryl, 1975, Associate Professor of Business Education and Administrative Services
B.A., Michigan State; M.A., Harvard; Ed.D., New York

Frey, Jack J., 1951, Assistant Professor of Music
B.S., Western Michigan; M.A., Michigan

Friday, Paul C., 1972, Associate Professor of Sociology
B.A., Drew; M.A., Ph.D., Wisconsin

Friedel, Jean, 1960, Associate Professor of Physical Education
B.S., Lacrosse Wisconsin State; M.S., Illinois State University

Friedman, Stephen B., 1966, Associate Professor of Biology
B.A., Rochester; M.S., Syracuse; Ph.D., Illinois

Fritschel, John J., 1967, Associate Professor of English
B.A., Pontifical College Josephinum; M.A., Ph.D., Loyola (Chicago)

Fulton, Tom R., 1955, Associate Professor of Music
B.M., Western Michigan; M.M., Eastman School of Music

Galligan, Edward L., 1958, Professor of English
B.A., Swarthmore; M.A., Columbia; Ph.D., Pennsylvania

Gamble, Clara, 1965, Associate Professor of Dance
B.S., Alabama College; M.A., North Carolina

Gammon, Reginald, 1970, Associate Professor of Humanities
Philadelphia Museum College of Arts; Stella Elkins Tyler School of Fine Art

Gardiner, Jeffrey B., 1970, Assistant Professor of German
B.A., Stanford; M.A., Ph.D., Colorado

Gardner, Wayland D., 1964, Associate Professor of Economics
B.A., Doane; M.S., Ph.D., Wisconsin

Garland, William, 1962, Professor of Anthropology
B.A., Texas; Ph.D., Minnesota

Gault, Frederick P., 1968, Professor and Chairman, Department of Psychology
B.A., Rutgers; M.A., Ph.D., Indiana

Gay, Richard L., 1971, Assistant Professor, Counseling Center
B.A., Michigan; M.A., Western Michigan; Ph.D., Michigan State

Gelis, Michael J., 1972, Assistant Professor of Humanities
B.S., M.A., Ohio University

Gerstein, Arnold A., 1969, Assistant Professor of Humanities
B.A., Hebrew University of Jerusalem; M.A., Ph.D., Minnesota
Faculty

Ghent, W. Lloyd, 1970. Assistant Professor of Industrial Education
B.S., Brigham Young; M.Ed., Ed.D., Texas A & M

Gianakaris, Constantine J., 1966. Professor of English
B.A., M.A., Michigan; Ph.D., Wisconsin

Gibbens, Helen E., 1946. Assistant Professor, Health Center
R.N., Borgess Hospital; B.S., Nazareth; M.H.E., Michigan

Giedeman, Elizabeth, 1953. Associate Professor of Classics
B.S., Miami; M.A., Michigan

Giesen, Philip, 1974. Adjunct Clinical Assistant Professor of Pathology
B.S., Michigan; M.D., St. Louis University

Gill, Joseph H., 1965. Associate Professor of Mechanical Engineering
B.S.M.E., Tri State College; M.A.B.A., M.S.M.E., Michigan State; P.E.

Gillham, Mary, 1965. Assistant Professor of Librarianship
B.A., Monmouth College; M.S., Illinois

Gingerich, Martin, 1968. Assistant Professor of English
B.S., Shippensburg State College; M.A., Maine; Ph.D., Ohio University

Gioia, Anthony A., 1966. Professor of Mathematics
B.A., Connecticut; M.A., Ph.D., Missouri

Godby, Neal A., 1976. Adjunct Assistant Professor of Political Science
B.S., Ball State; M.P.A., Michigan

Goldfarb, Clare R., 1961. Associate Professor of English
B.A., University College, New York; M.A., New York; Ph.D., Indiana

Goldsmitl, Donald L., 1968. Associate Professor of Mathematics
B.A., M.A., Ph.D., Pennsylvania

Goodnight, Clarence J., 1965. Professor of Biology
B.A., M.A., Ph.D., University of Illinois

Goodrich, Gregory Lee, 1974. Adjunct Associate Professor of Blind Rehabilitation
B.S., Ph.D., Washington State

Gorgone, John, 1970. Assistant Professor of Political Science
B.S., Loyola; Ph.D., Indiana

Gossman, Thomas L., 1970. Associate Professor of General Business
B.S., J.D., Indiana

Goyatos, Louis A., 1952. Professor of Teacher Education
B.S., Minnesota; M.A., Ph.D., Michigan

Grace, John D., 1969. Associate Professor of Geology
B.A., Denison; M.S., Pennsylvania State; Ph.D., Leeds

Grandauff, Russell J., 1965. Associate Professor of Theatre
B.A., Fairmont State College; M.A., Bowling Green State; Ph.D., Michigan

Greenwall, Norma, 1971. Adjunct Instructor in Business Education and Administrative Services
B.A., MacMurray College of Women; M.A., Western Michigan

Greenberg, Gilda, 1973. Associate Professor of Humanities and Social Science
B.S., M.A., New York; Ed.D., Colorado

Greenberg, Norman C., 1972. Professor of Anthropology; Dean, College of General Studies and Coordinator of University General Education
B.S., Juilliard School of Music; M.A., Columbia; Ed.D., Colorado

Gregory, Ross, 1966. Professor of History
B.A., M.A., Ph.D., Indiana

Greig, Margaret E., 1974. Adjunct Clinical Professor of Pharmacology
B.A., McGill; M.A., Saskatchewan; Ph.D., McGill

Grekin, Robert H., 1974. Adjunct Clinical Assistant Professor of Dermatology
B.A., M.D., Michigan

Griffeth, Paul L., 1958. Professor of Counseling and Personnel
B.A., Michigan State; M.A., Ph.D., Iowa

Griffin, Robert J., 1971. Assistant Professor of Spanish
B.A., M.A., Seton Hall; Diploma de Estudios Hispanicos, University of Zaragoza; Ph.D., Ohio Stat

Griggs, James H., 1948. Professor of Education
B.A., Harvard; M.A., Ed.D., Columbia

Grinwis, Gordon J., 1961. Associate Professor of Art
B.S., Western Michigan; M.A., Michigan State
Gross, Francis L. Jr., 1972, Assistant Professor of Social Science
B.A., Ph.L., S.T.B., St. Louis; M.A., Fordham; Ph.D., Ottawa (Canada)

Grossnickle, Edwin, 1957, Professor of General Business
B.A., Manchester; M.A., Iowa; Ph.D., Ohio State

Grotzinger, Laurel Ann, 1964, Professor of Librarianship
B.A., Carleton; M.S., Ph.D., Illinois

Groulx, Roy W., 1957, Professor of Industrial Engineering
B.A., M.A., Ph.D., Michigan State

Grundler, Otto, 1961, Professor of Religion
ABITUR, Gymnasium Nordhorn (Germany); B.D., Western Theological Seminary; Th.D., Princeton Theological Seminary

Gruntman, Douglas D., 1974, Instructor in Industrial Engineering
B.S., M.A., Western Michigan

Grunzke, Colonel Marvin E., 1973, Adjunct Professor of Transportation Technology
B.S., Trinity; M.A., Texas; Ph.D., Baylor

Hagans, Rex, 1975, Adjunct Professor of Educational Leadership
B.A., Iowa; M.Ed., Oregon; Ph.D., Iowa

Hagberg, Betty Lou, 1969, Assistant Professor of Teacher Education and Reading Center and Clinic
B.S., M.A., Western Michigan

Hahn, Robert J., 1961, Associate Professor of History
B.A., Miami; M.A., Ph.D., Ohio State

Hahnenberg, Willard, 1957, Associate Professor of Music
B.M., M.A., Western Michigan

Haight, Bruce M., 1970, Instructor in Social Science
B.A., Kalamazoo; M.A., Northwestern

Hains, Maryellen, 1971, Assistant Professor of English
B.A., Brooklyn College; M.A., Bowling Green State

Hall, Rex E., 1961, Associate Professor of Industrial Education
B.S., M.Ed., Texas A & M

Hallas, Donald G., 1973, Adjunct Professor of Speech Pathology and Audiology
B.S., Michigan State; D.D.S., Michigan

Hallsten, Karl J., 1974, Assistant Professor of Social Work
B.S., George Williams; M.S.W., Illinois

Halvas, Earl E., 1971, Assistant Professor of Business Education and Administrative Services
B.S., M.A., Northern Michigan

Hamady, Alfred, 1974, Adjunct Clinical Assistant Professor of Family Practice
B.A., Columbia; M.D., State University of New York Medical Center

Hamelink, Jerry H., 1968, Associate Professor of Mechanical Engineering
B.S., M.S., Michigan Technological

Hamlin, Lois, 1951, Assistant Professor of Occupational Therapy
B.S., Western Michigan; M.A., Columbia

Hammack, Paule, 1964, Assistant Professor of French
Baccalaureat de philosophie, Lycee de St. Quentin; B.A., M.A., Emory; Ph.D., Ohio State

Hamner, H. Nicholas, 1956, Professor of History
B.A., M.A., Emory; Ph.D., Ohio State

Hannaford, Alonzo E., 1970, Associate Professor of Special Education
B.S., M.S., Illinois State; Ed.D., Northern Colorado State

Hannah, Robert W., 1970, Assistant Professor of History and Secretary, Board of Trustees
B.A., Yale; M.A.T., Harvard; Ph.D., Michigan State

Hannah, Susan B., 1972, Adjunct Assistant Professor of Political Science
B.A., Agnes Scott; M.A.T., Harvard; Ph.D., Michigan State

Hansen, Marc F., 1957, Professor of Art
B.A., San Jose State; M.A., Ohio State

Hanson, David P., 1969, Assistant Professor of Political Science
B.A., Haverford; M.A., Ph.D., Florida

Hardie, Gerald, 1965, Professor of Physics
B.S., M.S., Manitoba (Canada); Ph.D., Wisconsin

Hardie, Nita G., 1964, Associate Professor and Area Chairman, Social Science
B.A., North Texas State; M.A., Indiana
Faculty

Iardie, Thomas C., 1957, Associate Professor of Music
B.Mus., M.Mus., North Texas State

Iardin, Frances S., 1957, Professor of Marketing
B.S., M.A., Nebraska; Ph.D., Colorado

Hargreave, David, 1969, Assistant Professor of Natural Science
B.S., Clarkson College of Technology; M.I.A., Johns Hopkins; M.A., Ph.D., Wisconsin

Harig, Bassam E., 1975, Instructor in Economics
B.A., American (Beirut); M.A., Wayne State

Harmon, Robert E., 1961, Professor of Chemistry
B.S., Washington State; Ph.D., Wayne State

Harring, L. Richard, 1968, Associate Professor of Teacher Education
B.S., M.A., Eastern Michigan; Ed.D., Indiana

Harrison, William B. III, 1973, Assistant Professor of Geology
B.A., M.A., University of South Florida; Ph.D., Cincinnati

Hartenstein, Fred V., 1959, Professor and Chairman, Department of Management
B.A., M.A., Ph.D., Pittsburgh

Havens, Gail Ann, 1968, Assistant Professor of Home Economics
B.S., M.A., Western Michigan

Havira, Barbara S., 1969, Assistant Professor of Social Science
B.A., Webster College; M.A., Western Michigan

Hawks, Graham P., 1960, Associate Professor of History
B.A., Rochester; M.S., Ph.D., Wisconsin

Haynes, William O., 1959, Associate Professor of Distributive Education
B.S., M.A., Western Michigan

Healy, Helen Jean, 1965, Assistant Professor, Library
B.A., M.A., Western Michigan

Hedrick, Mildred, 1964, Instructor in Librarianship
B.S., South Dakota State; B.S.L.S., Illinois

Heersma, H. Sidney, 1967, Adjunct Associate Professor of Occupational Therapy
B.A., Hope; M.D., Rush Medical College

Hefner, Harry S., 1940, Professor of Art
B.A., Western Michigan; M.A., Columbia

Heim, Marilyn Y., 1965, Associate Professor of Music
B.M., Michigan State; M.A., Western Michigan; M.S., Ithaca

Heinig, Edward J., 1963, Professor of Teacher Education
B.A., Indiana State; M.A., Ph.D., Michigan

Heinig, Ruth M., 1964, Assistant Professor of Communication Arts and Sciences
B.A., Valparaiso; M.A., Pittsburgh

Helgesen, Ann, 1972, Instructor in Business Education and Administrative Services
B.A., Nazareth; M.A., Western Michigan

Helgesen, Charles, 1955, Professor of Communication Arts and Sciences
B.S., St. Cloud; M.A., Ph.D., Denver

Heller, Charles F., 1961, Professor of Geography
B.A., M.A., Kansas; Ph.D., Illinois

Helms, Christian, 1970, Adjunct Professor of Speech Pathology and Audiology
B.A., Calvin; M.D., Michigan

Helweg, Arthur W., 1972, Assistant Professor of Social Science
B.A., Miami; M.A., Michigan State

Hendriksen, Daniel P., 1966, Associate Professor of Linguistics
B.A., Calvin; M.A. (Edu.), M.A. (Linguistics); Ph.D., Michigan

Herman, John E., 1966, Associate Professor of Physics
B.S.E., M.S.E., M.S., Ph.D., Michigan

Herman, Wanda J.M., 1973, Instructor, Division of Instructional Communications
B.A., M.A., Film and Television College of Academy of Arts (Prague); M.F.A., Ohio

Hesselteth, Cassius, 1963, Professor and Chairman, Department of Electrical Engineering
B.S.E.E., M.S.E.E., Ph.D. (E.E.), Illinois

Hessler, David, 1967, Associate Professor of Teacher Education
B.A., M.A., Michigan; Ph.D., Michigan State

Hetherington, Elisabeth, 1963, Professor and Chairman, Department of Dar
B.S., Miami; M.A., Ohio State; Ed.D., University of Northern Colori-
Hill, James W., 1970, Associate Professor of Management
B.A., Detroit Institute of Technology; M.A., Ph.D., Wayne State

Hinkel, Robert, 1968, Assistant Professor of English
B.A., Washington and Lee; M.A., Ph.D., Northwestern

Hinton, Alfred F., 1970, Assistant Professor of Art
B.A., Iowa; M.F.A., Cincinnati

Hirsch, Christian R. Jr., 1973, Assistant Professor of Mathematics
B.A., Iowa; M.A., Creighton; M.S., Illinois; Ph.D., Iowa

Ho, Alfred K., 1967, Professor of Economics
B.A., Yenching (China); Ph.D., California (L.A.) Ph.D., Princeton

Ho, Marjorie K., 1967, Associate Professor, Library
B.A., Sarah Lawrence; M.L.S., U.C.L.A.

Hoadley, Arthur, 1975, Assistant Professor of Transportation Technology
B.S., M.S., Ohio State

Hobbs, George W., 1965, Associate Professor of Physical Education
B.A., Michigan State; M.A., Michigan

Hodgman, Richard W., 1974, Adjunct Clinical Instructor of Surgery
B.A., M.D., Michigan

Holaday, Clayton A., 1956, Professor of English
B.A., Miami; M.A., Western Reserve; Ph.D., Indiana

Holkeboer, Paul E., 1955, Professor of Chemistry and Coordinator of Science Education Ph.D. Program
B.A., Hope; M.S., Ph.D., Purdue

Holland, Beverly, 1970, Instructor in Home Economics
B.S., Michigan State; M.A., Western Michigan

Holmes, Robert, 1966, Professor of Music and Dean, College of Fine Arts
B.Mus., M.A., Ph.D., Boston

Holt, Imy Vincent, 1961, Professor of Biology
B.S., New Mexico State; M.S., Ph.D., Iowa State

Hopkins, Robert Floyd, 1974, Professor of Counseling and Personnel
B.A., Ed.D., Michigan State

Horst, Oscar H., 1956, Professor of Geography
B.S., M.A., Ph.D., Ohio State

Horton, Paul B., 1945, Professor of Sociology
B.A., Kent; Ph.D., Ohio State

Houdek, John T., 1969, Assistant Professor of History
B.A., M.A., Ph.D., Michigan State

Houghton, David G., 1974, Assistant Professor of Political Science
B.A., Wayne State; M.A., Wisconsin; Ph.D., Colorado

Houser, Thomas, 1964, Associate Professor of Chemistry
B.S., Illinois Institute of Technology; M.S., Ph.D., Michigan

Houston, Charles O. Jr., 1965, Professor of Social Science
B.A., Miami (Ohio); Ph.D., Columbia

Howell, James A., 1964, Associate Professor of Chemistry
B.A., Southern Illinois; M.S., Illinois; Ph.D., Wayne State

Howson, Arthur T., 1967, Assistant Professor of Directed Teaching and Director of Muskegon Center
B.A., M.A., Michigan State

Hoy, Joseph T., 1952, Professor, Director and Head, Department of Physical Education
B.S., Western Michigan; M.A., Michigan; Ed.D., Indiana; P.E.

