Undergraduate Catalog 2006-2008*

Published by

UNIVERSITY OF MICHIGAN-DEARBORN

*Students admitted Winter, Summer or Fall, 2006 may follow the degree requirements in place in the Undergraduate Catalog 2003-2005.
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Chancellor
University of Michigan-Dearborn

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This Catalog of UM-D is a fundamental source of information concerning academic opportunities, policies, regulations, and procedures. It is each student's responsibility to become familiar with the information contained herein.

Information in this Catalog is as of January 2005. Every care has been taken to insure its accuracy; however, the University cannot be responsible for errors and reserves the right to change programs, requirements and policies at any time after the publication of this Catalog. Current information is available through Unit and Departmental Offices.
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2006-2008 Academic Calendar

FALL TERM 2006

Regular Registration Begins*....................................... Monday, April 28
Classes begin .......................................................... Monday, May 5
Thanksgiving recess .............. Thursday-Sunday, November 23-26
Classes resume 7:30 AM................. Monday, December 1
Examinations .................. Thursday-Saturday, December 14-16
Summer Term ends..................... Friday, August 24

*Check http://www.umd.umd.edu/registration for pre-select and early registration dates.

**Dates are subject to change at any time by the Board of Regents.
Campus Map
University of Michigan-
Dearborn

REGENTS OF THE UNIVERSITY

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Olivia P. Maynard
Rebecca McGowan
Andrea Fischer Newman
Andrew C. Richner
S. Martin Taylor
Katherine E. White
Mary Sue Coleman, President

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Edward Bagale, MBA, Vice Chancellor for Government Relations
Robert G. Behrens, MA, Vice Chancellor for Business Affairs
Stanley E. Henderson, MA, Vice Chancellor for Enrollment Management and Student Life
Thomas Baird, MEd, Vice Chancellor for Institutional Advancement

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Paul Zionts, PhD, Dean, School of Education
Subrata Sengupta, PhD, Dean, College of Engineering and Computer Science
Bruce Bublitz, PhD, Dean, School of Management

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Drew Buchanan, PhD, Director of Research & Sponsored Programs
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Richard F. Gordon, MPA, Director of Campus Safety
Roma Heaney, MA, Director of Institutional Research
Kathleen A. Herr, Director of University Center Operations
Larry G. Hicks, AA, AS, Director of Facilities Management
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Noel Hornbacher, BBA, Interim Director of Financial Aid
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Kathleen Pepin, BS, Director of Facilities Planning
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Timothy F. Richards, MA, AMLS, Director of the Mardigian Library
Gary Rodgers, Director of Operations, Henry Ford Estate.
David A. Schroat, PhD, Director of Counseling Support Services
Jeanette G. Schumacher, BA, Director of Alumni Relations
Susan W. Martin, PhD, Director of Graduate Studies
Regina M. Storrs, MA, Director of Career Services
Kristine Day, MS, Director of Student Activities
Jeffrey Evans, BS, Director of Human Resources/Affirmative Action

CITIZENS ADVISORY COMMITTEE

Ismael Ahmed
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Maria Leonhauser
Patricia Mooradian
Timothy J. O’Brien
Jon Pepper, Michael
C. Porter
Shirley R. Stancato
How To Use The Undergraduate Catalog

This Catalog is divided into five sections:

• General Information
• College of Arts, Sciences, and Letters
• College of Engineering and Computer Science
• School of Education
• School of Management

This Catalog of UM-D is a fundamental source of information concerning academic opportunities, policies, regulations, and procedures. It is each student's responsibility to become familiar with the information contained herein.

WHERE TO FIND INFORMATION

The General Information section of this Catalog is divided into seven areas:

• Admissions
• Financial Aid
• Registration and Records
• Campus Policies and Procedures
• Special Programs
• Campus Services
• Student Rights and Responsibilities

The College of Arts, Sciences, and Letters, College of Engineering and Computer Science, School of Education, and the School of Management sections contain: specific regulations and procedures which may be unique to that academic unit; information regarding programs, degrees and courses offered; and a plan for electing courses to fulfill undergraduate degree requirements.

KEY TO COURSE LISTINGS

The heading for each course listing contains the following information.

Discipline and Course Number

Courses are numbered in accordance with a University-wide numbering system: courses numbered 100 to 199 are introductory; courses 200 to 299 are intermediate; courses 300-499 are advanced (upper division).

Course Title

The bold face course title follows the course number.

Credit Hours

Credit hours at the University of Michigan-Dearborn are based on semester hours. The number of credit hours for each course is listed below the title.

Prerequisite

Prerequisites to the course normally appear below the title and credit hours, although they may sometimes be included in the course description. They should be completed before the course is elected.

Concurrent Courses

Courses listed with an asterisk (*) indicate those that may be taken concurrently with the course listed.
www.umd.umich.edu
The University of Michigan-Dearborn

The University of Michigan-Dearborn (UM-D) is one of the three campuses of the University of Michigan operating under the policies of the Board of Regents.

The campus, located the former estate of automotive pioneer Henry Ford, was founded in 1959 as a senior-level institution offering junior, senior and graduate-level courses and degrees. In 1971, UM-D became a comprehensive university campus offering four-year degree programs in liberal arts and sciences and graduate programs at the master's degree level.

More than 8,700 highly selective students, representing a wide range of academic interests and diverse backgrounds, are currently enrolled at the UM-D.

As part of the University of Michigan, UM-D enjoys an association with a large multi-university and the advantages of moderate size. Through expanded evening course offerings, professional development programs and cooperative education programs, UM-D continues to respond to the educational needs of commuting students from the Detroit metropolitan community.

Mission and Values

The UM-D is an interactive, student-centered institution committed to excellence in teaching and learning.

We offer undergraduate, graduate, professional education to a diverse and talented student body. Our programs are responsive to the challenging needs of society; relevant to the goals of our students and community partners; rich in opportunities for independent and collaborative study, research, and practical application; and reflective of the traditions of excellence, innovation, and leadership that distinguish the University of Michigan.

We accomplish this mission by:
• Providing a strong foundation in the liberal arts and sciences;
• Providing the knowledge and skills essential for career and personal success;
• Integrating teaching, research, and service in ways that enhance the learning experience;
• Promoting internships and cooperative education;
• Providing a dynamic environment where innovation, openness, and creativity are fostered;
• Using advanced technologies to meet changing educational needs and establish links with the global community; and
•Forging partnerships with business, industry, educational institutions, and government agencies.

We strive to be the institution of choice in southeastern Michigan for individuals and organizations that value accessibility, flexibility, affordability, diversity, and preeminence in education.

Goals for the Undergraduate Experience

The undergraduate programs of the UM-D provide students with the opportunity to develop particular skills and abilities; to cultivate an appreciation of aesthetic and ethical values; and to acquire both breadth of knowledge and the depth of understanding gained by concentration in one or more academic disciplines. All undergraduate programs, both general education and concentrations, prepare students, for example, to present ideas effectively; to think critically and to solve problems; to apply their knowledge to both theoretical and practical situations; to deal responsibly with questions of human values; and to demonstrate leadership in their professions and communities.

Undergraduate education at UM-D is designed specifically to aid students in learning to:
• Read, write, listen, and speak effectively
• Understand, manipulate, and present textual and quantitative information with the aid of computer and other appropriate technologies/methods
• See relationships, similarities, and differences between ideas, objects, and phenomena
• Identify central issues and assumptions in an argument, make correct inferences from data, deduce conclusions from information or data provided, and determine whether conclusions are warranted on the basis of the arguments and data given
• Make decisions and perform analyses using the perspectives, information, and ideas from the sciences and the humanities
• Make use of diverse historical, philosophical, and artistic contexts to understand both their own and other cultures
• Extend their knowledge through their abilities to access information effectively and to analyze, synthesize, and apply it in new situations
• Relate theory to practice
• Understand the world of work and develop skills for participation in it
• Function effectively both individually and collaboratively
• Articulate an ethical framework for their decision making

Goals for General Education

UM-D’s undergraduate degree programs, all predicated on a rich liberal studies foundation, actively engage students in a sustained course of study of sufficient breadth and depth to prepare and empower them for multiple arenas of life: with the conceptual frameworks for more advanced study, with tools for the changing world of work, with the analytical and critical thinking skills necessary for informed and socially responsible participation in both a diverse democracy and an increasingly interdependent global community, with the capacity to appreciate and enjoy the products and processes of the human imagination, and with the means to grow intellectually and personally over a lifetime. By the time a student completes a degree, he or she will have had many opportunities – at various levels, in multiple disciplines, and across disciplinary boundaries – to develop the habits and hallmarks of an educated person while also developing specialized knowledge in one or more fields.
One component of the undergraduate experience is the required coursework (called “distribution requirements” or “General Education requirements”) that students take – usually at the beginning of their college careers – in preparation for more focused and sustained work in their fields of choice. The goals of these General Education requirements coincide with the overarching Goals of the Undergraduate Experience, addressing them at the introductory level through a) practice in a core set of Skills and Competencies necessary for more advanced study and b) exposure to several Areas of Inquiry, which are broad disciplinary frameworks for problem-solving and discovery.

Skills and Competencies. These provide students with the practical tools needed to progress to more advanced academic study and to participate in various forms of professional and public interchange. They reside in the following areas: Written Communication, Critical Thinking, and Quantitative Thinking and Problem-solving.

Areas of Inquiry. An educated person needs to understand that there are multiple “ways of knowing,” each shaped by different intellectual traditions, values, assumptions, and methods of inquiry. It helps to look at problems and ideas through different perspectives, because they yield different understandings of the world and equip us with the analytical nuance and intellectual resilience to deal with issues that are complex, ambiguous, controversial, or non-quantifiable. To become acquainted with several different “ways of knowing,” students are expected to choose courses – based on their personal interests, chosen fields, and career goals – in three broad Areas of Inquiry: Humanities; Behavioral, Social, and Historical Analysis; and Biological and Physical Sciences.

In the process of exploring each Area of Inquiry, students will learn how practitioners in different fields carry out the following knowledge-making tasks:
- Applying appropriate theoretical and conceptual frameworks
- Applying appropriate methods and tools of analysis
- Pursuing significant questions and issues
- Drawing credible conclusions from appropriate evidence
- Using specialized concepts and terms to communicate, argue claims, and establish authority
- Critically assessing established systems of knowledge as well as their origins in social and historical contexts

Each degree program has developed the most appropriate mix of General Education requirements and options for its own students and assesses progress in ways that emphasize the preparation needed for that particular course of study. Nevertheless, irrespective of which program a student pursues, through the General Education component the student should develop threshold levels of competence and understanding and gain exposure to a broad range of disciplinary perspectives.

Components of General Education:

Skills and Competencies:

Written Communication. Because writing plays a role in both the construction and transmission of knowledge, learning to write effectively about ideas is fundamental to a liberal arts foundation. Writing at UM-D is considered a complex rhetorical and cognitive skill to be developed throughout a student’s undergraduate experience through guided exposure to texts, disciplinary content, and specialized research sources. At the introductory level, students who complete general education requirements are expected to be able to use writing as a means of critical inquiry and as a way of engaging significantly with the kinds of texts typical of college-level courses. They are also expected to be able to construct a structured and focused argument, to revise and edit their work in the light of particular audience demands, to draw on the insights of others and incorporate the results of research into their own writing, and to apply appropriate conventions of genre and voice. Introductory writing objectives include using basic computer-mediated expression as a form of communication.

Critical Thinking. General Education courses help students to see relationships, similarities and differences among ideas, objects and phenomena; to identify central issues and assumptions in an argument; to make inferences from data; to deduce conclusions from information or data provided; to determine whether conclusions are warranted on the basis of the arguments and data given; and to recognize faulty reasoning. In addition, General Education courses prepare students to determine the various implications that follow from accepting particular arguments and data, and to assess arguments in light of their own beliefs and values. Finally, these courses provide guided practice in strategies for accessing information effectively, and for analyzing, synthesizing, and applying it in new situations. While these skills are introduced in General Education courses, they are reinforced in courses for the concentration, as the two are integrated through similar pedagogies.

Quantitative Thinking and Problem-solving. Together with logical and critical reasoning skills, the ability to work with algebraic, geometric and/or statistical concepts is essential for the study, advancement, and application of many fields of knowledge; consequently, mathematics is an important component of a liberal arts or pre-professional education. General Education coursework in mathematics helps students to develop logical skills through symbolic expression and step-by-step reasoning. Courses meeting this requirement also provide a disciplined introduction to the axiomatic and analytic framework of mathematics and help students to understand, manipulate, and present quantitative information.

Areas of Inquiry

Humanities (Arts/Letters/Philosophy). Depending on the requirements of their respective degree programs, students may take General Education courses in one or more of the following fields to fulfill the Humanities Area of Inquiry.

Arts. A study of music or art history sharpens the perceptions of the eyes and ears, induces sensitivity to various principles of design and beauty, and fosters the capacity for aesthetic discrimination. Students who pursue coursework in the arts should not only be familiar with the masterworks of human imagination, but also possess an understanding of the historical and cultural significance of those works.

Letters and Philosophy. A study of literature, philosophy, and the humanities broadens the mind, develops the imagination, and encourages critical thinking. Beyond this, these areas of inquiry enable all of us to transcend the limitations of our own particular circumstances. A close
reading of the literature of these fields shows students how our own and other civilizations have grappled with the fundamental and enduring questions inherent in human experience. The objective of participating in these areas of study is to produce students who are self-reflective, capable of analyzing and evaluating foundational intellectual frameworks and literary texts, and confident in offering justifications for various ethical and epistemological positions.

**Behavioral/Social/Historical Analysis.** Depending on the requirements of their respective degree programs, students may take General Education courses in one or more of the following fields to fulfill this Area of Inquiry.

- **Behavioral Analysis** (Psychology, Sociology, Anthropology). Understanding and communicating with people who are different from oneself are important for functioning in the contemporary world. It is essential to understand human beings as individuals (psychologically) who function in a social context (sociologically) that varies across culture and through time (anthropologically). These perspectives offer different but complementary views of people. The behavioral sciences are both a way of applying the scientific method to rigorously ask and answer questions about the social world and an ever-changing body of knowledge.

- **Social Analysis** (Economics, Political Science). As part of its mission for providing the foundation for effective citizenship, UM-D expects its students to understand the structures and processes of government and legal systems. Similarly, since much of civic responsibility is ultimately a matter of economic decision-making, another goal of this requirement is that students understand the powerful and transformative forces of the economic environment. A familiarity with political and economic environments can be essential for working in organizations and industries and for understanding the interdependence of peoples in the contemporary world. The methods of the economic and political sciences also train students in the habits of critical thinking.

- **Historical Analysis.** A study of history develops a sense of the historical context of the present world, an appreciation of the historical background of our culture and other cultures, and an informed understanding of the major processes and events from which the present has emerged. A study of history is also a study of values and ethics, and one outcome of this requirement is the student’s ability to see how social value commitments play out over time. Another outcome is that students possess an acquaintance with the dynamics of change and an awareness of the continuity of civilization, and have the ability to see connections among events, social forces, and individual action.

**Biological and Physical Sciences.** Students may take one or more General Education courses to fulfill this area of inquiry, depending on the requirements of their respective degree programs. Science represents our attempt to build and refine models of nature and to discover and understand the basic laws of nature. Through this area of inquiry, we hope to develop students who are scientifically literate. The scientifically literate person understands the scientific method, not only for the purpose of understanding the sciences and the facts of science, but to appreciate how science is different from other “ways of knowing.” Such an individual should be able to discriminate between valid science and pseudoscience. Scientific literacy is an essential capability for citizenship in the modern era, as society is increasingly dependent on science and technology. Today’s students may eventually find themselves in a position to influence policy, regulate science and technology at the local, state, or federal level, or to work in an industry based on science and technology. The outcome of this requirement is a student who understands the scientific method and who has substantial knowledge of the basic laws, facts, and scholarly questions of one scientific discipline.

## The Campus

The UM-D campus was established in 1956 through a gift from the Ford Motor Company. The gift included approximately 196 acres of land, the Henry Ford Estate, and funds for the construction of four buildings totaling 226,770 gross square feet. The campus has grown considerably over the past 38 years and now includes the following facilities:

<table>
<thead>
<tr>
<th>Building Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration Building</td>
<td>Offices, classrooms</td>
</tr>
<tr>
<td>CASL Annex</td>
<td>Offices, classrooms</td>
</tr>
<tr>
<td>Campus Support Services</td>
<td>Offices, support services</td>
</tr>
<tr>
<td>Engineering Complex</td>
<td>Offices, Labs</td>
</tr>
<tr>
<td>Engineering Laboratory Building</td>
<td>Offices, classrooms and Labs</td>
</tr>
<tr>
<td>Fairlane Center North and South</td>
<td>Offices, classrooms and food service</td>
</tr>
<tr>
<td>Fieldhouse/Ice Arena/Wellness Center</td>
<td>Ice rink, recreation</td>
</tr>
<tr>
<td>Grounds Building</td>
<td>Vehicle storage, offices</td>
</tr>
<tr>
<td>Institute for Advanced Vehicle Systems</td>
<td>Offices, Labs</td>
</tr>
<tr>
<td>Henry Ford Estate</td>
<td>National historic landmark</td>
</tr>
<tr>
<td>Kindergarten Module</td>
<td>Classroom, offices</td>
</tr>
<tr>
<td>Manufacturing Systems Engineering Laboratory</td>
<td>Labs, offices</td>
</tr>
<tr>
<td>Mardigian Library</td>
<td>Library, offices, classrooms, Alfred Berkwitz Gallery</td>
</tr>
<tr>
<td>Monteith Parking Structure</td>
<td>Parking, storage</td>
</tr>
<tr>
<td>Professional Education Center</td>
<td>Offices, classrooms and computer Labs</td>
</tr>
<tr>
<td>Science Building/Computer Wing</td>
<td>Classrooms, Labs, offices</td>
</tr>
<tr>
<td>Science Learning and Research Center</td>
<td>Classrooms, Labs, offices</td>
</tr>
<tr>
<td>Social Sciences Building</td>
<td>Classrooms, Labs, offices</td>
</tr>
<tr>
<td>Student Services Center</td>
<td>Classrooms, Labs, offices</td>
</tr>
<tr>
<td>University Center</td>
<td>Classrooms, offices food service, copy center, bookstore</td>
</tr>
</tbody>
</table>

The Mardigian Library offers a student-centered environment that fosters learning by providing access to authoritative sources of knowledge and information and by helping students learn critical information literacy skills and concepts. It gives faculty and students access to sources and knowledge via modern information technology, and our librarians teach students how to find their way in the ever-expanding universe of information and knowledge. The four-story Mardigian Library houses a 340,000-volume collection.
and provides web-based access to a multitude of research resources, including an online journal collection of 18,000 titles, 200 online research databases and over 9,000 online books and approximately 1,200 student study stations. The facility also contains computer, audiovisual, and education laboratories, and a television studio. Librarians are accessible, either online or in person, to help students with their research needs.

The Alfred Berkowitz Gallery, located on the third floor of the Library, features changing exhibitions throughout the academic year. The gallery functions as a program laboratory, extending and supplementing other University programs, and as a showcase for exhibitions with broad public appeal.

Spaces for recreational, intramural, and varsity athletics, as well as health and physical education classes, are provided in the Fieldhouse/Ice Arena and attached Wellness Center.

The Administration Building, the University Center, and the Campus Support Services building currently house support services for the campus.

The Professional Education Center houses professional and continuing education programs.

The Henry Ford Estate is a major center of campus activity for meetings, cultural activities, and conferences. Having been designated a National Historic Landmark, it is open for public tour year-round.

Three cottages, part of the original Henry Ford Estate, have been converted to a Child Development Center. In addition, a modular building houses a kindergarten program.

### Capsule History of the University of Michigan-Dearborn

The first movement toward what was to become The University of Michigan-Dearborn began with some studies in the middle 1950's of manpower supply conducted by Archie Pearson, director of training for Ford Motor Company. Convinced that serious shortages were looming for the Company in qualified, college-trained engineers and junior administrators, he made discreet inquiries of educational institutions in the Detroit area concerning their willingness to adjust their programs to meet these needs.

Pearson was particularly interested in a program with a cooperative education component that would provide several periods of full-time work experience, alternating with regular terms of professional academic study. However, his inquiries and those of his associates did not strike the responsive chord they were looking for until they were put in touch with members of the top administration at the University of Michigan. Thus in late 1955 began the negotiations between Pearson, his associates, and University of Michigan officials that led to the establishment of the Dearborn Center of the University of Michigan. During 1956, the details of the proposed campus were worked out by a Special Committee involving top administrators at both Ford Motor Company and the University of Michigan. The announcement on December 17, 1956 of a gift of land and capital development money from the Company to the University made it obvious that the focus of the agreement between the two was the building of an upper-division and master's level campus of the University which would adopt the cooperative work-study requirement as a part of its regular degree program in engineering and business administration. The University was to provide the regular professional and liberal arts courses necessary to a University of Michigan bachelor's or master's degree, with the co-op work assignments forming an integral addition to the regular academic requirements. UM-D opened as the Dearborn Center of the University of Michigan on September 28, 1959.

The upper-division cooperative education program was the first important educational emphasis of what is now UM-D. Cooperative education is still a vital part of the professional programs, and not only has it expanded to include liberal arts students, but other kinds of off-campus experience for credit have been added as well. There are now regular program-related internships in political science, economics, social work, humanities, health sciences and public administration. Nevertheless, it became apparent in the early days that the campus could not afford to be limited to a single focus, and over the years it has gone through several stages of modifying its original purposes and structure.

From its inception in 1956 to about 1962, the cooperative education program was confidently set forth as a sufficient raison d'être for the campus, in spite of growing evidence that this admittedly fine and educationally sound opportunity was not drawing a sufficient number of students for economical use of the facilities. In February 1962, William Stirton, the University of Michigan Vice President who was the first chief executive of UM-D, announced that cooperative education was being extended to the liberal arts areas on an optional basis, beginning in the fall term, 1962. In reality, however, very few liberal arts co-op work assignments were actually made before 1973, when the present liberal arts co-op program was officially established. Although this early attempt to extend the co-op program to liberal arts was an apparently small episode in the history of the campus, it constituted the last major attempt to build the campus solely on the basis of the co-op programs and the upper-division/graduate structure. Moreover, it came at about the same time as the change in the name of the institution from "Center" to "Campus" (to make its objectives seem less limited). Both events marked the beginning of a period in the middle sixties characterized by growing uncertainty about the future of the institution. This period ended in 1969 with the recommendations of the Ross Committee (also referred to as the Balzhiser Committee, and officially called the Dearborn Campus Planning Study Committee), which radically changed the direction of the campus.

The 1969 report of the Dearborn Campus Planning Study Committee, appointed by University Vice President for State Relations and Planning Arthur Ross to consider the future of the campus, recommended the addition of the first two years to become a full four-year institution and the expansion of non-co-op programs; it recommended other changes as well, most of which were implemented in 1971 to give the campus its present structure. It became at that time a four-year undergraduate institution (newly designated "The University of Michigan-Dearborn") with a continued commitment to some master's level graduate programs, having a Chancellor as its chief executive officer; two years later, the old divisions became schools and colleges, and the Division of Education ("Urban Education" for the first few years) was created, with each of the major academic units headed by a dean. The first Chancellor of UM-D, Dr. Leonard E. Goodall, was appointed in July, 1971.

After that watershed change in 1971, UM-D grew rapidly from just under 1,000 students to over 6,000 in 1979. During this period there was a scramble just to supply the courses and facilities needed to accommodate the soaring student population. New faculties were added at the rate of 10 to 20 per year, and the face of the campus changed as a new set of buildings (the former University Mall now remodeled as the University Center, the Fieldhouse, and the Library) was planned and constructed to the south of the original four buildings. By April 1981, when the new
library building was dedicated, the population center of the campus had shifted to this newly developed area. Ironically, however, these years of expansion also ushered in a period of severe retrenchment, when the debt burden of the new structures coincided with a recession and cuts in state aid to the campus. Dr. William Jenkins, appointed as UM-D’s second Chancellor in 1980, took the helm at the beginning of what may be called the institution’s “Years of Consolidation.” The early 1980’s at UM-D were, as in the state of Michigan as a whole, a period of severe financial crisis. From 1979 through 1982, over a million dollars of funds allocated to UM-D by the state had to be recalled. During that same time, faculty and staff salaries were cut and student tuition rose 44 percent in three years. Nevertheless, student enrollment, after a slight drop from 1982 to 1984, resumed its steady rise that has continued to the present. A new surge in capital fund-raising was instigated as a result of the campus's fiscal problems, and it bore early fruit in 1984 when Ford Motor Company announced the biggest capital gift to UM-D since its founding: $800,000 to build a computer-aided engineering facility, now known as the Manufacturing Systems Engineering Laboratory (completed in 1988). By the end of the decade, capital funding from the state (delayed during the recession) resulted in one major new building (the Social Sciences Building, formerly the School of Management Building), an addition to the Science Building (Computer Wing), and extensive renovations to one of the original campus buildings to provide much-needed additional office space for both faculty and administrators.

Several developments in campus organization, administrative personnel, and academic offerings have highlighted what might be called the "Years of Redirection," from about the time of the inauguration of Chancellor Blenda Wilson (1988) to the present. At the center of this "redirection" has been a program of strategic planning, initiated in the summer of 1990 and reinforced by planning retreats for the whole campus in the fall terms of 1990, 1991 and 1992. A new campus mission statement arose out of the first retreat which rearticulates UM-D’s commitment to providing an experience of academic excellence for a diverse body of students from the metropolitan Detroit area, encouraging full community attention to the traditions of free intellectual inquiry, critical thinking and ethical behavior through interactive teaching, research, creative and applied scholarship, and service. From the second retreat emerged the principal points of a set of learning goals for undergraduate students.

In consonance with these statements of institutional purpose, organizational changes were made to strengthen the funding base for the campus, to consolidate and streamline academic programs, and to coordinate and strengthen student services under a new vice chancellor for student affairs. In July 1991, Dr. Robert Simpson took office as provost and vice chancellor for academic affairs, succeeding Dr. Eugene Arden. Provost Simpson energetically promoted the identification and implementation of those measures of academic improvement that are most appropriate to the newly stated purposes of the campus. Under his leadership, a new statement of UM-D’s Goals for the Undergraduate Experience was completed in 1993; a new fiber optic cable was laid for a campus computer network, with the Director of the Mardigian Library being given oversight of Information Technology Services; and, after a self-study (1991-93) using the campus's strategic plan as the focus, UM-D was officially reaccredited by the North Central Association in March 1994.

After Chancellor Wilson resigned in the summer of 1992, Dr. James C. Renick was appointed as the fourth chancellor of UM-D in January 1993. As one of his first responsibilities, he solidified the capital campaign and established a goal of $24 million over four years (1992-1997). Chancellor Renick emphasized the importance of making UM-D a fully "interactive campus" with the southeastern Michigan community it serves.

Several other important developments took place in 1993 and early 1994: 1) a new set of Campus Bylaws was instituted which provided for a Faculty Senate for the first time in the campus's history; 2) approval by the State Legislature of capital outlay for a new building to house faculty offices, general purpose classrooms, and a 350-seat multi-purpose auditorium; 3) institution of a new Engineering Management degree in 1993, administered jointly by the Schools of Engineering and Management; 4) implementation of a new, second-generation automated library system (WIZARD) which substantially increases faculty and student access to local, regional and national bibliographic databases. The University purchased the facility now known as Fairlane Center North and South from Ford Motor Company. In January 2004, the Schools of Education and Management completed their move into Fairlane Center South. SOE and SOM courses were offered in this new location starting Winter 2004. The Computer and Information Science Department will occupy the space vacated by SOE and the Department of Social Sciences together with other administrative offices will move into the former School of Management building, now called the Social Sciences Building.

Under Chancellor Little, the strategic planning effort initiated by Renick was continued. The campus community reaffirmed its intention to pursue doctoral programming, to explore the possibility of on-campus housing, to review undergraduate programs and to focus attention on diversity. The most recent self-study for continuing accreditation by the Higher Learning Commission (formerly the North Central Association) focused on each of these areas and provided summaries of the current status of each of these ongoing efforts. UM-D was accredited for ten years in 2004 and was authorized to offer doctoral programming.

In 2006, UM-D welcomed its third Provost and Vice Chancellor for Academic Affairs, Dr. Susan W. Martin. Two new buildings, the Science Learning and Research Center (just west of the Science Building) and the Institute for Advanced Vehicle Studies will be operational.

Source of information up to 1984: A Gift Renewed, written by Professor Elton D. Higgs.

**Accreditation**

The University of Michigan-Dearborn is fully accredited by The Higher Learning Commission and a member of the North Central Association of Colleges and Schools. Accreditation has also been awarded to various UM-D engineering programs by the Accreditation Board of Engineering and Technology, Inc. AACS, the International Association for Management Education has accredited programs in the School of Management. The School of Education is a member of the American Association of Colleges for Teacher Education, the Michigan Association of Colleges for Teacher Education, and the Teacher Education Council of State Colleges and Universities. In 2001 its certification programs were approved through the periodic review of the Michigan Department of Education.
For information regarding the accreditation status of the University, either of the following may be contacted:

The Higher Learning Commission
North Central Association of Colleges and Schools
30 North LaSalle Street, Suite 2400
Chicago, IL 60602
(800) 621-7440
www.ncahigherlearningcommission.org

or

University of Michigan-Dearborn
Office of the Provost
1080 Administration Building
Dearborn, MI 48128-1491
(313) 593-5030

Some degree programs are certified by professional organizations.

Admissions

Majors, Degrees Offered

The following undergraduate majors and other fields of concentration offered at UM-D are shown with the degree designations to which they normally lead:

- Accounting ...................................................... BBA
- American Studies .......................................... AB
- Anthropology .................................................. AB
- Art History ...................................................... AB
- Behavioral Sciences ......................................... AB
- Biochemistry .................................................. BS
- Biological Sciences ........................................ BS
- Chemistry (A.C.S. Certified) ............................ BS
- Chemistry (Instructional) ................................. BS
- Children & Families ...................................... BGS
- Communications .......................................... AB
- Computer Engineering ................................. BSE
- Computer and Information Science (Computer Science) BS
- Computer and Information Science (Information Systems) BS
- CIS Mathematics (Dual Degree only) ................ BS (CIS Math)
- Earth Sciences .............................................. BS
- Economics ...................................................... AB
- Education
  - Elementary Certification .......................... AB, BS, BGS
  - Secondary Certification ......................... AB, BS
- Early Childhood Education
  - Elementary Certification .......................... AB, BS
  - Electrical Engineering .............................. BSE
  - Elementary Certification (Certification Only) BSE (Math)
- Engineering Mathematics (Dual Degree only) .... BSE (Math)
- English ......................................................... AB
- Environmental Science ................................. BS
- Environmental Studies ................................. AB
- Finance ......................................................... BBA
- French Studies ........................................... AB
- General Studies .......................................... BGS
- Health Policy Studies ................................ AB
- Hispanic Studies ......................................... AB
- History ......................................................... AB
- Humanities .................................................... AB
- Industrial and Systems Engineering .............. BSE
- International Studies ................................ AB
- Language Studies ........................................ AB
- Liberal Studies ........................................... AB, BS
- Management ................................................. BBA
- Management Information Systems ................ BBA
- Marketing .................................................... BBA
- Mathematics ............................................... AB, BS
- Mathematics Studies ................................ AB, BS
- Manufacturing Engineering ........................ BSE
- Mechanical Engineering .............................. BSE
- Microbiology .............................................. BS
- Philosophy .................................................... AB
- Physics ......................................................... BS
- Political Science .......................................... AB
- Professional Development in Engineering ....... PD
- Psychology ..................................................... AB
- Science Studies .......................................... AB, BS
- Secondary Certification .............................. AB, BS
- Social Studies ............................................. AB
- Sociology ...................................................... AB
- Software Engineering ................................ BS
- Women and Gender Studies ......................... AB
- Human Resources Management .................... BBA

Freshmen Student Admission

ADMISSION PROCEDURES

The UM-D welcomes applications from prospective freshmen. The admission of all students is on a selective basis; admissions officials consider many factors in reaching individual decisions for admission.

Sources of information used in evaluating a candidate's qualifications include the secondary school record, comments of the secondary school counselor or principal, scores achieved on either the Scholastic Aptitude Test (SAT) or the American College Test (ACT), class rank, and any evidence of special abilities.

Freshmen are normally expected to be graduates of accredited high schools or preparatory schools. The requirement of high school graduation may be waived for adults, provided there is evidence that they are likely to be successful at the University. This evidence will in most cases take the form of achievement test scores or the General Educational Development (GED) test results.

Applications for admission are sent to all high schools in the metropolitan Detroit area for distribution to prospective students during their senior year. It is recommended that students apply for admission by March 1 for the following fall semester and at least two months in advance of any other semester. The official application deadline date for any semester is the first day of class of that semester. The application fee is $30. Applications may also be obtained by writing to the Office of Admissions, University of Michigan-Dearborn, 4901 Evergreen Road, Dearborn, Michigan 48128-1491 or telephoning (313) 593-5100.

Official high school transcripts are needed at the time of application for Freshman admission to UM-D. Students seeking admission to UM-D from other institutions of higher learning must also submit official transcripts of all their previous coursework. Official corrections made to transcripts by previous schools, whether high schools, colleges, or universities, must be
submitted to the University no later than six months after the first day of classes.

The Admissions counseling staff welcomes the opportunity to interview prospective students. Appointments for interviews should be arranged in advance by telephoning the Admissions Office (313) 593-5100.

ADMISSION REQUIREMENTS

A strong high school background in basic academic subjects is important in a student's preparation for college study. The following college preparatory high school curriculum should be followed:

**College Preparatory English:** Minimum four years required.

**Mathematics:** Minimum three years required with four years recommended (at least two years must be in college preparatory mathematics).

**Biological and Physical Sciences:** Minimum two years required with three years recommended.

**History and Social Sciences:** Minimum three years required.

**Foreign Language:** Minimum two years strongly recommended.

**Computer Science:** At least one semester is required; one year recommended.

**Electives:** Additional work in any subjects offered for high school credit to bring the total for the four high school years to the equivalent of at least 15 units.

SPECIAL RECOMMENDATIONS

Students who intend to pursue their college work in the following programs, business administration, computer science, engineering, or physical and natural sciences, are encouraged to include the following subjects in their high school preparation:

**Mathematics:** A minimum of three and one-half years (preferably four) which includes two years of algebra, one year of geometry and at least one semester of trigonometry.

**Biological and Physical Sciences:** One year of chemistry and at least one year of physics or biological science.

Applicants intending to pursue a college program in science or engineering who have not completed the recommended mathematics and chemistry units may still be admitted if they satisfy the general admission requirements. However, they will be expected to establish proficiency in these areas during their freshman year.

TEST REQUIREMENTS

The UM-D requires that all prospective freshmen submit scores on at least one standardized test: the Scholastic Aptitude Test (SAT) or the American College Test (ACT). The SAT or the ACT may be taken in the spring at the end of the junior year, or in the fall of the senior year. The student should make certain that the test results are forwarded to the UM-D Office of Admissions (SAT code #1861; ACT code #2074).

A student who is unable to submit test scores should write to the UM-D Office of Admissions explaining the situation.

The results of standardized achievement tests in specific subject areas are not required as part of the application procedure. However, all new students enrolling at UM-D, freshmen and transfers, must take the UM-D English Composition Examination; the Mathematics Placement Examination must be taken by all new students who plan to take Pre-Calculus or Calculus I. These exams are for diagnostic and placement purposes. Placement exams are normally administered prior to each registration period.

ADVANCED PLACEMENT PROGRAM

A prospective student who has exhibited outstanding scholarship in a particular subject area and has participated in the College Board's Advanced Placement Program (APP) may be considered for advanced college placement and credit. Such applicants should arrange to have their Advanced Placement Examination reports sent to the Office of Admissions, where they will be reviewed in accordance with the regulations of the various departments. Advanced Placement credit will not be granted when the AP Exam is taken after the student’s official date of high school graduation.

APPLICATION DEADLINE

It is recommended that all applicants for admission for the fall semester of any academic year apply and have all credentials on file by March 1. However, the official application deadline for any semester is the first day of class of that semester.

STUDENT ENROLLMENT DEPOSIT

(Fall Semester Only)

In order to guarantee a space in the fall semester, a $50 enrollment fee should accompany the student's affirmative reply on the Enrollment Deposit Request; this is sent to the student after admission has been granted. The applicant may confirm at any time. However, the deadline for deposit is May 1. Upon registration, this deposit will be applied to tuition fees for the fall semester. The $50 enrollment deposit is not refundable after May 1.

Admission to other semesters of the academic year does not require an enrollment deposit.

Transfer Student Admission

ADMISSION REQUIREMENTS

The requirements for admission to UM-D depend upon the particular program of study to be followed. Admission is based on preparation, ability, and probability of success. All applicants must be in good standing and eligible to return to their previous institution. Additional information about admission requirements appears in the appropriate section of this Catalog.
under:
  College of Arts, Sciences, and Letters
  School of Education
  College of Engineering and Computer Science
  School of Management

PRE-ADMISSION COUNSELING

Admissions counselors are most willing to explain the educational opportunities available at UM-D to prospective students. It is urged that, whenever possible, persons interested in enrollment arrange a personal interview in order that the most appropriate programs of preparation for future study may be planned. This includes students now in college or high school, and adults not currently in college. Arrangements for interviews or campus tours may be made by telephoning or writing the Office of Admissions, University of Michigan-Dearborn, Dearborn, Michigan 48128-1491, (313) 593-5100.

ADMISSION PROCEDURE

Prospective students are required to submit an application for admission and an official transcript from each college or university previously attended. To be considered official, transcripts must come directly from the previous university to UM-Dearborn's Office of Admissions and Orientation or must be received in the Office of Admissions and Orientation in a sealed envelope with the issuing university’s stamp/signature over the seal. Official corrections made to transcripts by previous schools, whether high schools, colleges, or universities, must be submitted to the Office of Admissions and Orientation within six months of the first day of classes of the term of admission. The prospective student is responsible for contacting each previous school attended to request that official transcripts be sent. While all transcripts are required for admission, only courses taken at an accredited college or university will be considered for transfer to the University of Michigan-Dearborn. UM-Dearborn uses the Transfer Credit Practices published by the American Association for Collegiate Registrars and Admission Officers (AACRAO) as a guideline to determine transferability of courses based on accreditation status and other criteria. A list of accredited US and Canadian colleges and universities can be obtained from http://www.acenet.edu/nationalguide/. A nonrefundable application fee of $30 will be required of all applicants who have not previously applied to the University of Michigan (Dearborn, Ann Arbor, or Flint). There is no additional application fee for individuals who transfer from UM-Ann Arbor or UM-Flint.

When the application and official transcripts have been received, they will be evaluated and the student will be notified regarding admission status.

SURPLUS CREDIT FOR TRANSFER STUDENTS

Students transferring to UM-D from other two- or four-year institutions may have credits in excess of the maximum allowed in transfer by their academic unit. A student may, for example, complete 72 transferable credits at a community college and be admitted to UM-D’s School of Management, and have only 62 of those credit hours count toward the degree (since at least 62 of 120 total must be earned at UM-D for a Management degree). Although the entire 72 hours would appear in the advanced standing, only 62 hours would apply toward the total hours required for a UM-D degree.

This is a complex topic and there are certain differences in the way this concern is resolved in each of the instructional units on campus. Students with any such concern should therefore consult an adviser in their own major unit.

Degree Student (Matriculated Student)

A student who has satisfied all relevant admissions requirements, who has been admitted into a specific academic unit and who is in a regular degree program, is called a degree student or a matriculated student. After matriculation, a student may change from one degree program to another by following established procedures, as long as he/she is accepted by the new unit.

Admission granted while the student is enrolled at another institution is conditional and will become final only when the student meets the conditions set forth in the conditional admission letter and upon receipt by the Office of Admissions of the final transcript from the student's former institution(s). It is the student's responsibility to see that the final transcript is provided to the Office of Admissions; students will not be allowed to register for subsequent terms until the final transcript has been received.

Personal Enrichment or Prospective Degree Status

A Personal Enrichment or Prospective Degree student (PE/PDS) is one who has been accepted to attend the University on a part-time basis, without being admitted to a specific degree program within an academic unit. Such a student may later decide to pursue a degree program, but to do so must subsequently request admission in accordance with existing University procedures and standards of the desired academic unit.

A Personal Enrichment or Prospective Degree Application Form is available in the Office of Admissions for students who wish to attend UM-D in this capacity. Students in this category are subject to the following policies:
1) A student may apply no more than 15 credit hours accumulated at UM-D to a degree program. Exception is possible only by written permission of the academic dean of the unit to which the student has applied.
2) A Personal Enrichment and/or Prospective Degree student is limited to enrolling for nine credit hours (not to exceed three courses) in a single four-month term (four hours per half-term). To exceed this limit, PE/PDS's attending UM-D for the first time must obtain written permission from the Director of Admissions, and continuing PE/PDS's must obtain written permission from the Director of the Program for Academic Support.
3) A PE/PDS with a grade point average (GPA) less than 2.0 should see the Director of the Program for Academic Support before registering for a subsequent term. The
student will normally be put on probation.

4) The Non-Traditional Student Committee will review the next term's work of any student placed on probation. A student who fails to comply with the committee's standards will not be allowed to register for UM-D courses for a minimum of one calendar year.

5) A PE/PDS will have fees assessed and adjusted by fee regulations identical to those governing regular matriculated students with one exception: PE/PDS's will automatically be assessed undergraduate tuition rates for all courses at the 400 level and below. All courses taken under PE/PDS status are considered part of the undergraduate record; for information on taking courses for graduate credit, see G-NCFD section below.

6) A PE/PDS should follow the change in course election procedures as stated in the Schedule of Classes and this Catalog.

Students who wish to request additional information should telephone the Admissions Office at (313) 593-5100.

Guest Students (Unclassified)

A guest student is a regular degree student in good standing at another institution who is admitted to UM-D for one term only. Such students are admitted by means of a Michigan Uniform Guest Application certified by the home institution. Work completed under such an arrangement is considered to be a part of the student's program elected under the jurisdiction of the home institution.

Guest students are expected to receive academic advising from their home institution, although guest students are subject to all rules governing course prerequisites. The Guest application deadline for any term is the first day of class of that term.

Re-Admission

An undergraduate student (that is, a candidate for a bachelor's degree) who does not register for any courses at UM-D during a 12-month period must be formally re-admitted in order to resume studies at UM-D. Such a re-admitted student is then governed by the current Catalog.

Some instructional units at UM-D may have more stringent regulations. It is the obligation of students who leave the University for an extended period of time to acquaint themselves with the specific requirements of their instructional unit.

Since all I and X marks are permanently changed to IE and XE after six months, a re-admit may not petition to make up Is or Xs on his/her prior record.

Courses taken at other campuses will not count automatically toward graduation. Students must receive prior written permission from their academic unit to take specific courses elsewhere; otherwise, such courses may be rejected by the unit as credits toward a UM-D degree.

Academic Advising

All UM-D students should be pursuing an academic program leading toward personal, intellectual, and/or career objectives. To aid that student in making appropriate decisions - both in determining long-range goals and in meeting specific program requirements - career guidance counseling and academic advising services are available throughout the academic terms, including the period of registration.

This Catalog is a fundamental source of information concerning academic opportunities, policies, regulations and procedures. Each student should become familiar with its contents, particularly the sections dealing with specific academic requirements for the student's program of study and with the policies of the academic unit in which the program is administered. Faculty advisers and professional staff in each academic unit are available to help the student understand policies and regulations as well as to assist in developing and implementing a program of coursework. In certain programs, the unit may require the academic plan to be worked out, signed, and deposited in the school, college, or departmental office. In most cases, the student will find a suitable regular program adequately described in the Catalog.

The fundamental goal is to assist the student in defining and achieving, in the most efficient way, a clear academic objective. The student's career objectives may change during the first year or two, and the advising procedures assist in making an orderly and efficient transition to the new one.

Prior to each registration period, the student is expected to have completed an analysis of the progress toward a degree and to identify the courses yet to be completed. If a student needs further assistance in understanding degree and concentration requirements, faculty and staff advisers will also be available throughout registration.

Orientation

The Office of Admissions and Orientation conducts orientation programs for newly admitted freshmen, transfer students, and parents of new students. These programs focus on academic expectations, requirements at the UM-D, and various aspects of campus life. The programs also make students aware of existing services available to them: counseling; tutoring; academic advising; life/work planning; and social and cultural activities. The special orientation program for parents of new students acquaints them with the organizational and programmatic structure of the University. Once admitted to the University each student will receive information about Orientation. It is expected that all new students, freshmen and transfers, will attend Orientation. Questions may be directed to the Orientation Office by telephoning (313) 593-5550.

Financial Aid

A goal of the University of Michigan is that no qualified student be denied an education because the student lacks the necessary funds. Students who believe their resources are inadequate to meet reasonable educational expenses should request financial aid consideration and seek the advice of the Financial Aid Office counseling staff in 1183 University Center or telephone (313) 593-5300.

Financial Aid consists of the following four types of assistance: scholarships, grants, loans, and employment. With the exception of some scholarships, most financial assistance through the Office of Financial Aid (OFA) is awarded on the basis of financial need and may include a combination of various types of aid mentioned above. Financial need is the difference between the amount of money the student and/or the student's family is expected to provide for an education and the cost of that education as determined by a uniformly applied
Available Financial Assistance

There are three types of aid available through a single application (the Free Application for Federal Student Aid or FAFSA): grants, loans and employment. Most assistance is offered as a package of two or more kinds of aid. Undergraduates (pursuing their first bachelor’s degree) are considered for grants, loans and work-study employment, according to their eligibility and preference.

Admission into an eligible program of study (i.e., a degree-granting program) is a primary criterion to receive financial aid funding. All Personal Enrichment status students are ineligible for financial aid. Most Guest and Prospective Degree status students are ineligible for financial aid – however, there are limited exceptions which may be applicable to specific situations. Students admitted via guest, Prospective Degree or Teaching Certificate status should make an appointment with a Financial Aid Officer to discuss their specific admission status and financing options.

Determining Eligibility

Most financial assistance awarded by the Office of Financial Aid (OFA) is based on financial need as determined by a careful review of the resources of the student and of the student's family. All students applying for financial assistance through the OFA must complete and submit the Free Application for Federal Student Aid (FAFSA). The FAFSA will assist the staff in determining what the student and the student's parent(s) can reasonably be expected to contribute toward educational expenses.

Financial need is determined by subtracting those resources, as determined by the OFA, from the appropriate student budget or estimated cost of attending the University.

Any student who applies for financial aid must submit a FAFSA completed by his/her parents, unless the student meets the independent student guidelines as defined by federal regulations. The following is a definition of an independent student. Any part of this definition is subject to change.

An independent student is an individual who meets one of the following criteria:
1. A student who is 24 years of age by December 31 of the first calendar year of the award year.
2. A student who is under age 24 will be considered dependent for financial aid purposes unless he or she:
   a. is an orphan or a ward of the court;
   b. an honorably discharged veteran of the U.S. Armed Forces or an individual currently serving on active duty in the U.S. Armed Forces (for purposes other than training);
   c. is a graduate or professional student;
   d. is a married student;
   e. is a student with legal dependents other than a spouse;
   f. presents documentation to the student financial aid administrator of other unusual circumstances demonstrating independence.

Cost of Attendance

Each year, the Office of Financial Aid (OFA) provides an estimated cost of attending UM-D for students interested in full-time enrollment. The estimated costs reflect a modest but adequate standard of living for the academic year. While there is some allowance for discretionary expenditures, there is no provision for costs not directly related to school attendance. Individuals should consult the following website for current information on estimated costs of attendance: http://www.umd.umich.edu/univ/finaid/

Tuition and fees are subject to change without notice by action of the Board of Regents. For current tuition and fees, individuals should consult http://www.umd.umich.edu/dept/registration/.

How to Apply for Financial Aid

Most assistance is committed at a certain time of the year; so note carefully the dates below. These dates assume entrance for the fall semester.

Freshmen And Transfer Students

1) Apply for admission. Freshmen and transfer students that have not already done so should contact the Office of Admissions and Orientation to find out about application deadlines. Students may submit a paper application OR may apply online at http://www.umid.mich.edu/admissions/.
2) After January 1, preceding Fall enrollment, complete the Free Application for Federal Student Aid (FAFSA). Students may submit a paper application OR may apply online at http://www.fafsa.ed.gov. If using paper FAFSA, include student and parent (if applicable) signatures and mail the FAFSA in the envelope provided. If using online FAFSA, include student and parent (if applicable) PIN numbers. Using either format, release the FAFSA information to the University of Michigan-Dearborn by entering our Federal Title IV School Code 002326. Students and parents should use their Federal Income Tax Returns (FORM 1040, 1040A or 1040EZ) to complete the FAFSA. FAFSA results received in the Office of Financial Aid (OFA) by March 1 will receive first priority consideration for funds.
3) Upon review of your FAFSA (paper or online application), the Federal Processor will provide you with a Student Aid Report (SAR). The Federal Processor will either mail you a paper SAR or forward an electronic SAR (if you provided an email address on the FAFSA). The OFA will receive your information electronically (assuming you have released the information to UM-D as described in #2 above).

CONTINUING STUDENTS

Students currently enrolled may reapply online at fafsa.ed.gov or pick up a paper Free Application for Federal Student Aid (FAFSA) at the OFA after January 1 preceding fall enrollment. Applications, SARs and/or ISIRs (resulting from the FAFSA) must be received in the OFA by April 1 to receive first priority consideration for funds.

Summer is a separate processing period. Applications for Summer aid are available in March. Funding for the Summer term(s) is dependent upon funding levels after the two regular terms.

REMMINDERS

1) Financial aid applications are processed only after a student has been admitted but students need not wait until they are admitted to apply for financial aid.
2) Applications submitted after the stated deadlines will be considered, subject to the availability of funds, but notification
may not come until after the term has begun.
3) Students must reapply for financial aid each year.
4) All correspondence and documents must include the student’s legal name and UMID number.

**DEADLINE DATES FOR FALL/WINTER**

**March 1:** Freshmen

**April 1:** Continuing students, transfer students, late freshmen

**April 2:** Late applicants (consideration will be given depending on availability of funds). Awards may not be made until after the term begins.

**Types Of Financial Aid**

There are three basic categories of financial aid: gift aid (scholarships and grants), loans and part-time employment. Most assistance is offered as a package of two or more kinds of aid. Undergraduates (in pursuit of the first bachelor’s degree) who apply to the OFA are considered for all three types of assistance. Undergraduates in pursuit of a second bachelor’s degree are considered only for loans and work assistance.

**Gift Aid**

Scholarships and grants do not require repayment or work. Gift aid takes the following forms:

**Freshman & Transfer Scholarships**

The University offers a variety of scholarship resources for freshman and incoming students. University scholarship funds for incoming students are the following:

- Academic Achievement Award
- Adnan Aswad Transfer Student Scholarship
- Alumni Legacy Scholarship
- Alumni Scholarship
- Athletic Scholarships
- Center for the Education of Women (CEW) Scholarship
- Chancellor’s Scholarship
- Community College Transfer Scholarship
- Deans’ Scholarship
- Detroit Catholic Central Scholarship
- Detroit Compact Scholarship
- Distinguished Student Leader Scholarship
- Dr. George & Isabelle Elanjian Scholarship
- Ford Motor Company Minority Women Scholarship
- Ford Motor Company UM-D Scholarship
- General Motors Minority Scholarship
- Henry Patton Endowed Scholarship
- Natural Science Scholarship
- Non-Resident Scholarship
- Retired Persons Scholarship Program
- UM-D Dependent Tuition Scholarship Program
- Valedictorian / Salutatorian Scholarship
- Wade McCree Scholarship

Each of the scholarships above has specific selection criteria. Some of the funds require prior commitment and participation, most do not. For detailed information regarding criteria for these scholarships, please refer to the OFA website (http://www.umd.umich.edu/univ/finaid), or contact the Office of Admissions and Orientation at (313) 593-5100.