Hsieh, Philip Po-Fang, 1964, Professor of Mathematics
B.S., National Taiwan (Formosa); M.S., Ph.D., Minnesota

Hughes, Robert D., 1964, Assistant Professor of Teacher Education
B.S., M.A., Western Michigan

Hughes, Theone, 1965, Assistant Professor of English
B.A., Kalamazoo; M.A., Western Michigan

Huitema, Bradley E., 1968, Associate Professor of Psychology
B.A., Southern Illinois; M.A., Western Michigan; Ph.D., Colorado State

Humbert, Jack T., 1974, Associate Professor of Distributive Education and Industrial Education
B.S., Wisconsin; M.B.A., Pittsburgh; Ed.D., New Mexico
Faculty

Hume, Robert H., 1974, Adjunct Clinical Instructor in Surgery
B.A., M.D., Michigan

Humiston, Robert G., 1961, Associate Professor of Music
B.M., Oberlin; M.A., Ph.D., Iowa

Hungerford, Norma L., 1968, Assistant Professor of Directed Teaching
B.S., M.A., Western Michigan

Hunt, Chester L., 1948, Professor of Sociology
B.A., Nebraska Wesleyan; M.A., Washington (St. Louis); Ph.D., Nebraska

Hunt, Mary Ida, 1966, Assistant Professor of Speech Pathology and Audiology
B.S., M.A., Western Michigan

Hutchings, Gilbert R., 1955, Professor of Industrial Education
B.S., Western Michigan; M.A., Michigan

Hutchins, Forrest O., 1966, Assistant Professor of Transportation Technology
B.S., Southeastern Louisiana; M.S., Western Michigan

Hutchinson, Carole Sue, 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Michigan

Hutchinson, Marshall L., 1974, Instructor in Music
B.A., Hamline; M.M., Indiana

Ifland, Don C., 1956, Professor and Chairman, Department of Chemistry
B.S., Adrian; M.S., Ph.D., Purdue

Inselberg, Edgar, 1966, Associate Professor of Biology
B.S., Cornell; M.S., Ph.D., Illinois

Inselberg, Rachel M., 1966, Professor of Teacher Education
B.S., Philippine Women's University; M.S., Illinois; Ph.D., Ohio State

Isaacson, David K., 1973, Instructor in Library
B.A., Indiana; M.A., Claremont Graduate School; M.A.L.S., Illinois

Isaak, Alan C., 1966, Associate Professor of Political Science
B.A., Western Reserve; M.A., Ph.D., Indiana

Israel, Lawrence J., 1973, Associate Professor of Social Science and Coordinator of Faculty and Curriculum Development, General Studies
B.A., Colorado; M.S., Montana; Ph.D., George Peabody

Ivey, Milvern K., 1973, Associate Professor of Music
B.M., M.M., North Texas State

Iwata, Brian A., 1974, Assistant Professor of Psychology
B.A., Loyola; M.A., Ph.D., Florida State

Jackman, Albert H., 1959, Professor of Geography
B.S., Princeton; Ph.D., Clark

Jacobs, Alan H., 1974, Professor and Chairman, Department of Anthropology
M.A., Chicago; D.Phil., Oxford

Jacobs, James P., 1974, Adjunct Clinical Instructor of Obstetrics and Gynecology
B.A., M.D., Michigan

Jaks, James A., 1967, Associate Professor of Communication Arts and Sciences
B.A., Central Michigan; M.A., Michigan; Ph.D., Wayne State

Jamison, Frank R., 1967, Associate Professor, Division of Instructional Communications
B.A., Missouri; M.S., Syracuse; Ed.S., Colorado State College

Janes, Raymond L., 1957, Professor and Head, Department of Paper Science and Engineering
B.S., Western Michigan; M.S., Ph.D., Institute of Paper Science and Engineering (Lawrence College)

Jennings, Helen, 1960, Associate Professor of Teacher Education
B.S., M.A., Ed.S., Western Michigan

Jetty, Albert J., 1968, Assistant Professor of Speech Pathology and Audiology
B.S., Northern; M.A., Western Michigan; Ph.D., Michigan State

Jevert, Joseph A., 1962, Associate Professor of Physical Education
B.S., Wisconsin State; M.A., Western Michigan; P.E.D.

Johnson, Clyde W., 1973, Adjunct Professor of Industrial Engineering
A.B., Michigan

Johnson, Donald F., 1974, Adjunct Clinical Assistant Professor of Pediatrics
B.M.S., M.D., Northwestern

Johnson, Gordon O., 1960, Associate Professor of Industrial Education
B.S., Northeast Missouri State; M.Edu., Missouri; Ed.D., Indiana
Johnson, G. Stewart, 1960, Professor and Chairman, Department of Mechanical Engineering
B.S.E. (M.E.) Michigan; M.S. (M.E.) Michigan State; P.E.

Johnson, Walter E., 1972, Assistant Professor of Biology
B.S., M.Ed., Texas (El Paso); Ph.D., Texas (Austin)

Johnston, Robert P., 1967, Associate Professor of Art
B.A., M.A., Pennsylvania State; M.A., Wyoming

Johnston, William Arnold, 1966, Associate Professor of English
Ph.B., Wayne State; M.A., Ph.D., Delaware

Jones, Darrell G., 1962, Professor of Business Education and Administrative Services and Dean, College of Business
B.A., M.A., Northern Iowa; Ph.D., Michigan State

Jones, Herb B., 1948, Associate Professor of Spanish
B.A., Nebraska State; M.A., Mexico

Jones, Jack D., 1956, Associate Professor of Physical Education
B.A., Texas; M.A., Western Michigan

Jones, Leander C., 1975, Associate Professor of Black Americana Studies
B.A., Arkansas A M & N; M.S., Illinois; Ph.D., Antioch

Jones, Stephen G., 1972, Instructor in Music
B.S., Ohio State; M.M., Wichita State

Joslyn, David R., 1974, Assistant Professor of Social Work
B.A., Western Michigan; M.S.W., Michigan

Josten, John J., 1968, Associate Professor of Biology
B.S., Cincinnati; M.S., Miami; Ph.D., Indiana

Joyce, Richard E., 1970, Assistant Professor of Humanities
B.S., M.A., Western Michigan; Ph.D., Michigan State

Junker, Louis J., 1961, Professor of Economics
B.A., Denver; M.A., Connecticut; Ph.D., Wisconsin

Kaarlela, Ruth, 1963, Associate Professor of Blind Rehabilitation
B.A., M.S.W., Wayne State

Kana'an, Adli S., 1965, Associate Professor of Chemistry
B.S., Arts and Sciences College (Baghdad); M.S., Colorado State; Ph.D., Wisconsin

Kanamueller, Joseph M., 1966, Associate Professor of Chemistry
B.S., St. Joseph; Ph.D., Minnesota

Kanzer, Janet, 1964, Assistant Professor of Physical Education
B.S., George Washington; M.A., Columbia

Kanzer, William H., 1961, Professor of Teacher Education
B.S., U.S. Naval Academy; M.A., Columbia; Ed.D., Wayne State

Kapoor, S.F., 1967, Associate Professor of Mathematics
B.S., M.S., B.L., Bombay; Ph.D., Michigan State

Karsten, David P., 1967, Associate Professor of Theatre
B.A., Hope; M.A., Northwestern; Ph.D., Michigan State

Kasling, Kim R., 1974, Associate Professor of Music
B.S., State University College at Potsdam; M.M., Indiana; A.Mus.D., Michigan

Kasling, Theresa, 1976, Instructor, Library
B.M., Oberlin; M.M., Southern Methodist; A.M.L.S., Michigan

Kaufman, Maynard L., 1963, Associate Professor of Religion
B.A., Bethel; M.A., Ph.D., Chicago

Kaufman, Robert W., 1959, Professor of Political Science and Director, Institute of Public Affairs
B.S., Wisconsin; M.A., Ph.D., American

Kaul, R. Dean, 1967, Associate Professor of Physics
B.S., Ph.D., Case Institute

Kavanaugh, Alice M., 1963, Associate Professor of Home Economics
B.S., M.A., Ed.S., Western Michigan

Kavanaugh, Thomas E., 1974, Adjunct Clinical Assistant Professor of Obstetrics and Gynecology
M.D., Marquette University of Medicine

Kearney, C. Philip, 1975, Adjunct Professor of Educational Leadership
B.A., M.A., Portland (Oregon); Ph.D., Chicago

Keaveny, Richard, 1968, Associate Professor of Art
B.S., Massachusetts College of Art; M.F.A., Rhode Island School of Design
Faculty

Keenan, J. Michael, 1962, Professor of Management
B.A., M.S., Colorado; Ph.D., Ohio State

Kelemen, Joseph A., 1968, Associate Professor of Electrical Engineering
B.S. (E.E.), M.S. (E.E.), St. Louis; Ph.D.

Kelley, Ronald W., 1975, Adjunct Clinical Instructor in Speech Pathology and Audiology
B.S., Indiana; M.A., Western Michigan

Kemper, Bruce H., 1974, Assistant Professor of Management
B.S., Iowa State; M.S., North Carolina State; Ph.D., University of Illinois

Kent, Louise M., 1967, Adjunct Assistant Professor of Psychology
B.A., M.A., Indiana; Ph.D., Iowa

Kent, Nell D., 1965, Professor of Psychology
B.A., M.A., Baylor; Ph.D., Indiana

Kettner, Peter M., 1972, Assistant Professor of Social Work
B.A., Valparaiso; M.S.W., Washington (St. Louis); D.S.W., Southern California

Kice, E. Patricia, 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Arkansas

Kiewiet, Maureen E., 1971, Adjunct Assistant Professor of Business Education and Administrative Services
B.A., M.A., Western Michigan

Kilty, Ted, 1968, Associate Professor of Teacher Education
B.A., M.A., Andrews; Ph.D., Michigan

Kilway, James B., 1974, Adjunct Clinical Assistant Professor of Surgery
M.D., John Carroll – St. Louis University School of Medicine

Kim, C. I. Eugene, 1961, Professor of Political Science
B.A., King, M.A., Valderrub; Ph.D., Stanford

King, Dale D., 1957, Associate Professor of Mechanical Engineering
B.S., M.A., Western Michigan

King, Donald E., 1966, Assistant Professor of Art
B.F.A., California College of Arts and Crafts; M.F.A., Mills College

Kiradi, Louis, 1960, Professor of Library
M.A., Western Michigan; Dr. of Laws, Royal Pazmany University of Budapest

Kirchherr, Eugene C., 1957, Professor of Geography
B.Ed., Chicago State College; M.S., Ph.D., Northwestern

Kirk, Wyatt D., Jr., 1970, Assistant Professor, Counseling Center
B.S., M.A.; Ed.D., Western Michigan

Kirshman, LTC Ronald L., 1976, Professor and Head, Department of Military Science
B.B.A., M.B.A., Western Michigan

Kivel, Johannes A., 1968, Assistant Professor of German
ABITUR, Ratsgymnasium (Munster); B.A., Mercer; M.A., Ph.D., Michigan State

Klammer, Waldemar E., 1956, Associate Professor of Industrial Education
B.A., Mankato State; M.S., Stout State

Klein, George, 1958, Professor of Political Science
B.A., M.A., Ph.D., Illinois

Klein, Patricia, 1967, Assistant Professor of Social Science
B.A., M.A., Illinois

Klein, Roy S., 1967, Associate Professor of Engineering and Technology
B.S.M.E., Drexel Institute of Technology; M.S.M.E., Newark College of Engineering

Klich, Beatrix de M., 1968, Lecturer in Blind Rehabilitation
Lyceum Stildes (Portugal, Brazil, Goa, England, France); M.A., Ph.D., Loyola

Kline, James E., 1963, Associate Professor of Paper Science and Engineering
B.S., M.S., Western Michigan

Kobrak, Peter, 1973, Assistant Professor of Political Science
B.A., Oberlin; M.S., Wisconsin; M.A., Yale; Ph.D., Johns Hopkins

Korhorn, Terry D., 1973, Instructor in Occupational Therapy
B.S., Western Michigan

Koronakos, Chris, 1960, Professor of Psychology
B.A., Colorado; M.A., Ph.D., Nebraska
Kotecki, Robert G., 1962, Assistant Professor of Directed Teaching
B.A., Western Michigan; M.A., Michigan

Kramer, Philip H., 1970, Professor of Social Work and University Ombudsman
B.A., Brooklyn; M.S.W., Columbia; Ph.D., Brandeis

Krawutschke, Peter W., 1967, Assistant Professor of German
ABITUR, Goethegymnasium Karlsruhe (Germany); B.A., M.A., Western Michigan; Ph.D., Michigan

Krieger, LaVerne, 1964, Associate Professor of Transportation Technology
B.S., Western Michigan; B.S.M.E., Michigan; M.S.A.E., Chrysler Institute; P.E.

Kripalani, Gangaram K., 1968, Associate Professor of Economics
M.S., Bombay; M.S., Ph.D., North Carolina State; F.I.A., Institute of Actuaries (London)

Kruglak, Haym, 1954, Professor of Physics
B.A., M.A., Wisconsin; Ph.D., Minnesota

Kuenzi, W. David, 1964, Professor of Geology
B.S., Western State; M.S., Ph.D., Montana

Kynaston, Trent P., 1973, Assistant Professor of Music
B.M., M.M., Arizona

Kyser, Daniel A., 1947, Professor of Music
B.S.M., Oberlin; M.M.E., Michigan

Labovitz, Alan, 1974, Assistant Professor of Communication Arts and Sciences
B.S., Temple; Ph.D., Michigan State

Laing, Robert A., 1970, Assistant Professor of Mathematics
B.S., Indiana University of Pennsylvania; M.A., Kent State; Ph.D., Ohio State

Lambe, Cameron W., 1962, Professor of Teacher Education
B.S., M.Ed., Ed.D., Wayne State

Lamper, Neil, 1959, Associate Professor of Counseling and Personnel
B.A., Calvin; M.A., Michigan; Ph.D., Michigan State

Landgrebe, John C., 1974, Adjunct Associate Professor, Medical Technology Program
B.S., Kentucky; M.A., South Dakota; Ph.D., Kentucky

Langston, John D., 1974, Adjunct Professor, Medical Technology Program
B.A., Oberlin; M.D., Jefferson Medical College

Large, Margaret S., 1949, Professor of Physical Education
B.A., Toronto; M.Ed., Wayne State; Ph.D., Michigan

Large, Wilda F., 1964, Associate Professor of Social Science (Arts & Sciences)
B.A., M.A., Ed.S., Western Michigan

Larsen, Phillip T., 1970, Associate Professor of Teacher Education
B.A., Rutgers; M.Ed., Ed.D., Pennsylvania State

Larson, Robert M., 1973, Associate Professor of Humanities
B.M., B.A., St. Olaf College; M.M., Ph.D., Northwestern

Laudeman, Max A., 1975, Assistant Professor of Accountancy
B.A., Manchester; M.B.A., Ph.D., Arkansas

Lawson, E. Thomas, 1961, Professor and Chairman, Department of Religion
B.D., M.A., Ph.D., Chicago

Leader, Alan H., 1963, Professor of Management
B.S., M.S., Rochester; D.B.A., Indiana

LeBonte, George, 1972, Assistant Professor of Social Science
B.B.A., M.P.A., A.B.D., Missouri (Kansas City)

Leclercq, Jean, 1975, Adjunct Professor of Medieval Studies
S.T.L., St. Anselm’s (Rome); S.T.D., Institute Catholique (Paris); Dr.h.c., Sacred Heart (Milan); Dr.phil. et litt.h.d., Louvain (Belgium); Litt.D., Western Michigan

Lee, Hung Peng, 1970, Assistant Professor of Social Science
B.A., National Hurtheaster (Peiping); M.A., New York

Lee, Sang Heak, 1974, Adjunct Clinical Instructor of Family Practice
M.D., Catholic Medical College (Korea)

Leja, Stanislaw, 1957, Professor of Mathematics
M.A., University of Lwow; Ph.D., Cornell

Lemanski, Patricia A., 1966, Assistant Professor of Physical Education
B.S., Illinois State Normal; M.A., Colorado State
Faculty

Lennon, Elizabeth M., 1968, Assistant Professor of Blind Rehabilitation
B.A., Indiana; M.A., Columbia

Leonardelli, D.B., 1951, Assistant Professor of Education and Director of In-Service Education, Division of Continuing Education
B.A., Northern Michigan; M.S., Michigan

Lewis, Alice E., 1956, Associate Professor of Occupational Therapy
B.A., Mount Holyoke; M.A., Southern California; O.T. Certificate; Western Michigan

Lewis, David M., 1962, Professor of Sociology
B.A., M.A., Maryland; Ph.D., Michigan State

Lewis, Helenan S., 1963, Associate Professor of Political Science
B.A., M.A., Ph.D., Michigan State

Libcke, John H., 1974, Adjunct Associate Professor, Medical Technology Program
B.A., Albion; B.S., M.D., Wayne State

Lick, Don Raymond, 1965, Professor of Mathematics
B.S., M.S., Ph.D., Michigan State

Lindbeck, John R., 1957, Professor of Industrial Education
B.S., M.A., Ph.D., Minnesota

Lindenmeyer, Carl R., 1969, Assistant Professor of Industrial Engineering
B.S.I.E., Northwestern; M.S., Western Michigan

Linder, Herman W., 1970, Assistant Professor of Transportation Technology
B.S., M.Ed., Illinois (Urbana)

Lindquist, Jay D., 1973, Assistant Professor of Marketing
B.S., United States Naval Academy; M.S.E., M.B.A., Ph.D., Michigan

Lindstrom, Carl A., 1959, Associate Professor of Directed Teaching
B.S., Western Michigan; M.A., Michigan

Livingston, William, 1964, Assistant Professor of Theatre
B.A., Humboldt State; M.A., Illinois

Lloyd, Bruce A., 1967, Professor of Teacher Education
B.S., M.Ed., Ph.D., Ohio University

Lobstein, Otto E., 1974, Adjunct Professor, Medical Technology Program
B.S., University of London; Ph.D., Northwestern

Locke, William L., 1973, Adjunct Clinical Instructor of Speech Pathology and Audiology
B.S., Indiana; M.A., Western Michigan

Lockhart, Kathleen, 1974, Assistant Professor of Psychology
B.S., M.A., Ph.D., University of Florida

Loesel, Lawrence S., 1974, Adjunct Associate Professor, Medical Technology Program
B.A., Valparaiso; M.D., Michigan

Loew, Cornelius, 1956, Professor of Religion and Dean, College of Arts and Sciences
B.A., Elmhurst; B.D., S.T.M., Union Seminary; Ph.D., Columbia

Loffler, Erika, 1971, Assistant Professor of Anthropology
B.A., Vienna; Ph.D., University of Mainz (W. Germany)

Loffler, Reinhold, 1967, Associate Professor of Anthropology
B.A., Innsbruck Teacher Training College; Ph.D., University of Mainz (W. Germany)

Lohr, Frances E., 1968, Associate Professor of Speech Pathology and Audiology
B.A., Michigan State; M.A., Northwestern; Ph.D., Michigan

Long, Brian G., 1975, Assistant Professor of Marketing
B.S., M.B.A., Central Michigan; Ph.D., Michigan State

Long, Michael S., 1973, Assistant Professor of Social Work
B.A., Washington; M.S.W., George Brown School of Social Work (Washington)

Lorenz, Captain Grant G., 1976, Assistant Professor of Military Science
B.S., Eastern Michigan; M.A., Western Michigan

Loss, Barbara L., 1975, Assistant Professor of Special Education
B.A., M.Ed., University of Florida; Ph.D., Wayne State

Lowder, Dwayne M., 1966, Associate Professor of Art
B.A., M.A., North Carolina

Lowe, James J., 1965, Professor, Counseling Center
B.A., Indiana; M.A., Western Michigan; Ph.D., Michigan State

Lowrie, Jean E., 1951, Professor and Director, School of Librarianship
B.A., Keuka; B.S.L.S., Western Reserve; M.A., Western Michigan; Ph.D., Western Reserve; Litt.D., Keuka
Faculty

Lowry, George G., 1968, Associate Professor of Chemistry
B.A., Chico State; M.S., Stanford; Ph.D., Michigan State

Lubavsky, Konrads, 1974, Adjunct Clinical Instructor of Surgery
B.A., Western Michigan; M.D., Michigan

Lukens, Shirley Ann, 1972, Assistant Professor of Occupational Therapy
B.S., Wisconsin; M.Ed., Illinois

Lyon, David O., 1963, Professor of Psychology
B.A., Hamilton; Ph.D., Indiana

MacDonald, Marshall, 1974, Adjunct Clinical Assistant Professor of Allergy
B.S., Alma; M.D., Michigan

MacDonald, Richard R., 1967, Assistant Professor of Sociology
B.A., Michigan State; M.A., Ph.D., Missouri

Macleod, Garrard D., 1959, Associate Professor, Division of Instructional Communications
B.A., M.A., Western Michigan

MacQueen, C. Bruce, 1966, Assistant Professor, Counseling Center
B.S., M.A., Western Michigan

Macrorie, Ken, 1961, Professor of English
B.A., Oberlin; M.A., North Carolina; Ph.D., Columbia

Madison, Captain Donald, 1973, Assistant Professor of Military Science
B.A., Missouri (Columbia); M.A., Georgia State

Maher, Robert F., 1957, Professor of Anthropology
B.S., M.S., Ph.D., Wisconsin

Maier, Paul L., 1959, Professor of History
B.A., B.D., Concordia Seminary; M.A., Harvard; Ph.D., Basel

Malanchuk, Iona R., 1970, Assistant Professor, Library
B.A., Adelphi; M.A., M.L.S., Indiana

Malanchuk, Peter P., 1970, Assistant Professor, Library
B.A., Adelphi; M.A., M.L.S., Indiana

Mallinson, George G., 1948, Professor of Science Education and Dean, The Graduate College
B.S., M.A., New York State; Ph.D., Michigan

Mallinson, Jacqueline, 1967, Adjunct Associate Professor of Science Education - Arts and Sciences
B.A., Kalamazoo; M.A., Michigan

Malmstrom, Jean, 1948, Professor of English
B.A., M.A., Washington; Ph.D., Minnesota

Maloney, Harold J., 1968, Lecturer in Blind Rehabilitation
B.A., Northwestern

Malott, Marilyn Kay, 1974, Assistant Professor of Psychology
B.S., Indiana; M.A., Columbia

Malott, Richard W., 1966, Associate Professor of Psychology
B.A., Indiana; Ph.D., Columbia

Manis, Jerome G., 1952, Professor of Sociology
B.A., Wayne State; M.A., Chicago; Ph.D., Columbia

Manis, Laura M., 1966, Assistant Professor, Counseling Center
B.Ed., Chicago Teachers; M.A., Western Michigan

Mann, Joseph D., 1974, Adjunct Professor, Medical Technology Program
B.S., M.D., University of Minnesota

Marietta, E.L., 1962, Professor of Business Education and Administrative Services
B.Ed., Southern Illinois; M.A., Ph.D., Iowa

Markle, Gerald E., 1971, Assistant Professor of Sociology
B.A., M.A., Wayne State; M.A., Ph.D., Florida State

Marshall, Duane W., 1960, Lecturer in Paper Science and Engineering
B.S., M.S., Virginia Polytechnic Institute

Marshall, Sandra, 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., CalFit; M.T., American Society of Clinical Pathologists

Martin, Gerald C., 1959, Professor of Educational Leadership
B.A., Ed.S., Western Michigan; M.A., Michigan; Ed.D., Michigan State

Martinson, William D., 1970, Professor and Head, Department of Counseling and Personnel
B.S., Minnesota State; M.A., Minnesota; Ed.D., Indiana
Faculty

Marvin, F. Theodore, 1962, Assistant Professor of Humanities and Administrative Assistant to the Dean
B.A., Western Michigan

Mason, A. Thomas, 1972, Assistant Professor of Mathematics
B.S., Johns Hopkins; M.S.I.E., Massachusetts; Ph.D., Purdue

Mason, John L., 1971, Assistant Professor of Electrical Engineering
B.S., M.S.E., M.S., Michigan; P.E.

Masunungure, Arnold, 1974, Instructor in Humanities
B.A., Michigan; M.A., Western Michigan

Mazer, Gilbert E., 1965, Associate Professor of Counseling and Personnel
B.A., Michigan; M.A., Western Reserve; Ph.D., Arizona State

McAnaw, Richard L., 1964, Associate Professor of Political Science
B.S., State Teachers College (Missouri); M.A., Missouri; Ph.D., Iowa

McBeth, John H., 1955, Associate Professor of Business Education and Administrative Services
B.S., Indiana; M.A., Alabama; Ed.D., Michigan State

McCabe, William M., 1970, Associate Professor of Electrical Engineering
B.S., M.S. (E.E.), St. Louis; P.E.

McCarty, F. William, 1970, Assistant Professor of General Business
B.A., DePauw; J.D., Michigan Law School

McCarthy, James F., 1975, Assistant Professor of Music
B.M., Wisconsin; M.A., San Jose State; Ph.D., Michigan State

McCarville, Michael E., 1968, Assistant Professor of Chemistry
B.S., Loras College; Ph.D., Iowa State

McCaslin, Nathaniel, 1971, Assistant Professor of Social Work
B.A., Miles; M.S.W., Fordham

McCray, Luretta, 1969, Assistant Professor of Dance
B.M., M.A., Western Michigan

McCully, Joseph C., 1956, Professor of Mathematics
B.A., Western Michigan; M.A., Ph.D., Michigan

McGinnis, Dorothy J., 1941, Professor of Teacher Education and Reading Center and Clinic
B.S., Western Michigan; M.A., Ohio State; Ph.D., Michigan State

McGranahan, William J., 1971, Assistant Professor of Russian
B.A., Athenaeum of Ohio; M.S., Ph.D., Georgetown

McGrath, Mary Kay, 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Mercy College; M.S., Wayne State

McIntyre, James W., 1959, Associate Professor of Communication Arts and Sciences
B.A., Denison; M.A., Michigan

McKeag, Dorinne L., 1962, Associate Professor, Counseling Center
B.A., Ottawa; M.A., University of Northern Colorado

McKee, David H., 1971, Assistant Professor, Library
B.S., Bowling Green; M.S.L.S., Case Western Reserve; M.B.A., Western Michigan

McKinney, Eleanor R., 1967, Associate Professor of Librarianship
B.S., Trenton State; B.S.L.S., Columbia; Ed.S., Western Michigan

McKitrick, Max O., 1964, Professor of Business Education and Administrative Services
B.Sc., Wittenberg; M.A., Ohio State; Ed.D., Colorado State

McTaggart, Fred, 1974, Assistant Professor of English
B.A., Millikin; M.A., Illinois (Urbana); Ph.D., Iowa

Meader, Edwin E., 1971, Adjunct Associate Professor of Geography
B.A., Michigan; M.A., Wayne State

Meagher, Jack R., 1949, Professor of Computer Science and Mathematics and Director, Computer Center
B.A., Western Michigan; M.A., Michigan

Meboke, Barbara Ann, 1966, Assistant Professor of Directed Teaching
B.A., Michigan State; M.A., Michigan

Merton, Leonard V., 1945, Professor of Music
B.M., M.M., Michigan

Mergen, Paul S., 1965, Assistant Professor of Art
B.S., M.S., Wisconsin

Metheany, John M. III, 1964, Associate Professor of Art
Meyer, Charles E., 1966, Professor and Chairman, Department of Art
B.A., M.A., Wayne State; Ph.D., Michigan

Meyer, Ruth Ann, 1965, Associate Professor and Chairman, Department of Physical Education
B.A., Northern Iowa; M.A., Northern Colorado

Michael, John L., 1967, Professor of Psychology
B.A., M.A., Ph.D., California

Micklin, Philip P., 1970, Assistant Professor of Geography
B.A., M.A., Ph.D., Washington

Middleton, Owen B., 1964, Professor of Teacher Education
B.A., Michigan State; M.A., Michigan; Ed.D., Michigan State

Mikat, Kurt W., 1974, Adjunct Professor, Medical Technology Program
B.A., M.D., Michigan

Miller, Diann J., 1968, Assistant Professor, Counseling Center
B.A., Wisconsin (Stevens Point); M.A., Western Michigan

Miller, George S., 1964, Associate Professor of Teacher Education
B.A., Michigan; M.A., Ed.D., Wayne State

Miller, John T., 1963, Assistant Professor of Physical Education
B.S., M.A., Western Michigan

Miller, Marilyn L., 1966, Associate Professor of Librarianship
B.S., M.A., Western Michigan

Miller, John L., 1964, Professor of Psychology
B.A., M.A., Peabody; Ph.D., Michigan

Mortimore, Fredric J., 1967, Associate Professor of Social Science (Arts and Sciences) and Assistant to the Dean for Special Projects
B.A., M.A., Ph.D., Michigan State

Moskovis, L. Michael, 1962, Professor and Head, Department of Business Education and Administrative Services
B.S., Miami; M.A., New York; Ph.D., Michigan State

Motley, Patricia P., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Kentucky

Moulton, Helmi K., 1960, Associate Professor of Art
B.S., Central Michigan; M.Ed., Wayne State

Mountjoy, Paul T., 1964, Professor of Psychology
B.S., Lawrence; M.A., Ph.D., Indiana

Mowen, Howard A., 1949, Professor of History
B.A., Baldwin-Wallace; M.A., Ph.D., Western Reserve

Moor, M. JoAnne, 1966, Assistant Professor of Art
B.S., M.A., Western Michigan

Moleski, Richard L., 1975, Assistant Professor of Counseling and Personnel
B.S., Aquinas; M.A., Western Michigan; Ph.D., Ohio State

Moore, Daniel, 1963, Professor of Teacher Education
B.A., M.A., Peabody; Ph.D., Michigan

Morell, Gilbert W., 1956, Assistant Professor of History
B.A., Western Michigan; M.A., Michigan

Morrison, Charles A., 1976, Adjunct Assistant Professor of Political Science
B.A., Carleton; M.P.A., Michigan

Morrison, William F., 1959, Professor of General Business
B.A., J.D., State University of Iowa

Mortimore, Fredric J., 1967, Associate Professor of Social Science (Arts and Sciences) and Assistant to the Dean for Special Projects
B.A., M.A., Ph.D., Michigan State

Moskovis, L. Michael, 1962, Professor and Head, Department of Business Education and Administrative Services
B.S., Miami; M.A., New York; Ph.D., Michigan State