**Grants**

Eligibility for the following Federal, State and University grant funds are determined according to demonstration of need (based on the outcome of the FAFSA), and availability of funds. The grants are considered for undergraduate students pursuing a first bachelor’s degree. Unless otherwise stated, at minimum, eligibility requires adherence to Federal fund criteria, enrollment on an at-least-½-time basis, and maintenance of the University’s Satisfactory Academic Progress guidelines.

**Federal Pell Grants**

The Federal Pell Grant is considered the “foundation” grant to which all other sources are added to create a financial aid package of awards. Pell Grant is one of the few programs that may allow some students to receive a prorated amount of the award at a less-than-1/2-time enrollment status. The Expected Family Contribution (EFC) (from the FAFSA) determines if the student is eligible at less-than-1/2-time status.

**Federal Supplemental Educational Opportunity Grants (FSEOG)**

FSEOG is a federal campus-based program used to supplement the Pell Grant of the neediest Pell Grant recipients. At UM-D, FSEOG is reserved for students with an Expected Family Contribution (EFC) ranging from 0 – 1000.

**Federal Academic Competitiveness Grant (FACG)**

This federally funded grant is available for first year (current year defined as high school graduation after January 1 of the first-year of the academic year of entry into the University), and second-year (current year defined as high school graduation after January 1 of the year preceding the academic year of entry) undergraduates. The Academic Competitiveness Grant provides up to $750 for first year students and up to $1,300 for second year students (maximum, once per grade level).

Eligibility requirements for the FACG are more stringent than other programs. Recipients must have successfully completed a “rigorous” high school program, be a US citizen (vs. eligible non-citizen), enroll full-time and be eligible for Pell Grant disbursement. In addition, first year students may not have been previously enrolled in an undergraduate program. Second year students must, at minimum, have a 3.0 cumulative GPA.

**Federal Science and Math Access to Retain Talent (FSMART)**

This federally funded grant is available for third year (defined as having earned 49 – 72 college credit hours), and fourth year (defined as having earned 73 – 96 college credit hours) undergraduates. The Science and Math Access to Retain Talent Grant provides up to $4,000 for the third and fourth years of undergraduate study (maximum, once per grade level).

Eligibility requirements for the FSMART Grant are more stringent than other programs. Recipients must have a declared major in specific subjects (e.g., the physical, life or computer
sciences, mathematics, technology or engineering, or in a foreign language determined to be critical to national security). In addition, recipients must be a US citizen (vs. eligible non-citizen), enroll full-time, be eligible for Pell Grant disbursement and, at minimum, have a 3.0 cumulative GPA.

**Michigan Competitive Scholarship (MCS)**

Funded by the State of Michigan, the Michigan Competitive Scholarships are available to many Michigan high school graduates from the Michigan Higher Education Assistance Authority. Scholarships are awarded to qualifying undergraduates attending public colleges and universities in Michigan. To qualify for the scholarships, students must demonstrate aptitude based on their performance on the American College Testing (ACT) Exam as well as financial need as determined by uniformly applied methodology via information from the FAFSA. Recipients must also meet Michigan-residency requirements.

**Michigan Adult Part-Time Grant Program**

The Michigan Adult Part-Time Grant Program is a campus-based program funded by the State of Michigan. It is designed to provide grant assistance for needy adults who enroll at approved public or private degree-granting Michigan colleges on a part-time basis. Grants of up to $600 per year are available for not more than two years of study. Recipients must also meet Michigan-residency requirements.

**Michigan Educational Opportunity Grant Program (MEOG)**

The Michigan Educational Opportunity Grant Program is funded by the State of Michigan. Modeled after the FSEOG, it is designed to provide grant assistance for needy undergraduates enrolled at public Michigan colleges and universities. Grants of up to $1,000 per year are available under this program. Recipients must also meet Michigan-residency requirements.

**Michigan Merit Award Program**

The Michigan Merit Award is a merit-based program established in 1999 with funding from the State of Michigan’s 1998 multi-state settlement with the tobacco industry. Application is made available to Michigan high school seniors to reward student achievement and to make postsecondary education more affordable.

Awards are determined based on the outcome of the Michigan Educational Assessment Program (MEAP) High School Tests in math, reading, science and writing (which are administered each year to high school juniors and seniors). Students may also qualify by performing well on supplemental tests in addition to qualifying scores on the MEAP test. Applicants meeting scoring requirements on the four test components, and all other eligibility requirements, may qualify to receive up to $3,000 via the Michigan Merit Award. Minimum ½-time enrollment and demonstration of financial need are not requirements for this fund.

**University of Michigan-Dearborn Grants**

UM-D awards need-based grants. Some are strictly need-based, some are need- and merit-based. These grants are funded by the University and applicants are automatically considered for the appropriate type of grant as described below.

**University of Michigan-Dearborn Grant**

The UM-D Grant is funded by the University to help high need students defray tuition costs. The EFC is used to determine eligibility for this grant. Consult the Financial Aid website, http://www.umd.umich.edu/univ/finaid/ for current information.

**University of Michigan-Dearborn Incentive Grant**

The UM-D Incentive Grant is funded by the University to help high need, non-resident and underrepresented students defray tuition costs. The EFC is used to determine eligibility for this grant. Consult the Financial Aid website, http://www.umd.umich.edu/univ/finaid/ for current information.

**University of Michigan-Dearborn Scholars Award**

The UM-D Scholars Award is a need- and merit-based grant. Entering students must have an eligible EFC of 4300 (or 5300) or less, a recalculated high school GPA of 3.4 or higher and an ACT composite score of 24 or higher. Eligible students can be considered for up to $2,000 based on full-time enrollment.

**University of Michigan-Dearborn Scholars Access Award**

The UM-D Scholars Access Award is a need- and merit-based grant. Entering students must have an eligible EFC of 4300 (or 5300) or less, a recalculated high school GPA of 3.0 or higher and an ACT composite score of 22 or higher. Eligible students can be considered for up to $1,000 based on full-time enrollment.

**University of Michigan-Dearborn Access Transfer Award**

The UM-D Access Transfer Award is a need- and merit-based grant. Entering students must have an eligible EFC of 4300 (or 5300) or less, a minimum of 30 transferred college credits and a recalculated college GPA of at least 3.0 or higher. UM-D Access Transfer Award recipients cannot also receive the Community College Transfer Scholarship. Eligible students can be considered for up to $1,000 based on full-time enrollment.

**Loans**

Eligibility for the following Federal and State loan funds are determined according to demonstration of need (based on the outcome of the FAFSA), availability of funds and also individual, annual and aggregate borrowing parameters. Unless otherwise stated, at minimum, eligibility requires adherence to Federal fund criteria, enrollment on an at-least-1/2-time basis and maintenance of the University’s Satisfactory Academic Progress guidelines. Requirements are subject to change over time. Additional documents may be required (e.g., Promissory Notes and/or an “Entrance Interview”) prior to disbursement of funds.
Federal Perkins Loans

The Perkins Loan is funded by the federal government. It is a low-interest (five percent) loan with preference given to students of exceptional need. The principal plus interest to the new borrower are repayable beginning nine months after graduation, leaving school or failure to attend at least half-time. At the end of the nine-month grace period, the student must begin repaying the loan. (If he/she is not a new borrower, the grace period may be six months.) Repayment may extend to a maximum of 10 years depending on the amount borrowed. This loan program also has provisions for deferment or cancellation of loan payments.

William D. Ford Federal Direct Loan Program

Federal Direct Stafford Loans are available through the William D. Ford Federal Direct Loan Program. Under the Federal Direct Loan Program, funds are lent to student or parent borrowers directly by the U.S. government. There are several types of Direct Loans: the Federal Direct Subsidized Stafford Loan (Subsidized FDSL), Federal Direct Unsubsidized Stafford Loan (Unsubsidized FDSL), Federal Direct Parent Loan for Undergraduate Students (FDPLUS), and the Federal Direct Consolidation Loan program.

Federal Direct Subsidized Stafford Loan

A Federal Direct Subsidized Stafford Loan (Subsidized FDSL) is a long-term low-interest loan funded by the federal government. Subsidized FDSLs are available to undergraduate students who meet the federal eligibility criteria. Undergraduates (regardless of dependency status) may be eligible to borrow a maximum of $2,625 as a first-year (freshman) undergraduate student, and $3,500 as a second-year (sophomore) undergraduate student. Students having completed two years of study and having achieved third- or fourth-year status (junior or senior), may borrow a maximum of $5,500 per academic year. The aggregate amount of Subsidized FDSL allowed an undergraduate is $23,000.

NB: As of the 2007-2008 academic year, freshmen and sophomore students will be allowed increased annual maximums. A freshman student will be able to borrow $3,500 (vs. $2,625) and a sophomore will be able to borrow $4,500 (vs. $3,500).

Federal Direct Unsubsidized Stafford Loan

The Federal Direct Unsubsidized Stafford Loan (Unsubsidized FDSL) program extends loan eligibility for middle-income borrowers. It is operated under the same terms and conditions as the Subsidized FDSL with the exception of a few key points: the Family Contribution (FC) is not a factor in determining eligibility, and there is no interest subsidy; therefore, a student MUST pay the accruing interest on a quarterly basis, otherwise the accruing interest will capitalize onto the principal (deferment of principal is still an option).

For Dependent students, the Subsidized and Unsubsidized FDSL programs share a common maximum amount that can be borrowed (singly or in combination); a Dependent first-year student can borrow a maximum of $2,625. However, Independent students may be considered for additional Unsubsidized FDSL funding. Independent students may be eligible to borrow an additional $4,000 per academic year in Unsubsidized FDSL funding as a first- or second-year (freshman or sophomore) undergraduate, or an additional $5,000 per academic year as a third- or fourth-year (junior or senior) undergraduate. The aggregate amount of Unsubsidized FDSL allowed an undergraduate is $46,000 (minus Subsidized FDSL aggregate).

NB: As of the 2007-2008 academic year, freshmen and sophomore students will be allowed increased annual maximums. A freshman student will be able to borrow $3,500 (vs. $2,625) and a sophomore will be able to borrow $4,500 (vs. $3,500).

Federal Direct Parent Loans for Undergraduate Students

Federal Direct Parent Loans for Undergraduate Students (FDPLUS) are for parent borrowers of dependent, undergraduate students. FDPLUS loans provide additional funds for educational expenses and, like Subsidized and Unsubsidized FDSLs, are funded by the federal government. FDPLUS enables parents to apply for an amount equal to the cost of education (minus the amount of other financial aid received for the loan period), FDPLUS borrowers are assessed a fixed interest rate of 7.9%. FDPLUS is limited to parent borrowers who do not have adverse credit histories. FDPLUS funds are disbursed via the (dependent) student's tuition account. FDPLUS proceeds (after tuition is paid) are refunded to the parent borrower via check by mail.

Unlike the Subsidized and Unsubsidized FDSLs, repayment of principal and/or interest will most likely begin within 60 days after the loan is disbursed. Parent borrowers may or may not qualify for deferment (interested parent borrowers must verify deferment eligibility with the FDSL Servicer).

Federal Direct Consolidation Loan

Federal Direct Consolidation Loans are designed to help student and parent borrowers simplify loan repayment. This loan allows the borrower to consolidate several types of federal educational loans with various repayment schedules into one loan, requiring only one payment per month. Interest rates, however, may differ depending on the loan category as well as repayment and deferment options for the borrower.

Borrowers in default on a previous federal education loan may be able to obtain a Direct Consolidation Loan as a method of resuming the educational process and regaining eligibility for financial aid funds. (Those in default are ineligible for any and all financial aid while the default status is unresolved).

Interest rates for the Direct Consolidation Loan varies but will not exceed 8.25% for consolidation of Direct Subsidized and Unsubsidized FDSLs. For Direct PLUS Consolidation Loans, the interest rate varies but has not exceeded 9%. There are a variety of repayment plans for Direct Consolidation Loans (with some restrictions). Those interested may contact the Direct Loan Origination Center’s Consolidation Department at 1-(800) 848-0979 for additional information.

MI-Loan

MI-Loan is the service mark for the Michigan Alternative Student Loan Program. The program is administered by the State
of Michigan’s Michigan Higher Education Student Loan Authority (MHESLA). It is intended to provide creditworthy students and their families with an alternate source of loan funds to assist in meeting the cost of postsecondary education. There are two types of MI-Loan: the Credit Ready Program and the Creditworthy Program.

Students attending (or accepted for enrollment at) any of Michigan’s degree-granting colleges or universities are eligible to apply. Additionally, a student’s parent (biological or adoptive) or legal guardian may apply for a MI-Loan on behalf of the student. The applicant (and cosigner if applicable) must be 18 years of age or an emancipated minor.

A separate application form is required and may be obtained by logging on to www.miloanprogram.com, dialing 1-(888) 643-7521 or picked up at the Office of Financial Aid. The minimum loan amount is $500. The annual maximum loan amount is an amount equal to the cost of education (minus the amount of other financial aid received for the loan period). The cumulative maximum is $75,000 via the Credit Ready Program or $125,000 via the Creditworthy Program. Borrowers may choose a fixed (currently 9.0% for the Credit Ready Program and currently 6.95% for the Creditworthy Program) or variable interest rate (currently 6.18%) for the Creditworthy Program (rates are subject to change).

**STUDENT EMPLOYMENT**

Eligibility for the following Federal and State funds are determined according to demonstration of need (based on the outcome of the FAFSA), and availability of funds. Unless otherwise stated, at minimum, eligibility requires adherence to Federal fund criteria, enrollment on an at-least-1/2-time basis and maintenance of the University’s Satisfactory Academic Progress guidelines. Requirements are subject to change over time.

The following provide work experience while earning money for college expenses.

**Federal Work-Study Program**

Funded by the federal government, the Work-Study Program is designed to provide employment opportunities for eligible students to help finance their college expenses. Preference for work-study is given to those who show financial need. The federal government may pay up to, but no more than, 75 percent of the student's wages and the employing department pays the remaining percentage. Students usually work between 15 and 20 hours a week while in school. An effort is made to place students in jobs related to their major academic interest. Job application should generally be made after completion of registration since class schedules are necessary to determine the hours students will be available to work.

**Michigan Work-Study Program**

The Michigan Work-Study Program is funded by the State of Michigan. It operates under the same format as the Federal Work-Study Program.

**On-Campus Employment**

Funded by UM-D. There are many part-time and temporary jobs available in the academic departments and in the support offices. Eligibility for Federal and/or State financial aid funds is not a factor for University employment. Students may contact the Office of Career Services and inquire about job availability. The departments pay 100 percent of these wages.

**OTHER SOURCES OF FINANCIAL AID**

Other sources of financial assistance are available through government agencies such as Vocational Rehabilitation, Veterans Administration and Social Security. Students needing information on these programs should contact the nearest appropriate agency. The Taxpayer Relief Act of 1997 also provides assistance for education in the form of tax cuts. These cost-saving initiatives include, but are not limited to, the Hope Tax Credit for the first two years of college and the Lifetime Learning Tax Credit for the third year of college or beyond. For information regarding eligibility, consult your tax advisor or the Internal Revenue Service.

For additional information about any financial aid program or financial aid counseling, telephone the Office of Financial Aid at (313) 593-5300.

**Satisfactory Academic Progress**

Federal regulation requires educational institutions that participate in federal financial aid programs to define and enforce Satisfactory Academic Progress standards for those students receiving financial aid. UM-D's Satisfactory Academic Progress policy establishes standards of progress toward a degree. Recipients must achieve and maintain these standards of progress in order to receive funding from the Office of Financial Aid (OFA). These standards are consistent with University goals and philosophies, satisfy federal and state regulations, and at the same time are sensitive to the needs of all students. These standards are also imposed on all federal and state programs, as well as programs supported by UM-D's General Fund and awarded through the OFA.

The standards of academic progress measure a student’s academic program both qualitatively and quantitatively. The qualitative measure assesses the student’s cumulative grade point average. Regulations specify that by the end of the second academic year (sophomore status), undergraduates must have either a “C” (i.e., 2.0) cumulative average or its equivalent or have an academic standing consistent with the requirements for graduation in their program of study. The UM-D requires a minimum of a 2.0 cumulative grade point average for graduation. To quantify academic progress, each educational institution must set a maximum time frame in which a student is expected to complete the program. These standards assure that completion of a degree will occur within an established time frame. To insure quantitative progress at the University, students are required to complete a minimum of 67% of all attempted courses. Students deemed ineligible for financial aid due to a lack of academic progress may appeal the decision to the Director of Financial Aid.

Students at the UM-D are not required to attend full time in order to receive financial aid or achieve satisfactory academic progress. A more detailed description of this policy may be found in the booklet entitled “Standards of Satisfactory Academic Progress,” available at the OFA.

**Registration & Records**

The Office of Registration and Records is responsible for coordinating, conducting, and evaluating the registration of students; establishing, monitoring, and maintaining student academic folders and records; preparing, distributing, collecting,
and handling Class Lists and Instructor Grade Reports; preparing and providing student transcript copies and enrollment certifications; and accepting, reviewing, and verifying Degrees, Honors and Certificates granted. The office also has the responsibility of preparing and verifying enrollment data and reports for local, state, and federal agencies and organizations. In addition, the Office of Registration and Records is responsible for Veteran Affairs and other on-campus and off-campus programs.

For current registration information, students should consult the Schedule of Classes for the term in which they are enrolling or visit the Registration & Records website: http://www.umd.umich.edu/registration.

Attendance (Instructor-Initiated Drops)

A student who is absent for all of the class meetings of a course during the first week of any term and does not inform the instructor or the instructor's department of his/her intention to continue as a class member may be required, by the instructor, to drop the course. The student is responsible for processing all paperwork to officially drop this or any course. Please consult the section "Change in Course Elections" for procedures on how to drop courses.

Auditing

Students are expected to elect courses for credit. The student's program adviser, however, with the concurrence of the instructor involved, may grant official auditing privileges when they are warranted for educational reasons. A student auditing a course is charged the usual fee for that course. Any specific conditions must be enunciated by the instructor at the time permission is granted for the audit. (Contact your unit office for specific information and instructions.)

Change of Fees and Refunds

When appropriate, a change of fees will be processed by the Office of Registration and Records when a student submits a "Change of Course Elections Form" or "Withdrawal Form" which affects the fee previously assessed. Individuals are also advised to see "Change in Course Elections" in this Catalog.

Refunds of tuition, fees, or student account credit balances will be made as follows:

1. In all cases, the student must complete a "Student Refund Request Form" and forward it to the UM-D Student Accounting Office, 1187 UC.
2. Refunds will be mailed to the address indicated on the "Student Refund Request Form."
3. "Student Refund Request Forms" can be obtained at the Student Accounting Office.

Adding

A student who increases the number of hours elected will have a new fee assessment prepared by the Office of Registration and Records, which will indicate the appropriate fee to be paid.

Dropping (for Full, Half, and Four-Week Mini Courses)

A student who, during the first two weeks of a full term or the first week of a half term or mini-term reduces the number of hours elected, will have a new fee assessment prepared by the Office of Registration and Records, which will indicate the appropriate fee to be paid. No reduction in fee assessments will be made after the end of the second week of classes except in cases of withdrawal from the University.

Dropping (for less than One-Month Mini Courses)

A student may drop from a less than one-month mini-course on or before the first class meeting of such a course without financial penalty. Thereafter, full tuition will be assessed and the academic record will reflect the symbol for withdrawal ("W").

Withdrawing (for Full, Half, and Four-Week Mini Courses)

A student who withdraws from the UM-D is assessed as follows:

1. Students who withdraw prior to the first day of classes will be assessed the non-refundable registration fee.
2. Students who withdraw during the first week of a half term or mini-term, or during the first two weeks of a full term, will be assessed a $25 withdrawal fee, as well as the non-refundable registration fee.
3. Students who withdraw during the second week in a half term or mini-term, or in the third through fourth week of a full term, will be charged 50% of the tuition assessed, as well as the non-refundable registration fee. In addition, there is no reduction in lab/course fees or computer use fees.
4. Students who withdraw during the third through fourth week of a half term or the third week of a mini-term, or in the fifth through the eighth week of a full term, will be charged 75% of the tuition assessed, as well as the non-refundable registration fee. In addition, there will be no reduction in lab/course fees or computer use fees.
5. Students withdrawing after the time periods indicated in Paragraph "d" will be assessed full tuition and fees.

Withdrawing (For Less Than One-Month Mini Courses)

1. Students who withdraw from a less than one-month mini course before the first class meeting of such a course will be assessed the non-refundable registration fee.
2. Students who withdraw from a less than one-month mini course on the first day of class will be assessed a $25 withdrawal fee, as well as the non-refundable registration fee.
3. Students who withdraw from a less than one-month mini course on the second day of class will be assessed 50% of the tuition assessed, as well as the non-refundable registration fee. In addition, there will be no reduction in lab/course fees or computer use fees.
4. Students who withdraw from a less than one-month mini course on the third day of class will be assessed 75% of the
tuition assessed, as well as the non-refundable registration fee. In addition, there will be no reduction in lab/course fees or computer use fees.

5. After the third class meeting of such a course, the student shall pay all fees and assessments.

Change in Course Elections: Add, Drop, Withdrawal
(See Also “Change Of Fees And Refunds”)

Changes in course elections include adding a course(s), dropping a course(s), substituting course(s), and withdrawing (discontinuing) all courses. All students will process their add/drop and withdrawal forms, with appropriate signatures, at the Enrollment Services Counter (1169 UC).

Please consult the section on “Change of Fees and Refunds” for the impact on tuition and fees.

ADD

A student may add courses or change a standard graded course to Pass/Fail or Audit during the first two weeks of a full term, the first week of a half term or mini-term, or before the second class meeting of a less than one-month mini-term, with the signature(s) of the instructor(s) involved. Open courses do not require signatures.

Forms for the purpose of adding a course may be picked up from the unit office in which the student is enrolled or at the Enrollment Service Counter (1169 UC) and must be returned to the Enrollment Services Counter. Any exceptions for adding courses must be approved by the Dean (or his designee) of the unit in which the student is admitted.

DROP

A student may drop a course(s) during the first two weeks of a full term, the first week of a half term or mini-term, or before the second class meeting of a less than one-month mini-term. No record of the student’s brief enrollment will be recorded.

Courses may be dropped during the third through the ninth week of classes in a full term, during the second through the fourth week of classes in a half term or mini-term, and before the third class meeting in a less than one-month mini-term, with the approval and signature(s) of the instructor(s) involved except for School of Management courses, which do not require a signature to drop. College of Engineering and Computer Science students should contact the CECS Student Services Office for required signatures. The mark of W will appear on the transcript.

Forms for the purpose of dropping a course may be picked up from the student’s unit office or at the Enrollment Services Counter (1169 UC) and must be returned to the Enrollment Services Counter. The effective date of the drop is the date the drop form is received and signed at the Enrollment Services Counter.

Permission to drop courses under circumstances other than stated above will require the approval of the academic unit in which the student is enrolled. Failure to receive approval will result in a grade(s) of E for the course(s).

WITHDRAWAL

A student may discontinue all of his/her courses through the last day of classes (for the term) by withdrawing from the term. The completed form must be presented to the Enrollment Services Counter for processing. The effective date of the withdrawal is the date the withdrawal form is received and signed at the Enrollment Services Counter.

If a student withdraws (drops all courses) from a term during the first two weeks of classes in a full term, the first week of classes in a half term or mini-term, or before the second class meeting in a less than one-month mini-term, no record of the student’s brief enrollment will be recorded. Beyond those deadlines, the mark of W will appear on the transcript.

Students enrolled in the College of Engineering and Computer Science must have the signature of their unit to withdraw.

Permission to withdraw under circumstances other than stated above will require the approval of the academic unit in which the student is enrolled. Failure to receive approval will result in a grade(s) of E for the course(s).

Consecutive Withdrawals

Every student’s academic record is reviewed for the purpose of observing academic progress at the end of each term in which the student is enrolled. A student who has not enrolled for one calendar year or who has withdrawn for two consecutive terms must apply for readmission and may not re-register without the explicit written permission of the student’s unit office. (CM/PDS/PE students see Academic Support and Outreach Services, 2136 UC.)

Required Withdrawals

Unless extenuating circumstances are presented by petition, a student who is required to withdraw from one academic unit may not be admitted to another UM-D academic unit within the same term as that in which such withdrawal action is taken.

REFUNDS AND FINANCIAL AID

Students receiving Title IV financial aid may be required to repay some or all of the financial aid received for a term in which the student withdraws. Students required to repay financial aid funds will have the refunds allocated to financial aid programs in the following order: Federal Direct Loans, Federal Perkins Loans, Pell, SEOG, other Title IV, federal, state, private, and institutional programs and finally, to the student. Students receiving financial aid and considering withdrawal should seek the advice of a Financial Aid Officer prior to taking such action.

Change of Grades

The grade that an instructor records on the final grade sheet and that appears on the student’s subsequent transcript is assumed to be final; that is, the instructor’s official evaluation of all of a student’s performance and work completed by the official end of the term (the last day of the final examination week).

Recognizing that mistakes can be made, the UM-D permits a student to ask an instructor for a review of a grade within the four-month period after the end of the term involved. After a four-month period has passed, reviews cannot be initiated and grades cannot be changed. Such a review is entirely separate and
distinct from the circumstances involving an I (Incomplete), or
X (for a missed final examination), or a Y (used only in a few
special kinds of courses); these three marks are explained
elsewhere in this Catalog.

Class Standing

Class standing is determined by the total credits earned that
apply toward the student's degree program. The various
classifications are as follows (numbers indicate semester hours):

<table>
<thead>
<tr>
<th>Student Classification</th>
<th>Number of Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>0-24</td>
</tr>
<tr>
<td>Sophomore</td>
<td>25-54</td>
</tr>
<tr>
<td>Junior</td>
<td>55-84</td>
</tr>
<tr>
<td>Senior</td>
<td>85+</td>
</tr>
</tbody>
</table>

Enrollment Certification

The following scale is used when verifying student
enrollment status at UM-D:

<table>
<thead>
<tr>
<th>Enrollment Status</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time</td>
<td>12 or more hours</td>
</tr>
<tr>
<td>Three-Quarter Time</td>
<td>9-11 hours</td>
</tr>
<tr>
<td>Half Time</td>
<td>6 to 8 hours</td>
</tr>
<tr>
<td>Less Than Half Time</td>
<td>5 or less hours</td>
</tr>
</tbody>
</table>

Grading System

Grade point averages (scholastic averages) are computed by
dividing the honor points a student has earned by the hours
elected. The term grade point average and the cumulative grade
point average are computed for each student at the end of each
term and become part of the student's official UM-D academic
record.

Symbols used in the grade reporting system common to all
units are: F, failed (pass/fail option election); I, incomplete; NR,
grade not reported; P, passed (pass/fail option election); S,
satisfactory (courses graded S/E only); NC, no credit; VI, audit;
W, withdrawal; X, absent from final examination; Y, indicates
the course extends beyond the term.

The grades of E, IE, UE or XE are not assigned honor points
and thus will lower the student’s grade point average. The grade
NC is used only for certain courses. When this grade is officially
granted, the grade NC and the course will appear on the
student's transcript, but the course will not be used in computing
a grade point average.

The recording of grades on a student's official academic
record is governed by the following (4.0) grading system:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Honor Points</th>
<th>Letter Grade</th>
<th>Honor Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA+</td>
<td>4.0</td>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>A</td>
<td>3.7</td>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.4</td>
<td>D+</td>
<td>1.4</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>D-</td>
<td>0.7</td>
</tr>
<tr>
<td>C+</td>
<td>2.4</td>
<td>E</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: The A+ and D- grades are not used by Engineering
instructors. The A+ grade is not used by Education
instructors.

Grades associated with transfer credit from other schools or
colleges (including other University of Michigan campuses) are
neither recorded nor used in computing grade point averages of
students.

Students may repeat a course no more than two times. All
grades received must appear on the transcript, but only the last
grade received is counted in the grade point average (GPA). Please see the Repeat Course Policy for more information.

Graduation/Application for Diploma

Each candidate for a degree must file an Application for Diploma in the appropriate unit office, typically within ten days
of the beginning date of classes for the term in which the student
expects to complete the requirements for degree. The Schedule
of Classes should be consulted for specific dates. Applications
will not be accepted after the published deadlines. If an
application for a diploma was filed for a previous graduation
period in which the student did not graduate, a new application
is necessary. Degrees are granted at the end of the fall, winter,
and summer terms, even though commencement exercises are
held only in April (or May) and December.

Incomplete Coursework

A student whose coursework (other than final examination)
for the term is incomplete in a minor way may, upon completion
and approval of the I Contract Form, be granted the privilege of
completing the work within a certain framework of time (see
below). If granted this privilege, a grade of I will be recorded.
Failure to complete the required work within the specified time,
or the denial of this privilege by the instructor, will result in a
grade of E for the final grade. In extenuating circumstances an
extension beyond the stated period may be requested by means
of a petition which has been endorsed by the instructor and
approved by the academic unit. However, such arrangements for
completing the work must be made within a stipulated time
period. Failure to complete the required work within the
specified time will result in a grade of I being automatically
treated as an IE and counted in the student's grade point average.
The I remains on the transcript even after the official final grade
is assigned.

Effective Summer 1999, the deadline date for resolution of the
I will depend on the unit of the course taken, not the
student’s unit. For Engineering and Management courses, the
resolution of the I will be five weeks from the first day of the
following term. For CASL and Education, the removal of the I
will be the last class day of the following term (approximately
four months).

Registration Information

ACADEMIC ADVISING

Academic advising should be sought from the student’s
school, college or graduate department office prior to
registration.

APPOINTMENT TIME TO REGISTER

Continuing students who are eligible to register via the Web
can determine their registration date based on credits earned as listed in the registration timetable. New students and those participating in non-traditional programs will receive written information regarding their registration appointment time. The Registration Timetable is available on the Registration & Records Website (www.umd.umich.edu/registration).

CLOSED COURSES

Closed course information will be posted at the Enrollment Services Counter (1169 UC) and on the Office of Registration & Records Website (www.umd.umich.edu/registration).

COURSE LOAD

Students may elect a maximum of 18 credit hours in a given semester. Students should contact their school or college for policies and procedures regarding electing hours in excess of the maximum.

HOLD CREDITS

Students will not be allowed to register if they have a hold credit. A hold credit could result from having outstanding financial obligations to the University, academic probation, mandatory advising or other academic or non-academic conditions that require resolution prior to registration. Students eligible to use Web registration can check their holds on the “View Your Holds” page located in the secure area within the Student Records section.

PERSONAL IDENTIFICATION NUMBER (PIN)

The University originally assigns your birth date (mmddyy) as your personal identification number (PIN). For your security (if you have not already done so), change this number immediately by Web. Once you have changed the PIN, your new PIN remains in effect until you change it again. If you forget your PIN, you must report in person, with picture identification, to the Enrollment Service counter to have your PIN reset.

Registration Options

The UM-D offers eligible students two options for registration:
- Walk-in
- Web*

*All students (with the exception of some non-traditional programs) who have been enrolled at least one term within the last year, new graduate students, and readmitted students who do not have financial obligations, academic holds or other registration restrictions are eligible to register via the Web.

Reporting of Grades

The Office of the Registrar reports term grades to students via web access to a “Final Grade Report”. Grades are also reported on each student’s Academic Transcript. Updated Academic Transcripts are available to students two weeks following the close of the final examination period. Students requiring more immediate service may contact Enrollment Services for assistance. (Also see “Request for Transcripts”).

Residency Classification Guidelines

The University of Michigan enrolls students from 50 states and more than 120 countries. Residency Classification Guidelines have been developed to ensure that decisions about whether a student pays in-state or out-of-state tuition are fair and equitable and that applicants for admission or enrolled students who believe they are Michigan residents understand they may be required to complete an Application for Resident Classification and provide additional information to document their residency status.

CIRCUMSTANCES UNDER WHICH YOU MUST FILE A RESIDENCY APPLICATION

If you claim Michigan resident status and any of the following circumstances apply, you must file an Application for Resident Classification and be approved to qualify for in-state tuition:
- You currently live outside the state of Michigan for any purpose, including, but not limited to, education, volunteer activities, military service, travel, employment.
- You have attended or graduated from a college outside the state of Michigan.
- You have been employed or domiciled outside the state of Michigan within the last three years.
- You are not a U.S. citizen or Permanent Resident Alien (if you are a Permanent Resident Alien, you must have a Permanent Resident Alien card).
- Your spouse, partner, or parent is in Michigan as a nonresident student, medical resident, fellow, or for military assignment or other temporary employment.
- You are 24 years of age or younger and a parent lives outside the state of Michigan.
- You are 24 years of age or younger and have attended or graduated from a high school outside the state of Michigan.
- You have attended or graduated from an out-of-state high school and have been involved in educational pursuits for the majority of time since high school graduation.
- You previously attended any U-M campus (Ann Arbor, Dearborn, or Flint) as a nonresident.

Other circumstances may also require you to file a residency application. The University reserves the right to audit prospective or enrolled students at any time regarding eligibility for resident classification and to reclassify students who are classified incorrectly.

How To File A Residency Application

Residency applications and in-person assistance are available at the Residency Classification Office, University of Michigan, Office of the Registrar, 413 E. Huron St., Ann Arbor, MI 48104-1520, phone (734) 764-1400 or at the Enrollment Services Counter, University of Michigan-Dearborn, 4901 Evergreen Rd, Dearborn, MI 48128-1491, phone (313) 583-6500. Business hours are 8 am - 5 pm weekdays. Applications can also be downloaded from http://www.umich.edu/~regoff/resreg.html. Completed applications should be submitted to the Residency Classification Office.
FILING DEADLINES

September 30 for Fall Term  
January 31 for Winter Term  
July 31 for Spring, Spring/Summer and Summer Terms

Applications must be received in the Residency Classification Office by 5 p.m. on the deadline date. If the deadline falls on a weekend, it will be extended to the next business day. The deadline date is always after the first day of classes of the term in which you are enrolling and seeking residency.

These deadlines apply to all U-M schools, colleges and campuses. For the On-Job/On-Campus program only, filing deadlines are 30 calendar days after the first scheduled day of classes the term for which you applied.

You may apply for resident classification for any term in which you are enrolled or intend to enroll.

Late applications will be assessed a nonrefundable $300 late fee and will be accepted up to the last published day of classes of the term for which you are applying. Late applications received after the last day of classes will be processed for the following term. In all cases, decisions will be based only on those facts that are in place by the original filing deadline for the term under consideration.

REQUIRED DOCUMENTS

Along with the completed Application for Resident Classification form, you must provide the following:

• For all applicants: Copies of your driver's license and the license(s) of the person or persons upon whom you are basing your claim to resident eligibility.
• For all applicants: Copies of the front and signature pages of the most recent year's federal and state income tax returns and W2 forms for you and the person or persons upon whom you are basing your claim to resident eligibility.
• For applicants born outside the U.S.: Verification of U.S. citizenship or visa status.
• For applicants who are dependents (see Residency Classification Guideline B-1 below): Copies of the front and signature pages of your parents' most recent year's federal and state income tax returns with accompanying W2 forms.
• For applicants whose claim to eligibility for resident classification is based on permanent, full-time employment for themselves, a spouse, partner, or parent: A letter from the employer, written on letterhead (including phone number), stating the position, status, and dates of employment. In addition to the letter, provide a copy of the most recent pay stub showing Michigan taxes being withheld.
• For all applicants: Any other documentation that supports your claim to resident eligibility.

The Residency Classification Office may request additional documentation. All information will be kept confidential to the extent permitted by law.

In making residency determinations, the University considers all information provided in or with an application. Decisions to approve a residency application are made when the applicant has presented clear and convincing evidence that a permanent domicile in the state of Michigan has been established.

MORE ON RESIDENCY CLASSIFICATION GUIDELINES

Because each of Michigan's public universities has autonomous authority to establish residency guidelines for admission and tuition purposes, guidelines vary by school and are independent of regulations used by other state authorities to determine residency for such purposes as income and property tax liability, driving, and voting. The University of Michigan’s current Residency Classification Guidelines were approved by its Board of Regents to take effect Spring Term 2005 and to apply to students at all campuses.

The Board of Regents has authorized the Residency Classification Office in the Office of the Registrar on the Ann Arbor campus to administer the University's residency guidelines.

If your activities and circumstances as documented to the Residency Classification Office demonstrate establishment of a permanent domicile in Michigan, you will be classified as a resident once your eligibility has been confirmed. If your presence in the state is based on activities or circumstances that are determined to be temporary or indeterminate, you will be classified as a nonresident.

Our Residency Classification Guidelines explain how you can document establishment of a permanent domicile in Michigan. To overcome a presumption of nonresident status, you must file a residency application and document that a Michigan domicile has been established. Eligibility criteria are explained in more detail in the sections that follow. Meeting the criteria to be placed in an "eligible" category does not mean that you will automatically be classified a resident. If you have had any out-of-state activities or ties, or if the University otherwise questions your residency status, you will need to confirm your eligibility to be classified as a resident by filing an Application for Resident Classification in a timely manner and by providing clear and convincing evidence that you are eligible for resident classification under the following Guidelines.

General Guidelines

1. Circumstances that may demonstrate permanent domicile

The following circumstances and activities, though not conclusive or exhaustive, may lend support to a claim to eligibility for resident classification if other applicable guidelines (see section B) are met:

• Both parents (in the case of divorce, one parent) permanently domiciled in Michigan as demonstrated by permanent employment, establishment of a household, and severance of out-of-state ties.
• Applicant employed in Michigan in a full-time, permanent position, provided that the applicant's employment is the primary purpose for his or her presence in the state and that out-of-state ties have been severed. If the applicant is married or has a partner, the employment must be the primary purpose for the family's presence in Michigan.
• Spouse or partner employed in Michigan in a full-time, permanent position, provided that the employment of the spouse or partner is the primary purpose for the family's presence in the state, and that out-of-state ties have been severed.
2. Circumstances that do not demonstrate permanent domicile

The circumstances and activities listed below are temporary or indeterminate and do not demonstrate permanent domicile:

- Enrollment in high school, community college, or university.
- Participation in a medical residency program, fellowship, or internship.
- Employment that is temporary or short-term or of the type usually considered an internship or apprenticeship.
- Employment of the spouse or partner of an individual who is domiciled in Michigan for temporary pursuits.
- Employment in a position normally held by a student.
- Military assignment in Michigan for the applicant or the applicant's spouse, partner, or parent (see section D for special military provision).
- Payment of Michigan income tax and/or filing of Michigan resident income tax returns.
- Presence of relatives (other than parents).
- Ownership of property or payment of Michigan property taxes.
- Possession of a Michigan driver's license.
- Voter registration in Michigan.
- Possession of a Permanent Resident Alien visa.
- Continuous physical presence for one year or more.
- Statement of intent to be domiciled in Michigan.

Additional requirements, definitions, & special circumstances

Even if one or more of the following circumstances applies to you, you may still need to file an application for resident classification. If you have had any out-of-state activity or have any out-of-state ties, you must submit an Application for Resident Classification by the filing deadline to request resident classification and confirm your eligibility. You must document that you meet all of the following applicable criteria to be eligible for resident classification and payment of in-state tuition.

1. Immigrants and Aliens

You must be entitled to reside permanently in the United States to be eligible for resident classification at the University. However, like U.S. citizens, you must also show you have established a Michigan domicile as defined in these Guidelines. The Residency Classification Office will review Applications for Resident Classification if you are in one of the following immigrant categories. You must provide official documentation showing your status.

- Permanent Resident Aliens – Must be fully processed and approved and possess Permanent Resident Alien card or stamp in a passport verifying final approval by filing deadline for applicable term.
- Refugees – I-94 card or passport must designate "Refugee".
- Asylees – I-94 card or passport must designate "Asylee".
- A, E, G and I visa holders – Exception: Dependent children who hold an E visa are not eligible to be considered for resident classification.

***Please note*** that individuals holding temporary visas, such as, but not limited to, F, H, J, K, Parolee, TN, TD, etc., are not eligible for resident classification at the University of Michigan regardless of their other circumstances.***

2. Dependent Students

For University of Michigan residency classification purposes, you are presumed to be a dependent of your parents if you are 24 years of age or younger and (1) have been primarily involved in educational pursuits, or (2) have not been financially self-supporting through employment.

a. Residents

i. **Dependent Student - Parents/Parents-in-law in Michigan**

If your parents/parents-in-law are domiciled in Michigan as defined by University Residency Classification Guidelines, you are presumed to be eligible for resident classification as long as you can demonstrate establishment of a Michigan domicile and severance of out-of-state ties.

ii. **Dependent Student of Divorced Parents/Parents-in-law, One Parent/Parent-in-law in Michigan**

If your parents/parents-in-law are divorced and one parent/parent-in-law is domiciled in Michigan as defined by University Residency Classification Guidelines, you are presumed to be eligible for resident classification as long as you can demonstrate establishment of a Michigan domicile and severance of out-of-state ties.

iii. **Dependent Resident Student Who Remains in Michigan When Parents Leave the State.**

If you are a student living in Michigan with your parents and permanently domiciled in the state as defined by University Residency Classification Guidelines, you are presumed to retain resident status eligibility if your parents leave the state provided: (1) you have completed at least your junior year of high school prior to your parents’ departure, (2) you remain in Michigan, enrolled full-time in high school or an institution of higher education, and (3) you have not taken steps to establish a domicile outside Michigan or any other action inconsistent with maintaining a domicile in Michigan.

b. Nonresidents

The University presumes you are a nonresident if you are a dependent student and your parents are domiciled outside the state of Michigan. (See exception under a-i and a-ii for married dependent students whose parents-in-law are domiciled in Michigan.)

3. Michigan Residents an Absences From the State

You may be able to retain your eligibility for resident classification under the conditions listed below if you are domiciled in Michigan as defined by University Residency Classification Guidelines and leave the state for certain types of activities. However, if you have been absent from the state, you must file an Application for Resident Classification by the appropriate filing deadline to request resident classification and demonstrate your eligibility.

a. **Absence for Active Duty Military Service (U.S. Army, Navy, Air Force, Marines, Coast Guard, Officers in the Public Health Service), Non-Administrative Missionary Work, Peace Corps, AmeriCorps, or Similar Philanthropic Work.**

If you are domiciled in Michigan at the time of entry into active military duty, missionary work, Peace Corps, or similar service, you are presumed to retain your eligibility for resident classification as long as you are on continuous active duty or in continuous service and continuously claim Michigan as the state of legal residence for income tax purposes. If you are a dependent child of such an individual, you are presumed to be eligible for resident classification...
The Appeal Process

If you filed an Application for Resident Classification and were denied by the Residency Classification Office, you have recourse to an appeal process by filing a written appeal within 30 calendar days of the denial.

The Board of Regents established the Residency Appeal Committee to review decisions made by the Residency Classification Office. The Appeal Committee is chaired by the Vice President and Secretary of the University and includes two other University administrators, a faculty member, and a student. The Residency Coordinator and other staff members in the Residency Classification Office are not part of the Appeal Committee.

Appeals, which must be in writing, should be submitted to the Residency Classification Office. Please note that the written appeal must be received by the Residency Classification Office within 30 calendar days of the date on the denial letter. If the deadline falls on a weekend or University holiday, it will be extended to the next business day. If there is additional information you would like the Residency Appeal Committee to consider beyond the materials you already have submitted, you should submit that additional information, in writing, with appropriate supporting documentation, when you submit your written appeal. Your request and any additional information and documentation you provide will be forwarded to the Residency Appeal Committee with your original file.

All communications to the Residency Appeal Committee must be in writing. Personal contact with a member of the Committee could disqualify the member from participating in the decision regarding your residency. The Residency Appeal Committee does not meet in person with students, and appearances on behalf of students are not permitted at appeal meetings.

After the Appeal Committee has completed its deliberations, you will receive the Committee's final decision in writing. This will conclude the appeal process for the term covered by the application. The University will not conduct any further review of the decision.

Special Provision for Active Duty Military Personnel Assigned to Michigan

Regular active duty military personnel who are on assignment in Michigan, as well as their accompanying spouses and dependent children, will be allowed to pay in state tuition while they attend the University of Michigan, even though they will not be eligible to be classified as residents under the Residency Classification Guidelines. This provision applies to persons in the U.S. Army, Navy, Air Force, Marines and Coast Guard, and to officers in the Public Health Service. In order to request this special consideration, the student must submit a residency application by the applicable filing deadline and provide documentation demonstrating eligibility.

Student Fees and Fee Regulations

These fees are subject to change at any time by the Regents of the University.

POLICIES GOVERNING STUDENT FEES

The Board of Regents shall determine the level of fees (registration and tuition) and a schedule of such fees shall be published. All other student fees shall be fixed by the Campus Fee Committee. All fees are subject to change at any time by the Regents of the University.

TIME OF PAYMENT OF FEES

All fees are payable in accordance with regulations established by the University providing only that said regulations may not defer payment of these fees beyond the end of the term for which they are assessed.

Fees

Payment for these fees may be made in full at the Cashier's Office after registration according to the deferred payment schedule (see Fee Payment Policy). The laboratory or course fee is refundable if the course is dropped prior to the beginning of the third week of classes in a full term, and prior to the beginning of the second week of classes in a half term. The procedure for obtaining a refund is described in the section "Change of Fees and Refunds."

Application Fees

A non-refundable application fee of $30 will be required of each applicant for a degree or certificate program at UM-D. Students who have paid the appropriate application fee (graduate or undergraduate) at another campus of the University will not be assessed a second fee. There is no application fee charged to guest students.

Dual Status Fees: Graduate And Undergraduate
Seniors who are within six hours of completing the requirements for graduation and who have been admitted to a UM-D graduate program may, with both undergraduate and graduate advisors' approval, register simultaneously in a UM-D undergraduate unit and in a graduate program. Tuition and fees will be assessed at the graduate program level for graduate courses and the undergraduate program level for undergraduate courses.

**Dual Enrollment Fees:**

**On Two Campuses Of The University**

A student electing courses at UM-D and at another campus of the University, by means of a "Guest Admission," will pay the appropriate fees at each campus. The only exception is that the student will not be assessed fees totaling more than a full program fee at whichever campus may have the higher full program fee.

**Undergraduate Credit By Examination (CBE)**

See section on Special Examinations (Undergraduate).

**Laboratory and/or Course Fees**

Students will be assessed a laboratory or course fee if they enroll in any of the courses so designated in the Schedule of Classes (e.g., "Lab fee $50.00").

**Late Registration Fee**

A late registration fee of up to $45 will be assessed for anyone registering later than two weeks after the first day of classes. It should be noted that students are not ordinarily permitted to register after the first two weeks of a full term, the first week of a half term or mini-term, or after the second class meeting of a less than one-month mini-term.

In exceptional cases, a student might be permitted to enroll even after the first two weeks (and be charged a late fee) if the student has obtained the written approval of the dean (or a designated representative) of the college or school. Late registrants not pursuing a degree (CM/PDS/PEs) must have the approval of both the Office of Academic Support and Outreach Services and the Registrar, as well as the approval of any instructors involved.

**Orientation Fee**

A $50 orientation fee is required for freshmen and transfer orientation. More detailed information is available from the Orientation/Admissions Office, University of Michigan-Dearborn, 4901 Evergreen Road, 1145 UC, Dearborn, Michigan 48128-1491.

**Fees Included Within Tuition**

The fees assessed by the University (registration and tuition) include a nominal charge for parking and other transportation-related services, information technology services, the health referral service to the Henry Ford Hospital-Fairlane Clinic, facilities debt service, and support for student activities and organizations. Fees are subject to approval by the Regents of the University and may be changed at any time.

**EXEMPTION FROM PAYMENT OF FEES**

No exemption from the payment of fees shall be granted unless specifically approved in advance by the Fee Committee or its designee. Failure to fulfill financial obligations to the University may result in disciplinary action, including the withholding of degrees and transcripts.

**Tuition**

Students should obtain current tuition and fee information from the Schedule of Classes or from the Tuition & Fees webpage, http://www.umich.edu/rr_tuition-fees/.

**Additional Assessments**

Course levels 300 and above are assessed an additional amount per credit hour. For current fees, students should consult the Schedule of Classes or the Tuition & Fees webpage, http://www.umich.edu/rr_tuition-fees/.

**Technology Assessment**

Students are assessed a fee for technology. This fee varies by academic unit. For current fees, students should consult the Schedule of Classes or the Tuition & Fees webpage, http://www.umich.edu/rr_tuition-fees/.

**SPECIAL FEE ADJUSTMENTS**

The Registrar and the Provost for Academic Affairs are authorized to make adjustments in the application of the policy stated above when, in their judgment, unusual circumstances warrant such action. Circumstances that may warrant special consideration include the death or serious illness of the student. The student who wishes to have his/her case reviewed must petition and submit documentation to the Office of Registration and Records, Room 1169, University Center, either in person or by mail. It is the responsibility of the student to make sure that required documents are submitted.

Except in rare and unusual circumstances, petitions will not be accepted after the last day of classes for the term concerned. Additionally, petitions will not be accepted once an account has been turned over for collection.

**Transcripts**

A transcript is a student's complete academic record at the UM-D. The transcript(s) that were presented for admission have become an integral part of the files of the admitting offices and cannot be released, either directly or for copying purposes. It will be necessary for you to write directly to the institutions concerned to obtain copies of those previous records. In addition, documents such as SAT/ACT scores are not available from the Records Office. Transcripts will be released only upon written request of the student.

**FINAL TRANSCRIPT**

Once the final transcript has been prepared and the diploma accepted by the student, his/her academic file is closed, and no changes can be made in it for any reason.
Students wishing more detailed information about final grades should make that request in the office of their instructional unit (CASL, CECS, SOE, or SOM).

REQUESTS FOR TRANSCRIPTS

Requests for copies of UM-D transcripts should be made at the University of Michigan-Dearborn, Office of Registration and Records, 1169 UC, Transcripts, Dearborn, MI 48128-1491. Requests may also be faxed to (313) 593-5697. For additional information, please telephone (313) 583-6500.

If the student indicates that he/she has also taken work through the Extension Service or at other campuses of the University, the Office of Registration and Records will forward the order to the appropriate offices which will send copies to the address indicated on the order. There is no charge for transcripts. Generally, up to five (5) working days are allowed for processing a UM-D transcript. Under certain circumstances, such as the end of the term or upon graduation, requests may take longer to process. Requests will not be processed if you have any financial obligation outstanding to the University.

Veterans Affairs

All students who are eligible for, and elect to receive, education and training benefits while attending the UM-D, may address inquiries for information to the Office of Veteran Affairs, 4901 Evergreen Road, 1169 UC, Dearborn, MI 48128-1491.

For information regarding the standards of academic performance and academic conduct, the grading system, and readmission, refer to the individual unit section for policies.

The UM-D Veterans Certification Coordinator will notify the Veterans Administration when: 1) a student fails to come off probation at the end of two semesters, 2) there is any change in student elections, or 3) enrollment is discontinued.

It is the responsibility of the student to notify the Office of Registration and Records each semester of eligibility and inform the UM-D liaison of any changes that may affect benefits.