Motley, Patricia P., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Kentucky

Moulton, Helmi K., 1960, Associate Professor of Art
B.S., Central Michigan; M.Ed., Wayne State

Mountjoy, Paul T., 1964, Professor of Psychology
B.S., Lawrence; M.A., Ph.D., Indiana

Mowen, Howard A., 1949, Professor of History
B.A., Baldwin-Wallace; M.A., Ph.D., Western Reserve
Faculty

Murdock, George D., 1971, Instructor in Communication Arts and Sciences
B.S., Michigan; M.Ed., Boston; M.A., Western Michigan

Murphy, John M., 1962, Assistant Professor of English
B.A., Western Michigan; M.A., Bowling Green State

Musser, Nelia Ann, 1962, Professor, Library
B.A., M.A., M.A.L.S., Ph.D., Michigan

Nadony, James E., 1959, Assistant Professor of Political Science
B.A., M.A., Pittsburgh

Naffel, Bruce, 1974, Assistant Professor of Art
B.S., M.A., Western Michigan

Nagler, Robert C., 1956, Professor of Chemistry
B.S., William Penn; M.A., Missouri; Ph.D., State University of Iowa

Nahm, Andrew C., 1960, Professor of History
B.A., Andrews; M.A., Northwestern; Ph.D., Stanford

Nangle, John E., 1964, Associate Professor of Psychology and Associate Director of Institutional Research
B.Sc., Northwestern; M.A., Bradley; Ph.D., Michigan State

Nantz, Don W., 1952, Professor of Mechanical Engineering and Assistant Dean, Applied Sciences
B.S., M.S., Stout State; Ed.D., Bradley

Natanson, Leo, 1972, Assistant Professor, Library
B.A., Kansas; M.A.L.S., Michigan

Neill, J. Donald, 1959, Associate Professor, Counseling Center
B.A., M.A., Michigan State

Nelson, Arnold G., 1954, Professor of English
B.A., Hamline; M.A., Ph.D., Minnesota

Nelson, James D., 1970, Assistant Professor of Mathematics
B.S., M.S., Ph.D., Kentucky

Neschich, Richard, 1964, Associate Professor of Distributive Education
B.S., Wayne State; M.B.A., Western Michigan

Neu, Mary E., 1968, Assistant Professor of Art
B.F.A., M.F.A., Drake

Neubig, Robert D., 1967, Professor of Accountancy
B.S., M.B.A., Ph.D., Ohio State; C.P.A. New York-Ohio

Newell, Gale E., 1968, Associate Professor and Acting Chairman, Department of Accountancy
B.B.A., M.B.A., Western Michigan; Ph.D., Michigan State; C.M.A.

Newton, John, 1970, Instructor in Physical Education
Diploma in P.E., Carnegie; M.A., Western Michigan

Nichols, Nathan L., 1955, Professor of Physics
B.A., Western Michigan; M.S., Michigan; Ph.D., Michigan State

Nicolaou, Abraham W., 1970, Associate Professor of Special Education
B.A., M.A., Ph.D., Michigan

Nicolette, Josephine, 1950, Associate Professor, Counseling Center
B.A., Western Michigan; M.A., Michigan; Ed.S., Western Michigan

Niemi, Leo, 1955, Professor of Business Education and Administrative Services, and Assistant to the Dean, Business
B.S., M.A., Western Michigan; Ph.D., Ohio State

Nisbet, Stephen R., 1966, Assistant Professor of Teacher Education and Director, Benton Harbor Regional Center
B.A., Alma; M.A., Michigan

Nobes, Leon D., 1966, Assistant Professor of Communication Arts and Sciences
B.A., M.A., Western Michigan

Nodel, Emanuel, 1961, Professor of History
B.A., Brooklyn College; M.A., Ph.D., Indiana

Northam, Jack I., 1968, Adjunct Associate Professor of Mathematics
B.A., New York University; M.A., Michigan State

Northouse, Peter G., 1974, Assistant Professor of Communication Arts and Sciences
B.A., M.A., Michigan State; Ph.D., Denver

Null, Thomas W., 1945, Associate Professor of Business Education and Administrative Services
B.A., Ottawa; M.A., Iowa

Oas, Donna, 1966, Instructor in Speech Pathology and Audiology
B.A., Michigan; M.A., Western Michigan
Olenchak, Frank R., 1966, Assistant Professor of Directed Teaching
B.M., Madison; M.Ed., Pennsylvania State; C.A.S.E., Johns Hopkins

Oliva, Major Robert J., 1973, Adjunct Professor of Transportation Technology
B.G.E., M.B.A., Ohio State

Olson, Helene M., 1974, Adjunct Clinical Instructor of Family Practice
B.A., M.D., University of California (San Francisco)

Olton, Roy, 1957, Professor and Chairman, Department of Political Science
B.A., Ohio Wesleyan; M.D., Ph.D., Fletcher School of Law and Diplomacy

Oplinger, Larry, 1963, Professor and Chairman, Department of Physics
B.S., School of Mines and Metallurgy (Missouri); M.S., Ph.D., Wisconsin

Orlofsky, Fred C., 1966, Associate Professor of Physical Education
B.S., M.S., Southern Illinois

Orr, Genevieve, 1964, Assistant Professor of French
Baccalaureats; Licence de lettres, Paris; B.A., M.A., Western Michigan

Orr, John B., 1955, Associate Professor of English
B.S., M.A., Minnesota

Orr, Leonard D., 1964, Associate Professor of Marketing
B.S.E., Michigan; M.B.A., Ph.D., Michigan State

Osborne, Charles E., 1957, Associate Professor of Music
B.M., M.M., Ph.D., Michigan State

O'Shea, Captain Michael J., 1976, Assistant Professor of Military Science
B.A., Duquesne University; M.S., North Carolina State

Osmun, George F., 1964, Professor of Classics
B.A., Lafayette; M.A., Columbia; Ph.D., Michigan

Oswald, Robert W., 1971, Associate Professor of Counseling and Personnel
B.A., Temple; M.S., Ph.D., North Texas State

Ottoson, Connor P., 1964, Professor of Marketing
B.B.A., M.B.A., Hawaii; D.B.A., Indiana

Overton, Harvey W., 1955, Professor of Humanities
B.A., Western Michigan; M.A., Ph.D., Michigan

Pagel, Thomas F., 1970, Assistant Professor of Communication Arts and Sciences
B.A., Wayne State; M.A., Pennsylvania; Ph.D., Denver

Palmatier, Robert A., 1955, Professor and Chairman, Department of Linguistics
B.A., M.A., Western Michigan; Ph.D., Michigan

Para, Donald, 1972, Instructor in Music
B.M., M.M., Western Michigan

Passero, Richard, 1966, Associate Professor of Geology
B.A., M.S., Miami; Ph.D., Indiana

Patterson, Elizabeth Lawrence, 1972, Associate Professor of Special Education
B.S., State University (Buffalo); M.A., Columbia; Ph.D., Syracuse

Pattison, Dale P., 1963, Associate Professor of History
B.A., Western Michigan; M.A., Ph.D., Chicago

Paulson, Eugene, 1967, Assistant Professor of Teacher Education and Director, Muskegon Regional Office
B.S., M.A., Western Michigan

Payne, Michael R., 1976, Instructor in Economics
B.S., University of Missouri (St. Louis); M.A., Syracuse

Pearson, Maisie K., 1965, Assistant Professor of English
B.A., Wilson; M.A., Purdue

Perry, David L., 1973, Instructor in Business Education and Administrative Services
B.S., M.B.A., Central Michigan

Petersen, James C., 1974, Instructor in Sociology
B.A., M.A., Northern Iowa; Ph.D., Iowa

Petro, John W., 1961, Professor of Mathematics
B.A., M.S., Ph.D., University of Iowa

Philips, Claude S., Jr., 1957, Professor of Political Science
B.A., M.A., Tennessse; Ph.D., Duke

Philips, Deloris, 1972, Assistant Professor of Social Work
B.A., M.E., Wayne State; M.S.W., Western Michigan
Faculty

Pippen, Richard W., 1963, Associate Professor and Acting Chairman, Department of Biology
B.S., Eastern Illinois; M.A., Ph.D., Michigan

Plaimsek, Sandra L., 1975, Assistant Professor of General Business
B.S., M.A., Kent State

Plano, Jack C., 1952, Professor of Political Science
B.A., Ripon; M.A., Ph.D., Wisconsin

Poche, Cheryl, 1976, Assistant Professor of Psychology
B.A., Southeastern Louisiana; M.A., Northeastern Louisiana; Ph.D., Florida

Poel, Robert, 1970, Associate Professor of Natural Science
B.A., Kalamazoo; M.A., Ph.D., Western Michigan

Poole, Howard R., Jr., 1973, Associate Professor of Instructional Communications and Head, Office of Instructional Development
B.S., M.S., Ph.D., Purdue

Porter, Dale H., 1970, Associate Professor of Humanities
B.A., Western Michigan; M.A., Stanford; Ph.D., Oregon

Powell, Andrew F., 1974, Associate Professor of Marketing
B.A., William and Mary; M.B.A., Ph.D., Michigan State

Powell, James H., 1955, Professor of Mathematics
B.A., M.A., Ph.D., Michigan State

Pridgeon, Arden D., 1965, Associate Professor of Industrial Engineering
B.S., M.A., Michigan State; P.E.

Pritchard, Michael S., 1968, Associate Professor of Philosophy
B.A., Alma; Ph.D., Wisconsin

Proctor, Charles L., 1975, Professor and Chairman, Department of Industrial Engineering
B.S., Oklahoma State; M.S., Purdue; Ph.D., Oklahoma State

Provancher, John R., 1966, Associate Professor, Division of Instructional Communications
B.A., M.A., Western Michigan

Prussin, Beatrice H., 1957, Assistant Professor of Communication Arts and Sciences
B.A., Denison; M.A., Michigan

Pugh, David G., 1955, Associate Professor of English
B.A., Drury; M.A., Chicago

Pulaski, Richard G., 1966, Associate Professor of Philosophy
B.A., Hofstra College

Pyles, Sharon S., 1973, Instructor, Library
B.A., University of Northern Colorado; M.L.S., North Texas State

Quandt, Eldor C., 1967, Assistant Professor of Geography
B.A., Valparaiso; M.S., Kansas State; Ph.D., Michigan State

Raklovits, Richard F., 1957, Associate Professor of Physical Education
B.S., Illinois; M.A., Western Michigan

Rao, K. Kameswara, 1975, Assistant Professor of Physics
B.Sc., M.Sc., Ph.D., Andhra University (India); M.S., Ph.D., Wisconsin (Madison)

Rappeport, Phyllis, 1966, Associate Professor of Music
B.A., Queens; M.M., Illinois

Rau, Henry A., 1960, Professor of Geography
B.A., Kent State; M.A., Ph.D., Illinois

Ray, Harold L., 1960, Professor of Physical Education and Assistant Director of Physical Education
B.A., M.S., Syracuse; Ph.D., Ohio State

Ray, LeRoi R., 1973, Professor and Director, Black Americana Studies
B.E., Southern Louisiana; M.S., Ph.D., Massachusetts

Rayford, Erwin W., 1967, Associate Professor of Industrial Education
B.S., Wisconsin State; M.E., Ed.D., Missouri

Rayl, Leo S., Jr., 1965, Associate Professor of Industrial Engineering
B.S.M.E., M.S.I.M. (Krannert School) Purdue; M.P.A., Western Michigan

Reid, Kenneth E., 1968, Assistant Professor of Social Work
B.A., Michigan State; M.S.W., Wayne State; Ph.D., Michigan State

Reish, Joseph G., 1972, Assistant Professor of French
A.B., Georgetown; M.A., Middlebury College; Ph.D., Wisconsin

Rensenhouse, Barbara, 1958, Associate Professor of Art
B.S., M.A., Western Michigan
Renstrom, Peter G., 1969. Assistant Professor of Political Science
B.A., Macalester; M.A., Ph.D., Michigan State

Resinger, Harold E., 1974. Adjunct Professor, Medical Technology Program
B.A., B.S., North Dakota; M.D., Nebraska

Rhodes, Curtis A., 1966. Associate Professor of Art
B.F.A., Kansas; M.F.A., Ohio

Ricci, Robert J., 1968. Associate Professor of Music
B.A., Antioch; M.M., Yale; D.M.A., University of Cincinnati College-Conservatory of Music

Richards, Evan L., 1966, Assistant Professor of Social Science and Sociology
B.A., M.A., Oxford (England)

Richardson, Geraldine, 1967, Assistant Professor of Occupational Therapy
B.S., Wisconsin; M.A., Western Michigan

Rider, Barbara A., 1976, Professor and Chairman, Department of Occupational Therapy
B.S., Wisconsin; M.S., Ph.D., University of Kansas (Lawrence)

Riegel, Robert Hunt, 1973, Assistant Professor of Special Education
B.A., M.Ed., Virginia; Ph.D., Minnesota

Riehmri, Lynne, 1971, Associate Professor of Social Work
B.S., Ohio State; M.S.S., Smith College, School of Social Work, Ph.D., Columbia

Riley, James E., 1960, Associate Professor of Mathematics
B.A., M.A., Western Michigan; Ph.D., Michigan State

Risher, Charles G., 1958, Professor of Industrial Education
B.S., Bowling Green; M.Ed., Ed.D., Missouri

Riley, James E., 1960, Associate Professor of Mathematics
B.A., M.A., Western Michigan; Ph.D., Michigan State

Risher, Charles G., 1958, Professor of Industrial Education
B.S., Bowling Green; M.Ed., Ed.D., Missouri

Ritchie, William A., 1964, Associate Professor of Political Science
B.A., Marshall; M.A., Ph.D., Michigan

Rizzo, John R., 1969, Professor of Management
B.A., Colorado; M.A., Ph.D., Ohio State

Rizzolo, Louis B., 1964, Associate Professor of Art
B.S., Western Michigan; M.A., Iowa

Robbert, Paul A., 1957, Professor of Art
B.A., M.A., Michigan State

Robeck, George, 1968, Associate Professor of Communication Arts and Sciences
B.A., Pennsylvania State; Ph.D., Michigan State

Robertson, Malcolm H., 1961, Professor of Psychology
B.A., Minnesota; M.A., George Washington; Ph.D., Purdue

Robin, Ellen P., 1970, Assistant Professor of Sociology
B.A., M.A., Ohio State; Ph.D., Purdue

Robin, Stanley S., 1965, Professor of Sociology and Director, Center for Sociological Research
B.A., M.A., Ohio State; Ph.D., Purdue

Robinson, Frank B., 1966, Professor and Head, Department of Speech Pathology and Audiology
B.A., Western Michigan; M.S., Minnesota; Ph.D., Ohio State

Rogers, Chester B., 1966, Assistant Professor of Political Science
B.A., M.A., Cincinnati; Ph.D., Northwestern

Rolls, Erlinda S., 1969, Assistant Professor, Library
B.A., Immaculata; M.S.L.S., Villanova

Rosegrant, William R., 1955, Associate Professor of English
B.A., Central Methodist College; M.A., Chicago

Ross, Martin H., 1966, Associate Professor of Sociology
B.S., M.S., Ph.D., Wisconsin

Ross, Myron H., 1961, Professor of Economics
B.S., M.A., Temple; Ph.D., Pennsylvania

Rossi, Ernest E., 1966, Associate Professor of Political Science
B.A., Duquesne; M. Litt; Ph.D., Pittsburgh

Rossman, Jules, 1966, Associate Professor of Communication Arts and Sciences
B.A., New York; M.A., Ph.D., Michigan State
Faculty

Roth, Rodney, 1972, Associate Professor and Chairman, Department of Educational Leadership
B.S., Bowling Green; M.A., Ph.D., Michigan

Roty, August R., Jr., 1974, Adjunct Clinical Instructor of Surgery
M.D., Michigan

Rowekamp, William H., 1957, Associate Professor of Physical Education
B.A., Missouri; M.A., Western Michigan

Rozelle, David L., 1970, Lecturer in Accountancy
B.A., Toledo; M.A., Michigan State; M.S., Western Michigan

Rusche, Allan H., 1974, Adjunct Associate Professor, Medical Technology Program
B.A., Hope; M.D., Michigan

Russell, Henry T., 1974, Adjunct Professor, Medical Technology Program
B.S., M.D., Washington (St. Louis); M.S., Ph.D., Purdue

Russell, Norman K., 1946, Professor, Counseling Center and Assistant to the Vice President for Student Services
B.S., Western Michigan; M.A., Michigan

Russell, Vera J., 1954, Assistant Professor of Directed Teaching
B.S., M.A., Western Michigan

Rutherford, Ira A., 1970, Instructor in Social Science
B.A., Western Michigan; M.A., Wayne State

Rutherford, Phoebe, 1964, Assistant Professor of Biology
B.A., Queens; M.A., Western Michigan

Ryan, L.D., 1967, Associate Professor of Mechanical Engineering
B.S.M.E., Tri-State; M.S.M.E., Toledo; P.E.

Ryan, Thomas F., 1974, Professor and Chairman, Department of Teacher Education
B.A., M.A., Ph.D., Michigan State

Sachtleben, Carl H., 1971, Professor and Director, University Libraries
B.A., Valparaiso; B.S.L.S., Western Reserve; M.A., Washington University

Sackett, Ronald L., 1966, Assistant Professor of Transportation Technology
B.S., M.S., Western Michigan

Sadler, David F., 1955, Professor of English
B.A., Antioch; M.A., Ph.D., Minnesota

Sandberg, John E., 1971, Professor and Dean, College of Education
B.S., M.A., Ed.D., Washington State

Sanders, James R., 1975, Associate Professor of Educational Leadership
B.A., M.S.Ed., Bucknell; Ph.D., Colorado

Sanders, Neill, 1969, Professor of Music
Royal College of Music (London)

Sanderson, John D., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Purdue

Schaeberle, Frederick W., 1965, Associate Professor of Accountancy
B.S., Eastern Michigan; M.B.A., Michigan; Ph.D., Missouri; C.P.A., Michigan

Schellenberg, James A., 1959, Professor of Sociology
B.A., Baker; M.A., Ph.D., Kansas

Schicker, Stephen, 1969, Assistant Professor of Humanities
B.A., Omaha; M.A., Cornell; Ph.D., Syracuse

Schiffer, Pat D., 1965, Assistant Professor of Transportation Technology
B.S., M.A., Western Michigan

Schlosser, Merle J., 1957, Associate Professor of Physical Education
B.S., M.S., Illinois

Schmalz, Lloyd J., 1959, Professor and Chairman, Department of Geology
B.A., Augusta; M.A., Ph.D., Missouri

Schmid, Harriet M., 1970, Assistant Professor of Occupational Therapy
B.S., Wayne State; M.A., Western Michigan

Schmidt, Richard H., 1955, Professor of Psychology
B.S., M.S., Ed.D., Oklahoma State

Schmitt, Peter J., 1965, Associate Professor of History and Faculty Associate for Regional History Collections
B.A., Minnesota; M.A. (English), M.A. (History), Iowa; Ph.D., Minnesota

Schneider, Arnold E., 1947, Distinguished Professor of Business
B.S., Northern Iowa; M.A., Iowa; Ph.D., Michigan
Schreiber, William P., 1968, Assistant Professor of Teacher Education
B.S., M.Ed., Illinois

Schreiner, Erik A., 1963, Associate Professor of Mathematics
B.A., M.A., Ph.D., Wayne State

Schubert, Richard C., 1969, Associate Professor of Mechanical Engineering
B.S.M.E., Illinois; M.S.M.E., Wayne State

Schultz, Beth, 1958, Professor of Biology
B.A., Temple; M.S., Cornell; Ed.D., Florida

Schultz, Robert F., 1973, Instructor in Industrial Engineering
B.A., M.A., Western Michigan

Schumann, Donna N., 1961, Assistant Professor of Biology
B.S., M.S., Michigan

Schut, A.L., 1966, Lecturer in Blind Rehabilitation
M.D., Michigan

Schwersinske, Walter C., 1967, Assistant Professor of Industrial Education
B.S., Andrews; M.A., Western Michigan

Scott, Frank S., 1956, Professor of Industrial Engineering
B.S., M.S., Purdue; Ed.D., Michigan State

Scott, Herbert S., 1968, Associate Professor of English
B.A., Fresno State; M.F.A., Iowa

Scott, Shirley S., 1970, Assistant Professor of English
B.A., M.A., Ph.D., Kent State

Seabolt, Phyllis, 1970, Assistant Professor of Home Economics
B.S., M.A., Western Michigan

Seafort, George B., 1964, Assistant Professor, Counseling Center
B.A., M.A., Michigan State

Sebaly, A.L., 1945, Professor and Chairman, Department of Directed Teaching
B.A., Western Michigan; M.A., Ph.D., Michigan

Seber, Robert C., 1956, Professor of Mathematics
B.A., Coe; M.S., Ph.D., University of Iowa

Seckler, Robert E., 1959, Associate Professor of Mathematics
B.A., Albion; M.S., Michigan State

Seelig, Karen, 1967, Assistant Professor of Speech Pathology and Audiology
B.A., Western Michigan; M.A., Northwestern

Segal, Eli, 1969, Associate Professor, Division of Instructional Communications
B.A., Columbia; M.A., New York

Seiler, Thomas, 1970, Assistant Professor of English
B.S., Indiana University of Pennsylvania; M.A., Toledo; Ph.D., The University of Texas at Austin

Sellin, Donald F., 1969, Professor of Special Education
B.S., State Teachers College (Maryland); M.Ed., Ed.D., Pittsburgh

Semelroth, James D., 1967, Assistant Professor of Spanish
Sendo, James A., 1970, Assistant Professor of Teacher Education
B.S., Valparaiso; M.S., Indiana; Ed.D., Michigan State

Shafer, Robert L., 1959, Associate Professor of English
B.A., Michigan; M.A., Harvard; M.A., Wisconsin; Ph.D., Michigan

Shamu, Robert E., 1967, Professor of Physics
B.S., Pennsylvania State; M.S., Ph.D., Wisconsin

Sharma, Visho B. L., 1967, Professor of Social Science and Sociology
B.S. (Econ.); Ph.D., London; Barrister-at-Law (England)

Shaw, John F., 1970, Assistant Professor of Physical Education
B.A., Muskingum; M.A., Western Michigan

Sheffer, Carol F., 1974, Associate Professor of Educational Leadership
B.S., Bowling Green State; M.A., Ph.D., Michigan

Sheldon, David A., 1966, Associate Professor of Music
B.M., M.M., Northwestern; Ph.D., Indiana

Shelnutt, Eve, 1974, Instructor in English
B.A., Cincinnati; M.F.A., North Carolina

Sheppard, John D., 1965, Associate Professor of Accountancy
B.S., M.A., Ph.D., Missouri
Sheppard, John D., 1965, Associate Professor of Accountancy
B.S., M.A., Ph.D., Missouri

Sheridan, Gregory, 1965, Associate Professor of Philosophy
B.S., College of the Holy Cross; M.Sc., Ohio State; M.A., Ph.D., California (L.A.)

Shull, Charles A., 1964, Assistant Professor of Business Education and Administrative Services and Director, Academic Advising, Business
B.S., Findlay; M.A., Michigan; M.B.A., Western Michigan

Sichel, Beatrice, 1974, Instructor, Library
B.S., City University of New York; M.A., Brandeis; M.L.S., Western Michigan

Siebert, Rudolf J., 1965, Professor of Religion
Ph.D., Mainz

Sievers, Gerald L., 1967, Associate Professor of Mathematics
B.A., St. Mary's; M.S., Ph.D., University of Iowa

Sill, Thomas J., 1967, Assistant Professor of Communication Arts and Sciences
B.S., M.S., Southern Illinois

Simon, Kenneth, 1971, Associate Professor and Associate Dean, College of Education
B.S., Mankato State; M.A., Minnesota; Ed.D., Washington State

Small, Thomas E., 1966, Associate Professor of English
B.A., Pomona College; M.A., Colorado; Ph.D., California (Berkeley)

Smidchens, Uldis, 1968, Associate Professor of Educational Leadership
B.A., Ball State; M.A., Wisconsin; Ph.D., Michigan

Smith, Carol Payne, 1965, Associate Professor of Teacher Education
B.S., Bowling Green State; M.A., Michigan State

Smith, Charles A., 1935, Associate Professor of English
B.A., Western Michigan; M.A., Michigan

Smith, Doris A., 1973, Assistant Professor of Occupational Therapy
B.A., Iowa: Certificate in Occupational Therapy, Iowa; M.Ed., Temple

Smith, Dorothy E., 1963, Assistant Professor of Teacher Education and Reading Center and Clinic
B.S., Northwestern; M.A., Western Michigan

Smith, Herbert L., 1963, Associate Professor of Sociology
B.S., M.A., Houston; Ph.D., Wisconsin

Smith, Isabelle L., 1968, Assistant Professor of Home Economics
B.S., Wayne State; M.A., Western Michigan

Smith, Jean Phillips, 1965, Assistant Professor of Business Education and Administrative Services
B.A., Virginia State; M.A., New York; Ph.D., Ohio State

Smith, Robert Jack, 1963, Professor of Anthropology
B.A., M.A., Yale; Ph.D., Pennsylvania

Smith, Robert L., 1964, Professor of Communication Arts and Sciences and Director, University Theatre
B.S., M.A., Bowling Green State; Ph.D., Michigan State

Smith, Wayland P., 1975, Adjunct Professor of Mechanical Engineering
R.S.M.E., Wisconsin; M.S.I.E., Ph.D., Case Institute of Technology

Smith, William K., 1967, Assistant Professor of Librarianship

Snapper, Arthur G., 1971, Associate Professor of Psychology
B.A., Harvard; M.A., Ph.D., Columbia

Soga, Michitosh, 1968, Professor of Physics
B.S., M.S., Gakushuin; Ph.D., Tokyo

Sommerfeldt, John R., 1959, Professor of History and Director, The Medieval Institute
A.B., A.M., Ph.D., Michigan

Sonnad, Subhash R., 1963, Assistant Professor of Sociology
B.A., M.A., I.I.B., Bombay; Ph.D., Wisconsin

Sorenson, Virginia, 1965, Associate Professor of Directed Teaching and Associate Director of Grand Rapids Center
B.S., M.A., Western Michigan; Ed.D., Michigan State

Spaniolo, Charles V., 1965, Associate Professor and Director, Counseling Center
B.A., M.A., Ph.D., Michigan State

Spink, Ralph M., 1966, Associate Professor, Division of Instructional Communications
B.S., Minnesota; M.A., Denver

Spradling, Marjory, 1959, Assistant Professor of Biology
B.A., MacMurray College; M.S., Illinois

Stafford, Norma M., 1967, Associate Professor of Physical Education
B.S., M.A., Michigan State
Stallman, Robert L., 1966, Associate Professor of English
B.A., M.A., New Mexico; Ph.D., Oregon

Staufer, W. Bryan, 1974, Adjunct Clinical Instructor of Pediatrics
M.D., University of Maryland

Stech, Ernest L., 1970, Assistant Professor of Communication Arts and Sciences
B.A., Miami; M.A., Ph.D., Denver

Stegman, George K., 1962, Associate Professor of Industrial Engineering
B.S., M.S., Wisconsin (Stout); Ed.D., Wayne State

Steinhaus, Nancy, 1973, Instructor in Home Economics
B.S., Ohio; M.S., Purdue

Steinhaus, Ralph K., 1968, Associate Professor of Chemistry
B.S., Wheaton; Ph.D., Purdue

Stenesh, Jochanan, 1963, Professor of Chemistry
B.S., Oregon; Ph.D., California

Stephenson, Barbara Jean, 1960, Associate Professor of Physical Education
B.S., Western Michigan; M.S., Southern California

Stevens, Fred L., 1946, Associate Professor of Physical Education
B.S., M.A., Western Michigan

Stiefel, William J. III, 1964, Associate Professor of Mechanical Engineering
B.S.C.E., Drexel Institute of Technology; M.S.C.E., Lehigh; P.E.

Stillwell, Janet E., 1967, Associate Professor of Dance
B.A., M.A., Ph.D., Michigan

Stillwell, Lyda J., 1966, Assistant Professor of Theatre
B.F.A., Texas; M.A., Washington

Stillwell, Vern, 1965, Associate Professor of Theatre
B.A., Lake Forest; M.A., Ph.D., Michigan

Stine, Leo C., 1952, Professor of Political Science and Director, Division of Continuing Education
B.Ed., Illinois State; M.A., Ph.D., Illinois

Stoddart, Arthur W. J., 1967, Associate Professor of Mathematics
B.S., M.S., Otago (New Zealand); Ph.D., Michigan

Stoline, Michael R., 1967, Associate Professor of Mathematics
B.A., M.S., Ph.D., University of Iowa

Stollman, Joseph P., 1971, Assistant Professor and Chairman, Department of Geography
B.A., Central Washington State; M.A.T., Chicago; Ed.D., Georgia

Stone, Nancy Y., 1974, Adjunct Assistant Professor of English
B.A., Antioch; M.A., Western Michigan

Storoshenko, Irene, 1964, Assistant Professor of Russian
Diploma, Kiev State; M.A.T., Indiana

Straw, W. Thomas, 1968, Associate Professor of Geology
B.S., M.A., Ph.D., Indiana

Stromsta, Courtney P., 1968, Professor of Speech Pathology and Audiology
B.S., Western Michigan; M.A., Ph.D., Ohio State

Stroup, John H., 1965, Associate Professor of English
B.A., Grinnell; Ph.D., Rochester

Stufflebeam, Daniel L., 1973, Professor of Educational Leadership
B.M.E., State University of Iowa; M.S., Ph.D., Purdue

Sud, Gian Chand, 1966, Associate Professor of Biology
B.S., M.S., Panjab; Ph.D., Wisconsin

Sundick, Robert I., 1969, Assistant Professor of Anthropology
B.A., State University of New York (Buffalo); M.A., Ph.D., Toronto

Suterko, Stanley, 1961, Associate Professor of Blind Rehabilitation
B.S., Illinois; M.A., Western Michigan

Swanson, Curtis N., 1968, Assistant Professor of Transportation Technology
B.S., M.S., Western Michigan

Swinsick, Richard, 1973, Assistant Professor of Music
B.M., M.A., Western Michigan

Swords, Michael D., 1972, Assistant Professor of Natural Science
B.S., Notre Dame; M.S., Iowa State; Ph.D., Case Western Reserve
Faculty

Syndergaard, Larry E., 1968, Assistant Professor of English
B.S., Iowa State; M.S., Ph.D., Wisconsin

Szalkowski, Anne O., 1955, Associate Professor of English
B.A., Western Michigan; M.A., Michigan State

Taylor, David R., 1968, Associate Professor of Teacher Education
B.S., Wisconsin State; M.S., Ed.D., Northern Illinois

Taylor, Mary L., 1963, Associate Professor, Library
B.A., M.A., Western Michigan

Teichert, Herman Uwe, 1972, Assistant Professor of German
B.S., M.Ed., Kent State; Ed.D., Georgia

Ten Harmel, Larry, 1974, Assistant Professor of Humanities
B.A., Calvin; M.A., Ph.D., Ohio University

Tessin, Melvin J., 1974, Adjunct Assistant Professor of Management
B.A., Albion; M.B.A., Ed.D., Western Michigan

Thomas, Darrell B., 1968, 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, Danny H., 1973, Assistant Professor of Social Work
B.S., Central Michigan; M.S.W., Wayne State; Ph.D., Chicago