Policies and Procedures

Absence from Final Examination

A student who is unavoidably absent from a final examination may, upon timely completion and approval of the X Contract Form, be granted the privilege of making up the examination within five weeks after the closing date of the term involved. If granted this privilege, a grade of X will be recorded. Failure to take the examination within the specified time, or the denial of this privilege by the instructor, will result in a grade of E for the final grade. In extenuating circumstances an extension beyond the stated period may be requested by means of a petition that has been endorsed by the instructor. However, such arrangements for completing the work must be made within the above five-week period. The grade of X will automatically be converted to XE and reflected in the student's grade point average as a failing grade if the Supplementary Grade Report is not submitted by the end of the five-week period.

Academic Honors

WILLIAM J. BRANSTROM (FRESHMAN) PRIZE

First-term freshmen who rank in the upper five percent of their class and earn 14 credit hours and at least a 3.50 GPA on any campus and in any unit of the University of Michigan are named recipients of the William J. Branstrom Prize. This distinction is noted on the student's transcript as "William J. Branstrom Prize.”

JAMES B. ANGELL SCHOLARS

Students who earn straight A's (A+, A, A-) for two or more consecutive terms with a minimum of 14 elected credit hours each term, 12 of which must be graded, are named James B. Angell scholars. This distinction is noted on the student's transcript.

UNIVERSITY HONORS

University Honors are awarded to all students who have achieved a 3.50 GPA and 14 credit hours (12 of which must be graded A-E). This distinction is noted on the student’s transcript as “University Honors” after fall and winter terms only.

HONOR SCHOLARS RECOGNITION

Students who have achieved superior academic performance are invited to and individually recognized at an Honor Scholars Awards Dinner held in late March each year. Those honored include active undergraduate and graduate students, one per degree major, with a specific minimum GPA, a specific minimum number of credit hours, and other criteria deemed appropriate by the School, College, or Department. For further information, contact the Office of the Provost, 1080 Administration Building; telephone (313) 593-5030.

Academic Standing

Every student's academic record is reviewed, for the purpose of observing academic progress, at the end of each term in which the student is enrolled at UM-D.

To be in good scholastic standing, a student must have a cumulative grade point average of at least 2.0. Students who fall below 2.0 in their grade point average will be placed on academic probation. After having been placed on academic probation, the student is allowed one more term of coursework on campus in order to attempt to bring the cumulative grade point average up to the required 2.0 level. If the student does not return to good scholastic standing at the completion of that term, the student may not re-register without the explicit written permission of the unit.

This general description of standards must be augmented by the regulations of each individual unit. All students must, therefore, be familiar with the academic requirements and rules of their own school or college.

ACADEMIC STANDING APPEALS

Students who wish to appeal decisions on their academic status, made by a unit's committee on academic standing, may
do so by addressing a petition to the executive committee (the chief policy body) of the unit in which they are admitted. If a negative decision is rendered at this high level, the student may, under unusual circumstances, appeal the case to the Academic Appeals Board of UM-D.

1. The UM-D Academic Appeals Board shall hear cases dealing only with academic matters, excluding matters of academic misconduct, which shall be addressed by the Code Appeals Board as defined in the UM-D Statement of Student Rights & Code of Student Conduct.
2. Individuals may seek redress from the Board only after all reasonable efforts have been made to settle the disagreement within the unit. Such an individual may then write to the Vice Chancellor for Academic Affairs, stating the grounds of the complaint, the name(s) of those most immediately involved, and a summary of the relevant information.
3. The Board is empowered to determine which complaints it will review. If a hearing is to occur, all parties shall receive written notice, ordinarily within thirty (30) days after the Vice Chancellor for Academic Affairs has received the written complaint. If, for any reason, a hearing is not to take place, the Board will inform the parties in writing and the reasons for its decision.
4. The Board will consist of the Council of Deans (minus the dean in whose academic unit the case is being contested), plus the Vice Chancellor for Enrollment Management and Student Life, the Registrar, the Academic Affairs “Proceedings Advisor”, and one student representative named by the Student Government Council.
5. The Provost and Vice Chancellor for Academic Affairs will chair the Board, without a vote, except to break a tie. All other members of the Board are regular voting members.
6. Five regular voting members will constitute a quorum to hear appeals. There are no alternates for the eight regular voting members. The term of office is one full academic year for all members.
7. Each side may call upon the assistance of an adviser.
8. An audiotape record of the proceedings will be available to both sides.
9. Since it is the function of the Board to conduct hearings and not court trials, the Chair shall set reasonable limits upon the length of the presentations. The usual format will allow the opposing sides to make opening statements, present evidence, and make closing statements.
10. Within ten days after the hearing, all parties will receive written notice of decisions rendered by the Board. The Board's action represents the final decision in the UM-D academic appeal process.

Additional Program Recognition

DOUBLE MAJORS OR CONCENTRATIONS

With approval from the appropriate school/college, students who meet the requirements in two majors or areas of concentration may graduate with a double major or concentration. The Registrar will seek confirmation from the appropriate academic units before making such an entry on the transcript.

RECOGNITION OF MINOR

A student in a CASL, SOM, or CECS degree program may apply for recognition of a minor, which consists of at least 12 hours in courses numbered 300 or above in a particular area of study. Minors are recorded on students' transcripts at the time the petition is granted.

SECOND BACHELOR'S DEGREES

A student who has already earned a bachelor's degree from UM-D or any other accredited collegiate institution may apply for permission to pursue a second bachelor's degree. If accepted, up to 90 credit hours from a previous University of Michigan degree will be counted toward the second degree. If the first degree was earned at a non-University of Michigan institution, up to 75 credit hours may count toward the second degree. If the student previously attended UM-D, the GPA for the second bachelor's degree will be based on the cumulative academic record of courses taken at UM-D for both degrees.

ADDITIVE CREDIT

UM-D Courses

Several courses in UM-D curricula (i.e., tennis, volleyball, weight training, etc.) are reflected on a student's transcript but do not fulfill requirements for graduation. Mathematics 090 and Composition 099, for example, bridge the gap between high school and college and are therefore offered only for additive credit. Courses taken for additive credit count in the determination of enrollment certification but not toward a degree or in determining class level.

Additive Courses Taken Elsewhere

Such courses as described above in the paragraph on UM-D additive credit courses are not transferable from other institutions to UM-D.

Coursework at Other Institutions

After the first enrollment at the UM-D, it is assumed that students will sever their college-related connections with all other colleges and universities.

The UM-D schools and college may refuse to accept any and all courses (credits and grades) if they are taken at another institution without prior written approval of the student's unit.

For information, contact your unit recorder's office.

Dual Degrees

Students may apply for two or more degrees either within the same college or in different colleges. To earn both degrees, students must meet the degree requirements for each degree. Generally, distribution courses taken within the College of Arts, Sciences, and Letters may be used to satisfy both degrees. Students should expect to elect at least 30 more credits to earn both degrees. Students are advised to contact each program to learn the specific requirements that must be met.

Some degrees, such as the degrees in Engineering Mathematics or Computer and Information Science (CIS) Mathematics, are only available as concurrent degrees and must be paired with a primary degree in either engineering or CIS. There are special concurrent degree programs in which a student can earn both a BSE in Electrical Engineering and Computer
Engineering or in both Industrial and Systems Engineering and Manufacturing Engineering. Students interested in dual degrees should see their advisor.

**Electronic Communication (E-Mail) With Students**

The UM-D uses your assigned UM-D email address for all university email communications. You are responsible for accessing your UM-D email account on a frequent and consistent basis to stay informed of important University business such as information regarding your student account, financial aid, registration, grades or correspondence from faculty.

You may choose to forward messages from your UM-D email address to an alternate personal address. However, doing so may place you at risk of not receiving critical University communications. For additional information on your UM-D email account (including how to forward your UM-D email address), go to http://www.its.umd.umich.edu/ and select Accounts.

This policy reflects UM-D's commitment to using available technology to communicate among members of the campus community. It recognizes an expanding reliance on electronic communication among students, faculty, staff and the administration due to the convenience, speed, cost-effectiveness and environmental advantages it provides. This policy will define the proper use of electronic communications between University staff, faculty and students. Electronic communications may include, but are not limited to, electronic mail, electronic bulletin boards, and web sites.

UM-D authorizes the use of email for official communication between students, staff, faculty, and the administration. All members of the campus community are expected to comply with established guidelines and procedures that define the proper use of electronic communications.

To implement this policy, the following actions and services will be provided:

1. **Provision of University email**
   UM-D will provide all staff, faculty, and students with an official University email address. This will be the address listed in University directories. All official University email communications will be directed to this address.

2. **Appropriate use of University email**
   Certain University electronic communications may be time-critical. Students, staff, and faculty are responsible for checking their official email address on a frequent and consistent basis in order to stay current with University communications.

   In general, email is not appropriate for transmitting sensitive or confidential information unless an appropriate level of security matches its use for such purposes.
   - Confidentiality regarding student records is protected under the Family Educational Rights and Privacy Act of 1974 (FERPA). All use of email, including use for sensitive or confidential information, must be consistent with FERPA.
   - Email shall not be the sole method for notification of any legal action.

3. **Redirecting of University email**
   Members of the campus community may elect to forward University email to an alternate address (e.g., aol.com, hotmail.com, comcast.net). They are responsible for ensuring that the configuration of their email service does not accidentally label University messages as spam. Users who redirect email from their official address to another email address do so at their own risk. The University will not be responsible for the handling of email by outside vendors or by departmental servers. **Having email redirected to an alternate service does not absolve students, staff or faculty members from the responsibilities associated with communication sent to their official email address.**

4. **Access to University email**
   Students who are not in possession of a home computer, or do not have access to a computer at work, can use computers available in campus labs or in their local library.

5. **Faculty use of University email**
   Faculty may determine how email will be used in their classes. It is highly recommended that if faculty have email requirements and expectations, they specify these requirements in their course syllabus. Faculty may reasonably expect that students are accessing their University email, and may use email for their courses accordingly.

**Repeat Course Policy**

On June 13, 2005, the Faculty Senate recommended, and on August 24, 2005, the Council of Deans approved, a change in the repeat course policy effective with the beginning of the Fall 2005 semester. The new policy is as follows:

“Students may repeat a course no more than two times. All grades received must appear on the transcript, but only the last grade received is counted in the grade point average (GPA).”

**GUIDELINES**

When a prior grade or mark other than “W” is recorded for a course, or its equivalent, or its cross listing, a subsequent enrollment (“repeat”) of the course, or its equivalent, or its cross-listing, will result in an adjustment of the grade point average and credits earned.

1. Students may repeat a course up to two times (total of three attempts).
2. Regardless of whether it is higher or lower than the previous grade(s), the last grade assigned in a course will be used in computing the student’s cumulative grade point average and credits earned toward degree.
3. If a student takes a course three times (the maximum allowed), the previous two grades will not be reflected in the GPA.
4. Most courses can be elected only once for credit. The maximum number of credits/elections allowed in courses designed for multiple enrollments are indicated in the Undergraduate Catalog. For information regarding these courses, students may contact their unit Academic Advisor. This policy applies to all undergraduate degree and non-degree students in all academic units. An exception not to accept the final grade in a repeated course cannot be petitioned.

The policy applies only to courses elected Fall 2005 or later. Students who have repeated a course two or more times prior
to Fall 2005 may repeat the course only one additional time. Only the two most recent previous grades will be affected by the new policy. Other previous grades will continue to be used in computing the grade point average.

The use of an Audit Grade Mode or Pass/Fail Grade Mode may not be used to adjust grade point averages for courses previously elected under any other existing grade mode.

The limitation of the three-course rule will be monitored by the Office of Registration and Records. Students who elect a course more than three times will be dropped from the course and notified of the election change.

Special Examinations

The UM-D will acknowledge proficiencies gained by students outside the bounds of traditional courses if such proficiency is certified by recognized examinations or departmentally prepared and/or approved alternatives. The University recognizes three types of such special examinations: 1) standardized examinations prepared and evaluated by nationally recognized organizations; 2) placement examinations prepared, administered on campus, and evaluated by UM-D academic departments; and 3) special examinations for individual courses, prepared, administered, and evaluated by specialists in the various academic departments and approved by the respective department chairs.

The number and nature of credits earned by examination must be approved by the department(s) normally responsible for teaching the subject matter areas for which credit is being granted. Decisions in individual cases related to departmental examinations will be made in light of the general departmentally approved policies that are not inconsistent with those for national examinations.

DEPARTMENTAL EXAMINATIONS

If a student believes that he/she has the knowledge and/or skill to merit credit for a specific course without attending classes and/or doing any assignments other than a single, comprehensive examination, the student and the academic unit or department must follow certain procedures.

If credit-by-examination is available in the area in which the student is interested, he/she should request permission to take an examination for specific credit in accordance with the unit’s procedures. If the request is granted (it can be denied) and the examination is scheduled, the student will be assessed a $20.00 fee.

All such examinations are graded on a Pass/Fail basis. If the student passes or fails, he/she will receive a written memorandum to that effect from the examiner. If the student passes the examination(s), he/she will be assessed regular University fees per credit hour received minus any fees previously paid.

Also see section on Tuition.

PLACEMENT EXAMINATIONS

Placement examinations are required by certain departments in an effort to determine the best course level for new students. No fee is assessed for the administration of these tests. For more information, telephone the Orientation Office at (313) 593-5550.

STANDARDIZED NATIONAL EXAMINATIONS

The College Level Examination Program (CLEP), the Advanced Placement Program (APP), and International Baccalaureate subject examinations are the chief examples in this category. If the relevant academic units and/or the academic departments award credit, the student is responsible for having the test results sent to the institution (normally, along with the application for admission), and the Records Office will be responsible for the recording of the appropriate credit. The student is not charged a fee for such credit.

Smoke-Free Building Policy

Since September 1, 1992, smoking has not been permitted in campus buildings. In a very real sense, the responsibility for implementing this policy lies with each individual in the University of Michigan-Dearborn community. Successful implementation requires your understanding, consideration, and cooperation.

Student Organizations

POLICIES FOR STUDENT ORGANIZATIONS

In an effort to coordinate the activities of all student organizations, policies were codified into a formal publication issued by Student Government, known as the Student Clubs and Organizations Information and Policies Manual.

The Student Clubs and Organizations Information and Policies Manual is a most useful booklet which contains information on forming an organization, the renewing and revoking of organizational status, office allocations, organizational accounting, the allotting of day sales and evening events, university services, descriptions of recognized organizations, etc.

The Student Organizations Coordinator and the Student Government Director of Student Organizations can assist any student group interested in this area of concern.

ACCOUNTING POLICIES AND PROCEDURES

The Student Activities Office (SAO) maintains and services the financial accounts for student organizations that have been recognized by the Student Government. Through this student service, SAO:

1. Ensures uniformity of accounting records.
2. Facilitates continuity between business officers and their successors.
3. Aids student organizations in keeping their activities on a sound financial basis.
4. Provides a means for recognized student organizations to use University facilities and services.

The SAO is prepared to offer staff consultation on matters of budgeting, detailed record keeping, and securing various University and outside vendor services and facilities. The information presented in the Student Organizations Accounting Policies and Procedures Manual is intended to assist the financial officers of organizations in conducting their duties and to inform them of the policies, procedures, and benefits associated with sound fiscal policy.
Special Programs

Officer Education Programs

Students at UM-D may apply for admission to the two-year and four-year programs of Army or Air Force officer training. These programs include some scholarship options and may lead to a commission either in the Army or the Air Force.

These officer training programs are based in Ann Arbor. Interested students may get further information by visiting the Office of Registration and Records in Dearborn (1169 UC) or by telephoning Ann Arbor: for Air Force information, telephone (734) 764-2403; for Army information, telephone (734) 764-2400.

ARMY OFFICER EDUCATION PROGRAM (ROTC) (NOT A CONCENTRATION)

Upon graduation from the University and successful completion of the program, students enrolled in the Army Officer Education Program receive a commission as second lieutenant in the United States Army Reserve or in the Regular Army. Many students enroll for the first two years in order to sample career opportunities. No military obligation is incurred for the first two years.

AIR FORCE OFFICER EDUCATION PROGRAM

The program offers studies designed to prepare and commission selected individuals to serve in the United States Air Force. Both a four-year and a two-year program leading to a commission as a second lieutenant are offered. The four-year plan comprises eight terms of courses in aerospace studies plus a four-week field training course at an Air Force base, between the sophomore and junior years. The two-year plan comprises an initial six-week field training course followed by four terms of aerospace studies (AS 310 through AS 411 series). Cadets may enroll in either the four-year or two-year program by permission of the chairman.

Military Obligation

After being commissioned, graduates of the program are called to active duty with the Air Force in a field usually related to their academic degree program. The period of service is four years for non-flying officers, five years for navigators after navigator training, and eight years for pilots after flight training. A contractual obligation is established for non-scholarship students when they attend the first Professional Officer Course (POC). Scholarship students in the four-year program incur a contractual obligation upon entering the sophomore year of AFROTC, whereas those in the two-year program incur one on entering the POC.

UM-D CREDIT FOR MILITARY OFFICER EDUCATION

College of Engineering and Computer Science

Grades earned in military science courses will be recorded and used in the computation of UM-D grade point averages, but credit hours will be shown as "Michigan Semester Hours" not as "Credit Toward Program" on an academic transcript. Students who satisfactorily complete the requirements as established by the Military Officer Education Program Chairman for a commission and satisfactorily complete the engineering program of studies may count a maximum of four credit hours of advanced military science courses (300 and 400 level) as meeting program elective hours for an engineering degree at the discretion of the academic department.

School of Management

Up to six semester credit hours will be granted to a student for successful completion of advanced military science courses towards the BBA degree requirements.

College of Arts, Sciences, and Letters

Courses do not carry credit toward degree requirements.

School of Education

Courses do not carry credit toward degree requirements.

Academic Support and Outreach Services (ASOS)

Academic Support and Outreach Services provides a range of services to assist undergraduates, graduating seniors, personal enrichment, and prospective degree students in their attempt to achieve academic success at the UM-D.

PROGRAM FOR ACADEMIC SUPPORT

Many students apply to the UM-D, some of whom may not meet all of the standard qualifications for acceptance. The Program for Academic Support is designed primarily for these students, students whose records show strong signs of college ability.

TUTORIAL SERVICES

ASOS offers individual and small group tutoring to all students who wish to improve their academic efficiency. To make arrangements for this service, you may contact the coordinator at (313) 593-5425, Monday through Friday, 8:00 am. – 5:00 pm.

KING/CHAVEZ/PARKS COLLEGE DAY PROGRAM

ASOS also participates in the Martin Luther King, Jr./Cesar Chavez/Rosa Parks College Day Program. The program targets African American, Latino, and Native American students, groups that have been historically underrepresented in higher education. The program is funded by the Michigan Department of Career Development.

REACH

The REACH Office (Renewed Expectations for Adults in
Continuing Higher Education) was established in 1974 to develop non-traditional instructional programs. The courses are designed for those who share the common goal of pursuing a university education, but are limited by time constraints such as family or employment responsibilities. There are no set class meeting times for REACH courses. Students utilize various study aids (texts, study guides, tapes, etc.) and study at their own pace. Registration times and deadlines for completing course assignments are consistent with those for standard university courses. We suggest you contact your academic unit to find out if there are any restrictions on the number or type of REACH courses you may take. For more information, please telephone (313) 593-5310 or visit the web site at: http://www.umd.umich.edu/casl/alum/reach.

Campus Services

Affirmative Action Coordinator

The Affirmative Action Coordinator helps to ensure that the campus promotes equal opportunity for all students, faculty, and staff, including racial, ethnic, and religious minorities, women, the disabled, senior citizens, Vietnam-era veterans, and gays and lesbians. The Coordinator oversees compliance with Regental by-laws, Presidential policy and legislation regarding nondiscrimination/equal opportunity/affirmative action and provides information and pre-grievance counseling to faculty, staff, and students with questions or complaints. The office of the Coordinator is located in 1020 Administration Building, telephone (313) 593-5190.

Athletics

INTRAMURALS, RECREATION, AND INTERCOLLEGIATE SPORTS

The UM-D has an athletic program designed for all members of the campus community. Students, faculty, and staff of UM-D are encouraged to participate in the educational, recreational and competitive sports programs. The formal intramural program offers competition and league play in flag football, basketball, sand volleyball, wallyball, volleyball, ice hockey, and tennis. Instructional opportunities are available in such activities as golf. Special events such as Family Day and National Employee Health and Fitness Day are popular among the UM-D community. The Fieldhouse/Arena, located on the south end of campus, is open on a regular basis for informal recreation.

For the student-athlete who wishes to compete at an intercollegiate level, the varsity sports program offers NAIA competition in men's and women's basketball and women's volleyball. Competitive men's ice hockey, soccer, and lacrosse are offered in the Club Sports Program and Intramural Program. Students interested in these sports should call or visit the UM-D Department of Physical Education, Recreation and Athletics in Room 205, Fieldhouse/Arena for specific information.

The Recreation and Physical Education Complex was completed during 1978. Included in this facility are an 800-seat multipurpose room for indoor tennis, basketball and volleyball, and also includes a climbing wall and a high ropes course. A 1,250-seat indoor ice arena is available for a variety of ice-oriented activities. Locker rooms are available for men and women. The facility also houses a concession stand, first aid room, classroom, conference room, equipment room, and administrative offices.

The 14,000 sq. ft. Wellness Center, which opened in January 2000, has state-of-the-art strength and conditioning equipment, two racquet courts, a studio, 1/17-mile jogging track, athletic training room, men's and women's locker rooms, and an administrative office. This addition has increased the opportunities for a greater variety of health/fitness-related programs in physical education, intramurals, and recreation. Special activities include fitness assessments, equipment orientation, individualized exercise programs, incentive programs, classes, and workshops. There is a nominal fee charged for special programs offered by the Center.

Athletic and recreational equipment may be checked out for personal use by presenting a currently valid UM-D identification card and driver's license at the Athletic Office in the Fieldhouse/Arena. The use of the facilities is free to students, faculty, and staff, and provisions are made for the purchase of guest passes on a daily or term basis for family members, UM-D alumni and retirees, and others, if criteria are met. A valid UMID is required to use the facilities.

FOOTBALL TICKETS

Season tickets to the University of Michigan-Ann Arbor football games are sold by the Ticket Office of the Ann Arbor campus Department of Athletics. UM-D students receive information regarding ticket purchase early in the year with a mid-April response/purchase deadline. Ticket information is available at 734-647-0247.

HEALTH AND PHYSICAL EDUCATION

The School of Education provides UM-D students with a variety of participatory and theoretical courses related to the importance of exercise in life-style management and healthful living. Theory courses such as coaching principles, nutrition and human development, and physical activity and health are offered regularly. Theory courses award college credit; however, students are encouraged to consult advisors in their respective colleges or schools to determine whether such credit can apply toward their degrees (degree credit). Unless degree credit is applicable and requested, additive credit will be reflected on the transcript.

Students in the School of Education may elect up to four semester hours of work in health and physical education toward the general education requirements of their degrees, provided such work is elected from among courses authorized to award academic credit. Such courses are identified in this Catalog as awarding degree credit.

Any student at UM-D may elect activity courses for additive credit. Among the classes are Tai Chi, Tae Kwon Do, aerobics, slimmastics, ice skating, volleyball, weight training, weight reduction, tennis, fencing, dance, stress management, and first aid. These classes may be repeated.

See the Education section of the Catalog for further information and a list of currently available courses.
Bookstore

Located in the University Center, the Barnes & Noble Bookstore has a complete line of textbooks, trade and reference books, periodicals (newspapers, magazines), and hardcover and paperback books (including best sellers). The store also maintains a complete line of supplies and study aids as well as UM and UM-D souvenirs and sportswear. American Express, Discover, MasterCard and VISA are accepted. Normal bookstore hours: 8:30 am to 6:30 pm (Monday-Tuesday); 8:30 am to 6:00 pm (Wednesday-Thursday); 8:30 am to 4:00 pm on Friday.

NOTE: Special hours are in effect at the start of each semester and during term breaks and holiday periods.

For additional information, telephone (313) 593-5551 or visit the website at http://www.whywaitforbooks.com.

Campus Media Services

Campus Media Services, located in the Mardigian Library, provides a range of facilities and services to support distance education and instructional technology. Multimedia services in support of course assignments are provided without charge to students. CMS will audio- and video-record classes and certain campus events for a nominal charge. A television studio with professional equipment and a dedicated distance learning center provide unique venues. The distance learning center features Internet2 and ISDN connectivity for video-conferencing, satellite downlinks and video via the Internet. Staff of the CMS offer multimedia consulting to units across campus.

Campus Safety and Security

The Campus Safety and Security Department provides 24-hour emergency, safety and security services. Services include campus patrol; campus escort service; crime prevention; emergency assistance; health, safety and crime protection programs; crime and health reporting center; lost and found program; key/locksmith and access control services; vehicle lockout and car problem assistance.

For immediate assistance with a medical or security emergency DIAL 911. Free on-campus phones are provided in some campus areas and 46 direct-dial emergency phones are strategically placed around campus.

The Campus safety and Security Department is located in the Campus Support Services Building (CSS), telephone 24-hour dispatch, (313) 593-5333; business office, (313) 593-9953. URL: www.umd.umich.edu/dept/safety

Career Services

Career Services provides a range of services to assist undergraduates, graduating seniors, and alumni in their career development. Students are encouraged to schedule a career counseling appointment early in their college experience to create a career plan.

Overall services offered include individualized career counseling, job search events, workshops on career planning, and job search topics, job listings, a career resource library, and employer literature.

Specifically for the undergraduates, the Career Services professional staff teaches a one-credit hour course, Career Planning (EXPS 102), guiding students in career development issues, including making decisions on majors, career options and job search strategies. Part-time and summer job listings which may assist students financially while attending UM-D are listed on our home page. FOCUS, a computerized career planning system, is available for self-assessment and career exploration. The Career Contact and Alumni Network (CCAN) provides an opportunity for students to gather information on specific career paths through interviewing UM-D alumni.

For seniors and alumni, Career Services offers assistance in the job search process. The following career fairs are held annually on campus to link employers with graduates: a three-day career fair, a liberal arts and sciences job fair, and a technical job fair. Other annual career fairs in which UM-D participates are also promoted. Campus recruiting provides opportunities for graduating students and recent alumni to interview with recruiters from a variety of organizations. Students and alumni can create on-line resumes and employers post job listings for students and alumni to peruse. Career counselors will provide advice on job search techniques, resumes, and interviewing through video mock interviews.

Students are encouraged to take advantage of these services to assist in the career development process. Career Services is a great place to begin as a new student to the University and to continue to use while at UM-D. Alumni may also utilize the Career Services programs for individual needs and/or as recruiters.

Career Services is located in 2149 UC, telephone (313) 593-5020. URL: www.umd.umich.edu/careerservices.

Copy Express

The UM-D Copy Express is located in 1290 University Center. It provides walk-in copy services (copying, laminating, plastic binding, resume printing, and paper purchase) for students, faculty, and staff. The Copy Express also provides computer access for printing color documents from 3.5” floppy disks or full-color photocopying. A variety of special paper stock is available for your different printing needs. A fax service is also available for your convenience. Hours of operation are Monday-Thursday 8:00 am-5:00 pm and Friday 8:00 am-4:30 pm.

Counseling and Support Services

The mission of Counseling and Support Services (C&SS) is to resolve barriers to the learning process and serve as a vital link in the UM-D “safety net.” CS&S services advance the academic mission of the University by enhancing personal development, problem solving, and communication. C&SS is located at 2157 University Center.

PERSONAL COUNSELING

We provide short-term therapy (up to 12 sessions per academic year) to all registered UM-D students. Also, UM-D faculty and staff are eligible (FASAP). There is no fee for counseling. Counseling is provided by licensed psychologists. Note: We do
not prescribe medication. Counseling begins with an assessment of your concerns and leads to a recommendation, which may include individual counseling, couples counseling, group counseling, or referral to a specialist.

**SCHEDULING AN APPOINTMENT**

Telephone or stop by the C&SS Office at 2157 University Center, (313) 593-5430. The first step in arranging an appointment will be to complete a questionnaire, and then an appointment will be scheduled. Please inform our receptionist if your concern is urgent.

**CONFIDENTIALITY**

Use of counseling and personal information shared with our counselors is confidential in accordance with Michigan Privileged Communication Statutes. There are limits or exceptions identified in these statutes. No information is released without a client’s written permission and no information is entered into a student’s college record.

**CONSULTATION SERVICES**

Consultation Services include faculty and staff support in assisting students in distress, Faculty and Staff Assistance Program (FASAP), career assessment services, and substance use assessment.

**CAREER ASSESSMENT SERVICES**

This service is for students who are undecided or wanting to change their majors and/or career plans and would like some assistance. After an initial interview, a series of personality and career tests may be used to provide students with feedback on work and career preferences that match their interests, values and personality type.

**OUTREACH PROGRAMS**

These programs emphasize personal development topics. Many are designed to respond to the diversity among students and reach students who are less likely to make use of traditional counseling services. To request a program, contact the C&SS Office at (313) 593-5430 or email: counseling@umd.umich.edu.

**TRAINING/INTERNSHIP PROGRAM**

Currently, the C&SS training program (clinical or counseling psychology and community counseling) is only available to graduate students. Please contact the Director, for more information.

**DISABILITY RESOURCE SERVICES**

C&SS offers aid to differently-abled individuals seeking the opportunity for further learning. Some of the services provided, as deemed appropriate after departmental review, are: 1) early registration; 2) course/classroom accommodations; 3) tutorial referral and mentoring services; 4) assistance while using the Computer Center; 5) note-taking; and 6) referral for auxiliary services such as interpreters for the deaf and the taping of texts for the blind. DRS staff train students to use the Adaptive Equipment Lab in the Mardigian Library. Please contact C&SS about any questions.

**STUDENT HEALTH INSURANCE**

A student group health insurance policy is available to any enrolled student. Information and application forms are available at C&SS. It is recommended that all students have health insurance coverage. All international students are required to have such coverage. Students applying for financial aid should be aware that the cost of health insurance could be included as a budget expense.

**HOUSING AND MEDICAL REFERRAL SERVICE**

A Housing Referral Service is located in C&SS. Listings are available, in addition to a telephone to call local landlords. For further information, contact the Housing Referral Service, telephone (313) 593-5430. Medical Referral Service is also available to students. Students are referred to the Henry Ford-Fairlane facility for low-cost medical service.

**Fax Service**

Fax service is available in Copy Express, located in the University Center. For a nominal charge, all faculty, staff and students may send and/or receive fax messages. The fax number is (313) 593-5604. For additional information, telephone (313) 593-5576.

**Food Services**

**FOOD COURT**

The University Center features a variety of fast food services including: Bene Pizzeria (offering pizza), Express (sandwiches, sushi and salads), Grille Works (burgers, fries and hot sandwiches), Java City (hot beverages), Subway (hot and cold sandwiches), and tmmmy.ymmys. (desserts). Current information on food services and hours can be obtained by consulting http://www.umd.umich.edu/universitycenter/.

**DINING**

The Pool Restaurant, located in the Henry Ford Estate-Fair Lane, serves moderately priced luncheons featuring homemade soups, quiche, a variety of hot and cold sandwiches, and daily specials. It is open Tuesday through Friday, from 11:00 am to 2:00 pm. Students, faculty, staff and the general public are welcome. For reservations and other information call (313) 436-9196.

**REFRESHMENTS**

Vending machines provide snacks in various locations throughout the campus.
Information Technology Services

General Purpose Labs: 1140 CW, (313) 593-5073
1070 ML. (Campus dialing only: x54992)
Help Desk: (313) 593-HELP (4357) or helpdesk@umd.umich.edu
Internet Address: http://www.its.umd.umich.edu

Information Technology Services (ITS) supports the computing needs of faculty, staff and students. The department has responsibility for: 1) the campus network, including Internet access; 2) computer labs in the CW and Library; 3) computer access accounts; 4) email and webmail services; 5) Help Desk support; and 6) the Banner student information system.

FACILITIES

The primary computing support facilities are two general purpose computer labs located in the Computing Wing (CW) of the Science Building and in the Mardigian Library (ML). Together, they contain over 130 AMD 64-bit processor computers, running Windows XP. Adjacent to the Library lab is the Adaptive Learning Lab, with comparable equipment. In addition to the standard software products, it runs a voice synthesis package that allows visually impaired students to run standard application programs on the computer. Additional departmental computer labs are also operated by individual schools and colleges across campus.

SOFTWARE

ITS offers a wide variety of software in the labs it supports, including communications, databases, word processing, spreadsheets, and artificial intelligence. Specialized software is also available, including Visual Studio, SPSS, SAS, Minitab, and Mathematica. The lab also provides instructional software required for some classes.

In addition, the University of Michigan has established a licensing agreement with Microsoft that provides students with excellent discounts on some of their products. ITS offers Windows XP, Office XP and 2003, and Visual Studio 2003 for sale in the Computing Wing on Fridays.

COMPUTER ACCOUNTS

The ITS Accounts Office assigns user ID’s and passwords for all university network systems. They process requests for several types of computer access, and assist with questions and problems with these types of computer access logins. These include Uniqnames, Kerberos passwords, lab access, Unix access, and Data Systems Center Access ID’s. The Accounts Office can also provide information on UM-D’s Webmail service, which allows you to more directly access and manage your mail from off campus.

ASSISTANCE AND SERVICES

The ITS Help Desk is the primary point of contact for support. Please call or email the Help Desk when you need assistance, service, documentation and information regarding the campus network, software, hardware and services. Many questions can be answered immediately on the phone. An automated ticket system is also used to keep track of each request that is received and the service that is provided. Both general purpose computer labs are staffed with student assistants who can provide answers to most questions or refer you to someone who can. Equipment problems and malfunctions in the labs should be immediately reported to the lab Counselor on duty so that the amount of downtime experienced is minimized.

HOURS

During the Fall and Winter semesters, the computing labs normally follow the schedule below. Holiday hours and other hour changes are posted on the ITS web site and in the computer labs. CW lab hours are 8:00 am until 9:45 pm, Monday through Thursday; 8:00 am to 5:45 pm on Friday; 12:00 noon until 4:45 pm on Saturday; and 12:00 noon until 8:45 pm on Sunday. ML lab hours are 10:00 am until 9:45 pm, Monday through Thursday; 10:00 am to 5:45 pm on Friday; 12:00 noon until 4:45 pm on Saturday; and 1:00 pm until 8:45 pm on Sunday.

WWW INTERNET ADDRESSES

The following UM-D Internet addresses may be of interest to you. Please contact the ITS Help Desk at (313) 593-HELP if you need assistance accessing the Internet.

University of Michigan-Dearborn:
http://www.umd.umich.edu
College of Arts, Sciences, and Letters:
http://www.umd.umich.edu/dept/acad/casl/
College of Engineering and Computer Science
http://www.engin.umd.umich.edu/
School of Education:
http://www.soe.umd.umich.edu/
School of Management:
http://www.som.umd.umich.edu/

International Office

The International Office provides the following services to students, scholars, and visiting professors:

- Pre-admissions assistance
- Pre-arrival assistance
- Issuance of DS-2019 or I-20
- Referral for housing and transportation needs
- Registration
- Cross-cultural and adjustment counseling and workshops
- Personal counseling referral
- Compliance advising
- Assistance in understanding federal laws and regulations regarding temporary visa holders
- Liaison with university services
- Advising for international student including employment and travel
- Referrals to community services and resources
- Assistance with emergency situations for international students
- Providing accurate and timely information in the government database (SEVIS) to maintain university compliance
- Maintain files as dictated by BCIS.

In addition, the International Office also provides service in Veteran’s Affairs and non-traditional program support services. The International Office is located at 2136 UC. For more
Mardigian Library

The Mardigian Library is an open-stack facility housing a book collection of over 340,000 volumes and a journal collection of approximately 18,000 full-text titles available electronically and 600 paper titles. All library materials are selected by faculty members and librarians to support the undergraduate and graduate curricula and general student interests. The Library maintains a web site (http://library.umd.umich.edu) that provides access to the online public access catalog and to electronic indexes, journals, and reference sources. Most of these resources are accessible from both on and off campus.

The four-story library building, opened in 1980, provides approximately 1,200 study spaces for students and stacks for books and journals. Wireless access is available. Facilities housed in the Mardigian Library include a computer lab, a distance learning classroom, a designated quiet group study area and silent study areas. The University Archive and the Voice/Vision Holocaust Survivor Oral History Archive are both located in the library.

Online access to all holdings of the Mardigian Library and to the holdings of UM-Ann Arbor campus libraries is available. Students may obtain UM-Ann Arbor University Library materials through the Library's Circulation Services Department. Under this procedure, the Mardigian Library borrows books from Ann Arbor campus libraries, loans them out to UM-D students, and then returns them to the lending library at no cost to UM-D students. Copies of journal articles may be obtained from Ann Arbor at no cost to UM-D students.

Currently enrolled UM-D students are eligible to borrow materials directly from the libraries that are part of the UM-Ann Arbor University Library system. Additional information regarding this service may be obtained from University Library Circulation Services, 104 Harlan Hatcher Graduate Library, Ann Arbor, MI 48109-1205, (734) 764-0400.

Students may also borrow materials through the MeLCat service, a statewide resource-sharing project of public and academic libraries including WSU, MSU, and CMU.

Librarians at the Mardigian Library are committed to teaching students the skills and concepts that are necessary to develop effective search strategies for research assignments and to use library and information resources effectively. During the Fall and Winter terms, librarians offer over 80 hours of regular “drop-in” research assistance. Other research assistance includes “Ask-A-Question” (e-mail), Instant Messaging (IM) and scheduling one-on-one appointments with librarians for in-depth assistance. Students may also attend scheduled group research education sessions as part of their classes.Occasional open research education workshops are also offered.

Guides to the use of the library and its resources are available on the library’s web site and in the Research Assistance area.

The library is open 95 hours per week during the Fall and Winter terms. Scheduled hours are posted.

Ombuds Services

Ombuds Services provides members of the campus community with individual, informal assistance in resolving concerns and addressing issues regarding students rights and responsibilities. Ombuds Services is an impartial resource for obtaining:

• Information about university policies;
• Guidance in following university procedures;
• Assistance in resolving concerns and critical situations;
• Help in cutting red tape and in obtaining appropriate and timely answers and information;
• Opportunities to discuss or question university actions;
• Active support for UM-D’s commitment to ensure that students are treated with fundamental fairness and personal dignity;

Ombuds Services is located in 1060 Administration Building, telephone (313) 593-5440, e-mail ombuds-office@umd.umich.edu.

Packing

Parking of all motor vehicles at UM-D is by permit only. Parking for students, faculty and staff is allowed in designated permit lots only when vehicles are properly registered and display the appropriate parking decal. Guest permits are available at the Parking Office. Parking for all visitors is provided in the parking structure. For further information, refer to the University of Michigan-Dearborn Parking Manual or telephone the Parking Office at (313) 593-5480.

Student Activities

The mission of the Student Activities Office (SAO) is to complement the academic program of studies at the UM-D and enhance the overall educational experience of students through development of, exposure to, and participation in diverse social, cultural, multicultural, intellectual, recreational, leadership, governance, group development and community service programs.

As a student advocacy office, SAO provides services and program that assist students in exploring themselves in depth, to achieve greater self-understanding, as well as an understanding of others.

The SAO, an active member of the National Association for Campus Activities (NACA), presents over 100 diverse events on the UM-D campus throughout the academic year during the day and evening. A contemporary Film Series is offered throughout the fall and winter semesters. Approximately 30 first-run films are shown. UM-D students, faculty and staff, as well as their guests, are admitted free of charge. The Distinguished Speaker Series is a program that brings speakers of national and local prominence to campus to discuss timely, controversial or popular issues of interest to the student body and offers thought-provoking discussion among the campus community. Many students take the opportunity to interact and listen to contemporary authors and poets read their literary works through the Visiting Writer Series. In addition, the SAO presents campus-wide picnics, comedy, novelty and cultural programs, and contemporary musical events.

Organizationally, SAO is responsible for the Student Activities Board (which plans and implements student programs), the Student Government, the Debate Team, the Michigan Journal (campus student newspaper), Lyceum (literary arts journal), Campus Video (student television productions), WUMD (student radio station) and over 80 full-status and ad hoc student organizations and clubs.
The SAO produces the following information publications: *Student Handbook*, the *Student Organizations Accounting Policies and Procedures Manual*, the *Student Clubs and Organizations Information and Policy Manual*, and the monthly *Student Affairs Events Calendar*.

The Student Activities Office is located at 2106 University Center, telephone (313) 593-5390.

**Transportation**

Access to the campus is available on bus routes operated by the Suburban Mobility Authority for Regional Transportation (SMART). Connecting service is available on routes operated by the Detroit Department of Transportation (DOT).

Direct service is available for most Detroit and western Wayne County residents, with transfer service available for Oakland and Macomb County commuters. The bus schedule may change without notice. Additional information may be obtained by telephoning SMART at (313) 962-5515.

**Women's Resource Center**

The Women's Resource Center, located in 2174 University Center, provides a lounge area for study, socializing and small meetings. Information about many of the programs and resources available in the Detroit metropolitan area can also be obtained here. The Center has an informative lending library of books, journals and articles and Fact Sheets on issues of interest to women.

The Center sponsors a variety of workshops, speakers and programs and provides support to student organizations that help women. Educational and career counseling, social services and help in organizing special interest groups are offered both directly and through referral. For more information about these services and programs, contact the Women's Resource Center, (313) 593-3263 or visit http://www.umd.umich.edu/womenscenter/.

**MENTORING**

The student mentoring network provides peer support to students who would like to meet a fellow student already familiar with the campus. This program has proven especially beneficial to nontraditional students making the transition back to academia and to international students acclimating to a new culture.

**Statement on Academic Integrity**

The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University’s standards of academic conduct as set forth by the Code of Academic Conduct, as well as policies established by the schools and colleges. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses. Violations will not be tolerated and may result in penalties up to and including expulsion from the University.

**Student Rights And Responsibilities**

The University of Michigan-Dearborn is composed of a diverse group of individuals and interests, drawn together by a common belief in the values of an education and appreciation for the significant contribution of our personal differences to that education and each other. Maintaining an environment that ensures harmony and a positive learning environment is a responsibility shared by all members of the campus community. The following information identifies behavior expectations in support of fulfilling these responsibilities and the means by which complaints may be resolved. Any member of the campus community who believes that a violation of any of these rights and responsibilities has occurred may obtain assistance in seeking redress from Ombuds Services or the Affirmative Action Coordinator.

For information regarding student academic conduct policies and procedures, see sections on Arts, Sciences, and Letters; Education; Engineering; and Management.

**Affirmative Action**

The University of Michigan, as an Equal Opportunity/Affirmative Action employer, complies with applicable federal and state laws regarding nondiscrimination and affirmative action, including Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973. The University of Michigan is committed to a policy of nondiscrimination and equal opportunity for all persons regardless of race, sex, color, religion, creed, national origin or ancestry, age, marital status, sexual orientation, disability, or Vietnam-era veteran status in employment, educational programs and activities, and admissions. Inquiries or complaints may be directed to the University’s Director of Affirmative Action and Title IX/Section 504 Coordinator, Room 4005, Wolverine Tower, Ann Arbor, Michigan 48109-1281, (313) 763-0235; TTY (313) 747-1388; fax (313) 763-2891. UM-D inquiries may be addressed to the Dearborn Affirmative Action Coordinator, Office of Human Resources/Affirmative Action, 1020 Administration Building, Dearborn, Michigan 48128-1491, (313) 593-5320/5190, TTY (313) 593-5430, fax (313) 593-3568.

The Affirmative Action Office aims to ensure that protected groups (racial minorities, women, the disabled, senior citizens, persons of different sexual orientation and Vietnam-era veterans) have equal opportunity and receive the support they need to be effective and successful as student, faculty or staff members. The Office oversees the University’s compliance with affirmative action/ nondiscrimination legislation, and provides pre-grievance counseling to faculty, staff and students with discrimination complaints. The Office is available to help with any sexual harassment problems or questions. The Office also provides staff and financial support to a number of constituency groups on campus and co-sponsors training and educational programs.

The University of Michigan believes that educational and employment decisions should be based on individuals’ abilities and qualifications and should not be based on irrelevant factors or personal characteristics that have no connection with academic abilities or job performance. It strives to build a
diverse community in which opportunity is equal for all persons regardless of race, sex, color, religion, creed, national origin or ancestry, age, marital status, handicap, Vietnam-era veteran status, or sexual orientation. It exerts its leadership for the achievement of this goal by all parties with which the University transacts business, which it recognizes, or with which students or employees of the University are involved.

It is the policy of the University of Michigan that an individual's sexual orientation be treated in the same manner. Such a policy ensures that only relevant factors are considered and that equitable and consistent standards of conduct and performance are applied. Any University of Michigan employee having a complaint of discrimination should notify the Affirmative Action Office, 1020 Administration Building, (313) 593-5320. A student should notify the Affirmative Action Coordinator or the Ombudsman in the Office of Student Affairs, 1060 Administration Building, (313) 593-5440, TTY (313) 593-5430, fax (313) 593-3568.

It should be noted that this policy does not apply to the University's relationships with outside organizations, including the federal government, the military and ROTC.

Alcohol at Campus Events (Policy on Serving)

Consumption of beverages containing alcohol is prohibited on the UM-D campus except under the conditions specified in this policy.

Alcoholic beverages may not be served at events in the Fieldhouse. The use of alcohol at Henry Ford Estate-Fair Lane is governed by the policies of the Estate. Alcohol may be served at events held in other facilities on the UM-D campus under the conditions described below.

Any event at which alcoholic beverages will be served must have a designated host who is a full-time permanent faculty or staff member of the UM-D. The host assumes responsibility for implementing these guidelines, supervising servers and intervening if immoderate drinking or other high-risk behaviors are developing.

Beverages containing alcohol must be monitored by a designated server at all times. The designated server may not consume alcohol at the event. Alcoholic beverages may not be carried out of the designated event location.

Serving alcoholic beverages to individuals under 21 years of age is illegal and expressly prohibited. Events at which the majority of participants will be under age should not include alcoholic beverage.

Under no circumstances may University General Fund accounts, including organization accounts funded with student activity fees, be used to purchase alcoholic beverages.

Any event at which alcohol will be served must be planned in such a way as to respect the preferences of individuals who choose not to drink for religious, personal, or health reasons; and in no case should an event be planned around or advertised to feature the consumption of alcohol. Substantial food and beverages that do not contain alcohol must always be served at an event that includes alcoholic beverages.

Written authorization to serve alcohol at a campus event must be obtained from the Chancellor's Office at least one week before the planned event. Authorization will specify type of event, participants, location, time, and the responsible host.

Alcohol and Drug Prevention Program and Policy

This policy is intended to educate members of the University community about the health risks associated with the use and abuse of alcohol and other drugs and about the resources available for counseling and therapy. In addition, in order to assure a work and learning environment that promotes the University's mission and proper function, the University prohibits unlawful possession, use, or distribution of alcohol or illicit drugs by faculty, staff, or students on University property or as a part of any University activity. Federal and state sanctions also apply to such conduct.

HEALTH RISKS

The use or abuse of alcohol and other drugs increases the risk for a number of health-related and other medical, behavioral, and social problems. These include acute health problems related to intoxication or overdose (blackouts, convulsions, coma, death); physical and psychological dependence; malnutrition; long-term health problems including cirrhosis of the liver, organic brain damage, high blood pressure, heart diseases, ulcers, and cancer of the liver, mouth, throat, stomach; contracting diseases, such as AIDS; through the sharing of hypodermic needles; pregnancy problems including miscarriages, stillbirths, and learning disabilities; fetal alcohol syndrome (physical and mental birth defects); psychological or psychiatric problems; diminish behavior (hangovers, hallucinations, disorientation, slurred speech); unusual or inappropriate risk-taking that may result in physical or emotional injury or death; violent behavior toward others, such as assaults and rape; accidents caused by operating machinery while impaired; impaired driving resulting in alcohol and drug-related arrests, traffic accidents, injuries, and fatalities; negative effects on academic or work performance; conflicts with co-workers, classmates, families, friends, and others; and conduct problems resulting in disciplinary actions, including loss of employment; and legal problems, including imprisonment.

COUNSELING AND TREATMENT PROGRAMS

The University of Michigan encourages individuals with alcohol- or drug-related problems to seek assistance by contacting Counseling and Support Services, 2157 UC, (313) 593-5430. This office can also provide additional information on local, state, and national resources for those seeking assistance.

UNIVERSITY SANCTIONS

Unlawful possession, use, or distribution of alcohol or illicit drugs by faculty, staff, or students on University property or as a part of any University activity may lead to sanctions within the University, the severity of which shall increase as the seriousness of the violation increases.

Sanctions include:
• Verbal or written reprimand;
• Completion of an appropriate rehabilitation program;
• A disciplinary warning, with notice that repetition of the offense or continuation of the offense may result in a more serious sanction;
• Suspension from the University (student) or from employment (employee) from a specified University activity or facility for a fixed period of time or until completion of specified conditions, such as completion of
an appropriate rehabilitation program;
  • Expulsion from the University (student) or termination of employment (faculty or staff); and/or
  • Other appropriate sanctions.

Sanctions for violations by faculty and staff shall be imposed pursuant to existing procedures applicable to acts of misconduct (e.g., Regental Bylaw 5.09, Standard Practice Guide 201.12, and appropriate collective bargaining agreements). Sanctions for violations by students shall be imposed pursuant to the UM-D Student Code of Non-Academic Conduct or pursuant to other approved procedures. Copies of the applicable student procedures are available at the Office of Enrollment Management and Student Life, 1060 Administration Building.

EXTERNAL SANCTIONS

Unlawful possession and use or distribution of alcohol or illicit drugs may lead to referral to the appropriate local, state, and/or federal authorities for prosecution for a misdemeanor or a felony, depending on the nature of the offense. The sanctions for such offenses may include fines and/or imprisonment.

For example, under federal laws, trafficking drugs such as heroin or cocaine may result in sanctions up to and including life imprisonment for a first offense involving 100 grams or more. Fines for such an offense can reach $4 million. Offenses involving lesser amounts, 10 grams, may result in sanctions up to and including 20 years of imprisonment and/or fines of up to $2 million. A first offense for trafficking marijuana may lead to sanctions up to life imprisonment for offenses involving 1,000 kilograms or more or up to five years of imprisonment for an offense involving less than 50 kilograms. Such an offense carries with it fines that can reach $4 million for an individual offender. Federal and state sanctions for illegal possession of controlled substances range from up to one year of imprisonment and up to $100,000 in fines to three years of imprisonment and $250,000 in fines for repeat offenders. Under Michigan laws, the use of marijuana is a misdemeanor punishable by up to 90 days in jail and a $100 fine. Delivery of marijuana is a felony punishable by up to four years of imprisonment and up to $2,000 in fines. Violations may also lead to forfeiture of personal and real property and denial of federal benefits, such as grants, contracts and student loans.

The State of Michigan may impose a wide range of sanctions for alcohol-related offenses. For example, a first drunk-driving offense may be punishable by up to 90 days in jail, a fine of not less than $100 nor more than $500, a suspended license for not less than six months nor more than two years, and attendance at a substance abuse program. Subsequent offenses can lead to significantly increased sanctions. The vehicle of a minor transporting alcohol may be impounded for up to 30 days. Furnishing or using fraudulent identification to obtain alcohol may be punishable by up to 90 days in jail and a $100 fine.