Thompson, William N., 1971, Assistant Professor of Political Science
B.A., M.A., Michigan State; Ph.D., Missouri

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 of Education
B.Sc., London; Ph.D., Columbia

Trimitis, George, 1969, Assistant Professor of Chemistry
B.Sc., American University in Cairo (Egypt); Ph.D., Virginia Polytechnic Institute

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.L.S., Minnesota; M.A., Chicago

Tyler, Larry L., 1970, Associate Professor of Social Science
B.A., Kansas State; M.A., Ph.D., Missouri

Tyndall, Dean R., 1955, Professor of Occupational Therapy
B.S., M.A., Ph.D., Missouri

Ulmor, James L., 1959, Associate Professor of Industrial Education
B.S., M.S., Kansas State (Pittsburgh)

Ulrich, Roger E., 1965, Research Professor, Psychology
B.S., North Central College; M.A., Bradley; Ph.D., Southern Illinois

Upjohn, William John, 1971, Adjunct Associate Professor of Management
B.A., Hobart College

Urbick, Thelma, 1968, Associate Professor of Counseling and Personnel
B.A., M.A., Western Michigan; Ph.D., Michigan

Urich, Roger R., 1967, Associate Professor of Industrial Engineering
M.S.M.E., Michigan Technological

Ursprung, Joanne, 1973, Assistant Professor of Natural Science
B.S., Queens College; Ph.D., Illinois

Van De Polder, James, 1967, Assistant Professor of 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 Ray, 1970, Associate Professor of Electrical Engineering
B.S.E., Calvin; M.S.E., Ph.D., Michigan

VanderMeulen, Kenneth, 1970, Assistant Professor of Teacher Education and Reading Center and Clinic
B.A., M.A., Western Michigan

VanderVelde, Kenneth M., 1974, Adjunct Clinical Instructor of Surgery
B.A., Hope; M.D., University of Chicago

VanDeventer, William C., 1953, Professor of Biology
B.A., Central Methodist College; M.A., Ph.D., Illinois

VanHoven, Shirley, 1972, Instructor in Communication Arts and Sciences
B.A., Hope; M.A., Western Michigan

vanWestrienen, Donna, 1970, Assistant Professor of 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

Varbile, Dale L., 1970, Associate Professor of Marketing
B.S., M.S., Southern Illinois; Ph.D., Arkansas

Vassil, Thomas V., 1974, Assistant Professor of Social Work
B.A., Boston University College; M.S.S.W., Boston University School of Social Work; Ph.D., Chicago

Vermeer, Evert W., 1973, Adjunct Assistant Professor of Social Work
B.A., Calvin; M.S.W., Michigan State

Viall, William P., 1963, Professor of Educational Leadership
B.S., New York State; M.A., Ed.D., Columbia

VonBergen, Leslie, 1974, Instructor in Speech Pathology and Audiology
B.S., Ball State; M.S., Michigan

Vucelich, George, 1968, Professor of Geography
B.A., M.A., Ph.D., University of Iowa

Wagenfeld, Morton O., 1966, Professor of Sociology
B.S., City College of New York; M.A., Brooklyn; Ph.D., Syracuse; Certificate, Harvard Medical School

Wait, Robert F., 1971, Assistant Professor of Sociology
B.S., M.A., Indiana

Walther, Michael H., 1970, Assistant Professor of Sociology
B.S., Ed.M., State University of New York (Buffalo); Ph.D., Florida State

Walker, Jess Morgan, 1965, Associate Professor of Teacher Education
B.S., M.A., Utah; Ph.D., Michigan State

Walker, Lewis, 1964, Professor of Sociology
B.A., Wilberforce; M.A., Ph.D., Ohio State

Walker, Richard H., 1974, Adjunct Professor, Medical Technology Program
B.S., M.D., Emory

Wallace, Roger L., 1966, Associate Professor of Management
B.B.A., M.B.A., Western Michigan; Ph.D., Michigan State

Walton, Eleanor, 1965, Associate Professor of Communication Arts and Sciences
B.A., Albion; M.A., Boston

Wangberg, Franklin, 1959, Assistant Professor of Directed Teaching
B.S., Massachusetts Institute of Technology; M.A., Michigan

Warfield, Charles C., 1972, Associate Professor of Educational Leadership
B.A., M.A., Western Michigan; Ph.D., Oregon

Warren, H. Dale, 1963, Associate Professor of Chemistry
B.A., Rice Institute; M.S., Idaho; Ph.D., Oregon State

Washington, Earl M., 1970, Instructor in Communication Arts and Sciences
B.A., M.A., Western Michigan

Watson, Archie E., 1970, Assistant Professor of Teacher Education
B.A., M.A., Michigan State

Way, Harold E., 1971, Assistant Professor, Library
B.S., South Dakota State; M.A., M.L.S., Western Michigan

Weaver, Constance, 1965, Associate Professor of English
B.A., M.A., Indiana; Ph.D., Michigan State

Weaver, Constance, 1965, Associate Professor of English
B.A., M.A., Indiana; Ph.D., Michigan State
Faculty

Weaver, Donald C., 1961, Professor of Educational Leadership  
B.A., Central; M.A., Ed.D., Michigan

Webb, Gene E., 1968, Associate Professor of Social Work  
B.A., Antioch; M.S.W., State University of New York at Buffalo

Weber, Paul, 1975, Instructor in General Business  
B.B.A., M.B.A., Western Michigan

Weeks, C. Wayne, 1974, Assistant Professor of General Business  
A.B., Taylor; M.B.A., Kent State

Weeks, William R., 1953, Associate Professor of Mechanical Engineering  
B.S., Wayne State; M.A., Western Michigan

Weessies, Marvin J., 1970, Assistant Professor of Blind Rehabilitation  
B.S., M.A., Western Michigan

Welke, William R., 1967, Professor of Accountancy  

Wend, Jared S., 1955, Associate Professor of Economics  
B.A., Middlebury; M.A., Ph.D., Michigan

Western, Jane L., 1974, Adjunct Assistant Professor, Medical Technology Program  
B.S., Marion

Westley, Robert J., 1964, Associate Professor of Special Education  
B.A., M.A., Wayne State

Westphal, Dale L., 1962, Associate Professor of Philosophy  
B.A., Gustavus Adolphus; M.A., Minnesota

Wygnight, Robert B., 1951, Professor of Accountancy and Vice President for Finance  
Ph.B., M.B.A., Toledo; C.P.A., Ohio

Whaley, Robert L., 1966, Associate Professor of Music  
B.M.E., Kansas; M.A., Iowa

Whitaker, Rebecca J., 1972, Instructor, Library  
B.S., M.L.S., Indiana

White, Arthur T., 1969, Associate Professor of Mathematics  
B.A., Oberlin; M.S., Ph.D., Michigan State

White, Beverlee A., 1966, Assistant Professor, Counseling Center  
B.S., Idaho; M.A., Western Michigan

Wichers, William A., 1951, Professor of Industrial Engineering  
B.A., Hope; Certificate, Boeing School of Aeronautics; M.A., Western Michigan; Ed.D., Michigan State

Widerberg, Lloyd C., 1964, Assistant Professor of Blind Rehabilitation  
B.S. (Ed.) Northern Illinois State Teachers; M.A., Western Michigan

Wienir, Paul L., 1970, Assistant Professor of Sociology  
B.A., Washington (Seattle); M.A., Ph.D., North Carolina

Wilcox, Glade, 1955, Professor of Electrical Engineering  
B.Ed., Western Illinois; M.S., Ed.M., Illinois; Ed.D., Indiana

Wilhite, Lindsey, 1965, Assistant Professor of French  
B.A., M.A., Western Michigan

Williams, Dick R., 1969, Assistant Professor of Social Science  
B.A., Kansas State College of Pittsburg; Ph.D., University of Missouri (Kansas City)

Williams, Kenneth L., 1973, Assistant Professor of Mathematics  
B.A., Michigan State; M.A., Western Michigan; Ph.D., Michigan State

Williams, Lawrence A., 1968, Assistant Professor of Distributive Education  
B.S., M.B.A., Western Michigan

Williams, Molly W., 1973, Adjunct Assistant Professor of Mechanical Engineering  
B.S., Northwestern; M.S., Ph.D., California (Berkeley)

Williams, Thomas K., 1973, Associate Professor of Counseling and Personnel and Director, Specialty Program in Alcohol and Drug Addiction  
B.S. (Educ.), B.S. (Religion); M.A., Andrews; Ed.D., Western Michigan

Willis, Clyde R., 1965, Professor of Speech Pathology and Audiology  
B.S., New York; M.A., Ph.D., Indiana

Willis, Donald J., 1974, Adjunct Assistant Professor of Political Science  
Ph.D., Michigan State

Wilson, Benjamin C., 1975, Assistant Professor of Black Americana Studies  
B.A., St. Benedict; M.A., Ph.D., Michigan State
Wilson, Brian L., 1975, Associate Professor of Music
B.M., M.M., Florida State

Winslow, Mildred, 1963, Assistant Professor of Teacher Education
B.A., Cornell; B.S.L.S., Illinois

Winter, Ronald J., 1969, Assistant Professor of Physical Education
B.S., M.A., Michigan State

Wirtz, Morvin A., 1967, Professor of Special Education
B.S., M.A., Wisconsin; Ed.D., Illinois

Wolf, Franklin K., 1970, Associate Professor of Industrial Engineering
B.S., Iowa State; M.S., Wisconsin; Ph.D., Iowa State; P.E.

Wolf, Major Thomas R., 1974, Assistant Professor of Military Science
B.A., Western Michigan; M.A., Ball State

Wood, Jack S., 1963, Associate Professor of Biology
B.S., Maine; M.S., Ph.D., Michigan State

Wood, Kathryn, 1973, Adjunct Clinical Instructor in Speech Pathology and Audiology
B.S., Western Michigan; M.Ed., Pennsylvania State

Woodruff, Charles M., 1967, Professor and Director, Division of Instructional Communications
B.A., Wisconsin State; M.A., Syracuse; Ed.D., Montana

Wood, John W., 1955, Professor of English
B.S., M.A.T., Indiana

Woodward, Charles F., 1966, Assistant Professor of Industrial Engineering
B.S., Western Michigan; M.S., Illinois Institute of Technology; C.M.E.

Woodworth, Shirley C., 1971, Instructor in Communication Arts and Sciences
B.A., M.A., Western Michigan

Work, Joseph T., 1963, Associate Professor of Music
B.M., M.M., Eastman School of Music; D.M.A., Michigan

Wright, Alden, 1970, Associate Professor of Mathematics
B.A., Dartmouth; Ph.D., Wisconsin

Wyatt, Richard E., 1972, Assistant Professor of French
B.A., Western Michigan; M.A., Ph.D., Ohio State

Wyman, Robert F., 1964, Associate Professor of Physical Education
B.S., M.Ed., Wayne State

Yamashita, Antonio C., 1975, Adjunct Professor of Education
B.A., Carroll; M.A., Ph.D., North Carolina

Yang, Kung-Wei, 1966, Associate Professor of Mathematics
B.S., National Taiwan; Ph.D., Indiana

Yelsma, Paul, 1975, Assistant Professor of Communication Arts and Sciences
B.A., M.A., University of Denver

Yinger, Karen, 1971, Instructor in Social Science
B.A., Baldwin-Wallace; M.A., Indiana

York, Zack L., 1940, Professor and Chairman, Department of Theatre
B.S., Western Michigan; M.S., Ph.D., Wisconsin

Yost, Lewis M., 1968, Assistant Professor of Mechanical Engineering
B.S., Western Michigan; M.A., Michigan

Young, Iris M., 1974, Adjunct Assistant Professor, Medical Technology Program
B.S., Michigan State

Yun, Chung-Hei K., 1974, Instructor of Humanities
B.A., San Francisco State; M.A., Chicago

Yunghans, Charles E., 1962, Assistant Professor of Electrical Engineering
B.S.E.E., Valparaiso; M.S., Western Michigan

Yzenbaad, John, 1962, Associate Professor of History
B.A., Western Michigan; M.A., Michigan

Zabik, Roger M., 1967, Associate Professor of Physical Education
B.S., Ball State; M.S., P.E.D., Indiana

Zappen, James, 1974, Assistant Professor of Business Education and Administrative Services
A.B., M.A., Detroit; Ph.D., Missouri (Columbia)
Faculty

Zastrow, Joyce R., 1962, Associate Professor of Music
B.A., Valparaiso; M.M., Indiana; D.M.A., Illinois

Zelder, Raymond E., 1964, Professor and Chairman, Department of Economics
B.A., Harvard; M.A., Ph.D., Chicago

Zelinger, Stephen H., 1975, Assistant Professor of Management
A.B., Pennsylvania State; M.B.A., Temple

Zelkowitz, Patricia, 1974, Adjunct Clinical Instructor in Pediatrics
B.A., Lake Erie; M.D., Pittsburgh

Zettelmaier, John L., 1974, Adjunct Clinical Assistant Professor of Medicine
B.A., Western Michigan; M.S., Michigan State; M.D., Michigan

Zietlow, James P., 1965, Professor of Physics and Associate Dean, College of Arts and Sciences
B.S., DePaul; M.S., Ph.D., Illinois Institute of Technology

Zinn, David C., 1965, Assistant Professor of Economics
B.A., Calvin; M.A., Western Michigan

Ziring, Lawrence, 1967, Professor of Political Science
B.S., M.A., Ph.D., Columbia

Zupko, Ramon, 1971, Associate Professor of Music
B.S., M.S., Juilliard School of Music
OFFICE OF THE PRESIDENT

PRESIDENT ................................................................. John T. Bernhard
Administrative Assistant to the President ....................................... Robert W. Ethridge
Assistant to the President .......................................................... William J. Kowalski
Campus Planning & Extension, Director .............................................. William F. Hamill, Jr.
and University Architect ............................................................. Kent Brigham
Associate Director .......................................................... Russell Gabier
Alumni & Development, Executive Director ............................................. Fred Hansen
Alumni Relations, Director .......................................................... Helen J. Flaspohler
Annual Fund, Director ................................................................ William Sturtevant
Senior Development Officer ............................................................
Board of Trustees, Secretary ............................................................... Robert W. Hannah
Athletic Director ....................................................................... Joseph T. Hoy
Student Financial Aid & Scholarships, Director ..................................... Edward W. Harkenrider
Associate Director .................................................................. Marvin Winegar
Information Services, Director ......................................................... Martin R. "Joe" Gagie
Associate Director ................................................................ Patricia M. Coyle
News Services, Director ................................................................. Robert G. Rubom
Associate Director .................................................................. Joe B. Freeman
Sports Information, Director ........................................................... John W. Beatty
Switchboard & Public Information Center, Director ............................. Elizabeth Maxwell

Internal Audit, Director ................................................................... Stephen J. Markee
Ombudsman ............................................................................. Philip H. Kramer
Associate Ombudsman ................................................................ Bryna Graff

OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS

VICE PRESIDENT FOR ACADEMIC AFFAIRS ................................................ Stephen R. Mitchell
Associate Vice President ................................................................ Philip Denenfeld
Academic Advising, Coordinator .......................................................... Donald L. DeLong
Archives, Director ................................................................... Wayne C. Mann
Computer Center, Director .............................................................. Jack R. Meagher
Instructional Communications, Director ................................................ Charles Woodliff
Libraries, Director .................................................................... Carl H. Sachtleben
Assistant for Academic Planning and Budgeting ..................................... Barbara R. Sherman
Assistant to the Vice President ........................................................ Chauncey Brinn
Minority Student Services, Director ...................................................... Gilbert Montez
Martin Luther King, Jr. Program, Director ................................................ Jethro K. Johnson
Upward Bound, Director ................................................................. Luther R. Dease
College of Applied Sciences, Dean .................................................... W. Chester Fitch
Assistant Dean ........................................................................ Robert Boughner
Assistant Dean .......................................................................... Don W. Nantz
College of Arts and Sciences .......................................................... Cornelius Loew
Associate Dean ........................................................................ Tilman C. Cothran
Associate Dean ......................................................................... James P. Zietlow
Black Americana Studies, Director ..................................................... LeRoi Ray, Jr.
School of Social Work, Director ........................................................... Robert Barstow
College of Business, Dean ............................................................... Darrell G. Jones
College of Education, Dean ............................................................ John E. Sandberg
Associate Dean ....................................................................... Kenneth Simon
Educational Resources Center, Director ..................................................
## Administrative Staff

<table>
<thead>
<tr>
<th>Department/Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Fine Arts, Dean</td>
<td>Robert Holmes</td>
</tr>
<tr>
<td>Assistant Dean</td>
<td>Robert H. Luscombe</td>
</tr>
<tr>
<td>College of General Studies, Dean</td>
<td>Norman C. Greenberg</td>
</tr>
<tr>
<td>The Graduate College, Dean</td>
<td>George G. Mallinson</td>
</tr>
<tr>
<td>Associate Dean</td>
<td>Richard T. Burke</td>
</tr>
<tr>
<td>Associate Dean</td>
<td>Sid Dykstra</td>
</tr>
<tr>
<td>School of Librarianship, Director</td>
<td>Jean E. Lowrie</td>
</tr>
<tr>
<td>Admissions, Director</td>
<td>Duncan A. Clarkson</td>
</tr>
<tr>
<td>Associate Director</td>
<td>Kenneth E. Dehring</td>
</tr>
<tr>
<td>Continuing Education, Director</td>
<td>Leo C. Stine</td>
</tr>
<tr>
<td>In-Service Education, Director</td>
<td>D. C. Leonardelli</td>
</tr>
<tr>
<td>Honors College, Director</td>
<td>Samuel I. Clark</td>
</tr>
<tr>
<td>Institutional Research, Director</td>
<td>Eston J. Asher, Jr.</td>
</tr>
<tr>
<td>Associate Director</td>
<td>John E. Nangle</td>
</tr>
<tr>
<td>Registrar</td>
<td>Dennis E. Boyle</td>
</tr>
<tr>
<td>Records, Director</td>
<td>Charles A. Carson</td>
</tr>
<tr>
<td>Registration, Director</td>
<td>Mary K. Leamy</td>
</tr>
<tr>
<td>Associate Director</td>
<td>Erika Zadins</td>
</tr>
<tr>
<td>Research Services, Director</td>
<td>Einard S. Haniuk</td>
</tr>
</tbody>
</table>

## OFFICE OF THE VICE PRESIDENT FOR FINANCE

<table>
<thead>
<tr>
<th>Department/Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICE PRESIDENT FOR FINANCE</td>
<td>Robert B. Wetnight</td>
</tr>
<tr>
<td>Auxiliary Enterprises, Director</td>
<td>Thomas J. Carr</td>
</tr>
<tr>
<td>Auxiliary Enterprises, Asst. Director</td>
<td>John G. Hungerford</td>
</tr>
<tr>
<td>Campus Bookstore, Director</td>
<td>Joseph T. MacLean</td>
</tr>
<tr>
<td>Family Housing, Manager</td>
<td>Robert Sprick</td>
</tr>
<tr>
<td>Miller Auditorium, Manager</td>
<td>Gordon Smith</td>
</tr>
<tr>
<td>Printing Services, Director</td>
<td>Lawrence J. Brink</td>
</tr>
<tr>
<td>Residence Halls, Manager</td>
<td>Robert Peterson</td>
</tr>
<tr>
<td>Residence Hall Food Service, Director</td>
<td>James McKellin</td>
</tr>
<tr>
<td>University Student Center, Director</td>
<td>Rodger Pruis</td>
</tr>
<tr>
<td>Budgets and Financial Planning, Director</td>
<td>Robert Beam</td>
</tr>
<tr>
<td>Controller</td>
<td>Robert W. Beecher</td>
</tr>
<tr>
<td>Asst. Controller and Chief Accountant</td>
<td>Gerald Schwemmin</td>
</tr>
<tr>
<td>Bursar</td>
<td>Jerry Fuss</td>
</tr>
<tr>
<td>Financial Systems Analyst</td>
<td>Fred W. Hunt</td>
</tr>
<tr>
<td>Grants and Contracts, Business Manager</td>
<td>Harry A. Petty</td>
</tr>
<tr>
<td>Management Services, Director</td>
<td>James M. Stephenson</td>
</tr>
<tr>
<td>Data Processing, Director</td>
<td>Ronald Pelc</td>
</tr>
<tr>
<td>Payroll Administrator</td>
<td>Michael Weber</td>
</tr>
<tr>
<td>Purchasing, Director</td>
<td>Maxel D. Kerby</td>
</tr>
<tr>
<td>Employee Relations and Personnel, Director</td>
<td>Stanley W. Kelley</td>
</tr>
<tr>
<td>Personnel Services, Manager</td>
<td>Karla Zakrzewski</td>
</tr>
<tr>
<td>Internal Audit, Director</td>
<td>Stephen J. Markee</td>
</tr>
<tr>
<td>Investments and Risk Management, Director</td>
<td>R. Larry Koenes</td>
</tr>
<tr>
<td>Physical Plant, Director</td>
<td>Robert H. (Herb) Williams</td>
</tr>
<tr>
<td>Trades Manager</td>
<td>Stephen F. Barton</td>
</tr>
<tr>
<td>Public Safety, Director</td>
<td>C. Keith Sheeler</td>
</tr>
<tr>
<td>Safety Coordinator</td>
<td>Robert S. Wirbel</td>
</tr>
<tr>
<td>Security Coordinator</td>
<td>V. Lemar Curran</td>
</tr>
</tbody>
</table>
OFFICE OF THE VICE PRESIDENT
FOR STUDENT SERVICES

VICE PRESIDENT FOR STUDENT SERVICES .................................................. Thomas E. Coyne
Asst. to Vice President & Orientation, Director ............................................. Norman K. Russell
International Student Services, Director ..................................................... Marlon W. Gerould
Testing and Evaluation Services, Director .................................................. Laurence H. Berman
Counseling Center, Director ........................................................................ Charles V. Spaniolo
Dean of Students .......................................................................................... Marie L. Stevens
Assoc. Dean, Religious Activities and University Judiciaries, Director ........... Charles G. Donnelly
Commuter Student Services, Director ........................................................... Albert W. Laaksonen
Residence Hall Programs, Director ............................................................... Sally Pippen
Student Activities, Director .......................................................................... Charles E. Stroup
Health Center, Director ............................................................................... Donald T. McNally
Placement Services, Director ....................................................................... Chester C. Arnold
EMERITI

Rachel Acree, M.A. Assoc. Professor of Home Economics 1929-1960
Ethel G. Adams, M.A. Professor of Music 1946-1973
Sam B. Adams, M.A. Associate Professor of Music 1946-1973
Agnes E. Anderson, M.S. Assistant Professor of Business Education 1943-1965
James O. Ansel, Ed.D. Professor and Director of Rural Education 1949-1974
Thelma Anton, M.A. Associate Professor of English 1946-1956
Hugh G. Archer, M.A. Associate Professor of Teacher Education 1939-1972

Maude Arthur, M.A. Associate Professor of Education 1929-1959
Harriette V. Bartoo, Ph.D. Professor of Biology 1948-1972
Edith C. Beals, M.A. Assistant Professor of Teacher Education 1944-1972
Fred A. Beeler, Ph.D. Professor of Mathematics 1946-1968
Isabel Beeler, M.A. Associate Professor of Counseling 1946-1968
Elmer R. Beloof, Ed.D. Professor of Music 1946-1971
Margaret Felts Beloof, M.A. Professor of Music 1946-1971
Ada E. Berkey, M.A. Associate Professor of University Libraries 1947-1975
Donald J. Black, M.A. Asst. Professor of Engineering and Technology 1952-1970
Jane A. Blackburn, M.A. Assistant Professor of Education 1922-1951
Ruth Boot, M.Ed. Associate Professor of Teacher Education 1953-1972
Ruth L. Bosma, M.A. Assistant Professor, Campus School 1953-1968
Mary Bottje, M.A. Assoc. Professor of Physical Education, Women 1925-1956
Roy C. Bryan, Ph.D. Professor of School Services 1937-1967
John A. Buelke, Ed.D. Professor of Teacher Education 1949-1974
Georgiann Burge, M.A. Assistant Professor of English 1948-1965
Grace L. Butler, M.A. Assistant Professor of Education 1930-1949

Theodore L. Carlson, Ph.D. Professor of Economics 1947-1974
Clara R. Chiara, Ph.D. Professor of Teacher Education 1949-1975
Edith E. Clark, A.B.L.S. Periodicals Librarian 1927-1964
Isabel Crane, M.A. Assistant Professor of Counseling 1923-1960
Lewis D. Crawford, M.A. Associate Professor of Counseling 1922-1962
Golda Crisman, M.A. Assistant Professor of Teacher Education 1947-1970

Jacob P. Dewitt, M.S. Associate Professor of Physics 1957-1971

Cora Ebert, M.A. Assistant Professor of Education 1930-1955
George O. Egland, M.A. Associate Professor of Speech Pathology & Audiology 1954-1972
Manley M. Ellis, Ph.D. Professor of Education 1922-1960
L. Dale Faunce, Ed.D. Professor of Counseling and Personnel 1956-1973
Margaret E. Feather, B.A. Financial Aid Advisor 1925-1974
Wendall B. Fidler, Ed.M. Associate Professor of Distributive Education 1951-1971
Orle I. Frederick, Ph.D. Professor of Education 1941-1972
Anne V. Fuller, M.A. Associate Professor of Biology. 1947-1967

Edward A. Gabel, M.A. Associate Professor of Physical Education, Men 1948-1972
Lorena M. Gary, M.A. Associate Professor of English 1925-1962
Leonard Gernant, M.A. Dean of Academic Services 1943-1975
Joseph W. Giachino, Ed.D. Head and Professor, Engineering and Technology 1939-1968
John W. Gill, M.A. Associate Professor of Physical Education 1928-1969
Grace I. Gish, M.A. Associate Professor of Education 1929-1962
Clarence Hackney, M.A. Associate Professor of Mathematics 1936-1973
Marion I. Hall Assistant Professor of Education 1922-1954
John B. Healey, J.D. Associate Professor of General Business 1947-1970
H. Glenn Henderson, M.M. Associate Professor of Music 1914-1956
Eunice E. Herald, Ph.D. Head and Professor, Home Economics 1947-1974
Deleee Mitterman Herman, M.A. Assoc. Professor of Communication Arts and Sciences 1947-1974
Bernice G. Hesselink Assistant Comptroller 1916-1961
Elizabeth Householder, M.A. Social Director, University Student Center 1937-1940 1953-1970
Frank C. Householder, M.A. Associate Professor of English 1934-1970
Mate Graye Hunt, M.A. Associate Professor of Librarianship 1946-1959
Opal Stamm Huskey, M.A. Assistant Professor of Home Economics 1934-1963
Doris L. Hussey, B.S. Asst. Professor of Physical Education, Women 1918-1961
A. Elizabeth Johnson, Ph.D. Professor of Teacher Education 1949-1976

John G. Kemper, M.A. Professor of Art 1942-1970
Dorotha Kercher, M.A. Assistant Professor of University Libraries 1966-1976
Leonard C. Kercher, Ph.D. LL.D. Professor of Sociology 1928-1972
Edna F. Kirby, M.A. Assistant Professor of Business Education 1938-1965
George A. Kirby, M.A. Associate Professor of Accounting 1936-1966
Ruth Kirby, M.A. Associate Professor of Teacher Education 1945-1968
Rosalia A. Kiss, Ph.D. Professor of Occupational Therapy 1952-1975
Opal Klammer, M.A. Asst. Prof. of Physical Education 1962-1976
Lawrence G. Knowlton, Ph.D. Professor of Chemistry 1941-1968
George E. Kohrman, Ed.D. Professor of Industrial Education 1951-1974
Eunice E. Kraft, M.A. Associate Professor of Language 1920-1962
Stanley Kuffel, Ed.D. Professor of Psychology 1952-1970
Stephen Kukolich, Ph.D. Professor of Paper Science and Engineering 1965-1975

Jean M. Lawrence, Ph.D. Associate Professor of Biology 1959-1976
Robert M. Limpus, Ph.D. Professor of Humanities 1947-1973
Carl V. Lindeman, M.S. Assistant Professor of Education 1928-1964
M. Dezena Loutzenhiser, M.A. Associate Professor of English 1923-1957
Phoebe Lumaree, M.S. Assistant Director of University Libraries 1923-1961

Vern E. Mabie, M.A. Director of Placement 1930-1932 1948-1970
C. B. MacDonald, M.A. Comptroller 1923-1962
Margaret B. MacMillan, Ph.D. Professor of History 1920-1934 1944-1969
A. Edythe Mange, Ph.D. Professor of History 1949-1975
Arthur J. Manske, Ph.D. Professor of Counseling and Personnel 1943-1975
Walter R. Marburger, M.S. Professor of Physics 1925-1963
Helen E. Master, M.A. Associate Professor of English 1921-1962
Holon Matthews, Ph.D. Professor of Music 1948-1973
Clayton J. Maus, M.S. Dean, Admissions and Records 1942-1974
Dorothy McCuskey, Ph.D. Professor of Educational Leadership 1957-1973
Florence E. McLough, M.A. Assistant Professor of Education 1921-1947
Elizabeth L. McQuigg, M.A. Assistant Professor of Education 1928-1965
Lillian H. Meyer, Ph.D. Head and Professor of Chemistry 1942-1968
James W. Miller, Ph.D. President 1961-1974
Robert B. Miller, Ph.D. Associate Professor of Physics 1956-1972
Evelyn A. Monroe, B.S. Asst. to Director, Career Planning & Placement 1954-1972
Lois B. Monroe, M.A. Assistant Professor of Spanish 1925-1961
Louise C. Myers, M.A. Assistant Professor of Education 1925-1961
Emeriti

Frances E. Nobel, Ph.D. Professor of French 1931-1973

Hilda Oster, M.A. Assistant Professor of Teacher Education 1946-1972
Lauri Osterberg, M.A. Assistant Professor of Chemistry 1948-1965

Hazel I. Paden, M.A. Assistant Professor of Art 1929-1960
Olive G. Parkes, M.M. Associate Professor of Music 1965-1976
J. Kimbark Peterson, M.A. Associate Professor of Mathematics 1947-1973
Effie B. Phillips, M.A. Assistant Professor of Education 1925-1949
John H. Plough, M.A. Assistant Professor of Industrial Education 1941-1956
Gayle Pond, R.N., M.A. Director of Nursing Service 1946-1966
Myrtle M. Powers, M.S. Assistant Professor of Biology 1941-1972
Lilija Puze, M.A.L.S. Assistant Professor, University Libraries 1956-1973

Glen C. Rice, M.A. Associate Professor of Counseling 1943-1965
William McKinley Robinson, Ph.D. Professor of Rural Life and Education 1927-1960
Olga S. Roekle, B.A. University Budget Officer 1931-1973
Candace Roell, Ph.D. Professor of Physical Education, Women 1956-1973
Frederick J. Rogers, Ph.D. Professor of English 1946-1973

3
Katharine D. Rogers, M.A. Assistant Professor of English 1946-1966
Paul Rood, Ph.D. Professor of Physics 1916-1964
Hermann E. Rothfuss, Ph.D. Professor of German 1944-1970
Hazel M. DeMeyer Rupp, B.S.L.S. Associate Professor, University Libraries 1946-1971
Robert R. Russel, Ph.D. Professor of History 1922-1960