More detailed descriptions of sanctions related to these and other drug and alcohol offenses are available in the libraries; at the personnel centers and offices; at the Office of the Vice President for Student Services, Room 3000, Michigan Union, Ann Arbor; at the Office of Student Affairs, 1060 Administration Building, Dearborn; and at the Office of the Dean for Student Services, 375 University Center, Flint.

On September 1, 1995, the Michigan Legislature expanded the law concerning minors and alcohol possession, consumption, and purchase. A minor is anyone under the age of 21. The minor may be required to submit to a preliminary chemical breath test and may be subject to suspension of his/her driver’s license even if he/she was not in an automobile at the time of the arrest. In addition, it is now a misdemeanor, not a civil infraction, for a minor to attempt to possess, consume, or purchase alcohol. If the underage person is less than 18 years of age, the agency charging him/her must notify the parents or guardian within 48 hours.

EMPLOYEE REPORTING REQUIREMENT

Under the Drug-Free Workplace Act of 1988, in addition to the other requirement of this policy, a faculty or staff member who works in any capacity under a federal grant or contract must notify his or her University supervisor or department head, in writing, of his or her conviction for a violation of any criminal drug statute occurring in the workplace no later than five calendar days after such conviction. This applies to direct charge employees and to the indirect charge employees who perform any support of overhead functions related to the grant. The supervisor or department head must then promptly report the violation to the General Counsel’s Office.

DISTRIBUTION OF POLICY

A copy of this policy statement shall be distributed annually to all faculty, staff and students.

REVIEW OF UNIVERSITY PROGRAM AND POLICY

Biennially, the University shall review its "Alcohol and Drugs Prevention Program Policy on Alcohol and Drugs" to determine the program's and policy's effectiveness and implement changes, if needed, and to ensure that the University's disciplinary sanctions are consistently enforced.

Non-Discrimination and Diversity

The University of Michigan believes that educational and employment decisions should be based on individuals' abilities and qualifications and should not be based on irrelevant factors or personal characteristics that have no connection with academic abilities or job performance. The University is committed to compliance with all applicable laws regarding nondiscrimination. Furthermore, it shall strive to build a diverse community in which opportunity is equal for all persons regardless of race, sex, color, religion, creed, national origin or ancestry, age, marital status, handicap, Vietnam-era veteran status, or sexual orientation. It shall exert its leadership for the achievement of this goal by all parties with which the University transacts business, which it recognizes, or with which students or employees of the University are involved.

It is the policy of the University of Michigan that an individual's sexual orientation be treated in the same manner. Such a policy ensures that only relevant factors are considered and that equitable and consistent standards of conduct and performance are applied. Any UM-D employee having a complaint of discrimination should notify the Affirmative Action Coordinator, 1020 Administration Building, (313) 593-5320. A student should notify the Affirmative Action Coordinator or Ombuds Services, 1060 Administration Building, (313) 593-5151.

It should be noted that this policy does not apply to the University's relationships with outside organizations, including the federal government, the military, and ROTC.
Posting and Handbill Distribution

The posting of any information or advertisement and distribution of handbills (fliers) is governed not only by the policy below, but also by all other applicable University Policies and Procedures:

1. The Posting Approval Log must be completed and signed by a representative of the organization or person responsible for the posted material.
2. All posted literature must be approved and officially stamped with a removal date at the lower left- or right-hand corner by a staff member of the Student Activities Office (SAO). Approved literature may be posted for a maximum of thirty days. Extensions to the thirty-day maximum posting period may be granted by the SAO in extenuating circumstances.
3. The indiscriminate distribution (littering) of handbills on the UM-D campus is strictly prohibited. Offending parties may have their personal and/or organizational rights to distribute handbills on campus revoked and/or may be billed for inordinate custodial or plant maintenance cost.
4. Material must be posted on designated Campus News & Activities bulletin boards, tack stripping, and kiosk structures only. Posting on University walls, windows, doors, lighting poles, floors, telephones, restroom facilities, sidewalks, roadways, parking lots, plants, or any vehicle on University property is strictly forbidden.
5. Chalking of University property is prohibited.
6. Fliers or posters partially or fully covering pre-approved material or Campus News & Activities signs will be removed.
7. Standard staples, thumbtacks, and pushpins are the only acceptable methods of affixing posted materials to bulletin boards.
8. Individuals and organizations are limited to posting one (1) flier not to exceed 8-1/2 x 14 inches, or one (1) sign not to exceed 18 x 24 inches per designated bulletin board, except where specified. Individuals or organizations may post four (4) fliers or two (2) signs of the above-noted dimensions on the tack stripping in the University Mall. Fliers or posters with different formats or graphics which essentially provide the same basic advertisement information are considered the same and subject to the above noted one per bulletin board provision.
9. Campus News & Activities bulletin boards may not be covered, amended or cleared without the express permission of SAO.
10. One (1) 3 x 6 foot banner, with official approval, may be posted on the balconies in the CASL Atrium for a period not to exceed twenty-one (21) days and must be appropriately hung as not to result in an obstruction or fire hazard.
   a. Banners used for commercial business gain or commercial advertisement are prohibited from posting.
   b. Banners advertising events of an ongoing nature or events not primarily sponsored by a recognized entity from within the UM-D community are prohibited from posting.
   c. The posting representative assumes responsibility for posting banners properly and removing all banners on the date stamped.
11. The content of the posters and signs is the direct responsibility of the posting individual and/or organization. Persons posting information written in a non-English language must provide an exact English translation for SAO records.
12. SAO retains the right to refuse the approval of material that is not in keeping with University policy and procedure.
13. Failure to adhere to the Posting and Handbill Distribution Policy may result in disciplinary action under applicable University of Michigan-Dearborn policies and procedures and/or applicable civil statutes.

Advisory: The Rock Painting Policy, as codified in The Student Clubs and Organizations Information and Policy Manual, governs painting on the rock outside the northwest entrance to the University Center.

Privacy and Access to Information

In collecting, utilizing, and releasing information about individuals associated with the University, the University will strive to protect individual privacy, to use information only for the purpose for which it was collected, and to inform individuals of the personal information about them that is being collected, used, or released. The University will not release sensitive information without the consent of the individual involved unless required to do so.

Rights and Obligations of Speakers, Audience Members and Protestors at Public Presentations of UM-D

1. Members of the UM-D community and their invited guests have the right to set forth their views and opinions and to listen, watch, protest, or otherwise participate in communication.
2. UM-D has an obligation to insure audience access to public events, to protect the rights of the speaker and those who wish to hear and communicate with the speaker, and to provide all with personal security.
3. Protestors have an obligation not to abuse their rights of free expression by harassing or intimidating speakers in ways that unduly interfere with free expression or communication between a speaker and members of the audience.
4. The prohibition against undue interference does not include suppression of the usual range of human reactions commonly displayed by an audience during heated discussion of controversial topics, so long as such activities are consistent with the continuation of the speech and the communication of its content to the audience.
5. The broadest range of speech and expression will be tolerated in public forums in order to facilitate the discussion and debate of ideas and issues. However, the intentional use of racial, ethnocentric or sexual invectives, epithets, slurs or utterances directly to attack or injure another individual rather than express or discuss an idea of philosophy are beyond the boundaries of protected speech. Additionally, malicious and intentional verbal threats of violence directed towards an individual, physical violence and destruction of property are misconduct and will be subject to discipline.
6. UM-D officials have a responsibility to make a judgment when there is a clear and present danger that the rights of
free expression and communication will be infringed upon and to take appropriate measure to safeguard these rights.

7. The overall goal of UM-D officials during a disruption shall be to re-establish an atmosphere conducive to communication between the speaker and the audience in full respect of the rights of all parties.

8. Canceling, stopping an event, adjourning to another time or place, or allowing protracted interruption of a speech or meeting is inconsistent with full respect for the rights of free expression and communication of those present.

Sexual Harassment by Faculty and Staff

POLICY STATEMENT

It is the policy of the University of Michigan to maintain an academic and work environment free of sexual harassment for students, faculty, and staff. Sexual harassment is contrary to the standards of the University community. It diminishes individual dignity and impedes equal employment and educational opportunities and equal access to freedom of academic inquiry. Sexual harassment is a barrier to fulfilling the University's scholarly, research, educational, and service missions. It will not be tolerated at the University of Michigan.

Sexual harassment violates the University's long-standing policy against discrimination on the basis of sex. Sexual harassment is also illegal. It is prohibited in the employment context by Title VII of the 1964 Civil Rights Act, in the education context by Title IX of the Educational Amendments of 1972 and, in both employment and education contexts, by Michigan's Elliot-Larsen Civil Rights Act, adopted in 1976.

A claim under this policy may be brought by the University or by a faculty, staff, or student member of the University community based on the conduct of any University employee. Complaints based on conduct by students who are not also employees of the University are addressed in the Interim Policy on Discrimination and Discriminatory Conduct by Students in the University Environment, which is administered by the Office of Student Services.

Sexual harassment can be a very serious matter having far-reaching effects on the lives and careers of individuals. Intentionally false accusations can have similar impact. Thus the charge of sexual harassment is not to be taken lightly by a charging party, an accused party, or any member of the University community. A person who knowingly and intentionally files a false complaint under this policy is subject to University discipline.

DEFINITION OF SEXUAL HARASSMENT

For the purposes of determining whether a particular act or course of conduct constitutes sexual harassment under this policy, the following definition will be used:

Sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when:

1. submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, education, living environment, or participation in a University activity;
2. submission to or rejection of such conduct by an individual is used as the basis for or a factor in decisions affecting that individual's employment, education, living environment, or participation in a University activity; or
3. such conduct has the purpose or effect of unreasonably interfering with an individual's employment or educational performance or creating an intimidating, hostile, or offensive environment for that individual's employment, education, living environment, or participation in a University activity.

Conduct alleged to be sexual harassment will be evaluated by considering the totality of the particular circumstances, including the nature, frequency, intensity, location, context, and duration of the questioned behavior. Although repeated incidents generally create a stronger claim of sexual harassment, a serious incident, even if isolated, can be sufficient. For example, a single suggestion that academic, other educational, or employment rewards or reprisals will follow the granting or refusal of sexual favors, will constitute sexual harassment and grounds for action under this policy.

This policy addresses intentional conduct. It also addresses conduct that results in negative effects even though such negative effects were unintended. Sexually related conduct forms the basis of a sexual harassment claim if a reasonable person of the same gender and University status as the complainant would consider it sufficiently severe or pervasive to interfere unreasonably with academic, other educational, or employment performance or participation in a University activity or living environment.

Sexual harassment most often occurs when one person has actual or apparent power or authority over another; however, it may also occur between individuals of equal status or rank within the University. Sexual harassment may occur between males and females and between persons of the same gender.

Although sexual harassment as described and prohibited by this policy includes a wide range of behaviors, it does not include certain discriminatory conduct even though that conduct may be otherwise unlawful, offensive, or prohibited by University policy. For example, unequal pay and denial of access to educational programs based on gender are unlawful sex discrimination not addressed by this policy. Also, not all harassment based on gender or sexual orientation may be addressed by this policy, if such conduct is not sexual in nature or sexually motivated. Some conduct which negatively emphasizes gender, gender differences or sexual orientation may violate this policy, but may also be a violation of another University policy. Harassment that is both racist and sexual in nature would be addressed by this policy and possibly by other University policies as well.

CONSENSUAL RELATIONSHIPS

Romantic and sexual relationships between supervisor and employee or between faculty or other staff and student are not expressly prohibited by University policy. However, even when both parties have consented to the development of such relationships, they can raise serious concerns about the validity of the consent, conflicts of interest, and unfair treatment of others. Similar concerns can be raised by consensual relationships between senior and junior faculty members.

In 1986, the University's Senate Assembly adopted a statement of principle concerning relationships between faculty (including teaching assistants) and students. The University concurs with the Assembly's position that sexual relationships, even mutually consenting ones, are a basic violation of professional ethics and responsibility when the faculty member has any professional responsibility for the student's academic performance or professional future.

The University's nepotism policy precludes individuals from
evaluating the work performance of others with whom they have intimate familial or close personal relationships, or from making hiring, salary, or similar financial decisions concerning such persons, without prior written approval. The same principles apply to staff-student or faculty-student relationships in the context of work or academic evaluation. Thus, consensual romantic or sexual relationships between faculty or staff and students also require disclosure to the appropriate administrative supervisor so that arrangements can be made for objective evaluation and decision making with regard to the student.

Romantic or sexual relationships with students that occur outside of the instructional or supervisory context may also lead to difficulties. The Senate Assembly has concluded, and the University concurs, that the asymmetry of the faculty-student relationship means that any sexual relationship between a faculty member and a student is potentially exploitative and should be avoided. Faculty and staff engaged in such relationships should be sensitive to the constant possibility that they may unexpectedly be placed in a position of responsibility for the student’s instruction or evaluation.

In the event of a charge of sexual harassment, the University will, in general, be unsympathetic to a defense based upon consent when the facts establish that a professional faculty-student, staff-student, or supervisor-employee power differential existed within the relationship.

**RESPONSE AND PROCEDURES**

**Prevention and Education**

The University is committed to preventing and eliminating sexual harassment of students, faculty, and staff. To that end, this policy will be published in pamphlet form and disseminated to the University community. The pamphlets will be included in orientation material for new students, faculty, and staff and made available in the Affirmative Action Office and other appropriate locations on each campus. In addition, appropriate educational sessions will be conducted by the University on an ongoing basis to (1) inform students, faculty, and staff about identifying sexual harassment and the problems it causes, (2) advise members of the University community about their rights and responsibilities under this policy, and (3) train personnel in the administration of this policy.

**Assistance with Sexual Harassment Problems**

The Affirmative Action Office is responsible for ensuring and monitoring the University's compliance with federal and state nondiscrimination laws. However, a discrimination-free environment is the responsibility of every member of the community. The University can take corrective action only when it becomes aware of problems. Therefore, the University encourages persons who believe that they have experienced or witnessed sexual harassment to come forward promptly with their inquiries, reports, or complaints and seek assistance within the University. Individuals also have the right to pursue a legal remedy for sexual harassment in addition to or instead of proceeding under this policy.

**Confidential Counseling**

Information about or assistance with sexual harassment issues may be obtained from a variety of University resources. Prior to or concurrent with making a report or complaint of sexual harassment, individuals may find it helpful to consult with a counselor. The following offices can advise and support victims of and witnesses to sexual harassment in a confidential setting. Discussions with representatives of these offices will not be considered official reports to the University and will not, without additional action by the complainant, result in intervention or corrective action.

- Counseling Services (available to students on each campus)
- Faculty and Staff Assistance Program (available to faculty and staff on each campus)
- Lesbian-Gay Male Programs Office (in Ann Arbor, but available to students, faculty and staff from Dearborn and Flint)
- Sexual Assault Prevention and Awareness Center (in Ann Arbor, but available to students, faculty and staff from Dearborn and Flint)

**Inquiries About Sexual Harassment**

Inquiries about sexual harassment and this policy may also be made to the University representatives listed below. Such inquiries will not be acted upon until an informal or formal complaint is made.

**Informal Resolution Process**

At the complainant's option, a sexual harassment report or complaint can be made centrally or locally on the Ann Arbor, Dearborn, and Flint campuses. Centrally, informal reports or complaints may be received by representatives of the Affirmative Action Office, Ombuds Services (students only), the Office of Student Services (students only), Dean's Office of the Horace H. Rackham Graduate School (graduate students only), Center for the Education of Women, Department of Public Safety, and appropriate Office of Human Resources.

At the local level, persons designated to receive informal reports or complaints are any dean, director, department head, unit manager, residence hall building director, and/or their designees. Each school/college or other unit shall be certain that at least one of the persons designated to receive complaints is a female.

The person who receives a sexual harassment report or complaint will advise the complainant about the informal and formal resolution alternatives available under this policy. At the complainant's option, the intake person can 1) provide information about sexual harassment and this policy, 2) help the complainant deal directly with the alleged offender, 3) assist with or mediate a resolution of the problem within the unit, and/or 4) help the complainant prepare a written complaint and pursue a formal investigation. Informal resolution measures should be custom-designed to address the particular circumstances. If the complainant wishes, the intake person can, in consultation with a representative of the appropriate Office of Human Resources and/or the Affirmative Action Office, conduct an informal inquiry into the reported incident and assist in resolving it. The person to whom an informal complaint is brought will not inform the accused of the complainant's action or identity without the consent of the complainant.

**Formal Investigation**

Either subsequent to or instead of following an informal process, a complainant may elect to make a formal charge of sexual harassment and have it pursued. The University will investigate all formal charges of sexual harassment.

There are two internal mechanisms available to pursue a formal charge and their availability depends on the employment status of the complainant. All employees represented by a union
must pursue a formal charge through the grievance procedure in the relevant collective bargaining agreement. All other employees may pursue a formal charge through the use of the appropriate faculty or staff grievance procedure set forth in the Standard Practice Guide or, in the alternative, through the procedures set forth in this policy.

Formal charges under this Policy's procedures should be made in writing and filed either with a dean or director, the Affirmative Action Office, the appropriate Office of Human Resources, or, on the Dearborn campus, with the Office of the Provost. If a formal investigation is initiated, the person accused of sexual harassment must be notified of the charge and given the opportunity to respond to any allegations before disciplinary actions are taken.

The purpose of an investigation, which will include interviewing the parties and witnesses, is to gather and verify facts about the case. Formal investigations will be conducted in consultation with the Office of the General Counsel, by a three-person team consisting of a representative from the appropriate Office of Human Resources, the Affirmative Action Office, and the office of the dean or director. Investigation of a complaint against a dean or director will include a representative from the office of the appropriate Vice President or Vice Chancellor in place of a representative from the office of that dean or director. Faculty and student participants in an investigation may elect to have a peer representative included on the investigatory team. Student or faculty peer representatives will be drawn by lot from the faculty cognate panel for the faculty grievance procedure, respectively, on the Ann Arbor campus, and from an equivalent representative pool on the Dearborn and Flint campuses.

Investigations will be conducted promptly, thoroughly, and fairly, affording both the complainant and the accused a full opportunity to participate. Possible outcomes of an investigation are 1) a finding that the allegations are not warranted or could not be substantiated, 2) a negotiated settlement of the complaint, 3) a finding that the allegations are substantiated and, if so, 4) recommendations to the appropriate supervisor regarding corrective action to be taken. If an allegation of sexual harassment is substantiated, appropriate corrective action will follow. The University utilizes a disciplinary system for this and other misconduct in which the extent of the disciplinary action taken depends on all the facts and circumstances available at the time the decision is made. The severity of the punishment will depend on the frequency and severity of the offense. Corrective action could include a requirement not to repeat or continue the harassing conduct, a reprimand, denial of a merit pay increase, reassignment, and suspension. A finding of sexual harassment may be cause for the separation of the offending party from the University, in accordance with University procedures, including, for qualified faculty, the procedures set forth in Regental Bylaw 5.09. Every effort will be made to assure University-wide uniformity of sanctions. The complainant and the person complained against will be notified in writing of the final disposition of a formal complaint. In the event the allegations are not substantiated, all reasonable steps will be taken to restore the reputation of the accused if it was damaged by the proceeding.

University Action

At the request of a complainant or with the consent of one or more complainants who agree to participate as witnesses, the University may, in appropriate circumstances, assume the role of a complainant and pursue a report or complaint of sexual harassment, either informally or formally. The University may respond to complaints or reports by persons external to the University community about conduct of University employees alleged to be sexual harassment.

Appeals Process

Complainants and faculty and staff members against whom corrective action is taken may avail themselves of the relevant grievance procedure as to the appropriateness of the corrective action and the procedures followed. A student complainant who is not satisfied with the outcome of a formal investigation may appeal the outcome to the Provost and Vice President for Academic Affairs (if person complained against is a faculty member or teaching assistant) or relevant Vice President (if person complained against is a staff member). On the Dearborn and Flint campuses, student complainants should utilize the appeals process specific to their own campus.

Reporting Requirements

To assure University-wide compliance with this policy and with federal and state law, the Affirmative Action Office must be advised of all reported incidents of sexual harassment and their resolution. Reports in which the complainant's and/or the accused's names are not revealed should be reported generically. The Affirmative Action Office will use this information to prepare annual statistical reports for the campus community on the incidence of sexual harassment. The Office of the General Counsel will monitor repeated complaints within the same unit or against the same individual, where appropriately identified, to assure that such claims are appropriately handled.

General

In all cases, a person who 1) reports or complains, 2) participates in an inquiry or investigation, or 3) is accused of sexual harassment incidents may be accompanied by an individual of his or her choice who shall be permitted to attend, but not participate in, the proceedings.

The University will take appropriate steps to assure that a person who in good faith reports, complains about, or participates in an informal resolution or formal investigation of a sexual harassment allegation will not be subjected to retaliation. The University also will take appropriate steps to assure that a person against whom such an allegation is made is treated fairly. The University will also undertake appropriate follow-up measures to assure compliance with settlements and the goals of this policy.

Inquiries and complaints of sexual harassment shall be treated with the maximum degree of confidentiality. Only when required by law or when personal safety is at risk will confidential information be acted upon or disclosed to others without a complainant's consent.

Sexual harassment complaints should be made promptly and resolved as quickly as possible, generally within two weeks of the date the complaint is made. Formal investigations should be concluded within thirty (30) days from the date of the complaint. The complainant and the accused should be kept apprised of the progress of the investigation, as well as the ultimate outcome.

The University will make every effort to accommodate parties who are unable to participate in a formal investigation because of physical incapacity or geographical location.
Complaint-Handling Guidelines

The University will issue and make available to persons entrusted with administering this policy and other interested parties, appropriate complaint-handling guidelines, consistent with this policy. All guidelines shall be reviewed and approved by the Office of the Provost and the Office of the General Counsel. These guidelines shall be issued within ninety (90) days of the effective date of this policy.

Revisions

This policy and these procedures are subject to revision as determined necessary or desirable in view of experience or changes in the law.

Student Records and Student Rights

In carrying out their assigned responsibilities, many offices at the University of Michigan collect and maintain information about students. Although these records belong to the University, both University policy and federal law accord you a number of rights concerning these records. The following is designed to inform you concerning where records about you may be kept and maintained, what kinds of information are in those records, the conditions under which you or anyone else may have access to information in those records, and what action to take if you believe that the information in your record is inaccurate or that your rights have been compromised.

Because the University does not maintain all student records in one location, the following contains general information related to student records. By direction of the Regents, however, each office that maintains student records is required to develop a written statement of its policies and procedures for handling those records. For more information about FERPA, visit the University of Michigan Office of the General Counsel’s webpage at: www.umich.edu/~vpgc/faq_student.html.

Student Records Location

If you are in any school or college except Rackham, your dean’s office or your academic advisor has information concerning your academic progress: admissions application, test scores, letters of recommendation, copy of academic record, notes (if any) made by academic counselors, information about honors awarded and/or academic discipline imposed, and similar items.

Only two offices have records on all students. The Office of Registration and Records maintains information pertaining to your enrollment (registration) and your official academic record. The Student Accounts Office maintains information about charges assessed and payments made to your account.

The other offices listed at the end of this document will usually have information about you only if you have had dealings with them or utilized their services.

Student Rights

Once you attend, you have the following rights concerning your student records:
1. The right to inspect and review all material in your file(s) except:
   a) Professional mental health treatment records to the extent necessary, in the judgment of the attending physician or professional counselor, to avoid detrimental effects to the mental health of the student or of others. These records may, however, be reviewed by a physician or other appropriate professional of your choice.
   b) Financial information furnished by your parents in support of an application for financial aid.
   c) Confidential letters of recommendation that were placed in your file prior to January 1, 1975.
   d) Confidential letters of recommendation concerning admission, employment, or honorary recognition, for which you have waived access. (The University may not require you to sign a waiver in order to obtain services, but a person writing a recommendation may insist on a waiver as a condition for his or her writing it.)
   e) Personal notes made by a faculty member or counselor that are accessible only to that person and are not shared with others.
   f) Materials in any admissions files, until you have been admitted to, and have attended in the U-M school or college for which the materials were submitted.

Most offices will require you to file a written request if you wish to review your records. Sometimes the response will be immediate, but in most instances you should expect to wait several days; in no case, however, may the response be delayed more than 45 days from the date of your request. Also, once you have submitted such a request, no non-exempt material may be removed from the file in question until the matter is resolved.

NOTE: Federal law requires that an institution make copies of materials available to a student only if the failure to do so effectively prevents the student from reviewing his or her file (for example, if you were at some distance from the campus and could not readily come to the campus). Most offices at the University, however, will provide copies if you need them. You will probably have to wait several days for the copies and you will be charged not more than fifteen cents per page plus any postage involved. In certain instances, you may be directed to obtain copies from the office responsible for maintaining a particular record. For example, most offices will not copy transcripts (whether from U-M or another institution you have attended) that are in their files; rather, you will be advised to obtain them directly from the Office of Registration and Records here or at your former school.

2. The right to a hearing if you feel that (a) you have been improperly denied access to your records, (b) your records contain information that is inaccurate or misleading, or (c) information from your records has been improperly released to third parties. Each record-keeping office has a procedure for this purpose. The use of that procedure will result in one of the following:
   a) If the head of the office involved agrees with your contention, he or she will see to it that the necessary corrective action is taken.
   b) If the head of the office does not agree with your contention, you may request a hearing by a hearing panel or hearing officer designated by the unit’s procedures.
   c) If the decision of the hearing panel or hearing officer agrees with you, the necessary corrective action will be taken.
   d) If the decision disagrees with you, you have the right to submit an explanatory statement, which must be included as a permanent part of your record.

3. The right, in most instances, to control access to information in your records by persons or agencies outside the
University. Within the University, information from your records will be made available to those staff members who demonstrate a legitimate educational interest consistent with their official functions for the University and consistent with normal professional and legal practices.

a) Except for directory information (see d below), however, persons outside the University - including your parents and/or spouse - will be given information from your records only (1) when you authorize it in writing, or (2) in connection with your application for or receipt of financial aid, or (3) in connection with studies conducted for the purpose of accreditation, development and validation of predictive tests, administration of student aid programs, or improvement of instruction, or (4) when disclosure is required in a health or safety emergency or by federal or state law or by subpoena. If information from your record is subpoenaed, you will be notified as quickly as possible. In addition, the results of a disciplinary hearing conducted by the institution against the alleged perpetrator of a crime of violence will be made available to the alleged victim of that crime.

b) Each office is required to keep a record of all requests for non-directory information from your records made by persons outside the University, and to make that record available for you to examine.

c) Federal law requires that the University designate what it regards as directory information and which may, therefore, be released to those outside the University without specific authorization. The law also requires that each currently enrolled student be given the opportunity to direct that items designated as directory information not be released without his or her consent.

d) The University of Michigan-Dearborn has designated the following items as directory information: (1) name, (2) permanent and local address and telephone, (3) U-M school or college, (4) class level, (5) major field, (6) dates of attendance at the University of Michigan, (7) degree received and date awarded, (8) honors and awards received, (9) participation in recognized activities, (10) previous school(s) attended, and (11) height and weight of members of intercollegiate athletic teams.

e) You have the right to direct that directory information about you not be released, however, you should carefully consider the consequences of that action before making the decision to do so. Information is not withheld selectively. If you choose to have directory information withheld, it is withheld from everybody who inquires.

f) If you wish the University not to release those items designated as directory information, you must file a written request to that effect with the Office of Registration and Records not later than ten (10) days from the beginning of the term for which the restriction is to begin. If you elect to have the University not release this information, all items designated as directory information will be withheld.

4. The right to file a complaint to federal officials if you feel that there has been a violation of the rights afforded you under the Family Educational Rights and Privacy Act of 1974. The complaint must be submitted in writing within 180 days of the alleged violation to:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW

Washington, D.C. 20202-4605
Telephone (202) 260-3887
TDD (800) 877-8339

Questions about the policies and procedures of any unit should be directed to the head of that unit. Questions about the University’s “Policies on Student Records” or about the Family Educational Rights and Privacy Act of 1974 should be directed to:

Vice Chancellor for Enrollment Management & Student Life
1060 Administration Building
Telephone (313) 593-5151

Student Records Locations

Administration Building............................................. AB
Engineering Complex................................................. EC
Fieldhouse/Arena..................................................... FH/A
University Center..................................................... UC
Academic Support and Outreach Services ......................2170 UC
Admissions...............................................................1145 UC
Alumni Society.........................................................1040 AB
Athletics................................................................. FH/A
College of Arts, Sciences, and Letters..........................1091 CA
College of Engineering and Computer Science ..................2000 EC
Counseling and Support Services...............................2157 UC
Enrollment Management and Student Life ......................1060 AB
Financial Aid..........................................................1183 UC
Honors Program.......................................................2062 CA
Library........................................................................1157 ML
Parking........................................................................ CSS
Personnel.................................................................1020 AB
Placement.................................................................1110 AB
Registration, Records and Student Certification .............1169 UC
Safety and Security................................................... CSS
School of Education..................................................262 FCS
School of Management..............................................168 FCS
Student Accounting...............................................1187 UC

Statement of Student Rights and Code of Student Conduct

The following are excerpts from the "University of Michigan-Dearborn Statement of Student Rights and Code of Student Conduct." Complete copies of the Code are available in the Office of Student Affairs, 1060 Administration Building.

SECTION 1. Introduction

The primary purpose of the Statement of Students Rights and Code of Student Conduct is to assist the University of Michigan-Dearborn (hereinafter in this document called the University) in providing an environment that supports the educational process and well-being of the campus community. The responsibility for maintaining such an environment is shared by all members of the campus community.

Student rights and student conduct are defined in this Statement and Code in order to give general notice of conduct expectations, to identify sanctions which shall be imposed when misconduct occurs, and to ensure that students are treated with fundamental fairness and personal dignity. Disciplinary proceedings initiated in response to a charge of violation will be the responsibility of the Code Judicial System and will be undertaken according to the provisions and procedures articulated by the Code. The focus of
inquiry in disciplinary proceedings will be on the question of guilt or innocence of those charged with violating the Code.

The Statement and Code is an articulation of the University's commitment to recognize and support the rights of its students and to provide a guide for defining behaviors the University considers inappropriate. It is not, however, meant to be an exhaustive list of all rights supported by the University or of all actions that may be considered misconduct.

Members of the University community are accountable to both civil authorities and to the University for acts which violate the law and this Code. Disciplinary action at the University will, normally, proceed during the pendency of external civil or criminal proceedings and will not be subject to challenge on the grounds that external civil or criminal charges involving the same incident are pending or have been invoked, dismissed or reduced.

The discontinuance of enrollment of a student does not negate the jurisdiction of this Code, which shall remain applicable with respect to matters that arose when the person was a student. Adjudication of alleged violations of the Code by a University employee will be handled, via the Code Judicial System, by the appropriate University resources.

The UM-D Statement of Student Rights and Code of Student Conduct was written by students, faculty, and staff of the UM-D.

SECTION 2. Student Rights

In recognition of students' rights and dignity as members of the University community, the University of Michigan-Dearborn is committed to supporting the following principles and to protecting those rights guaranteed by the Constitution, the laws of the United States and the State of Michigan, and the policies adopted by the Board of Regents.

1. Students have the right to free inquiry, expression, and association.
2. Students have the right to editorial freedom in student publications and the student media.
3. Students have the right to representation on the appropriate, designated University decisionary bodies.
4. Students accused of misconduct or of violating University policy have the right to have their guilt or innocence determined in accord with University procedures.
5. Students have the right to protection against improper disclosure of their student record as provided for in the Family Educational Rights and Privacy Act.
6. Students have the right of access to their personal records and other University files as provided for under the Family Educational Rights and Privacy Act and the Michigan Freedom of Information Act.
7. Students have the right to access all policies, rules, and decisions concerning their continued enrollment, and to those course materials and facilities necessary to pursue their studies.
8. Students have the right to educational programs that meet the objectives of the discipline, to teaching consistent with those objectives, and to a learning environment that encourages the students' active participation.
9. Students have the right to be informed by the faculty at the beginning of each term about course requirements, evaluation procedures, and evaluation criteria to be used, and the right to expect that those criteria be employed.
10. Students have the right to take reasoned exception to the data or views offered in any course of study; they are, however, responsible for learning the content of any course of study for which they are enrolled.
11. Students have the right to be evaluated solely on relevant academic criteria and to have protection against prejudicial or capricious academic evaluation.
12. Students have the right to request and receive timely assessment of their academic work.
13. Students have the right to request and receive a reasoned, impartial, and timely review of their grades.
14. Students have the right of redress if their rights have been violated.

SECTION 3. Student Conduct

Students are expected to conduct themselves in a manner conducive to an environment of academic integrity and of respect for the educational process and the safety and well-being of all members of the campus community. The actions cited as prohibited conduct should be used as a guide rather than an exhaustive list of behaviors the University considers misconduct and subject to disciplinary action.

A. Prohibited Academic Conduct

The following actions shall be considered academic misconduct and be subject to disciplinary action:

1. Furnishing false information to the University pertaining to one's own or to others' academic work, activities, records or status or initiating, or causing to be initiated, any false report pertaining to one's own or to others' academic work, activities, records or status (Falsification of Records or Official Documents).
2. Possessing, using, or distributing and altering or destroying any materials or information for the purpose of dishonestly affecting one's own or others' academic work, grades or student status (Cheating).
3. Aiding or abetting another in obtaining, using or distributing any materials or information for the purpose of dishonestly affecting one's own or others' academic work, grades, or student status (Aiding and Abetting Dishonesty).
4. Submitting as one's own any work which, in part or whole, is not entirely one's own work without properly attributing it to its correct source (Plagiarism).
5. Presenting data that were not gathered, or are not accounted for, in accordance with the appropriate methods for collecting and generating data (fabrication).
6. Interfering with the academic work or study of other members of the University community. This includes, but is not limited to, alteration, destruction, and denial of access to learning materials.
7. Failing to comply with additional specific criteria for academic conduct communicated by the instructor to his/her class regarding assignments, tests, and/or exams.
8. Violating, or aiding and abetting the violation of, any published University academic policy, regulation, or procedure.
9. Attempting to commit, or assisting another in attempting to commit, any act prohibited by Section 3.A. of this Code.
10. Violating the terms of any disciplinary sanction imposed in accordance with Section 3.C. of this Code.

B. Prohibited Non-Academic Conduct

The following actions shall be considered non-academic misconduct and be subject to disciplinary action:

1. Causing or threatening to cause harm to any person on University premises or at University-sponsored activities and
2. Hazing, i.e., action taken or situation created for the purpose of initiation of affiliation with any University organization or team, with or without the consent of the individual, which jeopardizes the physical or mental well-being of the individual. Hazing includes: physical injury, assault, or battery; kidnapping or imprisonment; forced consumption of any liquid or solid; mandatory personal servitude; interference with academic endeavors.

3. Interfering with normal University or University-sponsored activities. This includes but is not limited to studying, teaching, research, University administration, or campus safety, fire, police, or emergency services.

4. Interfering with the freedom of expression or rights of individuals on the University premises or at University-sponsored activities.

5. Harassment, i.e., physical force or violence or behavior, including stalking, that involves a deliberate interference or a deliberate threat to interfere with an individual's personal safety, academic efforts, employment, or participation in University-sponsored activities and causes the person to have a reasonable apprehension that such harm is about to occur. Students may not use threats concerning the terms or conditions of an individual's education, employment, housing, or participation in a University activity as a way to gain sex and/or sexual favors.

6. Furnishing false information to the University.

7. Failing to comply with directions of University officials, including campus safety, acting in performance of their duties.

8. Initiating or causing to be initiated any false report, warning, or threat of fire, explosion, or other emergency on University premises or at University-sponsored activities.

9. Theft of University property or funds or misuse of services on University premises; possession of stolen University property; possession of stolen property on University premises.

10. Destroying, or damaging, or misusing, or unauthorized use of any University funds, equipment, materials, or property including safety equipment and library materials; or such equipment or materials of others when on University premises.

11. Unauthorized use, possession, or storage of any weapon on University premises or at University-sponsored activities.

12. Unauthorized use or possession of fireworks or explosives on University premises or at University-sponsored activities.

13. Unauthorized use or possession or distribution of any controlled substance, alcoholic beverage, or illegal drug on University premises or at University-sponsored activities.

14. Violations of any published University policies, including those regarding affirmative action or procedures regulating entry and use of University facilities and properties, sales or consumption of alcoholic beverages, use of vehicles and sound equipment, use of telephone equipment or privileges, campus demonstrations, and use of identification cards.

15. Commission of any state or federal crime on University premises or at University-sponsored activities.

16. Violations of the terms of any disciplinary sanction imposed in accordance with Section 3.C. of this Code.

17. Attempt to commit any act prohibited by Section 3.B. of this Code.

C. Sanctions

The sanctions to be imposed should be commensurate with the offending conduct. Because education may be the most effective and appropriate means of addressing behavior that violates the standards of a university community, the University encourages fashioning sanctions to include an educational element that may help students understand their behavior in the context of the academic community. Although it is inappropriate for the University to try to change student's convictions, it is appropriate for the University to ask a student to change behavior. Sanctions should, therefore, be designed which may deter behaviors that harm, intimidate, harass, or threaten others.

Factors that may be considered in determining the nature of sanctions to be imposed for Code violation include the intent of the respondent, the effect of the conduct on the victim and the University community, presence or absence of violations of the Code on the part of the student, the presence or absence of past violations of the standards on the part of the student, and the appropriateness of sanctions such as community service.

Regrettably, some conduct is so harmful to members of the University community or deleterious to the educational process that more severe sanctions may be required. Severe sanctions, such as suspension or expulsion, should be imposed only when the offending behavior involves violent or dangerous acts, acts that disrupt the educational process and/or when there has been willful failure to comply with a lesser sanction. The Chair of the Conduct Board shall consult with the Dean of the School/College in which the student is enrolled before expulsion or suspension is imposed.

The range of potential sanctions is as follows:

1. Suspension from Specific Course or Activity. The student is removed from a specific course or activity, or is moved to a different section of the course.

2. Class Attendance. The student enrolls in and completes a class that may help improve his/her understanding of why the conduct engaged in is inappropriate.

3. Community Service. The student performs an appropriate amount of service that is both beneficial to the community and likely to assist the student in understanding the harm caused by his or her conduct.

4. Disciplinary Reprimand. The student receives a formal reprimand for violating the standards of behavior and a warning that future violations may result in more severe disciplinary action. The student does not lose his/her University privileges.

5. Disciplinary Probation. During the probation period, the student may not represent the University in any way. This includes, but is not limited to, engaging in any extracurricular activity, running for or holding office in any student group, organization, and serving on any University committees. The appropriate University units shall be notified of the student's probationary status.

6. Suspension in Abeyance. The student remains enrolled. However, any violation of the conduct regulations during the period of Suspension in Abeyance will, after a determination of guilt, result in automatic suspension.

7. Suspension. The student is temporarily separated from the University for a specified period of time. Conditions may be stipulated for the readmission of a student. When a student is suspended during a term, he/she is not exempted from the payment of tuition for that term.

8. Expulsion. The student is permanently separated from the
University. Penalty shall consist of the student being barred from the premises of the University. When a student is expelled during a term, he/she is not exempted from the payment of tuition for that term.

9. Restitution. The student makes payment to the University for damages incurred by the University as a result of his/her violation.

10. Other Disciplinary Actions. In addition to or in place of the above sanctions, the student may be subject to other penalties commensurate with the offending conduct. This may include but is not limited to degree and/or transcript actions, such as recession of a degree, withholding of course credit, loss of credit for an assignment/exam, assignment of additional work, loss of special privileges, behavioral counseling, or a behavioral contract.

11. Combined Sanctions. A combination of the sanctions described above may be imposed.

The sanctions imposed under these standards do not diminish or replace the penalties that may be invoked under generally applicable civil or criminal laws. Students are reminded that many violations of the standards, including harassment and other discriminatory behavior, may violate various local, state and federal laws and, therefore, also be subject to legal action.

JUDICIAL SYSTEM

The University of Michigan-Dearborn judicial system shall provide a uniform, fair, and impartial process for the reporting, adjudicating, and resolving of alleged violations of the University of Michigan-Dearborn Statement of Student Rights and Code of Student Conduct. Copies of this document, which describes procedures for reporting and responding to incidents of alleged misconduct, are available in the Office of Enrollment Management and Student Life, 1060 Administration Building.
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Bord, Donald J., PhD, Dartmouth College, Professor of Physics
DeCamp, Mark R., PhD, Princeton University, Associate Professor of Chemistry
Deng, Yiwei, PhD, Swiss Federal Institute of Technology, Assistant Professor of Chemistry
Devlin, John F., PhD, Michigan State University, Associate Professor of Physics
Donahue, Craig J., PhD, University of Massachusetts, Associate Professor of Chemistry
Gelderloos, Orin G., PhD, Northwestern University, Professor of Biology and Professor of Environmental Studies
Heady, Judith E., PhD, University of Colorado, Associate Professor of Biology
Hetrick, James, PhD, University of Illinois at Urbana-Champaign, Lecturer in Physics
Kovalak, William P., PhD, University of Michigan, Lecturer in Biology, Environmental Sciences, and Environmental Studies
Kreuz, Bette, MS, University of Michigan, Lecturer in Chemistry
Lawson, Daniel, PhD, Michigan State University, Associate Professor of Chemistry
Matzke, David C., MS, University of Michigan, Lecturer in Physics
Miller, Donald R., MS, University of Michigan, Lecturer in Natural Sciences
Mostafapour, M. Kazem, PhD, Wayne State University, Associate Professor of Chemistry and Biochemistry
Murray, Kent, PhD, University of California-Davis, Professor of Geology
Naik, Vaman, PhD, University of Michigan, Professor of Physics
Napiersalski, Jacob, PhD, Purdue University, Assistant Professor of Geology
Nesmith, Judy M., MS, Michigan State University, Lecturer in Biology
Otto, Charlotte A., PhD, University of Illinois at Urbana-Champaign, Professor of Chemistry
The College of Arts, Sciences, and Letters (CASL) is the liberal arts college at UM-D. Following the long-standing University of Michigan tradition of sound liberal arts education, the College emphasizes breadth and depth of learning. The programs of the College are designed to prepare students who can communicate clearly, reason and make critical judgments, distinguish facts from values, and understand their cultural and artistic heritage. Individuals who are educated in this manner will be able to adapt successfully not only to their first jobs but also to a rapidly changing world. With a sound liberal arts education, they will be equipped to give society leadership and vision.

With a full-time faculty of over 150, the College offers 31 liberal arts degree programs and over 1000 courses to its 3,200+ undergraduates, who represent nearly half of the total student enrollment at UM-D. In addition, the College provides the liberal arts foundation for all degree programs on campus and is the academic unit on campus that reflects in itself the diversity essential to and inherent in a modern comprehensive university. The College is the largest academic unit at UM-D and the third largest of all academic units on the three campuses of the University of Michigan.

History of the College

From the beginning of the Dearborn Center of the University of Michigan, as it was first called, there was "an intent to provide a full schedule of daytime courses in Engineering, Business Administration, and the Liberal Arts and Sciences" (Report by the University's Dean of Statewide Education, January 1957). On January 10, 1958, the Regents approved the creation of the Division of Literature, Science, and the Arts (LSA) as an official academic division. Full programs in the liberal arts began in Fall, 1960; and in Fall, 1965, the LSA Division became the largest academic unit on the Dearborn Campus, a distinction which continues to the present.
When it became a four-year undergraduate institution in 1971, the Campus was designated the University of Michigan-Dearborn (UM-D). Two years later, the Regents approved a new set of UM-D Bylaws, in which the Department of Education became a separate division, and the LSA Division became the College of Arts, Sciences, and Letters (CASL), administered by a Dean. Since then, CASL has evolved to comprise five multidisciplinary departments: Behavioral Sciences, Humanities, Mathematics and Statistics, Natural Sciences, and Social Sciences.

mission of the college

As was true in Paris and Bologna in the fourteenth century and as is true in Cambridge, Ann Arbor, and Dearborn in the twenty-first, liberal arts colleges are the *sine qua non* of universities. The pre-eminence of the College of Literature, Science, and the Arts at Ann Arbor is mirrored in the status of the CASL at Dearborn. The reason for this pre-eminence of liberal arts colleges is not difficult to ascertain. Together, they share an ideal, a goal: the cultivation of students’ intellectual abilities, the refining of their sensibilities, and the enlargement and deepening of their awareness and knowledge.

CASL is the intellectual core of the campus. In the College, a distinguished faculty of teacher-scholars aims to cultivate the intellectual abilities of a diverse and talented student body and to enlarge, refine, and deepen their awareness and knowledge. Through traditional degrees and such distinctive programs as cooperative education, undergraduate research and interdisciplinary honors, the College emphasizes both the practical and the intellectual side of the liberal arts. In collaboration with the professional schools, it prepares students for the professions while helping them toward an understanding of human values and ethics. In partnership with the broader academic community, its faculty contribute significantly to the creation, application, and dissemination of knowledge. In addition, it provides significant service to the University and the wider community.

In mathematics and the natural sciences, emphasis is placed on rational, analytical, conceptual thinking and on mastery of precise methods of inquiry, especially experimentation, that produces results that may be replicated.

In the humanities, methodology is equally important, but it is less exclusively rational, because the study of art, literature, and music depends on the manner – partly emotional, partly imaginative – in which these are experienced.

The social and behavioral sciences offer a political, social, economic, psychological, and cultural storehouse from which students can draw in order to understand the past, cope with the present, and design the future.

In CASL, emphasis is not placed exclusively on specific preparation for a narrow career track, but rather on providing a broad-based liberal arts background which offers an ethical and moral foundation from which graduates may grow. Basic core knowledge will aid graduates in their vocational career choices, but facts in many occupations may have a life of less than a decade. By contrast, values endure for a lifetime.

organization of the college

Among the three liberal arts colleges on the University of Michigan campuses (Ann Arbor, Dearborn and Flint), our College stands out because it is organized in a unique manner.

Instead of being fragmented into many traditional single-discipline departments, the College is organized into five multidisciplinary departments: Behavioral Sciences, Humanities, Mathematics and Statistics, Natural Sciences, and Social Sciences.

The Behavioral Sciences Department houses and offers degree programs in three disciplines: anthropology, psychology, and sociology. The Department also offers interdisciplinary degree programs in behavioral sciences and health policy studies. The office of the Behavioral Sciences Department is located in Room 4012, CB.

The Humanities Department houses and offers degree programs in six disciplines: art history, communications, English, French Studies, Hispanic Studies, and philosophy. It also offers interdisciplinary degree programs in international studies and in humanities. In addition, the Department offers minors in comparative literature, film studies, German, linguistics, and medieval and renaissance studies. To support its programs in art history and the foreign languages, the Department maintains an extensive collection of more than 55,000 slides, over 1400 phonograph records and compact discs, 200 videos, and numerous other instructional materials. The office of the Humanities Department is located in Room 3011, CB.

The Mathematics and Statistics Department houses and offers a degree program in the discipline of mathematics, with an emphasis on either pure or applied mathematics. In addition, the Department offers minors in computer and computational mathematics and applied statistics. The campus mathematics placement program and the Mathematics Learning Center are administered by the Department. The office of the Mathematics and Statistics Department is located in Room 2014, CB.

The Natural Sciences Department houses and offers degree programs in three disciplines: biological sciences, chemistry, and physics. The Department also offers interdisciplinary degree programs in biochemistry, chemistry instruction, earth sciences, environmental science, environmental studies, and microbiology; geology is also available as a minor. The Science Learning Center, the greenhouse, and the observatory are administered by the Department. The office of the Natural Sciences Department is located in Room 125, Science Building.

The Social Sciences Department houses and offers degree programs in three disciplines: economics, history, and political science. The Department also supports individual courses in cultural geography. The office of the Social Sciences Department is located in Room 2140 Social Sciences Building.

The College supports several interdepartmental programs, some administered directly by the College and some administered by departments. These include degree programs in American Studies, Criminal Justice Studies, General Studies, Health Policy Studies, Law and Society, Liberal Studies, and Women’s and Gender Studies, and minors in African and African American Studies, Leadership and Communication in Organizations, Medieval/Renaissance Studies, Religious Studies, Science and Technology Studies. The College also supports the Honors Program, coursework in Arab and Arab American Studies, a program for study in Japan, and the Cooperative Education Program.
Degrees Offered

Students may obtain a Bachelor of Arts (AB), Bachelor of Science (BS), or Bachelor of General Studies (BGS) from CASL. The BGS degree, reserved for students transferring from a community college with an associate degree, is discussed under requirements for transfer students.

A liberal arts degree program affords a student both breadth and depth of learning. The course requirements for a degree may be divided into types: courses that give a broad, general education, those that provide depth in a specialization, and those that offer the tools needed for success in college and life.

Distribution Requirements

Distribution requirements are divided into Skills and Competencies, and Areas of Inquiry. Courses included under Skills and Competencies are intended to give students tools they will need in English Composition, Foreign Language, and Mathematics. Areas of Inquiry courses give students experience across the breadth of the liberal arts: Arts, Behavioral and Social Analysis, Biological and Physical Sciences, History, and Letters.

Liberal Studies (LIBS) courses which appear in distribution areas are first year seminars, are generally taught only in Fall semester, and open only to newly admitted freshmen.

A student seeking a degree from CASL must fulfill the coursework specified below. All of these courses, except as noted, are at the 100 and 200 level. They should generally be completed during the freshman and sophomore years. These requirements, adopted in 1987, apply to newly admitted freshmen, transfer students, and readmitted students alike.

SKILLS AND COMPETENCIES

English Composition (6 hrs)
COMP 105 Composition I
COMP 106 Composition II

Each incoming student will take the UM-D Composition Placement Examination (CPAS). Excellent performance on the examination may result in the requirement for COMP 105 and/or 106 being waived. If a student without transfer credit for either COMP 105 or 106 performs below the minimum acceptable level he or she will be required to take and pass COMP 099, which does not count toward a degree. A transfer student with COMP 105 and 106 equivalency who is placed into COMP 099 will be required to take and pass COMP 227.

Students completing COMP 105, 106, and/or 270 at UM-D must pass these courses with a minimum C- grade. Students who earn less than a C- will be given an NC (No Credit), and will be required to repeat the course.

Note: Students enrolled in the Honors Program will take COMP 110 and 220 in place of 105 and 106.

Foreign Language (8 hrs)
A two-course sequence from:
ARBC 101 & 102 Arabic
FREN 101 & 102 French
GER 101 & 102 German
LAT 101 & 102 Latin
MCL 111 & 112 Armenian
MCL 105 & 106 Greek
SPAN 101 & 102 Spanish

The foreign language distribution requirement can be met by:
• Successfully completing a two-semester beginning language sequence at UM-D, or
• Transferring the equivalent of 8 semester hours of a beginning language sequence from another college or university, or
• Successfully completing a 3- or 4-semester hour foreign language course (this course cannot be taught in English) at the 102 level or higher, or
• Having completed at least 3 years (in the same language) of foreign language in high school with a grade of C or better in the final course, or
• Having completed the equivalent of a high school diploma at a school that used a language other than English for instruction. (Appropriate documentation attesting to the language of instruction and graduation from the high school program is necessary, and official English translations of foreign transcripts must be provided), or
• Passing an oral and written proficiency exam.

A student with prior knowledge of Arabic, French, German or Spanish should take a placement examination before registering for a course in that language. Placement/proficiency exams in French, German, and Spanish are administered by the Office of Admissions and Orientation; call (313) 593-5550. Placement/proficiency exams in Arabic are administered by faculty in the Humanities Department; call (313) 593-5433. A student wishing to take a proficiency exam in a language not mentioned above or not taught at UM-D should consult a CASL advisor; call (313) 593-5293 for more information and to see if a tester is available. A student wishing to waive the foreign language requirement must officially submit a request in writing via a petition form. Please note that when the requirement is waived, or proficiency is demonstrated by exam, credit will not be awarded for courses not taken.