Hazel E. Saye, A.B.L.S. Assistant Professor, University Libraries 1939-1965
William A. Schreiber, M.A. Asst. Professor of Engineering and Technology 1953-1971
Esther D. Schroeder, M.A. Professor of Education 1946-1968
Donald N. Scott, M.A. Director, University Student Center and Residence Halls 1943-1969
Maurice F. Seay, Ph.D. L.L.D. Professor of Educational Leadership 1967-1972
Russell H. Seibert, Ph.D., H.H.D. Vice President for Academic Affairs and Professor of History 1936-1973
Helen G. Sellers, M.A. Associate Professor of English 1947-1974
Laura V. Shaw, M.A. Professor of Speech 1918-1953
Marion J. Sherwood, M.A. Associate Professor of Industrial Education 1910-1948
Ethel Shimmel, M.A. Associate Professor, Campus School 1923-1966
Lydia Siedschlag, M.A. Professor of Art 1921-1958
Bess Baker Skillman, M.A. Assistant Professor of Education 1924-1947
Thomas C. Slaughter, M.A. Associate Professor of Physical Education, Men 1948-1975
J. Towner Smith, M.A. Dean of Men 1928-1966
M. Elizabeth Smutz, M.A. Professor of Art 1947-1972
Carl B. Snow, M.A. Associate Professor of Teacher Education 1946-1972
Dorothea Sage Snyder, M.A. Associate Professor of Music 1925-1962
Emil J. Sokolowski, M.A. Assistant Professor of Marketing 1951-1976
Raymond F. Sorensen, M.S. Associate Professor of Physical Education, Men 1950-1973
Marion A. Spalding, M.A. Asst. Professor of Physical Education, Women 1916-1960
Marion R. Spear, M.A. Associate Professor of Occupational Therapy 1944-1958
Charles R. Starring, M.A. Professor of History 1928-1969
Mathilde Steckelberg, M.A. Professor of Language 1927-1961
Edwin B. Steen, Ph.D. Professor of Biology 1941-1972
Elaine L. Stevenson, M.A. Assistant Professor of Art 1917-1960
Bess L. Stinson, M.A. Associate Professor, Campus School 1929-1960
Mathilde Stokes, Ph.D. Director of Libraries 1948-1967
Cyril L. Stout, Ph.D. Professor of Geography 1947-1968
Emeriti

Sarah J. Stroud, Ph.D. Professor of Teacher Education 1956-1976
Louise F. Struble, M.A. Assistant Professor of Education 1923-1952
Clella Stufft, M.A. Assistant Professor of Education 1924-1950
Sara R. Swickard, Ph.D. Professor of Teacher Education 1951-1976

Betty Taylor, Ph.D. Professor of Home Economics 1947-1976
Jane Thomas, M.A. Assistant Professor of Occupational Therapy 1944-1954
Eulalia Toms, M.A. Assistant Professor of Teacher Education 1947-1970
Adrian Trimpe, M.A. Head and Assoc. Professor, Distributive Education 1947-1972

Lois E. Van Den Berg, M.A. Assistant Professor of Directed Teaching 1950-1975
Clarence N. VanDeventer M.A. Associate Professor of Transportation Tech. 1955-1975
Charles Van Riper, Ph.D. Distinguished University Professor 1936-1976
Frank L. Van Voorhees, M.A. Associate Professor of Political Science 1963-1973
Jean Vis, M.A. Assistant Professor of Education 1927-1955

Louise J. Walker, M.A. Associate Professor of English 1924-1961
Ernest Weber, M.A. Assistant Professor, Campus School 1923-1960
William V. Weber, Ph.D. Professor of Political Science 1937-1966
Roy J. Wietz, M.A. Assoc. Professor of Physical Education, Men 1942-1970
Mary M. Wilcox, M.A. Assistant Professor of University Libraries 1959-1976

Ruth VanHorn Zuckerman, M.A. Associate Professor of English 1922-1964
INDEX

ABSENCES .......................... 40
Academic Advising .................. 46
Access to Student Information .... 46
Accreditation ....................... 13
Administration ..................... 585
President .......................... 585
Academic Affairs, Vice President for 586
Finance, Vice President for .......... 586
Officers .......................... 9
Student Services, Vice President for 587
Admission ........................ 14
Freshmen .......................... 15
Transfers .......................... 15
ACT .............................. 16
Notification of Admission .......... 16
Advanced Placement ............. 16
CLEP .................................. 17
African Studies Program .......... 208
Agriculture, Department of .... 90
Courses ........................... 91
Aircraft Technology ................ 180
Alumni ............................. 69
American Studies Program ....... 195
Anthropology, Department of .... 229
Application Fee ..................... 36
Applied Sciences, College of .... 383
Arabic Language .................... 319
Art, Department of ................ 469
Arts and Sciences, College of .... 189
Advising Office ..................... 193
Arts and Sciences Curriculum .... 192
Curricula and Majors ............. 190
Interdisciplinary Programs ....... 194
Asian Studies Program .......... 209
Athletic Board ...................... 13
Athletic Facilities ................. 76
Athletics ................................
Intercollegiate ...................... 69
Intramural ......................... 70
Audio Services ..................... 70
Audiovisual Center ................ 70
Automotive Engineering ............
Technology ......................... 173
Courses ........................... 182
Automotive Management and Service .................. 174
Aviation Building .................. 76
Aviation Courses ................... 183
Aviation Engineering ..........
Technology .......................... 175
Aviation Technology and Management .................. 176
Awards .................................. 66
BAND (Large Ensembles) ........... 498
Biology, Department of ............ 234
Black Americana Studies ........... 195
Blind Rehabilitation ............... 428
Board of Trustees ................. 7
Brazilian Portuguese ............. 319
Buildings and Grounds ............
East Campus ......................... 74
West Campus ......................... 75
Off Campus ........................ 76
Business, College of ............. 383
Business Administration ............
Curriculum ......................... 385
Major Areas of Concentration .... 387
Accountancy ....................... 397, 394
Business Education and Administrative Services .................. 387, 396

General Business .................. 390, 401
Finance Area ....................... 389, 401
Law Area .......................... 404
Management ........................ 390, 405
Marketing .......................... 390, 408
Business Research & Service Institute .... 384

CALENDAR ......................... 5
Center for Depreciation Studies .... 89
Center for Metric Education ......... 89

Certificate, Teacher ........................
(See Teacher Certification) ...... 35
Changing Courses (Drop-Add) .... 41
Chemistry, Department of ......... 246
Childhood Education, Early ........ 414
Chinese Languages ................ 319
Choirs ........................... 498
Class Attendance .................... 40
Class Load .......................... 40
Classical Humanities ............... 198
Classification of Students .......... 41
Clinics ................................
Reading Center and Clinic ....... 427
Speech and Hearing ................. 71
College Level Examination ..... 427
Program (CLEP) ..................... 17
Colleges and Curricular Offerings ..... 25
Communication Arts and Sciences .... 251
Comparative/Cross-Cultural Studies Program ....... 210
Comprehensive Examinations .... 38
Computer Science ........................
See Computer Mathematics 
Option ............................ 320
Computer Science Minor .......... 321
Computer Systems Engineering ... 103
Conduct, Discipline ................ 46
Continuing Education ........................
Division of ......................... 544
Cooperative Education Program .... 85, 93
Correspondence ..................... Inside Cover
Counseling and Personnel ........ 429
Counseling Center .................. 47
Course Numbering ................... 41
Creative Arts Minor ................ 415
Credit/No Credit System .......... 39
Criminal Justice ........................
See Continuing Education .... 546
Political Science .................... 340
Social Work ......................... 372
Sociology .......................... 363
Critical Languages ................ 315
Curricular Offerings ............... 25

DANCE ............................. 478
Dean's List ........................ 40
Degree, General Requirements .... 20
Degrees ............................ 18
Dentistry (See Pre-professional Curricula) ........ 28
Dietetics Curriculum ............... 110
Directed Teaching .................. 430
Discipline, Conduct .......... 46
Distributive Education, Department of .... 93
Courses ........................... 98
Two-Year Curriculum ............... 96
Food Distribution .................. 93
Petroleum Distribution ............ 94
Cooperative Education ............. 93
Distributive Teacher Education .... 95
Graduate College, The .......................... 539
Graduate Requirements for a Bachelor of Science in Engineering .......................... 86
Graduation ........................................ 42
Grants ............................................ 62, 65
Graphic Arts and Printing Management ........................................ 127
Greek Courses .................................... 305
Group Majors and Minors ........................................ 225

HEALTH EDUCATION GROUP MAJOR ................. 440
Health Education Group Minor ......................... 444
Health Service ..................................... 48
Hebrew Language ................................... 319
Hindi-Urdu .......................................... 319
Historical Sketch ................................... 3
History, Department of ................................ 289
Home Economics, Department of ......................... 107
Clothing Textile Emphasis ......................... 109
Clothing Textile Minor ................................ 115
Courses ......................................... 118
Curricula .......................................... 107
Dietetics ............................................ 110
Fashion Merchandising ................................ 108
Family Life Education Minor ...................... 116
Food Emphasis ..................................... 111
General Curriculum ................................ 112
Home Economics Education ......................... 113
Home Economics in Business ......................... 109
Honors .............................................. 43
Honor Points ....................................... 39
Honors College, The ................................ 78
Departmental Honors ................................ 78
General Education Honors .......................... 78
The Honors College Curriculum .................... 27
Honors College Courses ................................ 79
Housing .............................................. 49
Humanities Area, General Studies ..................... 527

IDENTIFICATION ................................ 43
Incompletes ....................................... 38
Industrial Design .................................. 140
Industrial Education Department of .................. 122
Courses ............................................ 126
Curricula .......................................... 122
Printing Management ................................ 125
Vocational-Technical Education ..................... 124
Industrial Engineering Department of .................. 135
Courses ............................................ 135
Curricula .......................................... 135
Industrial Supervision Curriculum .................... 137
Description of Courses ................................ 145
Institute of Public Affairs .......................... 342
Institute of Technological Studies ..................... 89
Inter-Disciplinary Programs .......................... 194
Integrated Creative Arts Minor ...................... 415
Integrated Language Arts Minor ..................... 415
International and Area Studies Programs ............ 207
International Students ................................ 47
Italian Courses ..................................... 310

JAPANESE LANGUAGE ................................ 319
Journalism .......................................... 267
Electronic Media .................................... 267
Print Media ........................................ 267
Junior High School Curriculum ......................... 417
Index

KLEINSTUCK NATURE PRESERVE ............................................. 76
Korean Language .......................................................... 319
LANGUAGES, CRITICAL .................................................. 314
Languages, Modern and Classical ...................................... 302
Latin American Studies .................................................. 212
Latin Courses ................................................................ 306
Latvian Language .......................................................... 319
Law (See Professional Preparations) ................................... 314
Liberal Arts Curriculum .................................................. 192
Librarianship .................................................................. 541
Librarianship Curriculum (For Teacher-Librarians) ............. 416
Librarianship Curriculum (Pre-professional) ...................... 29, 541
Libraries .......................................................................... 71
Linguistics, Department of .............................................. 314
MAJOR AND MINOR REQUIREMENTS .................................... 30
Majors and Minors Offered .............................................. 30
Manufacturing ................................................................ 88
Mathematics, Department of ........................................... 320
Mechanical Engineering Department of ............................. 149
Description of Courses ................................................... 151
Medical (Physical) Examination .......................................... 48
Medical Technology ....................................................... 220
Medicine (See Pre-professional Curricula) ......................... 29
Medieval Institute .......................................................... 214
Middle School & Junior High School Curriculum ............. 417
Military Science, Department of .................................. 155
Basic Course ................................................................ 156
Advanced Course .......................................................... 157
R.O.T.C. ...................................................................... 74
R.O.T.C. Scholarships ..................................................... 158
Minor Requirements ...................................................... 30
Minority Student Services .............................................. 52
Motion Picture Services .................................................... 72
Motor Vehicles .............................................................. 72
Multiple Audio Distribution System (MAD) ......................... 73
Music, Department of ..................................................... 489
Activities and Organizations ........................................... 73
Applied Music ................................................................ 493
Courses ........................................................................ 498
Elementary Curriculum (Music Majors) ............................ 419
Ensembles ...................................................................... 499
OCCUPATIONAL THERAPY, DEPARTMENT OF ................. 159
Courses ......................................................................... 160
Ombudsman .................................................................. 50
Orchestra ....................................................................... 498
PAPER SCIENCE AND ENGINEERING, DEPARTMENT OF .. 163
Paper Science .................................................................. 164
Paper Engineering .......................................................... 165
Course Description .......................................................... 169
Philosophy, Department of .............................................. 328
Physical Education, Department of .................................. 435
Physical Education Requirement ....................................... 433
Physical Examination ...................................................... 48
Physicians' Assistants ...................................................... 221
Physics, Department of ................................................... 333
Placement Services ......................................................... 51
Polish Language ................................................................ 319
Political Science, Department of ..................................... 340
Pre-professional Curricula ............................................... 28
Dentistry ....................................................................... 28
Engineering ................................................................... 28
Librarianship .................................................................. 29
Medicine and Osteopathy ............................................... 29
Printing Management .................................................... 127
Professional Preparation, Law ......................................... 29
Psychology, Department of ............................................. 349
Public Administration ..................................................... 344
RADIO: WMUK, WIDR ................................................... 73
Reading Center and Clinic .............................................. 427
Refunds .......................................................................... 37
Registration .................................................................... 17
Religion, Department of ................................................ 356
Religious Activities ........................................................ 51
Repeated Courses ........................................................... 39
Requirements, Major and Minor ........................................ 30
Residency........................................................................ 37
Room and Board ............................................................ 36
R.O.T.C. ....................................................................... 74
Rural Elementary Curriculum .......................................... 419
Russian Courses ............................................................ 310
SANSKRIT LANGUAGE ...................................................... 319
Scholarships ................................................................... 353
Scholarship Standards ..................................................... 40
Science Area, General Studies ........................................ 531
Secondary Education Curriculum ..................................... 420
Serbo-Croatian ............................................................. 319
Social Science Area, General Studies ............................... 533
Social Science Major and Minor ....................................... 227
Social Work, School of ................................................... 372
Sociology, Department of ............................................... 362
Spanish Courses ............................................................. 312
Special Education, Department of ..................................... 457
Emotionally Disturbed ..................................................... 422
Mentally Handicapped ..................................................... 423
Orthopedically Handicapped ........................................... 424
Visually Handicapped ..................................................... 425
Speech (See Communication Arts and Sciences) ............... 251
Speech and Hearing Clinic .............................................. 71
Speech Pathology and Audiology, Department of .............. 378
Statistics .......................................................................... 321
See Statistics Option ....................................................... 321
Statistics Minor ............................................................. 321
Student Academic Rights: Policies and Procedures .......... 44
Student Cheating ............................................................ 43
Student Employment ....................................................... 66
Student Financial Assistance .......................................... 53
Student Government ...................................................... 51
Student Activities and Organizations............................... 51
Student Planned Curriculum .......................................... 25
Student Services ........................................................... 46
Student Teaching (See Directed Teaching) ......................... 319
Swahili ........................................................................... 319
TEACHER EDUCATION, DEPARTMENT OF ................. 459
Teacher Education Program ........................................... 459
Admission to .................................................................... 412
Teacher Certification Provisional ........................................ 35
Continuing ....................................................................... 35
Teachers' Curricula ......................................................... 412
Television ........................................................................ 74
Testing Services .............................................................. 52
Theatre .......................................................................... 71
Transcripts ...................................................................... 43
Transfer Students ............................................................ 15
Transportation Technology, Department of ..................... 172
Courses .......................................................................... 182
Transportation Systems .................................................. 180
Index

Trustees, Board of .......................... 7
Tuition ........................................ 36

URBAN STUDIES
See Sociology .................................. 363

UNIT OF CREDIT .............................. 37
University Councils .......................... 12

VETERANS ASSISTANCE ..................... 68
WIDR ........................................... 73
Withdrawal from University ............... 41
WMUK ........................................... 73
Women's Studies ............................. 217
World Literature .............................. 218