Mathematics (3-4 hrs)
LIBS 111

Note: that MATH 080 and 090 do not count toward degree.

AREAS OF INQUIRY

Arts (3 credit hours)
ARTH 101, 102, 103, 104, 106
MHIS 100, 120, 130

Behavioral and Social Analysis (9 hrs)
A student must elect at least one course from Group A and one from Group B.

Group A
ANTH 101, 202
LIBS 112, 116, 117, 118, 123
PSYC 170, 171
SOC 200, 201
Biological and Physical Sciences (7-8 hrs)
One course must be a laboratory course
BIOL 100 or 100+101, 130, 140, 240
BIOL 103 & 105
CHEM 100, 134, 136, 144, 146
ESCI 275
GEOL 118, 218
LIBS 117, 123
NSCI 120, 121, 231, 232, 233
PHYS 100, 125, 126, 130 or 130+131, 150, 151

Courses with a "+" provide an optional laboratory component. The first number is the lecture course, which may be taken separately. The second number is the optional lab course, which requires prior completion or concurrent enrollment in the lecture. PHYS 100 is lecture only; there is no associated laboratory course. Although BIOL 103 and BIOL 105 may be elected separately, they must be taken together to meet the requirement. NSCI 120 and BIOL 100 (or 100+101) may not be used together to meet the requirement. NSCI 231, 232, 233, normally taken by elementary education students, have a prerequisite of EXPS 220 Exploratory Studies. Students who take these courses and ultimately transfer to CASL may use them toward CASL distribution as follows: one course from NSCI 231, 232, 233 would fulfill the non-laboratory course requirement; two courses would fulfill the laboratory requirement; three courses would completely satisfy the biological and physical sciences requirement.

History (3 hrs)
Any HIST course offered except HIST 398, 399, 485, 497, 498, or 499
LIBS 112, 113, 116, 119, 120, 121

Letters (3 hrs)
COM/LHUM 221, 222, 223
ENGL 200, 230, 231, 232, 233, 235, 236, 237, 239
HUM 171, 201
LIBS 112, 114, 115, 122, 123
PHIL 100, 120, 200, 240

CASL Honors Students may use Western Culture 261 and 262 to fulfill the History and Letters requirements. Western Culture 263 and 264 may be used to fulfill the Behavioral and Social Analysis Group A requirement. Western Culture 262 or 263 may be used to fulfill the Arts requirement.

Diversity Requirement

In November 2002, CASL instituted a requirement that all of its graduates who enroll after September 1, 2004, must satisfy a three-credit hour diversity course requirement. Students will choose from a list of approved courses on global issues, national issues, or both. Diversity is defined here to include cultural diversity, racial as well as ethnic diversity, religious diversity, social class, gender, sexual orientation, age, and ability/disability status. When appropriate, these courses may also be used to satisfy a distribution requirement or a requirement for a major or minor.

The list of approved courses is available in the CASL Dean’s Office, 2019 CB, (313) 593-5490, in CASL Advising, 1039 CB, (313) 593-5293, and is posted on the CASL website: http://casl.umd.umich.edu/CASL_diversity_requirement.html. The College will also identify each term’s diversity courses in the Schedule of Classes.

Majors

WHAT IS A MAJOR?

A college degree experience includes depth as well as breadth. Each student in an AB or BS degree program must choose a field in which to specialize, which is called a major.* A major is a program of specialized study that normally consists of a minimum of 30 credit hours of work at the upper-division level (courses numbered 300 through 499 and 3000-4999) taken mainly during the student’s final two years. A major allows a student to develop independence and discrimination of thought and judgment and to learn to appreciate, assimilate, and apply a coherent body of knowledge.

The College offers the following majors that normally lead to the degree (AB, BGS, or BS) listed.

American Studies ................................................................. AB
Anthropology ........................................................................ AB
Art History ................................................................................ AB
Behavioral Sciences ............................................................. AB
Biochemistry ........................................................................ BS
Biological Sciences ............................................................. BS
Chemistry (ACS Certified) ..................................................... BS
Chemistry/Instructional ......................................................... BS
Communications ................................................................. AB
Criminal Justice Studies ....................................................... AB
Earth Science .......................................................................... BS
Economics .............................................................................. AB
English .................................................................................. AB
Environmental Science ........................................................ BS
Environmental Studies .......................................................... AB
French Studies ........................................................................ AB
General Studies ..................................................................... BGS
Health Policy Studies .......................................................... AB
Hispanic Studies ..................................................................... AB
History ................................................................................... AB
Humanities .............................................................................. AB
International Studies ............................................................ AB
Liberal Studies* ................................................................. AB, BS
Mathematics .......................................................................... AB, BS
Microbiology ........................................................................ BS
Philosophy .............................................................................. AB
Physics .................................................................................. BS
Political Science ................................................................. AB
Psychology .............................................................................. AB
Sociology ................................................................................ AB
Women’s and Gender Studies .............................................. AB

*Liberal Studies offers the student an opportunity to design an AB or BS degree program from three 12 or 15 credit hour fields of study called Areas of Focus.
MAJOR REQUIREMENTS

Certain introductory courses, designated prerequisites, are designed to give students the knowledge and skills needed in the advanced courses. Undecided students will find these courses helpful in making a decision about majoring in the field. Consult the list of required prerequisites listed under Program and Course Offerings (p. 65) for details.

A program of study in a major should be planned in consultation with the faculty program advisor. The advisor must approve the content of the major and can help the student achieve a sound and harmonious program.

The following rules apply to most majors:
1. Generally, at least 30 upper-division credit hours are required. At least 24 credit hours must be taken in the field of the major. In most majors at least 6 credit hours of cognate courses are required. A cognate course is in a related field. Specific exceptions to these rules are noted under Program and Course Offerings.
2. The courses used to fulfill the 30 or more upper-division credit hours must be numbered 300 and above. Note that courses taken at community colleges and lower division courses taken at other four-year institutions may not be used to fulfill this requirement.
3. Courses taken as major prerequisites may not be counted in the major.
4. Courses used to satisfy distribution requirements (with the exception of the diversity requirement) may not be used to satisfy major requirements.
5. A minimum grade point average (GPA) of 2.00 must be achieved in both major courses and cognate courses.
6. At the minimum, students must complete between 12 and 15 of the 30 credit hours at UM-D. Students transferring upper-division credits from other institutions should check with their major advisor for specifics of this residency requirement.
7. Students who have been off campus for one full year must complete the degree requirements in effect when they return.
8. Courses used in the major cannot dually be used in a minor.
9. Courses used in the major cannot be taken P/F (Pass/Fail).

DOUBLE MAJOR (OPTIONAL)

Students who want a double major must meet all requirements in two fields and must officially declare, and be approved for, both majors, in the CASL Office of Advising and Student Records, Room 1039, CB. Courses that satisfy major and/or cognate requirements for more than one field can be applied simultaneously to both fields.

AREAS OF FOCUS

Instead of a traditional major, transfer students in the BGS degree program elect three Areas of Focus which can be in single disciplinary areas or in multi-disciplinary areas. A single disciplinary focus requires 12 hours at the 300 level or above. Multi-disciplinary areas of focus require 15 hours. At least two areas of focus must be within CASL. One area of focus may be from Management or CIS. Transfer students interested in this degree should contact CASL Advising and Records in 1039 CB or call (313) 593-5293 for additional information.

RECOGNITION OF A MINOR (OPTIONAL)

A student in an AB or BS degree program (other than Liberal Studies) may apply for recognition of a minor. A student may declare a minor (completed or not) by completing the appropriate form at the CASL Office of Advising and Student Records. A final audit will be conducted at the time of graduation. Any posted minor that has not been successfully completed will be deleted from the student’s transcript.

A minor generally consists of a minimum of 12 or 15 credit hours of upper-division (300-499 and 3000-4999) coursework in a particular field of study. A minimum grade point average (GPA) of 2.00 is required in the courses applied to a minor. For minors offered by the CASL, the grades (including E’s) in all upper-division courses in the discipline of the minor will be reflected in the minor GPA. Courses elected pass/fail (P/F) cannot be used in a minor. Courses used in a minor cannot dually be used in a major.

A single disciplinary minor requires a minimum of 12 credit hours of upper-division coursework. No more than three credit hours of transfer credit, field placements, internships, seminars, S/E-graded courses, and independent study/research may be applied to any 12 credit hour minor. Note that a few interdisciplinary majors do not offer minors. A minor may be obtained in the following fields of study even though there is no major offered: Applied Statistics; Comparative Literature; Computer and Computational Mathematics; Geology; German; Linguistics; and Music. In these fields, 12 credit hours of upper-division coursework are required.

An interdisciplinary minor consists of a minimum of 15 credit hours of upper-division coursework. Interdisciplinary minors are available in African and African American Studies; Criminal Justice Studies; Earth Science; Environmental Studies; Film Studies; Health Policy Studies; Law and Society, Medieval and Renaissance Studies; Religious Studies; Science and Technology Studies; and Women’s and Gender Studies. There is no minor in International Studies, American Studies, Behavioral Sciences, General Studies, Liberal Studies, or Chemistry/Instructional Track.

In addition, there are several non-CASL minors available – Computer and Information Science (CIS), Accounting, Finance, Management, Management Information Systems, and Marketing. The GPA for the CIS minor is based on CIS 125, 150, 175, 200, and all upper-division CIS coursework. The GPA for the Management minors is based on MIS 120, MIS 210 (if taken), ACC 297/298, ACC 299 (if taken), and all upper-division courses offered by the School of Management. Students who are not in the School of Management cannot elect more than 30 credit hours in courses offered by the School of Management. A maximum of six credit hours of transfer credit, field placement, internships, seminars, S/E-graded courses, and independent study/research may be applied to any interdisciplinary or non-CASL minor.

Other Requirements

TOTAL CREDIT HOURS

A minimum of 120 credit hours with an overall average of C (2.00) or better is required for graduation.
UPPER-DIVISION COURSEWORK

A minimum of 48 hours of upper-division (courses numbered 300-499 and 3000-4999) coursework must be completed by each student.

SENIOR RESIDENCY

Students must normally complete the last 30 credit hours required for graduation with coursework taken at UM-D. Students who have earned at least 30 hours of credit required for graduation at UM-D prior to the beginning of their senior year may, with the prior written approval of the advisor, 1) elect the last 30 credit hours at another campus of the University of Michigan, or 2) elect six credit hours at an institution other than a campus of the University of Michigan, subject to the CASL policy regarding coursework at other institutions.

CREDIT HOUR LIMITATION

No more than 44 credit hours in any one discipline may be applied toward the 120 credit hours needed for graduation. In the following cases exceeding the limit may be avoided by excluding certain introductory courses from the 44 credit hour count. 1) Mathematics majors may exclude MATH 105, 115, and 116; 2) chemistry majors may exclude CHEM 134, 136, 144 and 146; 3) psychology majors may exclude one lower-level non-equivalent (“LDST” or “general credit”) PSYC transfer course, and the two psychology honors courses, 498 and 499.

Degree Requirements: Summary

BACHELOR OF ARTS (AB)

To be recommended for the AB degree a student must have satisfied the CASL requirements previously listed in distribution, residency, credit hour, grade point average, and upper-division work. For all programs except Liberal Studies, the student must also complete the requirements for the major. The AB degree in Liberal Studies does not involve a major, but three fields of study called Areas of Focus. Minors are not available in Liberal Studies. See Programs and Courses (p. 66) for additional information.

BACHELOR OF SCIENCE (BS)

To be recommended for the BS degree a student must have satisfied all the requirements for the AB degree and must have majored in one of the following programs: biochemistry, biological sciences, chemistry (ACS certified), chemistry/instructional, earth science, environmental science, liberal studies, microbiology, or physics. Alternatively, a student who earns 60 or more credit hours (at least 20 credit hours of which are in upper division courses 300 or above) in mathematics (including CCM and CIS courses 150 and above, and statistics courses) and the physical and biological sciences may, upon petition to the CASL Office of Advising and Student Records, Room 1039 CB, be granted the BS degree.

BACHELOR OF GENERAL STUDIES: TWO PLUS TWO (BGS) REQUIREMENTS

The Bachelor of General Studies degree is designed and ordinarily reserved for students who have earned an associate degree from a community college that has a “two-plus-two” articulation agreement with UM-D. Students with associate degrees from other appropriately accredited institutions may be considered for this “two-plus-two” option. Contact the CASL Office of Advising and Student Records, Room 1039 CB.

To be recommended for this degree, a student must have completed:

1. one course in mathematics; one course in the natural sciences; two courses in the behavioral and/or social sciences; two courses in the humanities; courses equivalent to two semesters of English Composition 105 and 106

2. 12-15 upper division (300 or above) credit hours in each of three areas of focus with a GPA of at least 2.00 (exception: the GPA for the CIS area of focus is based on CIS 125, 150, 175, 200, and all upper-division CIS courses)

3. one approved diversity course

4. a minimum of 48 upper division credit hours

5. a minimum of 120 credit hours with an overall GPA of at least 2.00.

Note: No more than 30 credit hours of upper-division coursework in any one discipline or area of focus can count in the 120 hours required for graduation. Students not in the BBA program of the School of Management cannot elect more than 30 credit hours in courses offered by the School of Management.

Only one area of focus may be outside CASL. At least 30 upper-division credit hours must be in courses taken in CASL. All courses used to satisfy area of focus requirements must be upper-division. No credit hours transferred from a community college or lower-division courses taken in a four-year institution may be included. Courses used to satisfy distribution requirements (with the exception of the diversity requirement) may not also be used to satisfy area of focus requirements. Courses elected on a Pass/Fail (P/F) basis may not be used to fulfill the 12-15 credit hour requirement in an area of focus. No more than three hours in a 12-hour area of focus, or six hours in a 15-hour area of focus, may be transfer, independent study/research, internship, or S/E graded. Students should be aware that upper-division courses, particularly in the sciences, mathematics, and CCM, may have substantial prerequisite requirements. Minors are not available with the BGS degree.

Students should consult with a professional staff advisor in the CASL Office of Advising and Student Records, 1039 CB, to discuss areas of focus and to develop a rationale for their individualized BGS curriculum.

Other Degree Options

SECOND BACHELOR DEGREE

A student who has already earned a bachelor degree from UM-D or any other accredited collegiate institution may apply to pursue a second bachelor degree through the Admissions Office (1145 University Center). If accepted, the student must complete at UM-D at least an additional 30 credit hours (regardless of the number of credit hours completed for the first degree), if the first degree was earned at UM-D; or 45 credit...
hours, if the first degree was earned elsewhere; and must satisfy all the requirements for the second degree program. The GPA for the second degree will be based on the cumulative academic records of all courses taken at UM-D. For further information, contact the CASL Office of Advising and Student Records, 1039 CB.

DUAL DEGREES

Students may apply for two or more degrees either within the CASL or in CASL and another unit at UM-D. To earn both degrees, students must meet the degree requirements for each degree. Generally, distribution courses taken within the CASL may be used to satisfy both degrees. Students should expect to elect at least 30 more credits to earn both degrees. Students are advised to contact a representative from each program to learn the specific requirements that must be met. Some degrees, such as the degrees in Engineering Mathematics or CIS Mathematics, are only available as concurrent degrees and must be paired with a primary degree in either engineering or CIS. Students interested in dual degrees should see an advisor.

JOINT DEGREES

Students can get an early start in the graduate degree programs of the University’s Ann Arbor Campus Dental School, Medical School, or School of Natural Resources and still be awarded a liberal arts degree from UM-D. Students must have a GPA of at least 3.00 and have completed the requirements for graduation except for the senior residency requirement. A maximum of 15 credit hours of appropriate required courses in the first two years of the graduate degree program may count toward both the bachelor and the graduate degrees. At least 45 of the remaining 105 credit hours must be in residence at UM-D. For more information, contact the CASL Office of Advising and Student Records, Room 1039 CB.

CONCURRENT UNDERGRADUATE/GRADUATE STUDY (CUGS)

An exceptional student who has virtually completed an undergraduate program in three and one-half years with an outstanding record and who, in the judgment of both graduate and undergraduate faculty, is ready to enter a graduate program, is eligible to apply for early admission to the Horace H. Rackham School of Graduate Studies at the University’s Ann Arbor campus. A maximum of 15 credit hours earned in courses elected in this early admission program count toward both the bachelor and the graduate degree. The bachelor degree is conferred at the next commencement upon the student’s satisfactory completion of the prescribed course work and receipt by UM-D of the official transcript and diploma application.

Admission to CUGS requires: 1) a minimum 3.70 GPA, 2) completion of all requirements for the bachelor degree except in the concentration and in independent study or its equivalent. The student must have at least six courses in the field of concentration and one independent study experience. 3) During the junior year, the student should discuss the possibility of participating in the CUGS program with his/her program advisor and departmental chair. If the student’s academic record and other qualities are judged exceptional, the chair brings them to the attention of the chair of the proposed graduate program at the Ann Arbor campus.

4) If the Ann Arbor graduate program chair agrees that an application should be submitted, the student contacts:
   Office of Student Services
   Room 120 Rackham Building
   Horace H. Rackham School of Graduate Studies
   University of Michigan
   Ann Arbor, MI 48109
   (734) 734-0171

Requirements for Transfer Students

ADMISSION REQUIREMENTS

A student who applies to UM-D with 24 or more semester hours of transferable credit (excluding advanced placement credit) is considered a transfer student. Students with fewer hours of college credit are considered freshmen for admission purposes. For freshman admission requirements, see the General Information section of this Undergraduate Catalog.

Admission to the College as a transfer student is based on the quality and content of both the high school and the college academic records. Standards of evaluation are designed to ensure that each student admitted has the intellectual capacity and the preparation to pursue advanced undergraduate work successfully. Admission criteria are not based on race, sex, color, religion, national origin or ancestry, age, marital status, handicap or Vietnam-era veteran status.

The process of determining equivalent UM-D course and appropriate credit hours for a course taken at another institution is called credit certification. A student who believes that a course was not certified correctly should immediately contact the CASL Office of Advising and Student Records, Room 1039 CB. Any request for re-evaluation of credit must be submitted in writing within six months.

Courses will not be transferable if completed with a grade less than C. The College reserves the right to place students on registration hold if they have not provided an official transcript of their studies taken at another institution.

GENERAL REQUIREMENTS

Students entering the College with junior status will be expected to have completed most of the distribution requirements and, if applicable, major prerequisites. Deficiencies in either of these areas must be made up with all deliberate speed. Check with your major advisor for limits on the number of transfer credits that will be accepted toward degree requirements. Courses taken at other four-year institutions may be used in some cases to satisfy upper-division requirements in the major. Courses transferring from community colleges or other two-year institutions will be considered lower level or general elective credit only. They will not be considered upper level in the College of Arts, Sciences, and Letters.

Reminder: All students are required to declare a major when they reach 60 credit hours. Students transferring 62 hours or more are not required to declare a major before admission, but must do so during their first term at UM-D.
RESIDENCY REQUIREMENTS

Transfer students must complete at UM-D the last 30 to 58 credit hours before graduation. The precise number depends on the previously attended institution(s) and the maximum number of transferable credits. Institutions are classified into three categories: (2Y) includes all two-year institutions, (4Y) includes all four-year institutions other than the schools and colleges of the University of Michigan, (UM) includes only the schools and colleges of the University of Michigan. The table below gives the maximum transferable credits and minimum residency requirements.

Notes:
1. The transferable credit hours listed below are maximums. The exact number of transferable hours is determined upon official evaluation and may vary depending on the student’s program.
2. Advanced Placement, International Baccalaureate and Advanced Level coursework is treated the same as coursework from a four-year institution.
3. A maximum of 12 credit hours of applied art, applied music and music theory coursework may transfer and count toward graduation.

<table>
<thead>
<tr>
<th>Previously Attended Institutions</th>
<th>Maximum Transferable Credit</th>
<th>UM-D Residency Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Y (only)</td>
<td>62</td>
<td>58</td>
</tr>
<tr>
<td>4Y (only)</td>
<td>75</td>
<td>45</td>
</tr>
<tr>
<td>2Y &amp; 4Y (62 from 2Y, 75 total)</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>UM (only)</td>
<td>90</td>
<td>30</td>
</tr>
<tr>
<td>2Y &amp; UM (62 from 2Y, 90 total)</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>4Y &amp; UM (75 from 4Y, 90 total)</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>2Y, 4Y, &amp; UM (62 from 2Y, 75 from 2Y + 4Y, 90 total)</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

(not necessarily in this sequence)

Other Programs

GRADUATE PROGRAMS

The College offers a Master of Arts in Liberal Studies, a Master of Science in Applied and Computational Mathematics, a Master of Science in Environmental Science, a Master of Science in Psychology with tracks in Health Psychology and Clinical Health Psychology, and a Master of Public Policy. See the UM-D Graduate Catalog for admission requirements, complete program descriptions and a listing of graduate courses.

CERTIFICATES

The College offers two certificates: one in Women’s and Gender Studies and one in African and African American Studies. Consult the program description in this Catalog for additional information and requirements.

Special Programs, Facilities, and Services

Special Programs

HONORS PROGRAM

The College offers an Honors Program for students from all units of the campus who are highly motivated and qualified academically. The program provides them with an opportunity to broaden and enrich their undergraduate education by offering an alternate route for satisfying the course distribution requirements while retaining the concentration requirements. The program emphasizes general education grounded in the traditional liberal arts. It includes special honors courses, a tutorial and seminar, reduced class size, close student-professor relationships, and interaction with other honors students.

Students in the Honors Program participate in an interdisciplinary curriculum of the most stimulating courses on campus in a relaxed, intimate learning environment geared to heightening their perceptions and deepening their knowledge. The curriculum is organized to produce a cumulative effect: students who reach their junior year in the program share a common core of literature, language, and methodology upon which they can build. By their senior year, honors students have gained the skills needed for rigorous, independent critical thinking.

The Honors Program is a repository of “quality” education. This implies commitment from teachers, advisors, and students, a coherent and unified curriculum that moves toward specific goals, and a carefully monitored series of courses. It is understood that the curriculum is demanding, and that the program makes as few compromises as possible in order to maintain its integrity.

Special features of the Honors Program include:
1. A freshman seminar which focuses on a particular topic but emphasizes examination of method: critical analysis of both primary and secondary texts; historical, interpretive approaches; research techniques and comparison of how different disciplines pose questions of a wide variety of texts.
2. Four team-taught lower-division interdisciplinary honors courses, at least one per term during the first two years. Each course deals with the evolution and content of Western culture from the vantage points of several academic disciplines: anthropology, art, economics, history, literature, music, political science, psychology, sociology, and the sciences. The four courses provide honors students with a common body of knowledge, language, and literature. They foster critical thinking, help students gain a perspective on the traditions and problems of Western civilization, and equip them with a well-rounded background so that they may more intelligently construct their lives in the modern world. Honors students are also required to take six hours in non-Western culture chosen from a wide variety of courses.
3. The tutorial, a crucial part of the Honors Program, is one of its main features. Tutorials enroll between five and ten students. They are often offered in a non-classroom setting, perhaps in the Honors Lounge or at a faculty member’s home. They meet once a week for three hours and serve to create a sense of collegiality that is frequently lacking on a
Students are automatically qualified to apply to the Honors Program if they have a 3.2 high school GPA, have an ACT composite score of 25 or higher, score in the 90th percentile or higher in PSAT scores, or achieve a combined SAT score of at least 1150. Other incoming freshmen, transfer students, and freshmen or sophomores at UM-D who are genuinely interested in the Honors Program are encouraged to apply.

For information, contact the Honors Program Office at (313) 593-5183 or the Office of the Dean at (313) 593-5490.

FIRST YEAR SEMINARS

First Year Seminars are special classes designed for entering first-year students to ease the transition from high school to college. These are small, welcoming classes developed by dedicated UM-D faculty who have made a special commitment to helping students master important college skills. In a First Year Seminar, students find it much easier to get acquainted with college life and explore the university’s academic resources.

Each First Year Seminar benefits new students in the following ways:
- Exposure to exciting ideas on a special topic
- Linkage between the First Year Seminar and a related Composition course
- Special attention to college-level reading, writing, discussion and research skills
- Extra-curricular activities and opportunities, such as field trips, tours and projects
- Extra mentoring and support
- A ready-made peer group

For many students (especially in CASL), the First Year Seminar experience automatically fulfills two requirements: a required Composition course and a distribution requirement.

A few of the many seminar topics that have been developed include the following:
- “Car Culture”: the history of the automobile in American life and imagination
- “Fast Food Nation”: a look at the fast food industry through various lenses (economics, anthropology, sociology, environmental studies, politics, history and more)
- “To Infinity and Beyond”: an exploration of the concept of infinity using very creative learning techniques
- “Shakespeare on Stage, Page, & Screen”: this seminar incorporates films, texts and a trip to the Shakespeare Festival in Stratford, Ontario, to explore variations on Shakespeare plays based on different media, cultural contexts, and different artistic and ideological agendas.

All First Year Seminars are listed as Liberal Studies (LIBS) courses under “College-Wide Offerings” in the Schedule. For further information, contact the CASL Dean’s Office, 2002 CB, or view the First Year Seminar page on the CASL website: http://www.umd.umich.edu/dept/acad/casl/1stseminar/

COOPERATIVE EDUCATION PROGRAM

Cooperative Education in CASL is an academic program founded on UM-D's commitment to "excellence in teaching and learning." It promotes liberal arts learning and career/personal development through student participation in paid, professional employment. Expected learning outcomes include clarification of values, development of problem-solving and career-related skills, and enhancement of academic knowledge.

Students typically work two or more terms in part-time or full-time positions paying $7-15.00/hour. They also earn upper-level academic credit for their co-op experiences and attend a co-op seminar. To be eligible for the co-op program, students must be admitted to a major in the college and must have completed 30 credit hours with a minimum 2.25 GPA. Transfer students must complete 12 credit hours at UM-D before they are eligible.

Students compete for open co-op positions offered by area employers. After being hired by a co-op employer, students register for co-op and are required to submit academic learning objectives and a critical evaluation essay for approval by the Faculty Director, who determines the awarding of credit. The Co-op Office reviews requests for student-arranged co-ops. Contact the Co-op Office in Room 1038 CB for more information.

DISTANCE LEARNING PROGRAM: ONLINE AND REACH COURSES

The CASL Distance Learning (DL) Program was created to provide more learning options for students. Regular credit-bearing courses are offered via distance learning to UM-D students (and guest students) who can benefit from the flexibility and convenience of online course delivery or self-paced learning. Students who want to pursue a university education but have special constraints such as job demands, childcare or eldercare responsibilities, pregnancy or medical limitations may also find that distance learning helps them stay on track. Distance learning classes are taught by UM-D’s distinguished faculty and are equivalent in academic depth and rigor to face-to-face versions taught in the traditional classroom.

New courses are added to the DL repertoire each year.

Regularly enrolled students may elect distance learning courses as part of the registration process. Guest students must submit the Michigan Uniform Guest Application, available in our Admissions/Registrar’s offices or in the Registrar’s office of the student’s home institution, and complete the admissions process before registering for classes.

Distance Learning courses are currently offered in two modes: 1) instructor-paced online courses and 2) student- or self-paced online courses, formerly called REACH courses. Instructor-paced courses usually have deadlines set by the instructor for individual assignments, exams, and other required work. These courses often require regular participation in online discussion groups established for the class. Required materials may be made available in various formats, including conventional textbooks, coursepacks, CDs, and online resources. Some online courses may require attendance on campus at an orientation session and/or for exams, though often special proctoring arrangements can be made. In contrast, student-paced courses do not require attendance, either online or on campus, and are completed within a given academic term. Exams have deadlines set by the instructor and are proctored. Two of these courses include audio/video materials available for viewing in the campus library only. All others offer the audio/video materials online.

CASL Distance Learning also offers the ONLINE Bachelor of General Studies (BGS) degree program. This program is
INTERNSHIPS AND FIELD EXPERIENCES

In addition to the paid work experience offered in the cooperative education program, non-paying off-campus educational opportunities for academic credit are offered by various departments in the College. For specifics, see the course description for each discipline's offering in Programs and Courses beginning on page 66.

Criminal Justice Studies Internship

Criminal justice internships are available through various departments in the College. Placements are available through the Departments of Social and Behavioral Sciences. Internships vary from three credit hour programs to six credit hours. Students may elect CRJ 478 Social Work/Criminal Justice Internship; CRJ 479 Women’s Studies Internship; CRJ 485 Psychology Internship; or CRJ 494-495 Political Science Internship. For more information about internships, contact the Director of Criminal Justice Studies in the Department of Behavioral Sciences, (313) 593-5520; email: criminal_justice@umd.umich.edu

Economics Internship

The economics internship offers students field experiences with businesses, non-profit organizations and government agencies. The placement allows students to get hands-on experience applying the tools of economic analysis to specific job and project assignments. Student interns spend either eight or 16 hours per week in unpaid work at their placement site, for which they earn either three or six academic credits. Only three credit hours may be applied towards a Communications or Organizational Change in a Multicultural and Global Education Program, the Online BGS, specialized certificates of achievement and currently offered courses, consult the DL Program website: http://casl.umd.umich.edu/distancelearning/ or the DL staff. The Distance Learning Program office is located in 1150 Social Sciences Building, (313) 593-1392, email distancelearning@umd.umich.edu. The Director and the DL staff are available for student advising, transcript review, program information, and general student support in distance education.

Environmental Studies Internship

The environmental studies internship, which is required of all environmental studies concentrators, involves students in a wide variety of positions with government organizations (Department of Environmental Quality, departments of health, city and county agencies), consulting firms, and non-governmental organizations as field assistants and researchers. Students work a prescribed number of hours per week as arranged by the advisor and employer, typically earning three credit hours. Written permission of instructor is required to participate. To inquire, contact the Department of Natural Sciences at (313) 593-5277.

Health Policies Studies Internship

In the health policies studies internship, students volunteer eight hours a week for a semester in a health care delivery setting, to develop an understanding of health care system issues and problems. An internship paper describes the setting and discusses the student's project and its relationship to an organizational or health system issue. Students may enroll for one semester or for two consecutive semesters. Permission of program director and senior standing are required to participate. To inquire, contact the Department of Behavioral Sciences, at (313) 593-5520.

History and Humanities Internship

The history and humanities internship offers practical experience to students in art history, communication, English, foreign languages, history, humanities, music, and philosophy. Students develop job-entry experiences in humanities and history-related careers. The internship includes a required seminar. Although, in general, the internship is offered for elective credit, it may be used to satisfy the following concentration requirements: Three credit hours may be applied towards a Communications major/minor or toward an Art Administration degree. For students with a foreign language focus, three credit hours may be used within the International Studies Support Studies component or toward the cognate requirement of the French or Hispanic Studies concentrations. Prerequisites are junior or senior standing. Students earn three to six credit hours per semester. The maximum total credit hours are 12. To inquire, contact the Department of Humanities, (313) 593-5433.

Psychology Internship

Psychology internship placements offer work experiences in a wide variety of human services organizations. These include programs related to child abuse, criminal rehabilitation, crisis intervention, geriatrics, human resources, mental illness, organizational development, special education, substance abuse, and women's issues. Students spend six or 12 hours per week at their field placement and attend a weekly seminar involving training in listening and helping skills. Students may register for three or six credits. Prerequisites are PSYC 171 and permission of instructor. To inquire, contact the Department of Behavioral...
Public Affairs Internship

The political science internship program allows students to participate in the political process through placements in a variety of governmental offices. Students in the local internship program work for state and local elected officials, law firms, and interest groups. Students in the Washington, D.C. program have worked in the White House, the Pentagon, and for Members of Congress. Students in the Ottawa, Canada program work in a Member of Parliament’s office for a period of five weeks. Admission is reserved primarily for qualified juniors and seniors of all majors. Six upper-division credits are granted for successful completion of either program. Scholarships are available. To inquire, contact the Department of Social Sciences at (313) 593-5096.

Sociology/Social Work Internship

The sociology/social work internship offers students the opportunity to work in social welfare agencies and/or human services organizations such as domestic violence shelters, criminal justice agencies, head start programs, substance abuse rehabilitation, gerontology, hospice, human resources, health care, urban planning, and so on. The emphasis in the field experience is on the social problems that bring clients to agencies and on the social contexts within which agencies deliver services. Students spend six to eight hours per week on site and two hours in a classroom seminar. Prerequisites are SOC 200 or SOC 201 and permission of instructor. Students may enroll for three to six credit hours. To inquire, contact the Department of Behavioral Sciences at (313) 593-5520.

Women's and Gender Studies Internship

The women's and gender studies internship placements are offered in a variety of social service organizations providing services to girls and/or women. These include, but are not limited to, women’s health care, early education programs, adolescent services, residential counseling, pregnancy and childcare, family violence, homelessness, elder care, and others. The emphasis in the field experience is directed toward the gendered nature of the social problems bringing clients to agency attention. Students spend six to eight hours per week on-site and two hours in a classroom seminar. Prerequisites are SOC 200 or SOC 201, or WGST 275, and permission of instructor. To inquire, contact the Women’s and Gender Studies Office, 2040 CB, (313) 593-1391.

WOMEN IN LEARNING AND LEADERSHIP (WILL)

The Women in Learning and Leadership (WILL) program is designed to develop the analytical abilities and skills of undergraduates and promote their will to be community leaders for gender equity. WILL allows students to connect knowledge gained in the classroom with learning experiences in the community by combining courses in Women’s and Gender Studies, co-curricular programming, a student leadership organization, and internship and co-op opportunities. The following are the main goals of the program:

- To encourage critical thinking, intellectual curiosity and active learning opportunities that empower women as leaders during and beyond college;
- To increase awareness of obstacles created by gender, ethnic and social class stratification, with attention to what those obstacles mean for students living in metropolitan Detroit, and to develop awareness of individual and collective strategies to address these obstacles;
- To promote self-confidence, assertiveness, a realistic sense of efficacy and willingness to lead;
- To provide opportunities for students to explore their career and life choices, and to build a multicultural and co-generational community on campus that supports this learning and exploring;
- To develop ongoing networks of collaboration between community organizations, leaders, and students.

Requirements for WILL

Students accepted into WILL complete 4 courses in Women's and Gender Studies and an internship or co-op experience in a field of their choice. There are two required courses for the program: Introduction to Women’s and Gender Studies, and a Women, Leadership and Social Change class. For their two electives, students may choose from the wide variety of courses offered by the Women’s and Gender Studies program. In addition to fulfilling these curricular requirements, WILL students spend a minimum of 15 hours per semester engaged in co-curricular activities related to gender equity and community building. Among their other activities, the WILL student group engages in volunteer opportunities at soup kitchens, food banks, homeless shelters, a residential facility for troubled teens, and battered women’s shelters. In addition, they have the opportunity to meet with locally and nationally known gender equity leaders for casual “fireside chats” and are offered annual training seminars by local women leaders. They organize speaker series on topics such as leadership for global gender justice, eating disorders and body image, and violence awareness on campus. They also run an innovative and successful mentoring program for middle school girls in Southwest Detroit. WILL students’ internship placements have allowed them to work with women in the criminal justice system, in programs for at-risk youth, in an oral history project interviewing Arab-American women, and in a variety of positions in legal, medical, business and education fields with women leaders as mentors.

The program recruits in April every academic year for acceptance into the program the following Fall term. Students accepted into the program have a minimum of a 3.0 grade point average, demonstrated leadership ability, and an interest in fostering gender equity.

For more information, contact the Director of WILL at (313) 593-51391 or visit 2040 CB.

JAPAN CENTER FOR MICHIGAN UNIVERSITIES

Since 1989, the fifteen Michigan public universities have operated a unique program in Japanese language and culture in our sister state in Japan, the Shiga prefecture. The Japan Center for Michigan Universities is in Hikone, a beautiful, medium-sized, non-westernized city in central Japan. The $15 million facility, built by the Shiga government, includes classrooms, offices, and apartments with cooking facilities for student occupancy; home stays, of varying duration, may also be arranged. The full academic program runs from September through the end of April; students
may also select a one-semester program, or the Summer Intensive Program in the Japanese language. UM-D students receive 26 hours of credit for UM-D courses in Japanese language (see course descriptions under Japanese in this Catalog for the following: JPN 128-129, 178-225, or 228-229), Japanese Culture and Society (JPN 395, 396), and two other courses taught by visiting professors. These have included Japanese art and painting, Japanese technology and business, energy and environment in Japan, modern Japanese history, and mass media.

For current information on program fees and housing, visit the website: http://www.isp.msu.edu/JCMU/. Applicants need not know Japanese, but they should have studied another foreign language and have had some foreign travel experience. They must have sophomore standing by the end of Winter term and a 2.5 or higher GPA. Students should contact the International Office, 2136 UC, (313) 593-6600, for further information.

STUDY ABROAD

Students interested in other study abroad programs should consult faculty in Modern and Classical Languages, or their major advisor, or the International Office in 2136 UC for additional information.

Centers, Facilities and Services

OFFICE OF ADVISING AND STUDENT RECORDS

The Office of Advising and Student Records helps students make informed decisions about their course of study and the liberal arts. To provide this help, the Office offers students current and accurate information regarding CASL academic policies and procedures, coordinates academic advising between students and faculty advisors, provides necessary College forms and materials, and reviews students' academic progress and performance at specified intervals.

The Office offers a systematic program of guidance and advising that attempts to support students from registration through graduation. Advising occurs in many forms and at various levels. For new students, an orientation program is available for academic testing and advising. The initial advising is done by professional staff and faculty who work through the Office.

The Office also provides expert academic help of a general nature. Its staff is specifically trained to work with the undecided student. It also oversees the AB and BS degree programs in Liberal Studies and the BGS degree program. Traditional majors also have faculty advisors. A list of these advisors is posted in the Office, located in 1039 CB, (313) 593-5293.

UNIVERSITY OF MICHIGAN-DEARBORN WRITING CENTER

The University Writing Center, staffed by experienced student peer consultants under the supervision of full-time faculty in composition, provides support for all UM-D students wishing to improve their writing. Students needing regular one-on-one help in developing basic writing skills, as well as more advanced students wishing to improve their writing, will find the Writing Center useful.

The Writing Center is open five days a week during Fall and Winter terms and on a more limited basis during the summer term. It is strongly recommended that students make an appointment should they wish to work with a peer consultant. The center is equipped with personal computers and software for student use including word processing software, grammar programs and Internet access and research. For further information, contact the Writing Program Office, 3018 CB, or telephone (313) 593-5238. The center is located in 3035 CB; appointments can be made by calling the Writing Center at (313) 593-5543.

CENTER FOR ARAB AMERICAN STUDIES

The Center for Arab American Studies (CAAS) is a college-wide academic program and research site at UM-D. CAAS aims to produce cutting-edge scholarship at the intersection of many fields including Arab, Middle East, Race/Ethnic Studies among others. The inter-disciplinary perspective accounts for the ways in which race and ethnicity, gender and sexuality, class and wealth, citizenship and immigration status among other factors shape and influence the lives and experiences of Arabs and Arab Americans. The scope of CAAS activities is not limited to or confined by the campus boundaries. CAAS intends to contribute to a better public understanding of Arab experiences and concerns in North America and to promote a culture of justice, dignity, tolerance, and peace. The Center is equally committed to projects that promote the well-being of our neighborhoods in the greater metropolitan Detroit area and its mosaic of peoples of all racial, ethnic, religious and cultural groups. For additional information, contact the Center in Room 2200 SSB or call (313) 593-6334.

CENTER FOR ARMENIAN RESEARCH

The Armenian Research Center (ARC) was established for the documentation and the publication of materials in the field of Armenian studies and affairs. The ARC accomplishes this work in a variety of ways. It provides access to a computerized database of books, periodical articles, and other materials concerning Armenians. ARC publishes booklets and other texts. It also supports both academic and public outreach by participating in forums, sponsoring talks and answering questions from public media. ARC offers two scholarships each year to Armenian-American students attending UM-D. ARC also frequently faxes informational material to political leaders in regards to pending legislation before Congress or the White House. For additional information contact the ARC in 110 ASC or call (313)-593-5181.
CENTER FOR STUDY OF AUTOMOTIVE HERITAGE

Established in 2000, the Center for the Study of Automotive Heritage (CSAH) is a source for research on the history of the automobile and the automotive industry. The focus of the Center can be defined in terms of the following key dimensions of inquiry: material culture and automobile design; economic and social history of automotive production; the social history of advertising and consumption; and the global impact of the automobile.

The CSAH sponsors lectures on campus and hosts visiting faculty interested in conducting research on the role of the automobile in society, economy and culture. The Center is located in the Henry Ford Estate. Faculty and students are able to access the oral history collection of the Center by appointment only. Contact the Center staff at: autoheritage@umd.umich.edu. Visit the CSAH web site for additional information on our current research projects: http://www.umd.umich.edu/dept/acad/casl/csah/index.html.

CENTER FOR ECONOMIC EDUCATION

The Center for Economic Education in CASL seeks to improve the quality of economic education and financial literacy at all levels: primary, secondary, post-secondary, and post-graduate.

In pursuing this mission, the Center provides a number of services and programs:

• offers for-credit and non-credit courses, training programs, and seminars for in-service and pre-service teachers.
• sponsors programs in economic education and financial literacy for adult constituencies, such as the community at large, media, legislators, management, and employees.
• serves as a community resource and consultant to school districts, education agencies, and community groups regarding standards, curriculum development, course content, and resource materials.
• works to improve the quality of introductory economics courses and also to provide programs to upgrade the teaching skills of prospective and present university faculty.
• supports research to evaluate existing program effectiveness, to measure student learning, and to determine the most effective tools and methods for the delivery of high quality economic education.
• develops and distributes appropriate standards-based curriculum materials and other resource materials useful in economic education.
• Center faculty and staff work closely with faculty from the College, the School of Education, and the School of Management to improve the quality of economic education at all levels. A special focus of this collaborative effort is the integration of economic education into a variety of academic subjects.

The Center is associated with the Michigan Council on Economic Education and the National Council on Economic Education.

For more information, contact the Director at (313) 593-5096.

CENTER FOR MATHEMATICS EDUCATION

The Center for Mathematics Education is dedicated to improving the quality of teacher preparation for prospective teachers and to making continuous professional development available for current teachers. The goal is to strengthen the teaching of mathematics and improve student learning. The professional development programs offered by the Center seek to deepen teachers’ understanding of the mathematics they teach and emphasize best teaching practices through the study and use of current research and standards-based curriculum resources. These professional development activities are offered at school district sites or at the regional intermediate school districts and carry at least 3 SB-CEU credits. It is also possible for classroom teachers to enroll for graduate credit. These credits can be applied towards the degree requirements for the Specialty in Middle Grades Mathematics program that is part of the School of Education’s Master of Arts in Education degree. Additional information can be obtained at http://www.umd.umich.edu/casl/math/MathEd.

CENTER FOR THE STUDY OF RELIGION AND SOCIETY

Established in 2001, the Center for the Study of Religion and Society (CSRS) provides a focus for interdisciplinary scholarly research and teaching on religion and its relationship to American society. It is home to four interrelated programs: the interdisciplinary minor in Religious Studies; the Worldviews Seminar; the Pluralism Project at UM-D, and the Metropolitan Detroit Digital Music Archive of religious music, chant, and recitation. The Center sponsors lectures and colloquia on campus and is a link between the university and area religious centers and inter-religious organizations. CSRS is located in Room 2038 CB. Contact the Center staff at (313) 583-6329 or csrs_rs@umich.edu.

MATHEMATICS LEARNING CENTER (MLC)

The Department of Mathematics and Statistics supports a peer tutoring program for UM-D students needing assistance with their work in pre-calculus, calculus, differential equations, linear algebra, statistics, and mathematics education courses. Fellow students who have successfully completed these courses and who have been recommended for tutoring by their instructors are available during the posted hours throughout the week. Also at the MLC, computer tutorials and videos are available for review for the University Mathematics Placement Exam and mathematics courses. Please call the MLC (313) 583-6351 or visit our website at www.umd.umich.edu/casl/math for a current list of programs available for student support. The MLC is located in Room 2076, CB. The department also provides tutorial support for remedial algebra courses (MATH 080 and 090). Instructors for these courses will have information for students regarding the tutoring hours and location at the beginning of each semester.

SCIENCE LEARNING CENTER

The Department of Natural Sciences operates a Science Learning Center for students enrolled in a variety of science courses. The SLC program assures that all science students have adequate preparation for high achievement in science by
Policies And Procedures

For complete information on current policies and procedures, contact the Office of Advising and Student Records, Room 1039 CB, (313) 593-5293.

Academic Procedures

DECLARING A MAJOR

Students are required to declare a major formally and officially by the time they have earned 60 credit hours. A student who does not comply with this policy is placed on registration hold. As a result, the student will not be allowed to register for the next term until a major has been declared.

SENIOR DEGREE AUDITS

A senior audit gives the student a list of requirements remaining to be fulfilled for graduation. During the term in which a student will complete 85 credit hours, a notice will be sent from the Office of Advising and Student Records that a senior audit is about to be completed. The student will first be asked to confirm his or her major. When the senior audit is completed, the student will be notified and instructed to schedule an advising appointment, during which the audit will be reviewed. A final audit will be conducted automatically for students who have applied for graduation and are on the Degree Candidate List.

DROPPING AND ADDING COURSES

Changes in course elections, including dropping or adding a course, and substituting another course for one already elected, may be made during the official "drop/add period." To make a change in course election, a student must obtain an Add/Drop Form from the CASL Office of Advising and Student Records, Room 1039 CB, must obtain the required faculty signatures, and must submit the form to the Enrollment Services Counter by the Add/Drop deadline specified in the Schedule of Classes.

Courses may be added during the first two weeks of a full term or the first week of a half-term or mini-term. Courses may be dropped through the ninth week of a full term or the fourth week of a half-term, but a W notation will be entered on the transcript. Consult the Schedule of Classes for exact dates, signature requirements, and fee assessments.

ELECTING MORE THAN 18 CREDIT HOURS

Students must have written permission from the Office of Advising and Student Records to elect more than 18 credit hours a term. Students whose GPA is below 3.00 are not allowed to elect more than the normal maximum of 12 hours.

COURSEWORK AT OTHER INSTITUTIONS

After a student first enrolls in a degree program at UM-D, he or she may not ordinarily transfer credits from a course taken at another college or university to apply to the requirements of the UM-D degree. Exceptions to this policy require written permission from the CASL Office of Advising and Student Records prior to registration for the course. Permission for transfer of credit from a non-UM-D institution is granted only for demonstrably extraordinary and urgent circumstances. Courses that are in progress at the time of admission and are so reported in writing to the Office of Admissions and Orientation may be transferred.

CREDIT FOR CO-OP, INDEPENDENT STUDY AND OTHER EXPERIENTIAL COURSES

In addition to the Cooperative Education Program with its paid work experience, independent studies, independent research, internships, and field experience courses are offered by various departments.

No more than 18 hours of credit may be counted toward graduation for cooperative education, independent/directed research, independent/directed studies, internships, and field experiences. There may be more specific limits on the number of independent study, reading, and research courses that may be applied to a major; see the faculty advisor in the major area for more specifics on this matter. Credit for laboratory/off-campus experiences must be arranged prior to the experiences; credits may not be arranged retroactively, after the experiences are completed.

REGISTERING AFTER WITHDRAWALS

A CASL student who first registers and then totally withdraws from two consecutive terms may be placed on academic probation and may not register without the explicit written permission of the Associate Dean or the Associate Dean's representative.

A student who is required to withdraw from one academic unit may not be admitted to another UM-D academic unit within the same term that the withdrawal action was taken. See the General Information section of this Catalog for withdrawal policies.

PETITIONS

A petition is an official written request by the student to review information related to the student's academic record or to ask for approval of exceptions to policies or procedures. Petition forms are available in the CASL Office of Advising and Student Records, and must be filed in that office.
Grading System

**CASL LETTER GRADES AND QUALITY POINTS**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
</tr>
<tr>
<td>B+</td>
<td>3.40</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
</tr>
<tr>
<td>C+</td>
<td>2.40</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
</tr>
<tr>
<td>D+</td>
<td>1.40</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.70 (Minimum passing grade)</td>
</tr>
<tr>
<td>E</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Grade Notations**

The following notations may appear on a transcript to describe special situations in regard to a course.

**NC No Credit.** No honor points. Not computed in the grade point average. Used only in specially approved courses that are graded A, B, C, No Credit.

**I Incomplete.** No honor points. A student who cannot complete the work of a course before the end of the term must request permission to receive an incomplete grade. A contract form, obtained from the CASL Office of Advising and Student Records, Room 1039 CB, must be discussed with and approved by the instructor before the end of the term. If the work is not completed within either four months, or an earlier deadline specified by the instructor, the grade will be converted to an E. Incompletes may not be completed after graduation. An I notation will remain on the transcript, followed by the letter grade earned. In cases where an I is granted, but no contract is submitted, an IE will appear on the transcript.

**X Absent from Final Examination.** No honor points. An instructor may assign an X if a student has completed all the required coursework except for the final examination. The final exam must be taken within five weeks of the end of the term. If the exam is not completed in the required time frame, and an E grade will be recorded. The X notation will remain on the transcript, followed by the letter grade earned. A course with an X mark may not be completed after graduation.

**Y Course extended beyond term end.** No credit. No honor points. Used only for courses that have been specially designed and approved to extend beyond the end of one term. A course with a Y mark may not be completed after graduation. If such a course is not completed, the Y will be converted to an E upon graduation.

**NR Grade Not Reported.** No honor points. Student should consult the Registrar immediately.

**W Official Withdrawal.** No credit. No honor points. Not computed in the grade point average. Students who drop a course or withdraw from all courses for a term before the deadline for official drops and/or withdrawals will receive for these courses the W notation. This notation may not be removed from the transcript.

**S/E.** Used only for specially approved courses. If a student passes, an S (satisfactory) is awarded. It is not computed into the grade point average. If a student does not pass, an E is awarded. If a student stops attending, without officially dropping, a UE is awarded. Both the E and the UE are computed in the GPA as failing grades. (Exception: Failing grades in additive credit courses that are graded S/E have no impact on the GPA.)

**P/F Pass/Fail Option.** No honor points. A student must elect to take a course under the Pass/Fail option. The instructor reports a letter grade (A through E), except in courses where the notation No Credit is acceptable. Enrollment Services converts the student’s letter grade according to the following procedure:

1. Grades A through C- are posted on a transcript as P (Pass); counts toward residency requirement and credit hours toward graduation.
2. Grades D+ through E are posted on a transcript as F (Fail); no degree credit is earned.
3. A grade of UE is not converted to an F and is computed in the GPA the same as an E.

Neither a P nor an F is computed in the grade point average. This grading option applies only to courses offered by CASL. Students enrolled in degree programs in other units should check the pass/fail regulations in those units. The option is subject to the following conditions:

1. The pass/fail option is open only to students who are not on academic probation.
2. Courses taken under the pass/fail option may not be used to fulfill requirements for majors, minors, areas of focus, cognates, and/or teacher certification.
3. Students in the Honors Program must take all Honors Program requirements (including distribution) for a grade.
4. Courses taken under the pass/fail option must be specified on the registration form or added as such within the usual add period. Such courses may be dropped within the usual drop period.
5. Changing from the pass/fail option to a letter grade or vice versa is not permitted after the first two weeks of a full term or after the first week of a half term.
6. A student is limited to, at most, four courses taken under the pass/fail option. Courses specifically designated as "S/E only" are not counted in this limitation.

**UE Unearned Fail.** This grade is assigned to any student who has never attended, or stopped attending class during the semester and did not officially drop. It is computed in the GPA the same as an E.

**VI Visitor-Official Audit.** No credit. No honor points. Not computed into the grade point average. An official audit, or visitor status, allows a student to attend a course but not elect it for credit. The VI notation appears on the transcript. Regular tuition fees are assessed.
CHANGING GRADES

A grade or notation once reported may be changed only when a demonstrable clerical error has been made or at the discretion of the instructor. Such a change must normally be made within four months of the end of the term in which the course was taken. CASL instructors must complete Supplementary Grade Report forms and submit them in Room 1039 CB.

TERM AND CUMULATIVE GRADE POINT AVERAGE (GPA)

The cumulative GPA is determined by dividing the total number of credit hours into the total number of quality points earned. The term GPA is determined by dividing the number of credit hours elected during a term into the number of quality points earned during the same term.

The number of credit hours excludes 1) courses in which a student received an NC; 2) courses taken on a pass/fail basis in which a P or an F is recorded; 3) S/E graded courses in which the student receives an S; 4) additive credit courses.

Grades associated with transferred courses are neither recorded nor used in computing the cumulative GPA. Past grades, however, may be reviewed for admission to specific units within UM-D.

Effective Fall 2005, for any course repeated in Fall 2005, or thereafter, grades earned in all attempts of a course will appear on the transcript, however, only the most recently earned grade will be reflected in the cumulative GPA. Some restrictions apply. For more details, please see a CASL advisor.

Note: Prior to Fall 2005, grades earned in all attempts of a course appeared on the transcript and were reflected in the cumulative GPA.

Academic Honors

Consult the general information section in this Catalog.

Academic Performance

The goal of the College is to assist its students in making satisfactory and expeditious progress toward their degrees. In order to be graduated, the student must achieve not only a cumulative GPA of 2.00 or better, but also a 2.00 or better in his/her major, cognates, minor, or each area of focus. Steady achievement at this level is not always possible. From time to time students might perform at a level below 2.00 and still be permitted to register and thus to continue to make progress toward their degrees. The scholastic records of all students are examined at the end of each term during which they took courses.

PROBATION

If a student's cumulative GPA should fall below 2.00 at the end of a term, the student will be placed on "probation" and may be placed on registration hold for the next term. If the student's cumulative GPA reaches 2.00 or better at the end of this probationary term, the student is removed from probation. On the other hand, if the cumulative GPA is even lower at the end of the probationary term, the student would normally move to “required to withdraw” (RW) status and would not be allowed to reregister for the duration of at least one year. A student with a cumulative GPA substantially below 2.00 may be required to demonstrate his or her potential for readmission. Finally, if the cumulative GPA should show significant improvement but not yet reach 2.00 at the end of the probationary term, the student may be placed in "probation continued" status for one or more terms.

PROBATION CONTINUED

A student in "probation continued" status has an academic hold placed on registration. This means that the student may not register again until all grades for the probation continued term have been recorded and reviewed favorably. If the student on probation continued achieves a cumulative GPA of 2.00 or better at the end of this term, the student is removed from the academic hold and from probation. If the student should fail to achieve a cumulative GPA of 2.00 or better, the student would normally be required to withdraw (RW) and would not be permitted to register for the duration of at least one year. In extraordinary cases, a student might be permitted to register for a second term in the category of probation continued. A student with a cumulative GPA substantially below 2.00 may be required to demonstrate his or her potential for readmission. Normally, a student may be in the probation-continued category for only two regular terms.

Further information may be obtained from the CASL Office of Advising and Student Records, Room 1039 CB.

Code of Academic Conduct

In order to maintain the high academic standards subscribed to by UM-D, the College has adopted a Code of Academic Conduct that defines academic misconduct and outlines complaint and appeals procedures.

The College, like all communities, functions best when its members treat one another with honesty, fairness, respect, and trust. Therefore, an individual should realize that deception for the purpose of individual gain is an offense against the community. Such dishonesty includes:

PLAGIARISM

Submitting a piece of work (for example, an essay, research paper, assignment, laboratory report) which in part or in whole is not entirely the student's own work without attributing those same portions to their correct source(s).

CHEATING

Using unauthorized notes, or study aids, or information from another student or student's paper on an examination; altering graded work after it has been returned, then submitting the work for re-grading; and allowing another person to do one's work and to submit the work under one's own name.

FABRICATION

Presenting data in a piece of work which were not gathered in accordance with the guidelines defining the appropriate methods for collecting or generating data and failing to include a substantially accurate account of the method by which the data were gathered or collected.
AIDING AND ABETTING DISHONESTY

Altering documents affecting academic records; forging signatures of authorization or falsifying information on an official document, election form, grade report, letter of permission, petition, or any document designed to meet or exempt a student from an established CASL or University academic regulation.

A faculty member has the responsibility to inform the students that academic dishonesty is not acceptable. Students are responsible for discovering the sort of conduct that would be viewed as unacceptable by reviewing the Code of Academic Conduct and by asking individual instructors for the standards of their respective disciplines.

Complaints and Appeal Procedures

Complaints alleging violation of the Code of Academic Conduct may be filed by faculty, students, or administrative staff of the University.

These procedures are available to all students, regardless of their academic unit, who are enrolled or have been enrolled within a period of one year prior to the filing of a grievance against a faculty or staff member in CASL.

RIGHTS OF PARTIES

A faculty member shall have the right to assign penalties, including lowered grades for coursework or an entire course, for violations of the CASL Code of Academic Conduct with the understanding that students have the right of appeal to the CASL Academic Judiciary Committee.

PROCEDURES

An instructor who has evidence during the term that a student has violated the Code of Academic Conduct should arrange a personal conference with the student, present the evidence with respect to the alleged offense, give the student an opportunity to state his or her case, and inform the student of the charges, if any, and the possible sanctions that may be imposed or recommended. After final examinations or coursework have been turned in, such notice may be impossible. In such circumstances, instructors may enter the lowered grade or other penalty into the permanent record.

If informal resolution of the dispute appears impossible, the faculty member or the accused party should seek the advice of the CASL Ombudsperson. The Ombudsperson shall inform both parties of their respective rights and attempt to mediate the dispute.

If the Ombudsperson is unable to mediate the dispute, either party may present a written grievance to the Ombudsperson formally requesting a hearing before the Academic Judiciary Committee.

HEARING

A student has the right to an impartial hearing before the CASL Academic Judiciary Committee, in order to present evidence, to state his or her case, or both. Students may decline to speak against their own interests. All parties shall receive 1) sufficient notice of the hearing, 2) a prompt and impartial hearing, and 3) written statement of decisions rendered.

FINAL APPEAL

A final appeal may be subsequently made to the Campus Appeals Board. Such an appeal should be channeled through the Dean of the College.

OTHER STUDENT GRIEVANCE PROCEDURES

Additional grievance procedures are available when there is a charge that the College, a department in the College, or a faculty or staff member in the College has reached a decision concerning any aspect of the student's academic affairs that is manifestly unfair or illegal. Grievant's may challenge all aspects of the degree process and the grading process, with the exception of conclusionary judgments about academic competence and the desirability of established College academic policy.

These procedures are also applicable to a potential grievant who must offer grounds on which to allege personal harm or injury deriving from one or more of the following: 1) Discriminatory or intimidating treatment of students on the basis of race, sex, color, non-relevant physical disability, or any other legally impermissible distinction (age, religion, national origin or ancestry, marital status, sexual orientation, Vietnam-era status, parental status, etc.); 2) Rules, regulations, policies or procedures, or their implementation, which are inconsistent with federal regulations prohibiting discrimination in education on the basis of sex, race, or non-relevant physical disability; 3) Alleged violations of the Family Educational Rights and Privacy Act such as alleged inaccuracy of records; denial of access to records; allegations that records wrongly were made available to third parties without the student's consent; 4) Wholly arbitrary, capricious, or unprofessional conduct toward a student on the part of a faculty member, staff member or administrator whether or not related to race, sex, or physical disability for which no alternative appeals procedures are available. A complete copy of the CASL Student Grievance Procedures is available from the CASL Office of the Dean, 2002 CB.

Alternative appeals procedures such as petitions are available for cases handled by the Academic Standards Committee. Such grievances shall not be appealed under the Student Grievance Procedures, but must be appealed through the CASL Office of Advising and Student Records, 1039 CB. Contact the Office at (313) 593-5293 for further information about the processes by which such appeals are to be handled.

Policy Changes

All policies, procedures, and requirements are subject to change. These changes do not always coincide with the printing of a new Catalog. The most current information regarding CASL programs may be obtained from the CASL Office of Advising and Student Records, Room 1039 CB.
Programs And Course Offerings

Directory

CASL offers 31 degree programs and about a thousand courses. To help the reader find the program or course of interest, a directory is provided below. The following symbols are used to indicate the program type: Ma denotes a Major or Field of Concentration; Mi denotes a Minor and an area of focus; and NM denotes Not a Major or Minor. Changes may occur in the status of a program. Please check with the Office of Advising and Student Records, Room 1039 CB, or the relevant department office.

<table>
<thead>
<tr>
<th>Program</th>
<th>Type</th>
<th>Department</th>
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</thead>
<tbody>
<tr>
<td>African and African American Studies</td>
<td>Mi</td>
<td>College wide</td>
</tr>
<tr>
<td>American Studies</td>
<td>Ma,</td>
<td>Behavioral Sciences</td>
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<tr>
<td>Anthropology</td>
<td>Mi</td>
<td>Behavioral Sciences</td>
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<td>Applied Art</td>
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<td>Humanities</td>
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<td>Applied Music</td>
<td>NM</td>
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<td>Applied Statistics</td>
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<td>Arabic</td>
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<tr>
<td>Armenian</td>
<td>NM,</td>
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<tr>
<td>Art History</td>
<td>Ma,</td>
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<td>Arts, Applied</td>
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<tr>
<td>Astronomy</td>
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<td>Biochemistry</td>
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<tr>
<td>Biological Sciences</td>
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<td>Chemistry (ACS Approved)</td>
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<td>Chemistry/Instructional Track</td>
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<td>Communications</td>
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<td>Comparative Literature</td>
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<td>Composition</td>
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<td>Computer and Computational Mathematics</td>
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<td>Mathematics</td>
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<td>Cooperative Education</td>
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<td>Criminal Justice Studies</td>
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<td>Earth Sciences</td>
<td>Ma,</td>
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<td>Economics</td>
<td>Ma,</td>
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<td>French/French Studies</td>
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<td>General Studies</td>
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<td>Geography</td>
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<td>Geology</td>
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<td>German</td>
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<td>Greek</td>
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<td>Hispanic Studies</td>
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<td>Ma,</td>
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<td>Ma,</td>
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<tr>
<td>International Studies</td>
<td>Ma</td>
<td>College wide</td>
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<td>Japanese</td>
<td>NM</td>
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<td>Journalism</td>
<td>NM</td>
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<td>Latin</td>
<td>NM</td>
<td>Humanities</td>
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<tr>
<td>Law and Society</td>
<td>Mi</td>
<td>College wide</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td>Ma</td>
<td>College wide</td>
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<tr>
<td>Leadership and Communication in Organi-</td>
<td>Mi</td>
<td>College-wide</td>
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<tr>
<td>zations</td>
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<td>Linguistics</td>
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<tr>
<td>Mathematics</td>
<td>Ma,</td>
<td>Mathematics</td>
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<tr>
<td>Medieval and Renaissance Studies</td>
<td>Mi</td>
<td>College wide</td>
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<td>Microbiology</td>
<td>Ma,</td>
<td>Natural Sciences</td>
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<td>Modern and Classical Languages: Armen-</td>
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<td>ian, Greek, Swedish</td>
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<td>Music</td>
<td>Mi</td>
<td>Humanities</td>
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<td>Music Theory</td>
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<td>Natural Sciences</td>
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<td>Philosophy</td>
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<td>Ma,</td>
<td>Natural Sciences</td>
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<td>Political Science</td>
<td>Ma,</td>
<td>Social Sciences</td>
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<td>Psychology</td>
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<td>Behavioral Sciences</td>
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<td>Religious Studies</td>
<td>Mi</td>
<td>College wide</td>
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<tr>
<td>Science and Technology Studies</td>
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<td>Sociology</td>
<td>Ma,</td>
<td>Behavioral Sciences</td>
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<tr>
<td>Spanish (see Hispanic Studies)</td>
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<td>Humanities</td>
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<tr>
<td>Speech</td>
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<td>Swedish</td>
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<td>Statistics</td>
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<td>Mathematics</td>
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<tr>
<td>Women's and Gender Studies</td>
<td>Ma,</td>
<td>College wide</td>
</tr>
</tbody>
</table>

Key to Course Listings

The heading for each course listing contains the following information.

**Discipline and Course Number.** Courses are numbered in accordance with a University-wide numbering system: courses numbered 100 to 199 and 1000 to 1999 are introductory, courses 200 to 299 and 2000 to 2999 are intermediate, and courses 300 to 499 and 3000 to 4999 are advanced (upper-division).

**Course Title.** The bold face course title follows the course number.

**Credit Hours.** The number of credit hours will appear below the course title.

**Prerequisites.** Prerequisites to the course appear after the credit hours. They should be completed before the course is elected. An asterisk (*) denotes that course may be taken concurrently.
**Programs And Courses**

**African and African American Studies (Minor only)**

African and African American Studies (AAAS) is an interdisciplinary program housed in the College of Arts, Sciences, and Letters at the UM-D. The program offers a flexible, challenging and stimulating course of studies for students who wish to pursue a minor that will allow them to:

- explore the unique cultural heritages and experiences of Africans and African Americans beyond the confines of a traditional curriculum;
- increase their skills in critical analysis, discourse and writing, while honing these tools in a multicultural classroom environment;
- gain a sense of perspective about the series of crucial issues confronting a multicultural society, including: cultural hegemony, social class antagonisms, gender inequities and the lingering legacy of pseudo-scientific racist preconceptions;
- become more knowledgeable, more active members of their communities as a result of their university experience.

Many of the courses offered in the African and African American Studies Program are cross listed with other disciplines, and its faculty hold appointments in various disciplines within the College, such as Anthropology, Communications, Economics, English, History, Political Science, Psychology and Sociology.

To fulfill a minor in African and African American Studies, a student must complete 18 credit hours of coursework in the program as outlined below.

**CONCENTRATION REQUIREMENTS**

**Required courses**

- **AAAS 275** Introduction to Africana Studies ........... 3 hrs 300/400-level courses ........................................ 15 hrs
- **AAAS 498** Thesis* ................................................. 3 hrs

*Note: The thesis is optional and can be used to fulfill 3 hrs of the 300/400 level course requirement.

AAAS 275, taught at least once annually, introduces students to various issues and debates within African and African American Studies. The course will always incorporate both African and African-American themes; however, the emphasis may vary to reflect the specialties of the professor(s) at a given time. (HIST 106 or ENGL 239 may also be used to fulfill this requirement.)

Each term, AAAS offers a wide variety of 300 and 400 level courses that are designed to fulfill the core requirements of the AAAS minor. See the listing of AAAS course offerings below. Successful completion of this phase of the program requires that a student complete at least six of the required 15 credit hours in courses that are exclusively African and African-American in content. The courses that meet this criterion are identified by an asterisk (*) in the course offerings listed below.

Students minoring in AAAS may choose to complete their coursework with final thesis project (AAAS 498) that reflects particular interests developed during their course of study. The thesis option can be used to fulfill three hours of the required 15 hours of upper-division coursework. The AAAS thesis will be written under the direction of a faculty member whose scholarly interests are compatible with the research interests of the student.

**Courses from Other Disciplines**

Occasionally, other disciplines may offer courses relevant to the AAAS minor. In recent years, such courses have included: ENGL 390 Post-Colonial Literature, HIST 390 New World Cultures, and the SOC 391 Black Church Experience. With the approval of the AAAS advisor, such upper-division courses may be accepted as credit toward the AAAS minor.

For more information about the African and African American Studies program, please contact the CASL the AAAS office, 2041 CB or 1039 CB, (313) 593-5293.

**CERTIFICATE IN AFRICAN AND AFRICAN AMERICAN STUDIES**

Students completing the requirements for the minor may also obtain a certificate in AAAS, which provides students with evidence of specialization that can serve to complement other career or personal goals. Students who already have a bachelor’s degree may also earn a certificate to complement their undergraduate training. For additional information, contact the Office of the Dean, 2002 CB, (313) 593-5490.

**African and African American Studies (AAAS)**

**COURSE OFFERINGS**

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AAAS 106</td>
<td>Intro to the African Past</td>
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<td>Survey of the social, economic,</td>
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<td>political, intellectual, and</td>
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<td>present. Emphasis on internal</td>
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<td>dynamics of African society</td>
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<td>interest: the roots of African</td>
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<td>slave trade and the African</td>
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<td>diaspora in the New World, the</td>
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<td>European Conquest, and the</td>
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<td>character of the colonial order</td>
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<td>and the ongoing struggle to end</td>
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<td>the legacy of alien domination.</td>
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<td>AAAS 239</td>
<td>Intro to Lit: African American</td>
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<td>A study of African-American</td>
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<td>works, and authors within</td>
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<td>historical context. Topics will</td>
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<td>the Great Migration, the Harlem</td>
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<td>Renaissance, and the contemporary</td>
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<td>literature. Students will</td>
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<td>be required to read critically,</td>
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<td>discuss, analyze, and write</td>
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<td>their responses to the several</td>
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<td>incorporated (fiction, drama,</td>
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<td>poetry). (YR).</td>
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</tbody>
</table>
AAAS 275  Intro to Africana Studies  
3.000 Credits

This gateway course in the AAAS minor will engage the students in the intellectual issues, historical perspectives and cultural debates in African and African American Studies. Using a trans-disciplinary approach, the AAAS faculty teaching this course as a team will draw from the disciplinary strengths of the Humanities, the Social Sciences, and the Behavioral Sciences. Texts will include literature, film, music, art, theater, and other forms of popular and folk culture. This course will routinely invite speakers and performers to the class and engage the campus community in these events. (YR).

AAAS 305  Race/Justice/Freedom in Amer  
3.000 Credits  
Prerequisite(s): POL 101

This course will examine the social and political thought of selected Black political thinkers. Its focus will be to assess the origins, development, and implications of their ideas in the context of the changing dynamics of racial politics in America and the World. (AY).

AAAS 316  African American History  
3.000 Credits

This course will trace the experience of African Americans from their first landing in Virginia in 1619 through slavery and the Civil War. Emphasis will be placed on the origins of racism, the development of the slave system in the United States and the historical developments that led to the Civil War. (YR).

AAAS 322  Psychology of Prejudice  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

A consideration of ethnic (including racial, sexual, and religious) prejudice from the psychological point of view, focusing on the mind of both the oppressor and the oppressed. (AY).

AAAS 325  Econ of Poverty/Discrimination  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

An analysis of the economic aspects of poverty and discrimination. Emphasis on the theoretical economic causes of poverty and the economic bases for discriminating behavior, the impact of poverty and discrimination on individuals and society, and the effect of reform policies on the two problems. (AY).

AAAS 333  Intro to Gospel Music  
3.000 Credits

This course explores the history and aesthetics of Black sacred music within cultural context. Major figures (Thomas A. Dorsey, Mahalia Jackson, The Winans family, Kirk Franklin), periods (slavery, Great Migration, Civil Rights movement), and Styles (folk and arranged Negro spirituals, congregational songs, and gospel songs—traditional to contemporary) will be studied through recordings, videos, films, and at least one field experience. Underlying the course is the theory (Mellonee Burnim and Pearl Williams-Jones) that gospel music is an expression of African American culture that fuses both African and European elements into a unique whole. (OC).

AAAS 340  Race and Evolution  
3.000 Credits  
Prerequisite(s): ANTH 101

An evolutionary survey of the biological differences among human populations in response to such factors as climate, culture, disease, nutrition and urbanization. The meaning of racial variation is discussed in terms of adaptation to environmental stress. "Race" is rejected, racism is discussed. (YR).

AAAS 345  West Africa Since 1800  
3.000 Credits

A history of the West African peoples since 1800, which focuses on their unique cultural heritage. Themes include: West Africa before the advent of alien domination, the European Conquest, West Africa under the Colonial regimes, and the liquidation of colonial rule and the reassertion of West African independence. (AY).

AAAS 368  Black Exp in U.S.-1865-Present  
3.000 Credits

The history of black in America is traced from the Reconstruction era and the rise of Jim Crow segregation to the Civil Rights movement of the 1960's and the current period. Special attention is paid to the migration of blacks to the north and the social-economic situation which they encountered there. Specific topics to be addressed include formation of the NAACP. (AY).

AAAS 369  Civil Rights Movement in Amer  
3.000 Credits

A survey of race relations and Civil Rights activities from late 19th century to the present. The principal focus, however, is on the period since World War II, especially on the mass-based civil rights movement (1955-1965) and the various policy debates and initiatives of the past thirty years, most notably affirmative action and busing. We also examine critiques of non-violence and integrationism. (AY).

AAAS 371  African Exper in the Americas  
3.000 Credits  
Prerequisite(s): ANTH 101

The course is a survey of African populations and cultures from 1500 to the present throughout the Americas. The focus of the course is on the Caribbean and Latin American contexts of these populations, but comparisons to North America will be made. Topics include the slavery, the relationship between Africans and indigenous populations, religions, politics, music, and questions of race and ethnicity. Readings will include ethnographic description, history, biography and fiction. (YR).

AAAS 385  Black Cinema  
3.000 Credits  
Prerequisite(s): ENGL 240 or HUM 240 or ENGL 248 or HUM 248 or FILM 240 or FILM
The course will examine selected films from African American and African film traditions in order to analyze how their cultural production is responsive to the conditions of social oppression, economic underdevelopment, and neo-colonialism. How film traditions define “Black aesthetics” will also be discussed. (AY).

**AAAS 386 African Politics**  
3.000 Credits  
Prerequisite(s): POL 101

The internal dynamics of African politics, with particular attention paid to contemporary problems and issues, particularly parties, the military, ideology, ethnic conflict, rural politics, and social transformation. (AY).

**AAAS 387 Southern Africa**  
3.000 Credits  
Prerequisite(s): POL 101 or POL 201

The focus of this course is on the politics of Southern Africa, especially of South Africa but including Zimbabwe, Mozambique, Angola, Zambia, and others. The international dimensions of regional politics are also covered. (AY).

**AAAS 389 Odyssey of Black Men in Amer**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

This course will examine the struggle of African American men for personal, political, and creative expression. This course incorporates several literary genres (narrative, fiction, essay, drama, and poetry) and the literary voices of black men who range from professional writers to politicians, from athletes to actors. Students will be required to critically read, discuss, analyze, and write their own responses to the literature found in the texts. (YR).

**AAAS 390 Topics in Af & Af Am Studies**  
3.000 Credits

This course examines problems and issues in selected areas of African and African American Studies. The specific title of the course will change in the Schedule of Classes according to content. Course may be repeated for credit when specific topic differs. (OC).

**AAAS 403 Minority Groups**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

The status of racial and ethnic minorities in the United States with particular reference to the social dynamics involved with regard to majority-minority relations. Topics of study include inequality, segregation, pluralism, the nature and causes of prejudice and discrimination and the impact that such patterns have upon American life. Students cannot receive credit for both AAAS 403 and AAAS 503. (YR).

**AAAS 404 Dissa: Differ, Power, Discrim**  

Have you ever been dissed? Why are some people targets of disrespect? This class examines the unequal distribution of power - social, economic, and political - in the United States and other countries that results in favor for privileged groups. We will examine a variety of institutional practices and individual beliefs that contribute to disrespect. We'll look at ways that beliefs and practices, like viewing inequality as consequence of a 'natural order', obscure the processes that create and sustain social discrimination. We will engage in the intellectual examination of systems, behaviors, and ideologies that maintain discrimination and the unequal distribution of power and resources. Students will not receive credit for both AAAS 404 and AAAS 504.

**AAAS 449 Black Family in Contemp Amer**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

The African-American family is examined in relationship to the historical and contemporary forces that have shaped its characteristic patterns of family life. These forces include the influence of slavery, urbanization, racial discrimination and urban poverty. The patterns of family life include parental roles, family structure, kinship relations, and gender roles. (YR).

**AAAS 469 20th-Cent Afr Amer Lit**  
3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An intensive study of major 20th-century African-American writers. Fiction, poetry, autobiography, and drama will be examined but one genre will be stressed in any given term, e.g., the novel. Lectures will provide historical and biographical context for analysis and discussion of the works. Students cannot receive credit for both AAAS 469 and AAAS 569. (YR).

**AAAS 470 Black Women / Lit, Film, Music**  
3.000 Credits  
Prerequisite(s): FILM 240 or FILM 248 or FILM 385 or AAAS 239 or AAAS 275 or WST 275 or WGST 275 or WST 370 or WGST 370 or HUM 221 or HUM 222 or HUM 223 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 237 or ENGL 239 or ENGL 248 or ENGL 200

This course takes an interdisciplinary approach as it explores the intersections of identity (among them race, class, and gender) as they infuse the literature, film, and music of Black women. To paraphrase Chela Sandoval, this course presents a series of methods, not only for analyzing texts, music and film, but for creating identities that are capable of speaking to, against, and through power. The diverse work of such theorists as Ella Shohat, Jacqueline Bobo, Valerie Smith, and Sasha Torres will be utilized.

**AAAS 473 Race, Crime, and Justice**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201
This course is an analysis of race and its relation to crime in the criminal justice system. Students will analyze and interpret the perceived connection between race and crime, while exploring the dynamics of race, crime, and justice in the United States. This course is designed to familiarize students with current research and theories of racial discrimination within America's criminal justice system.

**AAAS 477  African American English**
3.000 Credits  
Prerequisite(s): LING 280 or LING 281 or LING 480 or LING 580

An examination of the structure, history and use of African-American English. Topics will include the pronunciation, grammar and vocabulary of African-American English, theories of origin, linguistic repertoire and code-switching in African-American communities, the Ebonics controversy, and the role of this variety in education and identity formation. Students cannot receive credit for both AAAS 477 and AAAS 577.

**AAAS 491  Topics in African Diaspora**
3.000 Credits

This course deals with African Diasporan history from the 19th century to the present. The method is by definition cross-cultural and comparative, requiring that the works or figures under study represent a diversity of Diasporan nationalities and/or cultures. The course may focus on a wide range of topics. Students cannot receive credit for AAAS 491 and AAAS 591 when the topic title is the same.

**AAAS 498  Thesis**
3.000 Credits  
Prerequisite(s): AAAS 275 or AAAS 239 or ENGL 239 or HIST 106 or AAAS 106

Students pursuing the AAAS minor or an area of focus in African and African American Studies may choose to complete their coursework with a final thesis project that reflects research interests developed during their course of study. This thesis, which can be used to fulfill three (3) hours of the required upper-division course work, will be written under the direction of a faculty member whose scholarly expertise is compatible with the research field(s) of the student. (OC).

**AAAS 499  Independent Study**
3.000 Credits  
Prerequisite(s): AAAS 275 or AAAS 239 or ENGL 239 or AAAS 106 or HIST 106

Students pursuing the AAAS minor as well as those interested in focusing on some particular area in African and African American Studies may wish to do research on a topic not covered in the regular AAAS curriculum. This course provides an opportunity for students to conduct such research under the direction of a qualified faculty member. The project must be defined in advance in writing. (OC).

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**American Studies**

American Studies is a field of study which examines the core values and ideas that define American culture, while at the same time emphasizing the diversity of its expressions in past and contemporary times. This scholarly inquiry draws upon the content of several disciplines and capitalizes also on the interdisciplinary content already common in courses offered on campus under English, History, Political Science, Sociology, Anthropology and other disciplines. Students in American Studies will not only come to a deeper understanding of their own culture, but will gain an appreciation for the challenges involved in the understanding of any culture. This course of study thus provides a thorough training in the liberal arts and is an excellent preparation for the job market or graduate study in a variety of fields.

**PREREQUISITES TO THE CONCENTRATION**

For the American Studies concentration, students are required to complete 4 prerequisite courses, two from Group A (below) and two from Group B, for a total of 12 credit hours:

**Group A**

- HIST 111  American Past I
- HIST 112  American Past II
- POL 101  Intro to American Government
- ENGL 237  Survey of American Literature

**Group B**

- AAAS 275  Intro to Africana Studies
- AAAS 239  Intro to African American Literature
- COMM 220  Survey of Mass Communication
- WGST 275  Introduction to Women’s Studies

(if adequate American content, please check with advisor)

**CONCENTRATION REQUIREMENTS**

**Upper Division**

At the upper division level, students must complete 9 courses (a total of 27 credit hours), beginning with AS 300, the gateway course, which provides an introduction to the subject matter and methods of American Studies.

The remaining 8 courses must be chosen from the tracks listed below. An American Studies advisor will provide guidance to students in their choice of courses, as there are additional courses not listed in the representative tracks which may be appropriate, some of which have their own discipline prerequisites. Students are also strongly encouraged to take an internship or independent study course in their senior year.

**Track 1. Comparative American Identities**

One of the distinctive features of American culture is the multiplicity of subcultures it includes. This makes the process of finding a personal and social identity a more complex process than in other more homogeneous societies. A number of courses can give a further understanding of the historical development and intersection of the variety of racial, ethnic, gender, or class identities in American life. Some representative courses for this track are:

- ANTH 455  Immigrants USA
- SOC 403  Minority Groups
Track 2. Work, Technology and Globalization

This track encourages an understanding of American Studies through the world of work and technological innovation. Students will study how work and technology define and shape American culture – both in historic and in contemporary contexts. Students will explore how technology in America shapes both work identities and work environments. They will also consider how the American workforce is affected by the globalization of labor and other resources. Some representative courses for this track are:

- STS 300 Introduction to Science and Technology
- ECON 321 Labor in the American Economy
- HIST 349 Thomas Edison and His Era
- WGST 481 Gender and Globalization
- SOC 460 America in Global Society
- HIST 3665 Automobile in American Life

Track 3. Literature, Arts and Culture

This track provides an interdisciplinary approach to the study of literature, music, the visual and performing arts, popular culture, architecture and the environment, with the objective of understanding the arts in relation to major issues and themes in American social, political and historical development. In this track, exploration of the arts offers opportunities to further engage questions central to the American Studies field, such as, what is “American” about this novel, this school of painting, this music? What has been the role of the arts in the evolution of an American national identity? How has art inspired or reflected various American identities? The courses offered under this rubric feature a variety of historical periods as well as a diversity of gender, racial and ethnic special interests. Some representative courses for this track are:

- ARTH 361 American Art
- COMM 420 Critical Media Studies
- ENGL 452 Major 20th/21st Century American Authors
- FILM 456 American Cinema
- MHIS 331 Music of America
- MHIS 120 History of Jazz

Track 4. Society, Religion and Politics

This track examines the ways in which both personal and national identity are shaped through a dynamic process of interaction between American citizens and the broad array of civic, religious, and cultural institutions in American society. Within this framework, students will study competing ideas of citizenship and nationhood as they operate in a variety of historical and contemporary contexts. In addition, this same perspective affords students the opportunity to explore regional topics of interest such as Detroit culture, the history and sociology of the auto industry, and the diversity of religious experience in Southeastern Michigan. Some representative courses for this track are:

- SOC 441 Sociology of the Auto Industry
- HIST 363 Religion in American History 1607-1865
- HIST 3695 The American City
- POL 304 American Political Thought
- POL 360 American Policy Process

American Studies (AMST)

COURSE OFFERINGS

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

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<tr>
<th>AMST 300</th>
<th>Comparat. American Identities</th>
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<td>3.000 Credits</td>
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<tr>
<td>Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270</td>
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This course will confront and complicate the following key questions: what does it mean to be an American? What is American culture? Participants in this course will respond to the questions central to the American Studies field by reading and discussing historical, sociological, literary, artistic, material culture, political, economic and other sources. Students will use this interdisciplinary study to examine the multiple identities of Americans - as determined by factors such as gender, race, class, ethnicity and religion. While emphasizing the diversity of American culture, participants will consider some core values and ideas uniting America both in historical and contemporary society. Students will be invited to seek out and share fresh narratives of the American experience.

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<tr>
<th>AMST 390</th>
<th>Topics in American Studies</th>
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<td>3.000 Credits</td>
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Examination of problems and issues in selected areas of American Studies. Title in the Schedule of Classes will change according to course content. Course may be repeated for credit when specific topics differ.

Anthropology

Anthropology, the comparative study of humanity and culture, seeks to explain both diversity and similarity in human behavior around the world. It is an academic discipline that integrates a number of specialized fields, including physical anthropology, archaeology, social and cultural anthropology, linguistic anthropology, and applied studies of human problems. The UM-D program emphasizes anthropology’s unique concern with the interdependence of human biology and culture. Anthropology at UM-D provides the foundation for a broad understanding of human behavior and values for students interested in a truly liberal education.

CONCENTRATION REQUIREMENTS

Required courses

- ANTH 101 Introduction to Anthropology ............... 3 hrs
- ANTH 202 World Cultures ..................................... 3 hrs

An additional 24 credit hours of anthropology courses numbered 300 or above.* ......................................................... 24 hrs
Note: Three courses emphasizing the interaction of culture and biology (331, 336, 340, 341, 345, 406, 415, 409, 430, 435, and 482) must be included among these 24 hours. Students are encouraged to take ANTH 331 prior to enrolling in the courses with the strongest biological emphasis (i.e., 336, 340, 341, and 409).

For students considering a professional career in anthropology, it is strongly recommended that a two-term sequence of ANTH 398/399 be organized as an apprenticeship in collaboration with an anthropology faculty member. This apprenticeship should be planned for the senior year. Students will learn the profession of anthropology from the "inside" by working with an individual professor on the professor's research, teaching, editing, or professional service. The final product of the two-semester sequence will be a serious contribution to the profession of anthropology, such as a paper authored jointly, a public lecture on the student's research, or the final report of research conducted for a local social service agency.

Cognates .......................................................... 6 hrs

Students will elect six hours in upper-level courses that are to be chosen in consultation with, and have the approval of, the concentration adviser. Areas from which appropriate courses could be selected include psychology, sociology, linguistics, biology, economics, philosophy, history, literature, and the arts.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in anthropology.

Anthropology (ANTH)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

ANTH 101 Introduction to Anthropology
3.000 Credits
A survey of anthropology which introduces the fundamental concepts and perspectives of the field. (F,W).

ANTH 202 World Cultures
3.000 Credits
A comparative study of politics, economics, family and religion in selected cultures—foraging, tribal, peasant, and industrial. Provides a survey of theoretical concepts in social and cultural anthropology through the comparison of ethnographic case studies. ANTH 101 recommended. (YR).

ANTH 275 Intro to Women's Studies
3.000 Credits
A multidisciplinary and multicultural introduction to Women's Studies. An overview of the theories and topics in the Social Sciences, Behavioral Sciences, Humanities, and Natural Sciences that are pertinent to upper-division courses in Women's Studies. (YR).

ANTH 315 Body Image and Culture
3.000 Credits
Prerequisite(s): ANTH 101 or WST 275
This course examines the biological and sociocultural construction of body image in both men and women. We explore such cultural and social practices as nudity, tattooing, piercing, scarification, dietary habits, physical activity and sports performance and their associated myths and realities. We explore how the human body is a terrain of contested meaning within society. The course provides an examination of the causes and consequences of women's poor body image, contemporary and historically. Course materials include case studies from North America, Europe, Africa, Asia and the Pacific.

ANTH 320 Culture and Int'l Business
3.000 Credits
Lectures, exercises and case studies explore anthropological concepts needed by managers in multinational and multi-ethnic work environments. Topics include the world economy in anthropological perspective, national culture and business culture, implicit values about work and time, and cross-cultural communication. Special emphasis is given to Japan and the Third World. ANTH 101 or SOC 200 recommended. (AY).

ANTH 331 Human Evolution
3.000 Credits
A survey of biological anthropology. This course is a prerequisite for all other upper-division bioanthropology courses. Topics include the human place in nature, primate biology and behavior, evolution theory, genetics, the fossil evidence for human evolution, human growth, and biocultural adaptation to the environment. (YR).

ANTH 336 Introduction to Primates
3.000 Credits
Introduction to the fundamentals of primate paleontology, evolution, morphology, and behavior with an emphasis on understanding the evolution of primate and human social behavior. (YR).

ANTH 340 Race and Evolution
3.000 Credits
An evolutionary survey of the biological differences among human populations in response to such factors as climate, culture, disease, nutrition, and urbanization. The meaning of racial variation is discussed in terms of adaptation to environmental stress. "Race" is rejected; racism is discussed. (AY).

ANTH 341 Human Paleontology
3.000 Credits
A survey of the evolutionary history of life through the study of fossils and collaborative field and laboratory material. The evolution of humans and the primate order of mammals is emphasized. (AY).
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<th>Course Code</th>
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<tr>
<td>ANTH 345</td>
<td>Cultural Ecology and Evolution</td>
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<td>An introduction to the study of human ecology. This course employs the case-study method to develop an evolutionary and biocultural perspective on the relationship between human beings and their environments. (YR).</td>
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<td>ANTH 350</td>
<td>Prehistoric Archaeology</td>
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<td>An account of the methods and findings of modern archaeological science in the Old and New World. Methods considered typically include paleontology, dating techniques, stratigraphy, etc. Sophomore standing; ANTH 101 highly recommended. (YR).</td>
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<td>ANTH 360</td>
<td>Myth, Magic, and Mind</td>
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<td>A broadly based introduction to the range of human mythical and magical traditions. Sophomore standing; ANTH 101 highly recommended. (YR).</td>
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<td>ANTH 370</td>
<td>Indians of North America</td>
<td>3.000</td>
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<td>The origin and development of cultures north of Mexico. A study of various culture areas and representative tribes at contact, and a political-economic analysis of the fate of American Indians since contact. The perspectives of Native American peoples are taken into account through books, novels, and poetry. Sophomore standing; ANTH 101 highly recommended. (YR).</td>
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<tr>
<td>ANTH 371</td>
<td>African Exper in the Americas</td>
<td>3.000</td>
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<td></td>
<td>This course is a survey of African populations and cultures from 1500 to the present throughout the Americas. The focus is on Caribbean and Latin American contexts of these populations, but comparisons to North America will be made. Topics include slavery, the relationship between Africans and indigenous populations, religions, politics, music, and questions of race and ethnicity. Readings will include ethnographic description, history, biography and fiction. (YR).</td>
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<tr>
<td>ANTH 372</td>
<td>Anthropology of Latin America</td>
<td>3.000</td>
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<td>The course is a survey of Latin American people and cultures from the conquest to the present. It will focus on culture change and sources of conflict by analyzing topics that include the economy, kinship, ethnicity, social stratification, gender, politics, religion, and the arts. Readings will include ethnographic description, history, biography, contemporary fiction. (YR).</td>
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<tr>
<td>ANTH 373</td>
<td>Anth Persp on the Middle East</td>
<td>3.000</td>
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<td>This course examines Middle Eastern society from a cultural perspective. Topics discussed include kinship, gender, popular and orthodox Islam, nationalism, mass media, urbanization, and historical relations with the West. The course ends with an examination of the Arab immigrant experience in Metro Detroit. (AY).</td>
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<tr>
<td>ANTH 374</td>
<td>Anthropology of Europe</td>
<td>3.000</td>
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<td>Introduces anthropological approaches to European culture, emphasizing ethnographies and community studies as well as social history from the classical and medieval to the present. Will include cultural implications of industrialism and urbanization. May focus on Western or Eastern Europe during a given semester. (AY).</td>
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<td>ANTH 376</td>
<td>Power &amp; Privilege in SE Mich</td>
<td>3.000</td>
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<td>An examination of the social and cultural systems that lead to power, privilege, and inequality in American culture. This course takes a local perspective, analyzing systems of inequality as related to such factors as race, ethnicity, gender, social class and sexual orientations. Field trips to local sites are included. (YR).</td>
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<tr>
<td>ANTH 390</td>
<td>Topics in Anthropology</td>
<td>3.000</td>
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<td></td>
<td>Examination of problems and issues in selected areas of anthropology. Title in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).</td>
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<tr>
<td>ANTH 397</td>
<td>Honors Tutorial</td>
<td>3.000</td>
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<td></td>
<td>Advanced seminar on selected topics offered through Honors Program. (OC).</td>
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<tr>
<td>ANTH 398</td>
<td>Independent Studies in Anthr</td>
<td>1.000 TO 6.000</td>
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<td>Readings or analytical assignments in anthropology in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. Permission of instructor required. (F,W).</td>
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<tr>
<td>ANTH 399</td>
<td>Independent Studies in Anthr</td>
<td>1.000 TO 6.000</td>
</tr>
<tr>
<td></td>
<td>Readings or analytical assignments in anthropology in accordance with the needs and interest of those enrolled and agreed upon by the student and instructor. (F,W).</td>
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</table>
ANTH 406 Culture and Sexuality
3.000 Credits

The study of women, men, children, socialization practices, and the genesis of sex roles cross-culturally. Students cannot receive credit for both ANTH 406 and ANTH 506. ANTH 101 highly recommended. (YR).

ANTH 407 Sexual Praxis and Theory
3.000 Credits
Prerequisite(s): WST 275 or SOC 443 or PSYC 405 or ANTH 406 or ANTH 101

This course will offer an overview of sexual differences including: the socio-cultural construction of gender, sexual behavior, and orientation; sex and sexualities in language and literature; and diversity by race, class, and cultural heritage. These topics will enable students to understand human sexuality within and across a continuum removing notions of duality, or polarity, in sexual behaviors and orientations. Examples both from within Western society and from non-Western societies may be used to further this position. Theoretical perspectives may encompass sociological and anthropological work, literary theory and criticism, queer theory, and multi-disciplinary discussions/discourse. Texts may include: Sex and the Machine: Readings in Culture, Gender and Technology, The Anatomy of Love, The Lesbian and Gay Studies Reader, Second Skins: The Body Narratives of Transexuality, and Lesbian and Gay Marriage.

ANTH 409 Human Body, Growth & Health
3.000 Credits

This course provides an advanced undergraduate introduction to the topic of human growth and shows how human growth can be a reliable measure of the psychological, social, economic and moral conditions of a society. A major theme will be the interplay of biology and culture in shaping the patterns of human growth and, consequently, the health of populations and individuals.

ANTH 412 Men and Masculinities
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201 or ANTH 101 or WST 275

This course addresses the question, "What is a man?", in various historical, cross-cultural, and contemporary contexts. A major focus on the social and cultural factors that underlie and shape conceptions of manhood and masculinity in America as well as in a variety of societies around the globe. (AY).

ANTH 415 Nutrition and Health
3.000 Credits

The influence of nutrition on physical and mental development from conception to adulthood. Topics include: 1) the definition and function of the essential nutrients for people, 2) basic principles of human growth and development, 3) the causes and consequences of under- and overnutrition, 4) feeding practices for infants and children and the development of food habits, 5) nutrient and food problems in the local region and in global perspective. Students cannot receive credit for both ANTH 415 and ANTH 515. (YR).

ANTH 420 Kinship and Marriage
3.000 Credits
Prerequisite(s): ANTH 101 or ANTH 201

A study of the diversity of kinship and marriage systems, and of the history of kinship theory which has played a seminal role in the development of general anthropological theory. Students cannot receive credit for both ANTH 420 and ANTH 520. (OC).

ANTH 421 Education and Culture
3.000 Credits

How and where do people learn? Why are there schools, and how is schooling culturally organized? Why do school experiences tend to vary by “race”, social class, and gender? What insights does anthropology bring to practical problems of learning and teaching? Students cannot receive credit for both ANTH 421 and ANTH 521. ANTH 101 or SOC 200 highly recommended. (AY).

ANTH 422 Narrative Anthropology
3.000 Credits

A consideration of alternative approaches to gaining ethnographic understandings by reading anthropological novels (Bohannan, LeGuin), fiction and poetry by non-western authors (Silko, Achebe), and travel writing (Chatwin, O'Hanlon). Junior standing; ANTH 101 highly recommended. (YR).

ANTH 425 Language and Society
3.000 Credits

An examination of the social functions of speech through readings and exercises, emphasizing schools and other applied settings. Topics include ethnic and social class dialects, codeswitching, and the organization of conversation. Students cannot receive credit for both ANTH 425 and ANTH 525. (OC).

ANTH 430 Medical Anthropology
3.000 Credits

A comprehensive examination of how culture mediates processes of illness and healing. Comparative materials are examined which provide a context for an anthropological analysis of modern biomedicine. Sophomore standing; ANTH 101 highly recommended. (YR).

ANTH 435 Human Genetics
3.000 Credits

An analysis of human genetic variation in terms of the theory of population genetics considers such polymorphisms as blood groups and variant hemoglobins as well as morphological characters like stature, skin color, and so on. Emphasis is on the genetics of human populations and particular attention is drawn to cultural factors affecting human biology. (OC).

ANTH 440 Religion and Culture
3.000 Credits

An introduction to the comparative study of religious systems. Explores religious beliefs and practices in non-Western cultures; surveys theoretical approaches to the study of religion; and
discusses how religions grow, develop, and change. ANTH 101 recommended. (YR).

ANTH 444 Political Anthropology 3.000 Credits

A consideration of some of the major anthropological views of politics, focusing on the relations of power to kinship, stratification, and religion in both states and stateless societies. Sophomore standing; ANTH 101 highly recommended. (OC).

ANTH 450 Anthropological Theory 3.000 Credits

An historical account of the development of anthropological theory, emphasizing the continuity between consecutive styles of explanation. Substantial consideration of recent theoretical developments in structuralism and ecological analysis. Sophomore standing; ANTH 101 highly recommended. (OC).

ANTH 455 Immigrants USA 3.000 Credits

The history and culture of immigration since 1850, including: (1) formation and perseverance of immigrant communities and interethnic boundaries; (2) relations between the homeland and the immigrant; and (3) impact of migration on family life and gender roles. Students cannot receive credit for both ANTH 455 and ANTH 555. ANTH 101 recommended. (OC).

ANTH 460 Economic Anthropology 3.000 Credits

A comparative examination of the basis of political economy. Economic problems (the production and distribution of goods and services) will be considered in ecological, evolutionary, and political terms. The primary emphasis will be on traditional economies, on production and exchange at the household level, and on the effect of modern market systems on indigenous cultures. (OC).

ANTH 470 Doing Anthropology 3.000 Credits

A practicum of anthropological theory and method, including ethnographic interview and participant observation. Students will conduct field research and evaluate results with the help of classmates. Students cannot receive credit for both ANTH 470 and ANTH 570. ANTH 101 or SOC 200 highly recommended. (YR).

ANTH 477 Ethnographic Film 3.000 Credits

Prerequisite(s): FILM 240 or HUM 240 or FILM 248 or HUM 248 or ANTH 101 or ENGL 240 or ENGL 248

This course will analyze ethnographic films as a medium for the construction of meaning in and across cultures. It will teach students to understand how the putatively "real" content of documentary film creates a mixture of fantasy, news and "science." Covering texts as varied as National Geographic photographic layouts, traditional ethnographic films made by anthropologists, and auto-ethnographies of cultural groups such as Native Americans and the Trobriand Islanders of Papua, New Guinea, the course will aim to deconstruct such oppositions as indigene vs. alien, us vs. them, and self vs. other. Students cannot receive credit for both ANTH 477 and ANTH 577. (AY).

ANTH 481 Gender and Globalization 3.000 Credits

Mass media, politics, and academia are full of references to globalization, and a future "world without borders." This interdisciplinary course considers the implications of globalization for women's lives, gender relations, and feminism. Topics covered include the global factory, cross-cultural consumption, human rights, global communications, economic restructuring, nationalism, and environmental challenges. Rather than survey international women's movements, this course explores how globalization reconfigures identities and locations and the political possibilities they create. (AY).

ANTH 482 Psychological Anthropology 3.000 Credits

Cross-cultural comparison of theories of human nature, including psychoanalytic anthropology, culture-and-personality, and other theories from Western science, as well as non-Western theories about such concepts as the person, emotions and mental illness. Students cannot receive credit for both ANTH 482 and ANTH 582. ANTH 101 and PSYC 170 or 171 highly recommended. (YR).

ANTH 498 Independent Study 1.000 TO 6.000 Credits

No description available.

ANTH 499 Readings in Anthropology 1.000 TO 3.000 Credits

For students desiring study not available in the regular course offerings. Students cannot receive credit for both ANTH 499 and ANTH 599. (F,W)

Applied Arts, (ART) (not a field of concentration)

COURSE OFFERINGS

(Note: An "*" denotes that the prerequisite course may be taken concurrently.)

ART 201 Beginning Painting 3.000 Credits

Lectures on the fundamentals of painting along with work in the studio. Basic ideas of structure, composition, and color are explored through individual and group instruction. Students work from still-life and from the model. This is a broad introductory painting course designed for the student unfamiliar with fundamentals of design and color. Material: acrylics. (YR).

ART 202 Beginning Drawing 3.000 Credits

Lectures alternate with studio work in the investigation of
drawing fundamentals. Students receive individual and group instruction as they work from still life setups, nature, and from the model. Emphasis is placed on the development of critical skills and perceptual drawing techniques for students with little or no studio experience. Pastel, charcoal, conte, pencil, and inks will be used. (YR).

ART 204  
**Beginning Watercolor**  
3.000 Credits

Through lectures and studio work, students will explore the fundamentals of watercolor painting. To demonstrate the dynamics of the medium, a variety of approaches and techniques will be used, including realistic, abstract, and experimental painting. Subject matter includes still life, the figure, possible outdoor sketching and painting from the imagination. All levels of students are given individual guidance. (YR).

ART 206  
**Basic Design-Color**  
3.000 Credits

Students will be introduced to the complex and diverse subject of color. The areas of study include principles and theories of color, practical application and technique, and the phenomenon of color interaction. The art elements (line, shape, value, space, form, and texture) and design principles will be applied within specific assignments. Compositional concerns and creative problem solving will be emphasized. (YR).

ART 321  
**Intermediate Painting**  
3.000 Credits  
Prerequisite(s): ART 201

Students who have mastered basic vocabulary and techniques will be asked to sustain and develop several large paintings. Various painting approaches, styles and concepts will be explored through lectures and studio work. Students will be encouraged to develop their own personal image as they work from a variety of subject matter. (F,W).

ART 322  
**Intermediate Drawing**  
3.000 Credits  
Prerequisite(s): ART 202

Students who have mastered basic vocabulary and techniques are asked to sustain and develop several large drawings. Lectures will consider the fundamentals of drawing and studio work will continue to be refined in a variety of media. Students are encouraged to develop their own personal image through work from their imagination. (F,W).

ART 324  
**Intermediate Watercolor**  
3.000 Credits  
Prerequisite(s): ART 204

Students will continue to develop skills using various watercolor techniques. Studio and lectures will explore subjects such as still life, the figure, landscape and painting from the imagination. All levels of students are given individual guidance. (OC).

ART 399  
**Independent Studies in App Art**  
1.000 TO 3.000 Credits

Readings or analytical assignments in applied art in accordance with the needs and interests of those enrolled and agreed upon by the student and the instructor. (F,W).

**Applied Music (MAPP)**  
*(not a field of concentration)*

Each applied music course may be repeated for credit.

**COURSE OFFERINGS**  
*(Note: An “*” denotes that the prerequisite course may be taken concurrently.)*

**MAPP 120**  
**Private Instruct in App Music**  
1.000 Credits

For students who desire credit for private lessons on a musical instrument or voice. The lessons are taken outside the University from an instructor approved by the music faculty of the University. Interested students should contact the music faculty at the beginning of the semester to arrange for a teacher. Eight hours of instruction over 16 weeks are required for one hour of credit. This course may be repeated for up to eight hours of credit. (F,W).

**MAPP 125**  
**Class Piano I**  
2.000 Credits

Development of skills at the keyboard in harmonization, improvisation, sight reading, accompanying, repertoire, and technique. Emphasis on group learning for beginners. (OC).

**MAPP 126**  
**Class Piano II**  
2.000 Credits

Enhancement of skills at the keyboard in harmonization, improvisation, sight reading, accompanying, repertoire, and technique. Emphasis on group learning for beginners. (OC).

**MAPP 135**  
**Class Guitar I**  
2.000 Credits

Development of skills in reading chord tablature, playing basic accompaniments to folk songs using various strumming and finger picking techniques, basic theory, reading, playing rhythms and notes. Emphasis on group learning for beginners. (OC).

**MAPP 136**  
**Class Guitar II**  
2.000 Credits

Enhancement of skills in reading chord tablature, playing basic accompaniments to folk songs using various strumming and finger picking techniques, basic theory, reading, playing rhythms and notes. Emphasis on group learning for beginners. (OC).
MAPP 138  Symphonic Band
1.000 Credits

Credit may be earned by students who are regular members of approved symphonic bands.

MAPP 145  Choir
1.000 Credits

One hour of credit per semester may be earned by students who are members of the UM-D choral ensemble. There will be a concert performance every semester which will be open to the general public. (F,W).

MAPP 320  Adv Private Instr in App Music
1.000 TO 2.000 Credits

For advanced students in applied music. Each student is required to pass a jury exam or perform publicly during each semester. Arrangements otherwise are the same as for MAPP 120. (YR)

Applied Statistics (STAT) (minor only)

MINOR OR AREA OF FOCUS

A minor consists of 12 hours of upper-division credit or graduate credit (300 or above level courses) in Applied Statistics. STAT 325 and STAT 363 cannot both be used to satisfy this requirement. Students with concentrations in mathematics, the natural sciences, or the social sciences should find the minor in Applied Statistics to be a valuable supplement to their concentrations.

Applied Statistics (STAT)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

STAT 325  Applied Statistics I
3.000 Credits
Prerequisite(s): MATH 113 or MATH 115 or MPLS 116

A study of the fundamental concepts and methods of probability and statistics. Topics include counting problems, discrete probability, random variables and probability distributions, special distributions, sampling distributions, the central limit theorem, introduction to hypothesis testing, and the use of statistical computer packages for data analysis. Students can receive credit for only one of MATH 363, STAT 363, SOC 383, and STAT 325. (F,W,S).

STAT 363  Introduction to Statistics
3.000 Credits

Frequency distribution and descriptive measures. Population, sampling, and statistical inference. Elementary probability and linear regression. Use of statistical computer packages to analyze data. Students can receive credit for only one of STAT 325, STAT 363, MATH 363, and SOC 383. Students intending to elect this course should have had at least one year of high school algebra. (F,W,S).

STAT 390  Topics in Applied Statistics
3.000 Credits

A course designed to offer selected topics in applied statistics. The specific topic or topics will be announced together with the prerequisites when offered. Course may be repeated for credit when specific topics differ. (OC)

STAT 425  Applied Statistics II
3.000 Credits
Prerequisite(s): STAT 325 or STAT 363 or MATH 363 or SOC 383

A continuation of STAT 325. This course treats both the principles and applications of statistics. Elementary theory of estimation and hypothesis testing, the use of the normal, chi-square, F and t distributions in statistics problems will be covered. Other topics are selected from regression and correlation, the design of experiments, analysis of variance, analysis of categorized data, nonparametric inference, and sample surveys. (F,W).

STAT 430  Applied Regression Analysis
3.000 Credits
Prerequisite(s): STAT 425

Topics include single variable linear regression, multiple linear regression and polynomial regression. Model checking techniques based on analysis of residuals will be emphasized. Remedies to model inadequacies such as transformations and weighted least squares will be covered. Statistical packages will be used. Students cannot receive credit for both STAT 430 and STAT 530. (F).

STAT 440  Design and Analysis of Expermt
3.000 Credits
Prerequisite(s): STAT 425

An introduction to the basic methods of designed experimentation. Fixed and random effects models together with the analysis of variance techniques will be developed. Specialized designs including randomized blocks, latin squares, nested, full and fractional factorials will be studied. A statistical computer package will be used. (W).

Arabic (ARBC) (not a field of concentration)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

ARBC 101  Beginning Arabic I
4.000 Credits

First course in the two-course elementary Arabic sequence. Listening comprehension, speaking, reading, writing, and culture are emphasized. Course materials promote the use of language to communicate with others and function in Arabic culture. (F,W,S).
ARBC 102  
**Beginning Arabic II**  
4.000 Credits  
Prerequisite(s): ARBC 101 or MCL 101

Second course in the two-course elementary sequence. Continued emphasis on culture and the four skills of listening, speaking, reading, and writing. (F,W,S).

ARBC 201  
**Intermediate Arabic I**  
4.000 Credits  
Prerequisite(s): ARBC 102 or MCL 102

An intermediate-level course designed to increase proficiency in listening, speaking, reading, and writing in a cultural context. Emphasis is placed on acquiring new vocabulary and expanding the use of grammar structures. (YR).

ARBC 202  
**Intermediate Arabic II**  
4.000 Credits  
Prerequisite(s): ARBC 201 or MCL 201

Second course in the two-course intermediate Arabic sequence. Continued emphasis on the development of the four skills of listening, speaking, reading, and writing.

ARBC 267  
**Arab & Arab American Workshop**  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270

The Arab and Arab American Writers Workshop is a creative writing workshop focusing on poetry and fiction. Students will explore Arab American literature, writers, and themes. Students are expected to work on their own manuscripts as well as critique outside readings. The workshop will be conducted under the guidance of Arab and Arab American faculty and is open to all students.

ARBC 301  
**Adv Conversation & Comp I**  
3.000 Credits  
Prerequisite(s): ARBC 202

This course is designed for students who have already had the equivalent of four semesters of Arabic instruction. The course emphasizes the four language skills with specific attention to the productive skills, oral and written. The course introduces authentic reading materials drawn from different disciplines such as religion, literature, history, and politics, reflecting different styles of Arabic and different periods. (F)

ARBC 302  
**Adv Conversation & Composition**  
3.000 Credits  
Prerequisite(s): ARBC 301

A continuation of ARBC 301. It continues to develop the four language skills with specific attention to the productive skills, oral and written. The course introduces authentic reading materials drawn from different disciplines such as religion, literature, science, politics, reflecting different styles of Arabic and different periods. (W, YR)

ARBC 305  
**Language of Business**  
3.000 Credits  
Prerequisite(s): ARBC 301

An introduction to the language and cultural practices of the Arab world of business. Particular emphasis will be placed on learning the terminology used in typical business correspondence and documents related to the world of finance, investment, import, and export, and commerce. A variety of businesses will be examined and opportunities for practice in reading and composing business letters will be provided. (W,A,Y)

ARBC 350  
**Arabic Literature and Culture**  
3.000 Credits

An introduction to the literature and other art forms of the modern Arab world in cultural and historical context. Topics include the Arab world-view, religious attitudes and self-expression, and ethnicity and gender. The course assumes No prior knowledge of the region. All readings will be English translation. (YR).

ARBC 381  
**Intro to Postcolonial Studies**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 234 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 250

This course offers a general introduction to Postcolonial Studies - a field of cultural inquiry that questions how personal identity (specifically race, language, and ethnicity) shapes, and is shaped by, the politics of colonization and nationalism. Students will clarify the subject of Postcolonial Studies by examining a variety of cultural and linguistic objects (literature, film, TV-journalism, slave- and middle-passage-narrative, and political manifesto) from a variety of cultural perspectives (Arab American, Anglo-Indian, West African, and Caribbean).

ARBC 390  
**Topics in Arabic**  
3.000 Credits

Examination of problems and issues in selected areas of Arabic. Title as listed in Schedule of Classes will change according to content. Course may be repeated when specific topics differ. (OC).

ARBC 490  
**Topics in Arab Amer Studies**  
3.000 Credits

The content of this course will vary. All courses which will run under this number will cover Arab American issues.
Armenian (not a field of concentration, see Modern and Classical Languages)

Art, Applied
(not a field of concentration, see Applied Art)

Art History

Art History may be elected as a concentration program within the Humanities Department. The art history program offers the student practical, critical, and historical studies in architecture, sculpture, painting, the decorative arts, printmaking, and photography. Each art is considered a creative process which, like language, has developed as an expression of human ideas, emotions, and life conditions. The history of these arts is presented as a visual record of the evolution of human societies, which can give the student a valuable introduction to the various world civilizations.

Students may elect one of two concentration tracks in Art History: Track A – Art History, or Track B – Museum Studies. The concentration programs offer the student a broad humanistic education within the context of an undergraduate degree and prepare the student for graduate work in academic, museum, or commercial fields.

PREREQUISITES TO THE CONCENTRATION ........... 9 hrs

Students concentrating in Art History (Track A) or Museum Studies (Track B) are required to take the following prerequisites:

ARTH 101 Western Art to 1400
ARTH 102 Western Art since 1400
ARTH 103 Arts of Asia

CONCENTRATION REQUIREMENTS............ 33 hrs

Track A: Art History required courses ............ 21 hrs

One course from each of the following five areas............. 15 hrs
Asian/Non-Western
Ancient/Classical
Medieval
Renaissance/Baroque
Modern

Also required ....................................................... 6 hrs
ARTH 400 Senior Seminar
ARTH 410 Museum Practice Seminar

Electives ....................................................... 6 hrs
Two upper-level Art History courses

Cognates ......................................................... 6 hrs
One studio art course (ARTH 201, 204, 206, 321, 322, 324) and one upper-level course in a cognate discipline of Humanities and the Social Sciences. (Selections must be approved by the discipline advisor.) Courses with strong interdisciplinary orientation are recommended.

Foreign Languages

Although competency in a foreign language is not required for the concentration, a reading proficiency in French and/or German is extremely important for anyone planning to pursue the study of Art History. Most graduate programs in Art History require at least two foreign languages.

Track B: Museum Studies required courses ........... 21 hrs

One course from each of the following four areas......... 12 hrs
Asian/Non-Western
Medieval/Classical
Renaissance/Baroque
Modern

Also required ....................................................... 9 hrs
ARTH 400 Methods Seminar
ARTH 410 Museum Practice Seminar I
ARTH 411 Museum Practice Seminar II

Electives ........................................................ 6 hrs
Two upper-level Art History courses.

Required Cognates ........................................... 6 hrs
HUM 485 Internship ........................................... 3 hrs

AND

One upper-level course selected from the following .... 3 hrs
OB 354 Behavior in Organizations
COMM 330 Feature Writing
COMM 420 Critical Media Studies
COMM 440 Writing for the Organization
PSYC 430 Organizational Psychology

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in art history.

Art History (ARTH)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

ARTH 101 Western Art to 1400
3.000 Credits

An introduction to the history of art from the prehistoric era to the end of the middle ages. Using a broadly chronological structure, the course surveys changes in the style and style and substance of western (European) art in this period. The course also explores the connection between art and culture, and notes the many interrelationships between the cultures that have formed the western tradition. (F,W).

ARTH 102 Western Art from 1400
3.000 Credits

A historical survey of Western painting and sculpture from the Renaissance through the twentieth century. (F,W).
ARTH 103  Arts of Asia
3.000 Credits

An introduction to the visual arts of three Asian civilizations: India, China, and Japan. Since this is a survey, the focus will be placed on major monuments that are characteristic of these artistic traditions. In order to better understand the works of art, the cultural milieu including religion, philosophy, and parallel arts will be considered. (YR).

ARTH 104  Arts of the Middle East
3.000 Credits

From the eighth century, a new religious community with no developed artistic heritage spread rapidly over the ancient empires of the near and middle east and as far west as Spain and Hungary. Appropriating established forms and traditions, Muslim cultures created a brilliant system of religious and secular art that reveals national diversity and an underlying unity of purpose. This course provides an introduction to the visual traditions of Muslim cultures. (YR).

ARTH 105  Creation of Art
2.000 Credits

An art appreciation course based on videotapes. Great art does not completely yield its secrets. The course helps the student to understand the subject, the message or content of the creation and the method that the artist used in making it. This course does not fulfill the Art History concentration requirement. (F,W).

ARTH 106  History of Western Architect
3.000 Credits

An introduction to the place of architecture in western culture. The course treats architecture as the "mother of the arts" and explores how buildings are perceived today and in the past, and why enormous amounts of money and time were spent on them. Structure and aesthetics will also be discussed, both in relation to individual buildings and in the way whole cities are created and experienced. (YR).

ARTH 304  Detroit Study
3.000 Credits

This course is an attempt to define a modern cultural history of Detroit. Taught by two faculty members, the emphasis of the course will vary but the following aspects of the city's cultural history will be covered in some detail: its literature, arts, music and architecture; its social conditions and broader American cultural context. Not open to students who have completed IDS 305, concurrent with ARTH 305. Not open to students who have completed HIST 304 or SOC 304 or HUM 304 or ARTH 304 or ENGL 304 or IDS 304.

ARTH 310  Art of India
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An introduction to the Classical and Medieval civilizations of India through the historical presentation of its characteristic arts forms. The course will examine the philosophical, intellectual, and visual structures of Hinduism, Buddhism, and Islam as these interact to create both traditional and modern Indian culture. (AY).

ARTH 311  Art of China
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An introduction to representative works of art produced in China from the Neolithic era down to modern times. Examination of the artifact's cultural context will be emphasized, including the study of philosophy (Confucianism and Daoism) and religion (Buddhism).

ARTH 312  Art of Japan
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An introduction to representative works of art produced in Japan from the Neolithic era down to modern times. The artifact's cultural context will be examined including religious practice (Shinto and Buddhism), influence from abroad, and other artistic developments in literature, music, and theatre.

ARTH 313  Chinese Painting
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

This course is a survey of the painting of China from the earliest examples found in tombs through works influenced by the West during the modern period. The course focuses on selected artists who serve as representatives of major traditions of China's cultural and artistic heritage. Students will be introduced to Chinese philosophy and relevant literary genres that provide a context for the development of Chinese painting.

ARTH 315  Early Chinese Art and Archaeol
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An examination of the art and architecture of early China (Neolithic through Eastern Han). Recent excavations that have significantly changed our view of the early period will be given emphasis. Students will analyze relevant literary and philosophical texts in translation to enhance understanding of the cultural context. (OC).
The art of the Ancient world is examined through an intensive review of the visual traditions of Egypt: its monumental architecture, sculpture, painting and decorative artifacts. (AY).

This course surveys the history and art of Crete, the Cyclades, and Greece from the third millennium through the first century B.C. In the prehistoric period, the course will focus on both architectural and ceramic developments, as well as on the trade and economic contacts between Asia Minor and Greece. In the historic period, the course considers the major artistic developments in architecture, sculpture, and painting, focusing on how social, political or historical events caused these art forms to evolve and change over the centuries. (AY).

This course surveys the major art forms produced by both the Romans and Etruscans. The course begins with the Roman Republic (late sixth century B.C.) and concludes with the rule of Constantine in the fourth century A.D. We will discuss the development of the urban, government complex (the Roman Forum), the evolution of domestic architecture, and the major artistic achievements in sculpture, painting, and the minor arts. We will focus on how social, economic, religious, political and/or historical events caused these art forms to evolve and change over the centuries. (AY).

Borrowing its formal language from late antiquity and its symbolism from other mystery cults, the art of early Christianity emerged from the Roman catacombs to monumental expression under emperors Constantine and Justinian. (AY).

A study of the dynamic interplay between barbarian, Christian, and classical Mediterranean influences in the early Medieval period with a consideration of the art and architecture of the pilgrimage routes to Santiago de Compostela and of the crusader kingdoms in the Holy Land. (AY).

A survey of the architecture, sculpture, and stained glass of the great cathedrals of Europe, focusing on Chartres, Amiens, Reims, and Bourges. A study of the patrons, builders, the new technology they employed and the cities in which they worked as well as an analysis of the emergence of naturalism in medieval manuscript illumination and panel painting. (AY).

This is a course that examines the art and architecture of Europe in the 14th century: one of the great transitional periods in the history of western art. Beginning with the new developments in 13th-century Italian art by such artists as Giovanni Pisano and Giotto, the course charts the pattern of these developments in northern European countries as well. (OC).

This course examines the city of Florence as a work of art, as well as masterpieces of Florentine sculpture, painting and architecture of the Early Renaissance (fifteenth century). Among the masters studied are the sculptors Nanni di Banco, Donatello, Ghiberti, Luca della Robbia, Pollaiuolo, and Verrocchio; the painters Masaccio, Fra Angelico, Fra Filippo Lippi, and Botticelli; and the architects Brunellischì, and Alberti. Statuary, reliefs and tombs; altarpieces, fresco cycles and mythological pictures; churches and palaces are all studied within the context of the technical, philosophical, political and cultural developments of the quattrocento. The ideals of the Florentine Republic, Humanism, Neo-Platonism, and Millenarianism provide the historical and intellectual background for the study of these works of art and architecture. Issues of patronage, placement, restoration, art criticism, women's roles in society and reception will also be explored. (OC).


A survey of the art which arose amid the conflicts of late medieval mysticism and Renaissance humanism in 15th- and
16th-century Germany and the Netherlands with emphasis on the works of Van Eyck, Durer, Grunewald, Bosch, and Bruegel. (AY).

**ARTH 346 Bible and Western Tradition**  
3.000 Credits

A detailed study of major episodes from the Bible, first as a literary work, and second as it is reflected in both poetry and the visual arts during the Renaissance and Baroque periods. Included are selected works by such masters as John Donne, George Herbert, and John Milton in poetry and Michelangelo, Raphael, and Leonardo da Vinci in painting and sculpture. (OC).

**ARTH 351 Southern Baroque Art**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A study of the art of the seventeenth century in Italy and Spain, focusing upon Caravaggio, Annibale Carracci, Guercino, Reni, Cortona, Gaulli, Murillo, Zurbaran, and Velasquez, among others. (OC).

**ARTH 352 Northern Baroque Art**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

Study of the art of the seventeenth century in France, Flanders and Holland, with emphasis on Poussin, Georges de la Tour, the Le Nain brothers, Lebrun, Rubens, Van Dyck, Van Ruisdael, Vermeer, and Rembrandt. (OC).

**ARTH 361 American Art**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A study of American painting, sculpture, and architecture from the colonial period to the present. In this survey of an arts tradition that has greatly depended upon developments in Europe, efforts will be made to identify what is American about American art. (AY).

**ARTH 362 Impressionism and Post-Impress**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An examination of the origins of modern painting and sculpture in the art of the major Impressionists (Manet, Monet, Degas, Renoir) and Post-Impressionists (Cezanne, Seurat, Gauguin, Van Gogh). (OC).

**ARTH 363 Arts of the Twentieth Century**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A contextual study of twentieth-century art that seeks to define the relationships between western art and society. In addition to a consideration of painting, sculpture, and architecture, the emergence of new media - including altered and fabricated photography, video, and installation art - will be examined. Although a broad survey of a century rich in artistic achievements, the course will emphasize the dominance and influence of Pablo Picasso, Henri Matisse, and Frank Lloyd Wright. (AY).

**ARTH 364 Picasso**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A critical examination of Pablo Picasso's art that chronicles the artist's achievements as a painter, sculptor, draftsman, printmaker, and ceramist. Lectures and readings are directed to positioning Picasso's masterworks in relationship to his art as a whole and in the context of twentieth-century art. (AY).

**ARTH 365 Modern Architecture**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A survey of European and American architecture from the Chicago School to Post-Modernism. The course will trace the stylistic history of modern architecture while considering parallel issues of theory, social context, and building technology. Major architects studied will be Sullivan, Wright, Mies van der Rohe, Le Corbusier, and Johnson. (AY).

**ARTH 366 The Modern Print**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A history of western printmaking from Post-Impressionism to the present. The course will examine the relationship of printmaking to major movements of the day, the impact of modern technology on traditional print processes, and the developing notion of printmaking as an integral form of expression for the modern painter and sculptor. Special emphasis will be placed on the contributions of Gauguin, Munch, Picasso, Johns, and Stella. (OC).

**ARTH 367 Contemporary Art**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An examination of the most recent developments in modern art. In addition to painting and sculpture, consideration will be given to related forms of expression in performance art, photography, and video. (OC).

**ARTH 368 American Photography**  
3.000 Credits  
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

This course explores the history of photography, its aesthetics, and social functions in the United States, beginning with the medium's emergence in the 1830s and concluding with contemporary practices. Lectures and discussions will attend to several threads of inquiry: the history and theory of the medium...
and its interpretation; the diverse functions of photographs in American society; the relationship between photography and American identity formation; and the status of the photograph in a post-photographic, digital age.

**ARTH 370 The Arts of West Africa**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 105

This course represents a survey of the sculpture, architecture, pottery, textiles, body ornament and performance arts of Sub-Saharan Africa (the Western Sudan and the Guinea Coast of Africa from the Sahara to the Gulf of Benin). Objects will be examined in light of individual cultures and religions, traditions, and social and political change. (YR).

**ARTH 384 Islamic Architecture**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 105

This course is a comprehensive study of history and development of Islamic architecture from its birth in the seventh century to the present time. The course is designed to explain major characteristics of Islamic architecture through the study and analysis of major monumental buildings both religious and secular: Mosques, Madrasas (schools), Mausoleums, Palaces, and other buildings. Detailed analysis also will be applied to different types of art associated with these building, such as wall painting, stucco work, wood carving, sculpture, mosaic, and calligraphy.

**ARTH 390 Topics in Art History**
3.000 Credits

Examination of problems and issues in selected areas of art history. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when topics differ. (OC).

**ARTH 392 Masters of Western Art**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An intensive study of the complete work of a selected western painter, sculptor, or architect. In accounting for and interpreting the evolution of the large body of work by a major artist, instructors will focus on social, art-historical, and biographical determinants that shaped the art in question. Title as listed in Schedule of Classes will change according to content. Courses may be repeated for credit when specific artist differs. (OC).

**ARTH 398 Ind Studies in History of Art**
1.000 TO 3.000 Credits

Readings and research assignments in history of art selected in accordance with the special needs and interests of art history concentrators. May be repeated for a maximum of 3 credits each. (F,W).

**ARTH 399 Independent Studies**
1.000 TO 3.000 Credits

Readings and research assignments in history of art selected in accordance with the special needs and interests of art history concentrators. May be repeated for a maximum of 3 credits each. (F,W).

**ARTH 400 Senior Seminar**
3.000 Credits
Prerequisite(s): (ARTH 304 or ARTH 305 or ARTH 310 or ARTH 311 or ARTH 312 or ARTH 313 or ARTH 315 or ARTH 319 or ARTH 321 or ARTH 322 or ARTH 331 or ARTH 332 or ARTH 333 or ARTH 334 or ARTH 335 or ARTH 337 or ARTH 338 or ARTH 339 or ARTH 340 or ARTH 341 or ARTH 342 or ARTH 343 or ARTH 344 or ARTH 345 or ARTH 346 or ARTH 347 or ARTH 348 or ARTH 349 or ARTH 350 or ARTH 351 or ARTH 352 or ARTH 353 or ARTH 354 or ARTH 355 or ARTH 356 or ARTH 357 or ARTH 358 or ARTH 359 or ARTH 360 or ARTH 361 or ARTH 362 or ARTH 363 or ARTH 364 or ARTH 365 or ARTH 366 or ARTH 367 or ARTH 368 or ARTH 369 or ARTH 370 or ARTH 371 or ARTH 372 or ARTH 373 or ARTH 374 or ARTH 375 or ARTH 376 or ARTH 377 or ARTH 378 or ARTH 379 or ARTH 380 or ARTH 381 or ARTH 382 or ARTH 383 or ARTH 384 or ARTH 385 or ARTH 386 or ARTH 387 or ARTH 388 or ARTH 389 or ARTH 390 or ARTH 391 or ARTH 392 or ARTH 400 or ARTH 401 or ARTH 402 or ARTH 403 or ARTH 404 or ARTH 405 or ARTH 406 or ARTH 407 or ARTH 408 or ARTH 409 or ARTH 410 or ARTH 411 or ARTH 412 or ARTH 413 or ARTH 414 or ARTH 415 or ARTH 416 or ARTH 417 or ARTH 418 or ARTH 419 or ARTH 420 or ARTH 421 or ARTH 422 or ARTH 423 or ARTH 424 or ARTH 425)

An introduction to art-historical research methods. The art historian's central task of interpretation is explored by considering the critical perspectives of connoisseurship, iconography, formal analysis, iconology, and modern literary theory. (OC).

**ARTH 410 Museum Practice Seminar I**
3.000 Credits
Prerequisite(s): (ARTH 304 or ARTH 305 or ARTH 310 or ARTH 311 or ARTH 312 or ARTH 313 or ARTH 315 or ARTH 319 or ARTH 321 or ARTH 322 or ARTH 331 or ARTH 332 or ARTH 333 or ARTH 334 or ARTH 335 or ARTH 337 or ARTH 338 or ARTH 339 or ARTH 340 or ARTH 400 or ARTH 411 or ARTH 425) and (ARTH 304 or ARTH 305 or ARTH 310 or ARTH 311 or ARTH 312 or ARTH 313 or ARTH 315 or ARTH 319 or ARTH 321 or ARTH 322 or ARTH 331 or ARTH 332 or ARTH 333 or ARTH 334 or ARTH 335 or ARTH 337 or ARTH 338 or ARTH 339 or ARTH 340 or ARTH 400 or ARTH 411 or ARTH 425)

The course explores problems encountered in the field of art administration. Students will attend lectures given by art
administrators and curators of local institutions and will be involved in the planning, organization, and presentation of an actual exhibition. (YR).

**ARTH 411 Museum Practice Seminar II**
3.000 Credits
Prerequisite(s): (ARTH 304 or ARTH 305 or ARTH 310 or ARTH 311 or ARTH 312 or ARTH 313 or ARTH 319 or ARTH 321 or ARTH 322 or ARTH 331 or ARTH 332 or ARTH 333 or ARTH 334 or ARTH 342 or ARTH 343 or ARTH 346 or ARTH 351 or ARTH 352 or ARTH 361 or ARTH 362 or ARTH 363 or ARTH 364 or ARTH 365 or ARTH 366 or ARTH 367 or ARTH 370 or ARTH 390 or ARTH 392 or ARTH 400 or ARTH 410 or ARTH 425) and (ARTH 304 or ARTH 305 or ARTH 310 or ARTH 311 or ARTH 312 or ARTH 313 or ARTH 315 or ARTH 319 or ARTH 321 or ARTH 322 or ARTH 331 or ARTH 332 or ARTH 333 or ARTH 334 or ARTH 342 or ARTH 343 or ARTH 346 or ARTH 351 or ARTH 352 or ARTH 361 or ARTH 362 or ARTH 363 or ARTH 364 or ARTH 365 or ARTH 366 or ARTH 367 or ARTH 370 or ARTH 390 or ARTH 392 or ARTH 400 or ARTH 410 or ARTH 425)

This course is a continuation of ARTH 410. This course explores problems encountered in the field of art administration. Students will attend lectures given by art administrators and curators of local institutions and will be involved in the planning, organization, and presentation of an actual exhibition. This course is required of all students in the Art Administration track. (OC).

**ARTH 416 Earl Mod Jpn Paint&Wood Prnts**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103

Paintings and woodblock prints of the Edo/Tokugawa (1600-1868) and Meiji (1868-1912) periods are considered in light of competing developments that on the one hand looked to Japan's classical tradition and on the other to the influence of art and artists from China and the West. Special attention is given to female artists and images of women. Students cannot receive credit for both ARTH 416 and ARTH 516. (OC).

**ARTH 425 Women in Classical Antiquity**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

This course examines the evidence for the lives of women in Greek, Etruscan and Roman Antiquity, from the Bronze Age through the Imperial Period. Special emphasis will be placed on the archaeological evidence, especially works of art which illustrate women's lives and their relationships with men. Documents such as dedicatory and funerary inscriptions, the poetry of Sappho and Sulpicia, and selections from the writings of Homer, Hesiod, Aristotle, Pliny, Juvenal, and other ancient authors, will also be examined critically, particularly in relationship to the works of art. Students cannot receive credit for both ARTH 425 and ARTH 525. (YR).

**ARTH 426 City of Ancient Rome**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103

This course will focus on the ancient city of Rome, from its foundation to its precipitous decline in the fifth century AD. It will explore the public art and architecture of the city, emphasizing the different types of evidence available (topography, architecture, sculpture, texts) for understanding the history, politics, religion, and urban development of Rome, as well as the various art historical and archaeological techniques used to analyze the evidence. (OC)

**ARTH 454 Rembrandt**
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

Rembrandt's paintings, drawings, and prints are considered in the full historical and cultural context of the Golden Age of the Northern Netherlands, a period of unprecedented wealth and cultural diversity. Special attention will be given to issues of style, iconography, biography, art criticism, gender, patronage and artistic technique. Students cannot receive credit for both ARTH 454 and ARTH 554. (YR).

**ARTH 498 Advan Readings in Art History**
1.000 TO 3.000 Credits

Independent study of problems and issues in selected areas of art history. May be repeated for credit when specific topics differ. (OC).

**Astronomy**
(not a field of concentration; see PHYS 130, 131)

**Behavioral Sciences**

The major in Behavioral Sciences is an interdisciplinary program encompassing the disciplines of anthropology, psychology, and sociology. It is designed as a general preparation for a career in human services such as social work, counseling, criminology, or prevention/treatment programs in mental health. The idea for combining the three fields is based on the belief that it is important for an individual who plans to work with people to understand human beings as individuals (psychologically) who function in groups (social psychologically) within a social context (sociologically) which varies across cultures (anthropologically). These disciplinary perspectives offer different but complementary views of people. In order to understand, predict, or influence human behavior, one needs some comprehension of how humans develop, the problems they confront, the organization or structure in which they function, and how and why these go awry. It is also critical
to have some exposure to the methods employed by behavioral scientists and some actual experience in the working world of the human services.

To enroll in this program, a student must develop a list of courses which are appropriate for her/his career goals or interests and which satisfy the requirements listed below. This list should be prepared in consultation with, and approved by, the Behavioral Sciences advisor, Roger Loeb. The concentration encourages specific vocational tracks shaped to the student’s career goals. Specific career and appropriate course selection advice is available as follows: Michael Akiyama (child development, gerontology), Pam Aronson (family), Lars Bjorn (law), Eric Bolling (juvenile delinquency, minority groups), David Chatkoff (counseling), Kevin Early (criminal justice), James Gruber (social work), Lora Lempert (women’s issues), Pam McAuslan (gender), Larry Radine (healthcare administration, law, corporations), Jane Sheldon (adolescence), Marie Waung (business and industry), and Nancy Wrobel (mental health).

**PREREQUISITES TO THE CONCENTRATION**

The concentration requires the student to take introductory-courses in

- ANTH 101 Introduction to Anthropology
- PSYC 170 Introduction to Psychology as a Natural Science
- OR
- PSYC 171 Introduction to Psychology as a Social Science
- SOC 200 Understanding Society
- OR
- SOC 201 Contemporary Social Problems

**CONCENTRATION REQUIREMENTS**

The concentration also requires a minimum of 30 upper-division (300 and above) credits in the Behavioral Sciences including at least two courses in psychology, two in sociology, and one in anthropology. These courses must also include at least one course from each of the following categories:

**Methods**

- ANTH 470, PSYC 415, PSYC 425, PSYC 444, SOC 410, SOC 411.

**Normal/Abnormal Personality**

- ANTH 480, PSYC 440, PSYC 441, PSYC 442, SOC 465.

**Human Development**


**Individual Issues**

- ANTH/SOC 407, ANTH 455, PSYC 320/SOC 382, PSYC 446, PSYC 455, SOC 404, SOC 440, SOC 446, SOC 447, SOC 461

**Societal Issues**

- ANTH 340, ANTH 442, PSYC 322, PSYC 423, SOC 350, SOC 403, SOC 449, SOC 466, SOC 467, SOC 468, SOC 469, SOC 470, SOC 473.

**Social Organization/Social Structure**

- ANTH 370, ANTH 420, ANTH 440, ANTH 444, ANTH 460, PSYC 4305, SOC 422, SOC 435, SOC 450, SOC 477, SOC 483.

**Applied**

- PSYC 485, SOC 478.

**Cognates**

- 6 hrs

Students must also complete six additional hours in upper-level courses approved by the Behavioral Sciences advisor. These courses must be selected from courses which are not cross-listed with Behavioral Sciences courses. Recommended areas are biological science, communications, computer science, economics, English, foreign language, history, management, mathematics, philosophy and political science.

**HONORS PROGRAM IN BEHAVIORAL SCIENCES**

Behavioral Science students are eligible for the Honors Program which provides special opportunities for outstanding students, including a research training seminar, followed by independent research conducted in collaboration with faculty members. Students are accepted into the Honors Program early in their junior year. Prospective students should plan on completing the statistics and methods requirements by their junior year. Requirements for entrance are 1) GPA of 3.2 or higher in behavioral science courses and overall UM-D courses, and 2) informal evidence of being a superior student, such as high motivation and ability to work independently. Requirements for graduation with honors in behavioral science are the successful completion of the following:

- fulfillment of all requirements for behavioral sciences concentration
- PSYC 381 Principles of Statistics and Experimental Design or SOC/MATH 363 Introduction to Statistics
- PSYC 481 Computers in Psychology
- PSYC 498 (Honors Seminars) normally taken Winter Term, junior year
- PSYC 499 (Honors Research) normally completed during senior year
- Research Proposal meeting, normally completed early in senior year
- Final Oral Defense, completed at least one month prior to graduation

**Biochemistry**

Biochemistry bridges the biological sciences and chemistry. This degree program is thus designed to provide the student with an understanding of the structural and functional relationships between the chemical constituents of cells and their role in life processes. The requirements for concentration include courses in biological sciences and chemistry, and appropriate courses in mathematics and physics. The degree in biochemistry prepares a student for careers in teaching, medicine, and research in industry or academia.
PREREQUISITES TO THE CONCENTRATION

A solid background in mathematics is essential to success in any of the scientific disciplines. Incoming students who intend to choose a concentration in Biochemistry should have completed at least three years of high school mathematics. First year students should plan to enroll in MATH 105, MATH 115 or MATH 116 based on the results of their math placement tests. The CHEM 134 and CHEM 136 or CHEM 144 and CHEM 146 sequence is a prerequisite to many other courses in the Natural Sciences Department; students should complete this sequence as soon as possible.

BIOL 130 and 140 .................................................. 8 hrs

CHEM 134 and 136 General Chemistry
OR
CHEM 144 and 146 General Chemistry ..................... 8 hrs

AND
CHEM 225, 226 and 227 Organic Chemistry ............... 8 hrs
MATH 115 and 116 ................................................. 8 hrs
PHYS 150 and 151 or *PHYS 125 and 126 ............... 8 hrs
*Premedical students should elect PHYS 125 and 126.

CONCENTRATION REQUIREMENTS ......................... 30 hrs

Biochemistry ....................................................... 13 hrs
BCHM 470 Biochemistry I ..................................... 3 hrs
BCHM 471 Biochemistry II .................................... 3 hrs
BCHM 472 Biochemistry Lab I ............................... 1 hr
BCHM 473 Biochemistry Lab II ............................... 1 hr
BCHM 474 Molecular Biology ............................... 4 hrs
BCHM 497 Seminar in Biochemistry ......................... 1 hr

Chemistry .......................................................... 7 hrs
CHEM 344 Quantitative Analysis ............................ 4 hrs
CHEM 368 Physical Chemistry I ............................. 3 hrs

Related sciences .................................................... 10 hrs
Minimum of 7 credit hours in upper level Biochemistry, Biology or Chemistry.

At least one credit must be a laboratory (either lecture or lab, stand-alone lab course, or one credit hour of BCHM 495 or 499; or, CHEM 495 or 499).

Computational Skills (minimum of 3 credit hours)
An upper level course or MATH, STAT or CIS.

Electives ................................................................ 14 hrs
Students may not apply more than 14 additional credit hours of upper division courses offered in biochemistry, biological sciences, or chemistry for satisfying graduation requirements. A maximum of 6 credit hours of independent study in 495, 498 and 499 courses in any science discipline will count toward the 120 credit hours required for graduation.

HONORS DEGREE IN BIOCHEMISTRY

To qualify for this honor, a student must maintain an overall grade point average of 3.5. In addition to one credit hour for the BCHM 497 seminar, the honors degree candidate must take six credit hours of independent study under BCHM 495, 498 or 499. Such a study will culminate in an oral and/or written presentation of the results. The Biochemistry Program Committee will evaluate the student's presentation.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in biochemistry.

Biochemistry (BCHM)

COURSE OFFERINGS
(Not: An “*” denotes that the prerequisite course may be taken concurrently.)

BCHM 352 Introduction to Toxicology
3.000 Credits
Prerequisite(s): CHEM 225

An introduction to the principles of toxicology with an emphasis on environmental toxicology. Major topics include toxic agents, toxicological mechanisms, and use of toxicological reference literature. Discussion of chemical carcinogenesis, genetic toxicology, immunotoxicology, teratology, and toxic responses of the skin, eyes, and nervous system. Three hours lecture. (AY).

BCHM 370 Principles of Biochemistry
3.000 Credits
Prerequisite(s): BIOL 140 and CHEM 226

A concise but comprehensive survey of various areas of biochemistry designed for non-biochemistry majors. The course follows the standard approach to the subject including a description of cells, their structure and constituent macromolecules (proteins, nucleic acids, carbohydrates and lipids), enzymology, bioenergetics, intermediary metabolism, and gene regulation. Students cannot take both Biochemistry 370 and 470 or 471 for any combination of concentration, cognate or minor requirement. Three hours lecture. (F).

BCHM 390 Current Topics in Biochemistry
1.000 TO 3.000 Credits
Prerequisite(s): (BCHM 370* or BIOL 370* or CHEM 370*) or (BCHM 470* or BIOL 470* or CHEM 470*)

Special topics current to the field of biochemistry. Topics and format for the course may vary. See Schedule of Classes for current topic. Permission of Instructor. (OC).

BCHM 470 Biochemistry I
3.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140 and CHEM 226

Life processes from a chemical viewpoint: structure/function relationships of biomolecules with emphasis on proteins, enzyme kinetics, and mechanisms of action. Three hours lecture. (F).
BCHM 471  Biochemistry II  
3.000 Credits  
Prerequisite(s): BCHM 470 or CHEM 470 or BIOL 470  
Intermediary metabolism, bioenergetics, energy transformation, metabolic interrelationships, biochemical regulation, highly structured subcellular biochemical systems. Three hours lecture. (W).

BCHM 472  Biochemistry Laboratory I  
1.000 Credits  
Prerequisite(s): CHEM 344* and (BCHM 470* or BIOL 470* or CHEM 470*) and CHEM 227  
The techniques of preparative and analytical biochemistry. Preparation and characterization of proteins and nucleic acids. Physical and chemical properties of proteins and nucleic acids. Four hours laboratory. (F).

BCHM 473  Biochemistry Laboratory II  
1.000 Credits  
Prerequisite(s): (BCHM 471* or BIOL 471* or CHEM 471*) and (BCHM 472 or BIOL 472 or CHEM 472)  
The techniques of preparative and analytical biochemistry. Preparation and characterization of lipids and carbohydrates. Methods in metabolism. Four hours laboratory. (W).

BCHM 474  Molecular Biology  
4.000 Credits  
Prerequisite(s): (BCHM 470 or CHEM 470 or BIOL 470) or (BCHM 370 or BIOL 370 or CHEM 370) and CHEM 227  
Co-requisite(s): BCHM 474L  
This course will emphasize the molecular biology of eukaryotes, and topics will include genome organization and complexity, chromatin structure and function, gene expression, DNA replication and repair, genetic rearrangements, and the molecular biology of development. The laboratory will emphasize the application of recombinant DNA technology to the study of biological problems. Three hours lecture, four hours laboratory. (W).

BCHM 480  Biochemical Pharmacology  
3.000 Credits  
Prerequisite(s): BCHM 470 or CHEM 470 or BIOL 470  
Pharmacology is a study of drugs. In this course, the biochemical and molecular basis of drug action will be emphasized. Different categories of drugs, their use, abuse, and side effects will be presented. Three hours lecture. Permission of Instructor. (OC).

BCHM 490  Topics in Biochemistry  
1.000 TO 3.000 Credits  
A course in special topics that examines research problems of current interest in biochemistry. Topics and format may vary. See current Schedule of Classes. One to three hours seminar. (W).

BCHM 495  Off-Campus Research in Biochem  
1.000 TO 3.000 Credits  
Participation in ongoing research at an off-campus laboratory. No more than 6 hours combined from any Natural Science courses numbered 495, 498, and 499 may be credited toward the 120 hours required for a degree. Four to twelve hours laboratory. Permission of concentration advisor. (F,W,S).

BCHM 497  Seminar in Biochemistry  
1.000 Credits  
Prerequisite(s): BCHM 470 or BIOL 470 or CHEM 470  
A seminar course that examines research problems of current interest in biochemistry. The course format may include training students to read and present scientific papers, guest lecturers, and lectures by the instructor on a selected topic. One hour seminar. Permission of Instructor (W).

BCHM 498  Directed Reading in Biochem  
1.000 TO 3.000 Credits  
Library research in a specific area of biochemistry performed under the direction of a faculty member. No more than six hours combined from departmental courses numbered 495, 498, and 499 may be credited toward the 120 hours required for a degree. Four to twelve hours readings. Permission of Instructor. (F,W,S).

BCHM 499  Laboratory Research in Biochem  
1.000 TO 3.000 Credits  
Directed laboratory research performed under the supervision of a faculty member. Research training is encouraged. No more than six hours combined from departmental courses numbered 495, 498, and 499 may be credited toward the 120 hours required for graduation. Four to twelve hours laboratory. Permission of Instructor. (F,W,S).

### Biological Sciences

Biology is an extensive field that covers such diverse basic areas as molecular biology, microbiology, cell biology, genetics, anatomy and physiology of plants and animals, development, ecology, field biology, and evolution. The program is recommended for students who wish to study biology as part of an undergraduate liberal arts degree, to prepare for graduate study in biology or in any of the health professions, or to qualify for a secondary teacher's certificate in Biology.

Students who are non-concentrators and interested in biology should elect courses from the following, which covers topics such as fundamental biological principles, the social implications of biological questions, and the history and development of biological ideas: Biological Sciences 100, 101, 240, or 290. Students who wish a survey of the principles of biology should select the introductory sequence: Biological Sciences 130 and 140. Students concentrating in the biological sciences must fulfill the following requirements:
PREREQUISITES TO THE CONCENTRATION

A solid background in mathematics is essential to success in any of the scientific disciplines. Incoming students who intend to choose a concentration in Biological Sciences should have completed at least three years of high school mathematics. Based on the results of the mathematics placement exam, first year students should plan to enroll in MATH 105, 113 or 114.

Chemistry is another area essential to success in biology. Students should plan on completing the CHEM 124-136, or 124-146 sequence as soon as possible, followed by CHEM 225, 226 and 227.

BIOL 130 and 140 are prerequisites to the upper-division Biological Sciences courses and should also be completed early. It is very helpful to take BIOL 130 and start on the chemistry sequence before enrolling in BIOL 140.

PHYS 125 and 126 are useful for many of the upper-division Biological Sciences courses. An ideal program for completing the prerequisites would include Calculus, General Chemistry and Introductory Biology during the first year, Organic Chemistry during the second, and Physics during the third.

In order to finish the concentration requirements, coursework must include the remaining college and campus distribution requirements, six credit hours of cognate courses, at least 24 credit hours in upper-division biological sciences courses and up to 26 credit hours of electives. In planning this curriculum, students should note that BIOL 301, 303 and 385 serve as prerequisites for many Biological Sciences courses.

BIOL 130 and BIOL 140

CHEM 134 or CHEM 144 General Chemistry I
AND
CHEM 136 or CHEM 146 General Chemistry II

CHEM 225, 226 and 227 Organic Chemistry
PHYS 125 and 126 Physics

MATH 113 and 114 Calculus I and II: Management, Life and Social Science (preferred sequence)
OR
MATH 115 and 116 Calculus I and II

CONCENTRATION REQUIREMENTS ............... 24 hrs

At least 24 credit hours of 300- and 400-level biological sciences courses. The 24-hour total must include at least 7 credit hours (including one laboratory course) from each of the following areas:

Cell and Molecular Biology

Organismal Biology
BIOL 303, 309, 310, 311, 312, 333, 335, 350* and 351

Population and Environmental Biology
BIOL 304, 315, 320, 360*, 361, and 420

*Note: These courses will count toward laboratory course requirements when accompanied by the corresponding laboratory.

In addition, one course in genetics (BIOL 306, 360 or 406) is required. The following courses may be applied to the 24 credit-hour concentration requirement: BIOL 326, 390, 410, 410, 490, 495, 497, 498 and 499.

BIOL 495, 497, 498 and 499 may be repeated for credit, but no more than six credit hours in these courses can be applied toward the 24 credit-hour concentration requirement. No more than 44 credit hours in biological sciences courses may be applied toward the 120-credit-hour total required for graduation.

Students are reminded of the College requirement that at least 48 hours of coursework be taken at the upper-division level (numbered 300 and up). This requires at least 18 credit hours of upper-division courses beyond the concentration and cognate requirements. These courses may be selected from any program offered on campus.

Cognates ................................................................. 6 hrs

Students concentrating in the biological sciences must complete at least six credit hours in biology-related courses numbered 300 or above. In addition to courses in the natural sciences (biochemistry, chemistry, environmental science, geology, microbiology, and physics) a wide variety of courses in areas as diverse as mathematics, computer science, environmental studies, physical anthropology, and experimental psychology can be used to fulfill this requirement, as well as courses in the history, philosophy, or literature of science.

Students should consult a biology advisor to obtain a current list of acceptable cognate courses. Note that courses that are cross-listed as biology will count toward this requirement if they are elected under the non-biology listing. A cross-listed course cannot be used to satisfy both the concentration and the cognate requirement.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in biological sciences. Note that all these courses include prerequisites in biology and some include prerequisites in chemistry or mathematics.

Biological Sciences (BIOL)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>BIOL 100</th>
<th>Principles of Biology</th>
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<td>3.000 Credits</td>
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A lecture course introducing non-science concentrators to major areas of biology, including cell biology, genetics, human physiology, plant biology, ecology, and evolution. Topics of current interest are discussed. Students cannot use both BIOL 100 and NSCI 120 to satisfy the Natural sciences distribution requirements. Three hours lecture. (F,W).

<table>
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<tr>
<th>BIOL 101</th>
<th>Principles of Biology Lab</th>
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<td>1.000 Credits</td>
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Prerequisite(s): BIOL 100 *

A laboratory course introducing non-science concentrators to major areas of biology including cell biology, genetics, human
physiology, plant biology, ecology, and evolution. Three hours laboratory. (F,W).

**BIOL 103  Anatomy and Physiology I**  
4.000 Credits  
Co-requisite(s): BIOL 103L

The structural and functional relationships of the human body at the cellular, tissue, organ, and system levels are analyzed. Students identify the major anatomical parts and relate these to the physiological activities of the circulatory, skeletal, nervous, muscular, and digestive systems. The homeostatic effects of fluids, electrolytes, and acids and bases throughout the integrated human body are analyzed. Four hours lecture, three hours laboratory. (F).

**BIOL 105  Anatomy and Physiology II**  
4.000 Credits  
Prerequisite(s): BIOL 103  
Co-requisite(s): BIOL 105L

The major anatomical parts of the respiratory, reproductive, endocrine, and urinary systems of the human body are identified and related to the physiological activities of these systems. Continued emphasis is placed on the homeostatic effects of fluids, electrolytes, acids, and bases throughout the integrated human body. Four hours lecture, three hours laboratory. (W).

**BIOL 130  Intro Org and Environ Biology**  
4.000 Credits

An introduction to organismal and environmental biology, with emphasis on plant and animal diversity, structure, physiology, and development; ecology; and evolution. This course complements BIOL 140, which need not be taken as a prerequisite; together they constitute an introduction to biology. This course is intended for science concentrators. Three hours lecture, four hours laboratory/recitation. (F,W,S).

**BIOL 140  Intro Molec & Cellular Biology**  
4.000 Credits  
Co-requisite(s): BIOL 140L

An introduction to molecular and cellular aspects of biology with emphasis on cell structure and function, biochemistry, genetics, cell growth and differentiation, and the origin of life. This course complements BIOL 130; together they constitute and introduction to biology. This course is intended for science concentrators. Three hours lecture, four hours laboratory/recitation. BIOL 130 and CHEM 114 recommended. (F,W,S).

**BIOL 240  Great Experiments in Biology**  
3.000 Credits

An individualized-learning course that portrays the development of modern biological science. The course does not require attendance in classes since it can be completed at home and in the library by means of study guides, audio cassettes, slide/tape presentations, and computer-assisted instruction. (F,W,S).

**BIOL 290  Topics in Biology and Society**  
3.000 Credits

An introduction to themes of biology reflecting the interaction between biology and society. Topics vary and are announced in the current Schedule of Classes. The course may be repeated no more than once under a different topic. Three hours lecture. (OC).

**BIOL 291  Biology and Society Laboratory**  
1.000 Credits  
Co-requisite(s): BIOL 290

A laboratory course to accompany BIOL 290. Three hours laboratory. (OC).

**BIOL 301  Cell Biology**  
4.000 Credits  
Prerequisite(s): BIOL 140  
Co-requisite(s): BIOL 301L

Functional and structural features of cells, organelles, and macromolecules. Topics in biochemistry, and physical chemistry of cellular processes are considered. Three hours lecture, four hours laboratory. CHEM 226 is recommended. (W).

**BIOL 303  Comparative Animal Physiology**  
4.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140 and (CHEM 124 or CHEM 134 or CHEM 144)  
Co-requisite(s): BIOL 303L

Physiological processes and their control in higher animals. Emphasis ranges from the cellular mechanisms and systemic patterns of regulation of body functions to the evolutionary and environmental adaptations determining body form and function in diverse animal types. Three hours lecture, four hours laboratory. MATH 114 is recommended. (F).

**BIOL 304  Ecology**  
4.000 Credits  
Prerequisite(s): BIOL 130 and (MATH 115 or MATH 113 or MPLS 116)  
Co-requisite(s): BIOL 304L

Relationships between organisms and their environments. Patterns in the physical environment, physiological and behavioral adaptations, population dynamics, energy flow, nutrient cycling; succession. Three hours lecture, four hours laboratory (with field trips). (F, S).

**BIOL 306  General Genetics**  
3.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140  
Co-requisite(s): BIOL 306R

An intermediate course in classical, molecular and evolutionary genetics. The structure, function, and inheritance of genetic
material in prokaryotes, eukaryotes and viruses are discussed. Topics include DNA and chromosome structure, genetic linkage and mapping, gene expression and its regulation, human genetic disease, and population genetics. Three hours lecture, one hour recitation. (F).

**BIOL 307 General Genetics Laboratory**
1.000 Credits  
Co-requisite(s): BIOL 306

A semester-long laboratory course dealing with investigation and analysis in genetics. Laboratory sessions will include genetic crosses of plants and animals and the subsequent analysis to determine linkage and gene mapping location. Computer exercises will also be used to establish genetic tools for modern molecular analysis. Four hours laboratory. (W).

**BIOL 309 Introduction to Mycology**
4.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140

An introduction to the biology of the fungi. Classification, structure, industrial use, gastronomic qualities, and disease-producing ability of macroscopic and microscopic forms are studied. Laboratories include microscopic and macroscopic examinations of fungi and their growth and field studies on the occurrence and classification of edible and poisonous varieties. Three hours lecture, four hours laboratory. (OC).

**BIOL 310 Histology**
4.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140  
Co-requisite(s): BIOL 310L

Descriptive approaches to the study of the microscopic anatomy of animal tissue. The course emphasizes the study of cell and tissue types, selected organs and the interpretation of electron micrographs. Three hours lecture, four hours laboratory. (AY, F).

**BIOL 311 Embryology**
4.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140

Descriptive and experimental approaches to a comparative study of reproduction, morphogenesis, and growth. Emphasis is placed on the vertebrates, but some attention is focused on the development of invertebrates and plants. Three hours lecture, four hours laboratory. (AY, W).

**BIOL 312 Compare Anat of Vertebrates**
5.000 Credits  
Prerequisite(s): BIOL 130

A comparative study of the morphology of living organisms, including an analysis of functional features, an introduction to the principles of systematics, and a study of the broad outlines of classification. The major emphasis is on the comparative functional anatomy of vertebrates. Three hours lecture, eight hours laboratory. (AY, W).

**BIOL 313 Plant Taxonomy and Systematics**
4.000 Credits  
Prerequisite(s): BIOL 130

Characteristics, distribution, and relationships of plants with special reference to the local Michigan flora. Three hours lecture, four hours laboratory (including field work) per week. (OC).

**BIOL 315 Aquatic Ecosystems**
4.000 Credits  
Prerequisite(s): BIOL 130 and (CHEM 124 or GEOL 118)

An introduction to the physical, chemical, and biological characteristics of lakes, rivers, and wetlands emphasizing a comparison of ecosystem structure and function. Laboratory emphasizes data collection and analysis to characterize a representative lake, river, and wetland. Lecture and laboratory. (AY, F).

**BIOL 320 Field Biology**
4.000 Credits  
Prerequisite(s): BIOL 101 or BIOL 130

Adaptations, taxonomy, systematics, ecology, and behavior of southeastern Michigan flora and fauna. Techniques of field observation and recording are emphasized. Skills in the use of identification keys and guides are developed. The campus Environmental Study area is used intensively. Three hours lecture, four hours laboratory (with field trips). (S).

**BIOL 326 Environmental Management**
4.000 Credits  
Prerequisite(s): (BIOL 304 or ESCI 304) and ESCI 301


**BIOL 333 Plant Biology**
4.000 Credits  
Prerequisite(s): BIOL 130  
Co-requisite(s): BIOL 333L

A thorough survey of the evolutionary trends in plant reproduction and morphology will be considered. This survey will extend into the field of plant anatomy, but not plant physiology, which is covered in a separate course. Major groups to be studied include: bacteria, algae, fungi, liverworts, lichens, mosses, ferns, and seed plants. Certain less familiar groups will also be emphasized. Plant diversity will be examined from the perspective of its import to civilizations of the past and future. Three hours lecture, four hours laboratory. (F, S).

**BIOL 335 Plant Physiology**
4.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140  
Co-requisite(s): BIOL 335L

Physiological principles as they apply to the major plant groups. Topics include cellular metabolism, water balance,
translocation, photosynthesis, mineral nutrition, growth and development and production of secondary substances. Three hours lecture, four hours laboratory. (W).

**BIOL 350** Introduction to Neurobiology
3.000 Credits
Prerequisite(s): BIOL 130 or PSYC 370

An introduction to nervous systems and how they function. This course includes the cellular physiology and anatomy of nervous systems in vertebrates and invertebrates, and how these cellular activities are integrated into systems to produce complex, coordinated behavior. Three hours lecture. (W).

**BIOL 351** Intro to Neurobiology Lab
1.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140
Co-requisite(s): BIOL 350

A laboratory for science concentrators to accompany BIOL 350. Four hours laboratory. (OC).

**BIOL 360** Population Genetics & Evolution
3.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140 and (MATH 113 or MATH 115 or MPLS 116)

Processes which change the genetic composition of populations: mutation, gene flow, drift, and natural selection. The origin of races, species, and higher taxa. Evidence of evolution from the geological record, comparative anatomy, comparative biochemistry and other sources. Three hours lecture. (W).

**BIOL 361** Population Genetics & Evol Lab
1.000 Credits
Prerequisite(s): BIOL 360 *

A laboratory course to accompany BIOL 360. Four hours laboratory. (OC).

**BIOL 370** Principles of Biochemistry
3.000 Credits
Prerequisite(s): BIOL 140 and CHEM 226

A concise but comprehensive survey of various areas of biochemistry designed for non-biochemistry majors. The course follows the standard approach to the subject including a description of cells, their structure and constituent macromolecules (proteins, nucleic acids, carbohydrates and lipids), enzymology, bioenergetics, intermediary metabolism and gene regulation. Students cannot take both BCHM 370 and 470 or 471 for any combination of concentration, cognate or minor requirement. Three hours lecture. (F).

**BIOL 380** Epidemiology
2.000 Credits
Prerequisite(s): BIOL 140

A study of disease occurrence and spread in human populations. The primary concern is with groups of persons, rather than individuals. Emphasizes methods of study that would contribute to understanding disease etiology. Two hours lecture. BIOL 301 and 385 is recommended. (OC).

**BIOL 385** Microbiology
4.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140
Co-requisite(s): BIOL 385L

The biology of microorganisms is considered through study of the properties of bacteria, fungi, algae, protozoa, and viruses. Microbial structures are discussed and correlated with their function. Aspects of cellular metabolism pertinent to microorganisms are emphasized. The interaction of microorganisms and their environment, animate and inanimate, is discussed with respect to the beneficial or harmful effects of the different microbial groups. Laboratory exercises introduce the student to basic, practical microbiological techniques and illustrate various principles of microbial life. Three hours lecture, four hours laboratory. (F,S).

**BIOL 390** Topics in Biology
1.000 TO 4.000 Credits

Examination of problems and issues in selected areas of biology. Title in Schedule of Classes changes according to content. This course may be repeated for credit when specific topics differ. Permission of Instructor. (OC).

**BIOL 405** Applied & Environ Microbiology
4.000 Credits
Prerequisite(s): BIOL 385 or MICR 385

The study of the diversity, structure, and function of microorganisms as they interact with their environment. Emphasis will be placed on soil microbiology (fungi, bacteria, microalgae) and plant-microbe interactions (pathogens, symbioses). Ecological topics include decomposition, nutrient cycling, bioremediation, and agro ecosystems. Three hours lecture, four hours laboratory. (W).

**BIOL 406** Microbial Genetics
3.000 Credits
Prerequisite(s): MICR 385 or BIOL 385

This molecular genetics course emphasizes bacteria and viruses. Topics include chromosome structure and replication, recombination, DNA repair, genetic mapping, mechanisms of gene transfer, regulation of gene expression, and mutagenesis. Three hours lecture, four hours laboratory. (AY,F).

**BIOL 410** Diversity Issues Health Care
3.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140

This course will address the effect of race, age, gender, religion, and economic status on medical research and health care. Through an examination of clinical trials and case studies, students will learn how medical research is performed in the United States, and what health care treatments and options for patients are available. Medical treatment and disease topics will be selected and will be evaluated as to how they are influenced by the criteria listed. The examples will focus on both cultural differences and inequity, in national and global settings. (AY).
BIOL 414  Limnology  
4.000 Credits  
Prerequisite(s): BIOL 130 and (CHEM 136 or CHEM 146)

A study of the physical, chemical, and biological characteristics of freshwater lakes. Laboratories will emphasize field study of area lakes and impoundments. Three hours lecture, four hours laboratory. BIOL/ESCI 304 or ESCI 275 recommended. (OC).

BIOL 416  Stream Ecology  
4.000 Credits  
Prerequisite(s): BIOL 304

A study of the physical, chemical and biological characteristics of streams and rivers. Three hours lecture, four hours laboratory. (OC).

BIOL 420  Advanced Field Ecology  
4.000 Credits  
Prerequisite(s): BIOL 304 or BIOL 320

An intense study of behavioral ecology and field-oriented research at an advanced level, utilizing ecological habitats on campus and in surrounding urban areas. Focus will be on plant/animal interactions and will include pollination ecology, reproduction and distribution ecology, optimal foraging theory, as well as hypothesis testing of animal migration and distribution of species in extreme urban environments. Three hours lecture, four hours laboratory. (OC).

BIOL 440  Micro Genetics & Physi Lab  
4.000 Credits  
Prerequisite(s): BIOL 385* or MICR 385* or BIOL 301* or BIOL 406* or MICR 406* or BIOL 485* or MICR 485*

This course emphasizes the use of advanced microbiological techniques for understanding the genetics and physiology of microorganisms. Experiments focus on the understanding of general microbial phenomena, such as nutrition, metabolism and biochemistry; protein and nucleic acid synthesis; energy generation, enzyme regulation, membrane transport, motility, differentiation, cellular communication and the behavior of populations.

BIOL 450  Virology  
4.000 Credits  
Prerequisite(s): CHEM 226 and (MICR 385 or BIOL 385)

The first half of this course deals with bacterial viruses, with emphasis on classical events in this field. The second half surveys the field of animal viruses, with emphasis on recent discoveries, including replication, pathogenesis, and viral association with cancers. Three hours lecture, four hours laboratory. (AY,W).

BIOL 452  Med & Env Toxicology  
3.000 Credits  
Prerequisite(s): BIOL 140 and CHEM 225 and (BIOL 370 or BIOL 455 or BIOL 470 or BIOL 301 or BIOL 303 or BIOL 385)

Emphasis will be on cellular and human pathophysiology resulting from environmental toxicants. Examples will be based on toxicant exposure and subsequent diseases in humans and other biological systems. (AY).

BIOL 455  Immunology  
4.000 Credits  
Prerequisite(s): BIOL 385 or BIOL 301 or MICR 385

A detailed study of the field of immunology. Among the topics covered are various aspects of the immunological response, such as humoral or cell-mediated immunity, cell-cell interactions, and immunology as related to the cause and prevention of disease. Three hours lecture, four hours laboratory. (AY,F).

BIOL 459  Pathogenic Microbiology  
4.000 Credits  
Prerequisite(s): BIOL 385 or MICR 385

An introduction to pathogenic microorganisms and mechanisms of microbial pathogenicity. Disease-causing bacteria, fungi, viruses, and protozoa are studied. Laboratories emphasize clinical approaches to isolation, identification, and treatment. Three hours lecture, four hours laboratory. (AY,F).

BIOL 470  Biochemistry I  
3.000 Credits  
Prerequisite(s): BIOL 130 and BIOL 140 and CHEM 226

Life processes from a chemical viewpoint: structure/function relationships of biomolecules with emphasis on proteins, enzyme kinetics, and mechanisms of action. Three hours lecture. (F).

BIOL 471  Biochemistry II  
3.000 Credits  
Prerequisite(s): BCHM 470 or BIOL 470 or CHEM 470

Intermediary metabolism, bioenergetics, energy transformation, metabolic interrelationships, biochemical regulation, highly structured subcellular biochemical systems. Three hours lecture. (W).

BIOL 472  Biochemistry Lab I  
1.000 Credits  
Prerequisite(s): CHEM 344* and (BCHM 470* or BIOL 470 or CHEM 470)

The techniques of preparative and analytical biochemistry. Preparation and characterization of proteins and nucleic acids. Physical and chemical properties of proteins and nucleic acids. Four hours laboratory. (F).

BIOL 473  Biochemistry Laboratory II  
1.000 Credits  
Prerequisite(s): (BCHM 471* or BIOL 471* or CHEM 471*) and (BCHM 472 or BIOL 472 or CHEM 472)

The techniques of preparative and analytical biochemistry. Preparation and characterization of lipids and carbohydrates.
Methods in metabolism. Four hours laboratory. (W).

**BIOL 474 Molecular Biology** 4.000 Credits

Prerequisite(s): (BCHM 470 or BIOL 470 or CHEM 470) or (BCHM 370 or BIOL 370 or CHEM 370) and CHEM 227

Co-requisite(s): BIOL 474L

This course will emphasize the molecular biology of eukaryotes, and topics will include genome organization and complexity, chromatin structure and function, gene expression, DNA replication and repair, genetic rearrangements, and the molecular biology of development. The laboratory will emphasize the application of recombinant DNA technology to the study of biological problems. Three hours lecture, four hours laboratory. (W).

**BIOL 485 Physiology of Micro-organisms** 3.000 Credits

Prerequisite(s): (BIOL 385 or MICR 385) and CHEM 225*

An in-depth examination of the physiology of microorganisms. Areas of emphasis include the growth and nutrition of microorganisms, the development of viruses, the microbial degradation of organic compounds, the regulation of degradation reactions, and the biosynthesis of uniquely microbial compounds and secondary metabolites, such as antibiotics and toxins. Consideration is given to the natural environments of specific microorganisms. Three hours lecture, four hours laboratory. (AY,W).

**BIOL 489 Origins of Biological Sciences** 3.00 TO 4.000 Credits

A study of the development of the science of biology as revealed in the writing and experiments of major biologists of the past and present. (OC).

**BIOL 490 Seminar in Biology/Microbiology** 1.000 TO 6.000 Credits

Directed research on a problem culminating in the preparation of a paper and presentation of a public seminar. Tutorials, lecturers, and student seminars are given on selection and formulation of research problems, experimental design, and statistical treatment of data. May be repeated for credit with permission of advisor. (OC).

**BIOL 495 Off-Campus Research Participant** 1.000 TO 3.000 Credits

Participation in ongoing experimental research at an off-campus laboratory (or in the field). Arrangements made between the off-campus researcher, the student, and the Biology concentration advisor. No more than six credit hours combined from BIOL 490, 495, 498, and 499 may be counted toward the 120 hours required for a degree. Four to twelve hours laboratory. Permission of Instructor. (F,S).

**BIOL 497 Seminar in Biology** 1.000 Credits

Topics of current interest in Biology will be presented by guest lecturers, faculty members or students. Topics chosen will vary, from term to term. Can be elected up to three times. One hour seminar. (W).

**BIOL 498 Independent Study in Biology** 1.000 TO 3.000 Credits

Library research and independent study performed under the guidance of a faculty member. Four to twelve hours readings. Permission of Instructor. (F,S).

**BIOL 499 Laboratory in Biological Resrh** 1.000 TO 3.000 Credits

Directed laboratory research performed under the guidance of faculty member. Four to twelve hours laboratory. Permission of Instructor. (F,S).

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**Chemistry (ACS Approved)**

The concentration program in chemistry at the UM-D is certified by the American Chemical Society. This program is designed primarily for students who intend to go into Chemistry as a profession or who plan to continue their studies at the graduate level. A student may earn a BS degree in chemistry by completing the prerequisite, concentration, and cognate courses listed below and by fulfilling the CASL distribution and graduation requirements.

**PREREQUISITES TO THE CONCENTRATION**

A solid background in mathematics is essential to success in any of the scientific disciplines. Incoming students who intend to choose a concentration in Chemistry should have completed at least three years of high school mathematics. First year students should plan to enroll in MATH 105, MATH 115, or MATH 116 based on the results of their math placement tests. The CHEM 124-136 or 124-146 sequence is a prerequisite to many other courses in the Natural Sciences Department; students should complete this sequence as soon as possible.

Chemistry concentrators must complete the following 40 credit hours of prerequisite courses. These courses should be completed early in the student's four-year curriculum.

- CHEM 134/136 or 144/146
- CHEM 225, 226 and 227
- BIOL 130 or 140*
- PHYS 150 and 151**
- MATH 115, 116 and 215

*Students interested in biochemistry should elect BIOL 140; students interested in environmental chemistry should elect BIOL 130.

**The physics prerequisite may also be satisfied by completing PHYS 125 and 126 and an upper-division physics course, such as PHYS 305.
CONCENTRATION REQUIREMENTS

Required courses .................................................. 29 hrs
CHEM 303 Inorganic Chemistry I .......................... 3 hrs
CHEM 344 Quantitative Analysis ............................ 4 hrs
CHEM 368 Physical Chemistry I ............................ 3 hrs
CHEM 370 Principles of Biochemistry ..................... 3 hrs
CHEM 403 Inorganic Chemistry II ......................... 3 hrs
CHEM 447 Instrumental Methods of Analysis .......... 4 hrs
CHEM 450 Advanced Organic Synthesis and Characterization Laboratory .......................... 1 hr
CHEM 452 Advanced Inorganic Synthesis and Characterization Laboratory ......................... 1 hr
CHEM 469 Physical Chemistry II ........................... 3 hrs
CHEM 481 Physicochemical Measurements ............. 2 hrs
CHEM 493 Presentations in Chemistry ................... 1 hr
One course from
CHEM 348 Environmental Chemistry .................... 3 hrs
CHEM 349 Environmental Chemistry Laboratory ...... 1 hr
CHEM 352 Introduction to Toxicology .................... 3 hrs
CHEM 390 Current Topics in Chemistry ................. 1-3 hrs
CHEM 426 Advanced Organic Chemistry ................ 3 hrs
CHEM 436 Polymer Chemistry .............................. 3 hrs
CHEM 470 Biochemistry I ..................................... 3 hrs
CHEM 471 Biochemistry II ................................... 3 hrs
CHEM 472 Biochemistry Laboratory I ..................... 1 hr
CHEM 473 Biochemistry Laboratory II ..................... 1 hr
CHEM 490 Topics in Chemistry ............................. 1-3 hrs
CHEM 497 Seminar in Chemistry ............................ 1 hr

One course from
CHEM 348 Environmental Chemistry .................... 3 hrs
CHEM 349 Environmental Chemistry Laboratory ...... 1 hr
CHEM 352 Introduction to Toxicology .................... 3 hrs
CHEM 390 Current Topics in Chemistry ................. 1-3 hrs
CHEM 426 Advanced Organic Chemistry ................ 3 hrs
CHEM 436 Polymer Chemistry .............................. 3 hrs
CHEM 470 Biochemistry I ..................................... 3 hrs
CHEM 471 Biochemistry II ................................... 3 hrs
CHEM 472 Biochemistry Laboratory I ..................... 1 hr
CHEM 473 Biochemistry Laboratory II ..................... 1 hr
CHEM 490 Topics in Chemistry ............................. 1-3 hrs
CHEM 497 Seminar in Chemistry ............................ 1 hr

A student may apply no more than 52 credit hours of chemistry toward the 120 credit hours required for graduation. No more than six credit hours from among Natural Sciences department courses numbered 495, 498 and 499 may be counted toward the 120 credit hours required for graduation.

Cognates .......................................................... 6 hrs
Students must complete at least six credit hours from courses numbered 300 and above in Biological Sciences, Biochemistry, Environmental Science, Geology, Mathematics, Microbiology, Applied Statistics, or Physics. The six credit hours need not be from a single discipline. Courses that do not carry concentration credit within a discipline will not satisfy the cognate requirement in chemistry.

ADDITIONAL REQUIREMENTS

Students must also complete 24 credit hours of courses offered by the Departments of Behavioral Sciences, Humanities, and Social Sciences. This requirement can be and usually is fulfilled by completion of the CASL distribution requirements. In satisfying the CASL foreign language requirement, students are encouraged to select French or German. At least one computer science course is strongly recommended.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in chemistry.
CHEM 134  General Chemistry IA  
4.000 Credits  
Prerequisite(s): MATH 105* or MPLS 113 or MPLS 115  
Co-requisite(s): CHEM 134L  

An introduction to chemistry phenomena and principles with an emphasis on developing both an understanding of chemistry and an appreciation of what chemists do. Students will investigate the fundamentals of chemistry in the context of real-world problems and will utilize systems of biological and environmental importance. Core concepts to be explored include atomic structure, structure and bonding, classes of organic compounds, and spectroscopy. Three hours lecture, one hour recitation, three hours laboratory. Suitable for students considering careers in engineering, life sciences, and physical sciences. (F,S).

CHEM 136  General Chemistry IIA  
4.000 Credits  
Prerequisite(s): CHEM 124 or CHEM 134 or CHEM 144  
Co-requisite(s): CHEM 136L  

Continuation of CHEM 124. Concepts to be explored in this course include chemical equilibrium, acids and bases, electrochemistry, atomic structure, chemical bonding, introduction to organic chemistry. Suitable for students majoring in engineering, physical sciences, life sciences. (F,W,S)

CHEM 144  Gen Chemistry IB  
4.000 Credits  
Prerequisite(s): MATH 105* or MPLS 113 or MPLS 115  

An introduction to chemistry phenomena and principles with an emphasis on developing both an understanding of chemistry and an appreciation of what chemists do. Students will investigate the fundamentals of chemistry in the context of real-world problems as related to physical phenomena and properties. Core concepts to be explored include atomic structure, structure and bonding, classes of organic compounds, and spectroscopy. Three hours lecture, one hour recitation, three hours laboratory. Suitable for students considering careers in engineering, life sciences, and physical sciences. (F,W,S).

CHEM 146  General Chemistry IIB  
4.000 Credits  
Prerequisite(s): CHEM 124 or CHEM 134 or CHEM 144  

Continuation of CHEM 124. Concepts to be explored in this course include organic chemistry, fossil fuels, synthetic polymers, electrochemistry, solid state, extractive metallurgy, and spectroscopy. Suitable for students majoring in engineering, physical sciences, life sciences. (F,W,S).

CHEM 225  Organic Chemistry I  
3.000 Credits  
Prerequisite(s): CHEM 136 or CHEM 146  
Co-requisite(s): CHEM 225R  

The initial course in organic chemistry. A general introduction organic chemistry with emphasis on the development of structure theory and functional group chemistry. Three hours lecture, one hour recitation. (F,S).

CHEM 226  Organic Chemistry II  
3.000 Credits  
Prerequisite(s): CHEM 225  
Co-requisite(s): CHEM 226R  

A continuation of CHEM 225. Topics include functional group chemistry and properties of carbohydrates, amino acids, and aromatic compounds. Three hours lecture, one hour recitation. CHEM 225 and 226 constitute a two-semester sequence in organic chemistry, suitable for students in the basic sciences or engineering or with interests in one of the health professions. (W,S).

CHEM 227  Organic Chemistry Laboratory  
2.000 Credits  
Prerequisite(s): CHEM 226 *  

Development of the basic laboratory techniques of organic chemistry. The chemistry of functional groups is studied and various organic compounds are synthesized and purified. Eight hours laboratory. (F,W,S).

CHEM 285  Introduction to Glass Blowing  
1.000 Credits  

A study of the nature, properties, and manufacture of glass. Laboratory experience in the manipulation of glass and the construction of scientific apparatus. Discussions, laboratory, and field trips. (AY).

CHEM 303  Inorganic Chemistry I  
3.000 Credits  
Prerequisite(s): CHEM 136 or CHEM 146  

A study of the chemistry of the elements and their periodic relationship. Bonding theories and structures as well as descriptive chemistry of the representative elements will be emphasized. Three hours lecture. (F).

CHEM 325  Principles of Organic Chem  
3.000 Credits  
Prerequisite(s): CHEM 124 and (CHEM 136 or CHEM 146)  

A one-semester introduction to the compounds of carbon, with an emphasis on structure, preparation, reactivity and characterization of different functional groups. Both aliphatic and aromatic compounds will be examined. The important role of organic compounds in modern society will be highlighted with real world examples including fuels, detergents, plastics, medicines, biomolecules, environmental pollutants and additives. This course may not be used to satisfy the organic chemistry prerequisite for the Biochemistry, Biology, Chemistry, or Microbiology degree programs. Students may not receive credit for both CHEM 225 and 325. CHEM 325 may not be used as a prerequisite for Chemistry 226.
CHEM 344  Quantitative Analysis  
4.000 Credits  
Prerequisite(s): CHEM 136 or CHEM 146  
Co-requisite(s): CHEM 344L  

A survey of theory and practice of volumetric, gravimetric,  
electrometric and colorimetric analysis. Systematic analysis  
of complex materials. Two hours lecture, eight hours laboratory.  
(F).

CHEM 348  Environmental Chemistry  
3.000 Credits  
Prerequisite(s): CHEM 344  

Description of the concepts, principles, practices, and current  
problems in the chemistry of natural waters, the soil, and the  
atmosphere. Three hours lecture. (AY).

CHEM 349  Environmental Chem Laboratory  
1.000 Credits  
Prerequisite(s): CHEM 348* or ESCI 348*  

Collection and analysis of air, water, soil, and organisms for  
pollutants such as noxious gases, heavy metals, and trace  
organics. EPA-approved methods are emphasized. Four hours  
laboratory. (AY).

CHEM 352  Introduction to Toxicology  
3.000 Credits  
Prerequisite(s): CHEM 225  

An introduction to the principles of toxicology with an emphasis  
on environmental toxicology. Major topics include toxic agents,  
toxicological mechanisms, and use of toxicological reference  
literature. Discussion of chemical carcinogenesis, genetic  
toxicology, immunotoxicology, teratology, and toxic responses  
of the skin, eyes and nervous system. Three hours lecture. (AY).

CHEM 368  Physical Chemistry I  
3.000 Credits  
Prerequisite(s): CHEM 225 and CHEM 344 and  
MATH 116 and (PHYS 125 or PHYS 150)  

Nature of the gaseous state, chemical thermodynamics,  
biochemical and chemical equilibria and kinetics. Three hours  
lecture, one hour discussion. (W).

CHEM 370  Principles of Biochemistry  
3.000 Credits  
Prerequisite(s): BIOL 140 and CHEM 226  

A concise but comprehensive survey of various areas of  
biochemistry designed for non-biochemistry majors. The course  
follows the standard approach to the subject including a  
description of cells, their structure and constituent  
macromolecules (proteins, nucleic acids, carbohydrates and  
lipids), enzymology, bioenergetics, intermediary metabolism and  
gene regulation. Students cannot take both BCHM 370 and 470  
or 471 for any combination of concentration, cognate or minor  
requirement. Three hours lecture. (F).

CHEM 390  Current Topics in Chemistry  
1.000 TO 3.000 Credits  

A course in special topics current to the field of chemistry.  
Topics and format for the course may vary. See current Schedule  
of Classes. One to three hours seminar. Permission of instructor.  
(OC).

CHEM 397  Current Topics in Chemistry  
3.000 Credits  

A course for non-science majors which focuses on the  
interaction of chemistry and society. Sufficient chemical  
knowledge will be introduced so that the issues can be discussed  
and competing statements evaluated. Topics covered will  
include air and water pollution, fuels, designing drugs, etc.  
(OC).

CHEM 403  Inorganic Chemistry II  
3.000 Credits  
Prerequisite(s): CHEM 303 and (CHEM 368* or  
CHEM 468)  

A study of coordination and organometallic compounds through  
the use of current theories. The structure, reactivity, and  
descriptive chemistry of transition metal complexes will be  
examined. Three hours lecture. (W).

CHEM 426  Advanced Organic Chemistry  
3.000 Credits  
Prerequisite(s): CHEM 226 and CHEM 227  

Spectral analysis, structure determination, reaction mechanisms,  
synthesis, stereochemistry, and other selected topics are  
discussed. Three hours lecture. (AY).

CHEM 436  Polymer Chemistry  
3.000 Credits  
Prerequisite(s): CHEM 226 and ( CHEM 368* or  
CHEM 468)  

The macromolecular concept is introduced and polymerization  
mechanisms are discussed. The chemistry and physical  
properties of representative polymeric materials are presented.  
Topics include the determination and distribution of molecular  
weights, polymer morphology, mechanical properties of  
polymers, relaxation phenomena in polymers, and methods of  
polymer characterization. Three hours lecture. (AY).

CHEM 447  Instrumental Methods of Analy  
4.000 Credits  
Prerequisite(s): CHEM 368* or CHEM 468  

A study of the theory, operation, and application of instrumental  
methods of chemical analysis including optical, magnetic,  
electrochemical, and separation techniques. Two hours lecture,  
eight hours laboratory. (W).
CHEM 450  Adv Org Syn & Character Lab
1.000 Credits
Prerequisite(s): CHEM 227 and (CHEM 368* or CHEM 468*)

Laboratory work in the preparation and characterization of organic compounds by modern techniques. The compounds that are prepared are identified and characterized by spectroscopic, chromatographic, and magnetic techniques. Four hours laboratory. (F).

CHEM 452  Adv Inorg Synth & Char Lab
1.000 Credits
Prerequisite(s): CHEM 226 and CHEM 227 and CHEM 303 and (CHEM 368* or CHEM 468*)

Laboratory work in the preparation and characterization of inorganic compounds. Synthetic techniques and methods of characterization as described under CHEM 450 are employed. Four hours laboratory. (F).

CHEM 469  Physical Chemistry II
3.000 Credits
Prerequisite(s): CHEM 368

Nature of the liquid state, simple mixtures, heterogeneous equilibria; quantum theory, atomic and molecular structure, spectroscopy; statistical thermodynamics. Three hours lecture, one hour discussion. (F).

CHEM 470  Biochemistry I
3.000 Credits
Prerequisite(s): BIOL 140 and BIOL 130 and CHEM 226

Life processes from a chemical viewpoint: structure/function relationships of biomolecules, with emphasis on proteins, enzyme kinetics, and mechanisms of action. Three hours lecture. (F).

CHEM 471  Biochemistry II
3.000 Credits
Prerequisite(s): BCHM 470 or CHEM 470 or BIOL 470

Intermediary metabolism, bioenergetics, energy transformation, metabolic interrelationships, biochemical regulation, highly structured subcellular biochemical systems. Three hours lecture. (W).

CHEM 472  Biochemistry Laboratory I
1.000 Credits
Prerequisite(s): CHEM 344 * and (CHEM 470 * or BCHM 470 * or BIOL 470*) and CHEM 227

The techniques of preparative and analytical biochemistry. Preparation and characterization of proteins and nucleic acids. Physical and chemical properties of proteins and nucleic acids. Four hours laboratory. (F).

CHEM 473  Biochemistry Laboratory II
1.000 Credits
Prerequisite(s): (BCHM 471* or BIOL 471* or CHEM 471*) and (BCHM 472* or BIOL 472* or CHEM 472*)

The techniques of preparative and analytical biochemistry. Preparation and characterization of lipids and carbohydrates. Methods in metabolism. Four hours laboratory. (F).

CHEM 481  Physicochemical Measurements
2.000 Credits
Prerequisite(s): CHEM 469*

Laboratory work including the determination of molecular weights, measurements of properties of pure liquids and solutions, studies of phase equilibria, thermochemical measurements, and analysis of atomic and molecular spectra. Eight hours laboratory. (W).

CHEM 490  Topics in Chemistry
1.000 TO 3.000 Credits
Prerequisite(s): CHEM 226

Examination of problems and issues in selected areas of chemistry. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. One to three hours lecture. (YR).

CHEM 493  Presentations in Chemistry
1.000 Credits

Employment or graduate studies in chemistry involve integration of experiences and knowledge from one's undergraduate courses. This course is designed to help prepare students for their professional endeavors beyond UM-Dearborn. Students will submit a proposal for a senior project, present the completed project in an appropriate forum, and submit a written report on the project. Students will assemble and present a professional portfolio, and complete an exit interview. The experimental work on the project may be done in an advanced laboratory course or an independent study. (F, W).

CHEM 495  Off-Campus Research Participation
1.000 TO 3.000 Credits

Participation in ongoing experimental research at an off-campus laboratory. Arrangements made between the research laboratory, the student and the chemistry concentration adviser. No more than six hours combined from CHEM 495, 498, and 499 may be credited toward the 120 hours required for a degree. Four to twelve hours laboratory. Permission of concentration advisor. (F,W,S).

CHEM 497  Seminar in Chemistry
1.000 Credits

Weekly seminars on topics of current chemical interest presented by faculty members, guest lecturers or students. The subject will vary from term to term. The course may be elected up to three times. One hour seminar. (W).

CHEM 498  Readings in Chemistry
1.000 TO 3.000 Credits

Library research in a specific area of chemistry performed under the guidance of a faculty member. No more than six hours combined from CHEM 495, 498 and 499 may be credited
toward the 120 hours required for a degree. Four to twelve hours of readings. Permission of instructor. (F,W,S).

**CHEM 499 Laboratory Research in Chem**  
1.000 TO 3.000 Credits

Directed laboratory research performed under the guidance of a faculty member. No more than six hours combined from CHEM 498 and 499 may be credited towards the 120 hours required for a degree. Four to twelve hours laboratory. Permission of instructor. (F,W,S).

### Chemistry/Instructional Track

The Chemistry/Instructional Track concentration is an interdisciplinary program for students who wish to teach chemistry and other science courses at the secondary school level. The program meets State of Michigan requirements as well as American Chemical Society recommendations for teaching chemistry in high school. A student may earn a BS degree in Chemistry and qualify for a Michigan Provisional Secondary Teaching Certificate by completing the professional sequence of education courses including one semester of directed teaching; by completing the prerequisite concentration and cognate requirements listed below; and by fulfilling the CASL distribution and graduation requirements. Students must also complete at least 100 credit hours of non-education courses; have a minimum 2.75 overall GPA; have a 2.75 or better GPA in their teaching major and in education courses; and have a 2.75 in their teaching minor. Students must take the Michigan Test for Teacher Certification (MTTC) prior to being recommended for a Michigan teaching certificate.

### PREREQUISITES TO THE CONCENTRATION

Chemistry/Instructional Track concentrators must complete 40 credit hours of prerequisite courses. These courses should be completed early in the student's curriculum.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 134/136 or 144/146</td>
<td>General Chemistry</td>
<td>8 hrs</td>
</tr>
<tr>
<td>CHEM 225, 226 and 227</td>
<td>Organic Chemistry</td>
<td>8 hrs</td>
</tr>
<tr>
<td>BIOL 130 or BIOL 140*</td>
<td>4 hrs</td>
<td></td>
</tr>
<tr>
<td>MATH 115, 116 and 215</td>
<td>12 hrs</td>
<td></td>
</tr>
<tr>
<td>PHYS 150/151</td>
<td>General Physics**</td>
<td>8 hrs</td>
</tr>
</tbody>
</table>

*Note: Students interested in biochemistry should elect BIOL 140; students interested in environmental chemistry should elect BIOL 130.

**Note: The physics prerequisite may also be satisfied by completing PHYS 125 and 126 and an upper-division physics course, such as PHYS 305.

### CONCENTRATION REQUIREMENTS  

20 hrs

Students must complete 20 credit hours of upper-division chemistry courses as indicated:

#### Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 303</td>
<td>Inorganic Chemistry I</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 344</td>
<td>Quantitative Analysis</td>
<td>4 hrs</td>
</tr>
<tr>
<td>CHEM 368</td>
<td>Physical Chemistry I</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

One course from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 403</td>
<td>Inorganic Chemistry II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 447</td>
<td>Instrumental Methods of Analysis</td>
<td>4 hrs</td>
</tr>
<tr>
<td>CHEM 469</td>
<td>Physical Chemistry II</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

One laboratory course from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 450</td>
<td>Advanced Organic Synthesis and Characterization Laboratory</td>
<td>1 hr</td>
</tr>
<tr>
<td>CHEM 452</td>
<td>Advanced Inorganic Synthesis and Characterization Laboratory</td>
<td>1 hr</td>
</tr>
<tr>
<td>CHEM 481</td>
<td>Physicochemical Measurements</td>
<td>2 hrs</td>
</tr>
</tbody>
</table>

#### Electives

Additional courses to bring the upper division chemistry total to 20 hours, from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 348</td>
<td>Environmental Chemistry</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 349</td>
<td>Environmental Chemistry Laboratory</td>
<td>1 hr</td>
</tr>
<tr>
<td>CHEM 352</td>
<td>Introduction to Toxicology</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 370</td>
<td>Principles of Biochemistry</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 390</td>
<td>Current Topics in Chemistry</td>
<td>1-3 hrs</td>
</tr>
<tr>
<td>CHEM 403</td>
<td>Inorganic Chemistry II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 426</td>
<td>Advanced Organic Chemistry</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 436</td>
<td>Polymer Chemistry</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 447</td>
<td>Instrumental Methods of Analysis</td>
<td>4 hrs</td>
</tr>
<tr>
<td>CHEM 450</td>
<td>Advanced Organic Synthesis and Characterization Laboratory</td>
<td>1 hr</td>
</tr>
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<td>CHEM 452</td>
<td>Advanced Inorganic Synthesis and Characterization Laboratory</td>
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</tr>
<tr>
<td>CHEM 469</td>
<td>Physical Chemistry II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 470</td>
<td>Biochemistry I</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 471</td>
<td>Biochemistry II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 472</td>
<td>Biochemistry Laboratory I</td>
<td>1 hr</td>
</tr>
<tr>
<td>CHEM 473</td>
<td>Biochemistry Laboratory II</td>
<td>1 hr</td>
</tr>
<tr>
<td>CHEM 481</td>
<td>Physicochemical Measurements</td>
<td>2 hrs</td>
</tr>
<tr>
<td>CHEM 490</td>
<td>Topics in Chemistry</td>
<td>1-3 hrs</td>
</tr>
<tr>
<td>CHEM 497</td>
<td>Seminar in Chemistry</td>
<td>1 hr</td>
</tr>
</tbody>
</table>

#### Cognates

6 hrs

Chemistry/Instructional Track concentrators must complete at least six credit hours of courses numbered 300 or above offered in Biochemistry, Biological Sciences, Environmental Science, Geology, Mathematics, Microbiology, Physics, or Statistics. The six credit hours need not be from a single discipline. Courses that do not carry concentration credit within a discipline (for example MATH 363, 385, or 387) will not satisfy the cognate requirement. Cross listed Chemistry courses will be counted toward the Chemistry elective credit or towards cognate credit. Courses taken to fulfill the teaching minor requirement usually fulfill the cognate requirement as well.

### REQUIREMENTS FOR THE TEACHING MINOR

In order to obtain teaching certification, a student must complete the requirements for a teaching minor. Courses used to satisfy requirements for the minor and prerequisite may not be used to satisfy cognate or concentration requirements.

Teaching minors are available in mathematics, physical science, physics, and biology. Students should consult the School of Education section in this Catalog for coursework requirements to complete the teaching minor.
EDUCATION REQUIREMENTS

Chemistry/Instructional concentrators must complete the following courses offered by the School of Education: EDA 340 or EDA 440, EDC 300, EDC 301, EDC 302, EDC 460, EDD 301, EDD 304, EDD 469, EDD 480 or EDD 481, EDT 211, EXPS 410. Course descriptions for the above courses will be found under the School of Education section of this Catalog. Chemistry/Instructional concentrators must also complete PSYC 171.

Communications

Communication is central to cultural, social, economic and political aspects of society. The study of communication provides a lens for understanding and acting upon the vast changes taking place today.

Strong analytical skills and superior written and oral communication skills position graduates to carve out careers in a variety of governmental, business and non-profit contexts. The program combines a strong theoretical foundation with practical skills training to prepare students for any number of opportunities in our globalized multicultural and highly technological environment. The newly reorganized Communications major has five areas of study from which students can choose:

1. Electronic and Visual Communication
   Students in this area will focus on the theory, practice and implications of communicating electronically and visually by radio, television, Internet and other digital forms.

2. Journalism
   Students in this area will be grounded in journalistic traditions and principles as well as its practices. These students will develop into writers and editors who can analyze the news as well as report it.

3. Public Communications and Culture Studies
   Students will take an interdisciplinary approach to the study of communication, working at the nexus of three areas of inquiry within communication: Public Relations and Organizational Cultures; International/Intercultural Communication and Global Cultures; and Public Advocacy and Democratic Cultures.

4. Speech Communication
   Students in this area will develop both strong communication skills and the critical perspectives that will allow them to become effective and ethical communicators across a range of professional, civic, family and social situations.

5. Technical and Professional Communication
   Students in this area will develop a broad understanding of workplace communication principles and their application to specific written and oral communication tasks using relevant and current technologies.

REQUIREMENTS

A. Prerequisites
   All areas require a minimum of six and up to twelve hours of prerequisites. All areas require COMM 220 (Survey of Mass Communication)

B. Required Courses
   All areas of study require thirty hours of upper-division courses to complete a concentration.

C. Cognates
   In order to build on the multidisciplinary values of the program, students are required to take at least one course in a cognate area. While particular cognates are strongly recommended for each area, any course at the 300 level or above within CASL will satisfy the cognate requirement. This is true for all areas of study.

D. Core Areas
   Each area of study is divided into two or three core areas, reflecting the traditions of inquiry and designed learning outcomes particular to the sub-field. Each of the areas of study has its own thematic content and organization of core areas, because of its particular history and context.

Internship, Co-Op and Senior Thesis

On-the-job experience gained through an internship or co-op is invaluable for students of any major. Because of this, all Communications students are required to participate in an internship, co-op or senior thesis. Many new college graduates lack the “soft skills” that employers seek. Communications graduates at the University of Michigan-Dearborn will have a distinct advantage. There is a seminar component to both the internship and the co-op.

The senior thesis is for students who have prior communications industry experience and would like to relate their experience to the theory and practice of communications without having to spend time in the field.

TECHNICAL AND PROFESSIONAL COMMUNICATION

.......................................................... 30 hrs

Prerequisites:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEE 101</td>
<td>Principles of Speech Communication</td>
</tr>
<tr>
<td>COMM 220</td>
<td>Survey of Mass Communication</td>
</tr>
<tr>
<td>COMM 250</td>
<td>Introduction to Communication Design</td>
</tr>
</tbody>
</table>

Required Core Area I: .................................................. 9 hrs
Select at least 3 from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 430</td>
<td>International Communication</td>
</tr>
<tr>
<td>COMM 450</td>
<td>Organizational Communication and Organizational Cultures</td>
</tr>
<tr>
<td>COMM 477</td>
<td>Professional Communication Ethics</td>
</tr>
<tr>
<td>SPEE 340</td>
<td>Theories of Persuasion</td>
</tr>
</tbody>
</table>

Required Core Area II: ............................................. 15 hrs
Select at least 5 from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 317</td>
<td>Case Studies in Technical Writing</td>
</tr>
<tr>
<td>COMM 320</td>
<td>Desktop Publishing</td>
</tr>
<tr>
<td>COMM 335</td>
<td>Promotional Design</td>
</tr>
<tr>
<td>COMM 338</td>
<td>Business and Automotive Reporting</td>
</tr>
<tr>
<td>COMM 340</td>
<td>Professional Communication</td>
</tr>
<tr>
<td>COMM 403</td>
<td>Issues in Cyberspace</td>
</tr>
<tr>
<td>COMM 440</td>
<td>Public Relations Writing</td>
</tr>
<tr>
<td>SPEE 400</td>
<td>Speech Skills for Professionals</td>
</tr>
</tbody>
</table>
Required Core Area III: .................................................. 3 hrs
Select at least 1 from the following
COMM 390 Topics in Communication
ESCI 572 Environmental Communications
SOC 310 Computers and Society
SOC 441 Sociology of Auto Industry
SOC 442 Sociology of Work
SOC 444 The Medical Profession
SOC 453 Sociology of Law

Humanities Internship, Co-Op, or Senior Thesis: ......... 3 hrs

ELECTRONIC MEDIA AND VISUAL COMMUNICATION .......................................................... 30 hrs

Prerequisites:
SPEE 101 Principles of Speech Communication
COMM 220 Survey of Mass Communication
COMM 250 Introduction to Communications Design
COMM 280 Fundamentals of Electronic Media

Required Core Area I: .................................................. 9 hrs
COMM 315 Writing for Electronic Media
COMM 415 Telecommunications Law and Policy
COMM 344 Theories of Mass Communication

Required Core Area II: .................................................. 18 hrs
Select at least six from the following
Media Production
COMM 345 Audio Production
COMM 350 TV Production
COMM 405 Producing for Electronic and Multimedia
COMM 410 Advanced Media Production

Electronic Media Studies
COMM 300 Communication Research Methods
COMM 403 Issues in Cyberspace
COMM 420 Critical Media Studies
POL 329 Politics and the Media

Humanities Internship, Co-Op, or Senior Thesis: ........ 3 hrs

JOURNALISM ............................................................ 30 hrs

Prerequisites:
COMM 2015 Introduction to News Reporting and Writing
COMM 220 Survey of Mass Communication

Required Core Area I: Multiple Context Courses........ 12 hrs
Select all of the following
COMM 302 Press Law and Ethics
COMM 310 Literature of Journalism
COMM 380 History of American Journalism
COMM 430 International Communication

Required Core Area II: Advanced Reporting and Writing Courses ............................................. 9 hrs
Select at least 3 from the following
COMM 3015 Advanced News Reporting
COMM 330 Feature Writing for Magazines and Newspapers
COMM 401 Interpretive Journalism: News Analysis, Columns, and Reviews
COMM 402 Investigative Reporting

Required Core Area III: Specific Journalistic Modes ...... 6 hrs
Select at least 2 from the following
COMM 307 Copy Editing
COMM 308 Business and Automotive Reporting
COMM 390 Topics in Communication
COMM 426 Memoir and Travel Writing
HUM 485 Second Internship*
POL 329 Politics and the Media

*This must take place in a separate term from the first internship.

Humanities Internship, Co-Op, or Senior Thesis: ....... 3 hrs

PUBLIC COMMUNICATION AND CULTURE STUDIES

Prerequisites:
SPEE 101 Principles of Speech Communication
COMM 220 Survey of Mass Communication

Required Core Area I: .................................................. 3 hrs
COMM 366 Introduction to Public Communication and Culture Studies

Required Core Area II: .................................................. 18 hrs
Select at least 2 from each of the following focus areas
Public Relations and Organizational Culture
COMM 260 Public Relations Principles
COMM 300 Communication Research Methods
COMM 390 Special Topics
COMM 440 Public Relations Writing*
COMM 450 Organizational Communication and Organizational Cultures
COMM 460 Public Relations Campaigns
COMM 477 Professional Communication Ethics
ESCI 572 Environmental Communications

International/Intercultural Communication and Global Culture
COMM 300 Communication Research Methods
COMM 390 Special Topics
COMM 420 Critical Media Studies
COMM 430 International Communication
COMM 455 Gender and Media Studies
COMM 481 Gender and Globalization
SPEE 310 Interpersonal Communication

Public Advocacy and Democratic Culture
COMM 306 Comparative American Identities
COMM 380 History of American Journalism
COMM 420 Critical Media Studies
COMM 455 Gender and Media Studies
SPEE 320 Public Argument and Advocacy
SPEE 330 Argumentation and Debate
SPEE 340 Theories of Persuasion
SPEE 422 20th Century Public Argument
SPEE 430 Small Group Communication

Additional Elective Hours from Core Area II ............... 6 hrs
In addition to the 18 hours above, select 6 hours from any of
the above focus areas from Core Area II. Students are free to tailor their program of study by choosing all 6 elective hours in one focus area or spreading out the 6 elective hours across focus areas.

**Humanities Internship, Co-Op, or Senior Thesis:** .......... 3 hrs

**SPEECH COMMUNICATION**.................................30 hrs

**Prerequisites:**
COMM 220 Survey of Mass Communication
SPEE 101 Principles of Speech Communication

**Required Core Area I: The Rhetorical Tradition**........... 9 hrs
Select all of the following
SPEE 320 Public Argument and Advocacy
SPEE 340 Theories of Persuasion
SPEE 442 20th Century Public Argument

**Required Core Area II: Interpersonal and Professional Communication** .................................................. 9 hrs
Select all the following
SPEE 310 Interpersonal Communication
SPEE 400 Speech Skills for Professionals
SPEE 430 Small Group Communication

**Required Core Area III: Complementary Communication Courses** .......................................................... 9 hrs
Select at least 3 of the following
COMM 300 Communication Research Methods
COMM 350 TV Production
COMM 370 Narratives of Film and Literature
COMM 380 History of American Journalism
COMM 420 Critical Media Studies
COMM 477 Professional Communication Ethics
SPEE 330 Argumentation and Debate
SPEE 399 Independent Studies in Speech

**Humanities Internship, Co-Op, or Senior Thesis:** .......... 3 hrs

**MINOR OR AREA OF FOCUS**
A minor or area of focus in Communications consists of fifteen hours of approved upper-division courses. Nine of the fifteen must be taken in one of the five areas of study listed below. The remaining six must be taken from any of the other four areas of study. Of the fifteen hours, three must be in a Speech course and three in a Communications writing intensive course as listed below. In addition, students must complete the two prerequisites listed below to obtain a minor or area of focus in Communications.

**Prerequisites**
COMM 220 Survey of Mass Communication
SPEE 101 Principles of Speech Communication

**Areas of Study:**
Corporate and Professional Communication
Electronic Media and Visual Communication
Journalism
Public Communication and Culture Studies
Speech Communication

**Writing Intensive Courses**
COMM 3015 Advanced Reporting
COMM 310 Literature of Journalism
COMM 315 Writing for Electronic Media
COMM 317 Case Studies in Technical Communication
COMM 330 Feature Writing
COMM 340 Professional Communication
COMM 401 Interpretive Journalism
COMM 402 Investigative Reporting
COMM 436 Memoir and Travel Writing
COMM 440 Public Relations Writing

**CERTIFICATES**
Please see Communications program advisor for certificate options in Communications.

**Communications (COMM)**

**COURSE OFFERINGS**
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

**COMM 2015 Newspaper Journalism**
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Study and practice in newspaper reporting and news gathering, interview techniques, and basic news writing skills. Students will also discuss libel law, ethics, and the use of the Freedom of Information Act. (YR).

**COMM 220 Survey of Mass Communication**
3.000 Credits
Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270

Course covers historical, economic, theoretical and research foundations of various mass media of communication—newspapers, magazines, radio, television, and others. Includes study of the functions of media, and their creative and destructive potential in society. Textbook study and critical analyses of media products—advertisements, news stories, TV programs. (F,W).

**COMM 250 Intro to Communications Design**
3.000 Credits

This course will cover basic artistic and electronic design principles as they relate to the field of communications. Through classroom and computer exercises, students will become familiar with a variety of tools and techniques for planning and executing media designs. This will include exposure to digital imaging and desktop publishing software. (F,W,S).

**COMM 260 Public Relations Principles**
3.000 Credits
Prerequisite(s): COMM 220

Explores how public relations, as an area of communications management and production, can contribute to an organization's
success. Provides a comprehensive introduction to the field of public relations, including: History and contemporary professional status of the public relations practitioner; role of public relations as a management discipline; major areas of public relations work, including media relations, public affairs, issues management, lobbying, organizational relations, development; techniques of public relations production - planning and presentation - with attention to the uses of specific tools available to practitioners - i.e., news releases, brochures, multimedia, Internet communications, special events. (YR).

COMM 280 Fund of Electronic Media
3.000 Credits
Prerequisite(s): COMM 220

An examination of the changing role and function of the electronic media with an emphasis on how communications systems are being transformed by the convergence of different forms of media. Through an exploration of the telephone, cable, information and broadcast industries, students will learn about the way in which society is being altered by communications technology and policy and how those changes are in turn influencing the communications environment. Course material will be presented in the way of lectures, discussions, practical applications and group presentations. (YR).

COMM 290 Communications Practicum
3.000 Credits
Prerequisite(s): COMP 106 or CPAS 40

COMM 290 (Practicum) provides introductory instruction and practice in a number of practical communications skills, with the field and focus changing each time the course is offered. (AY).

COMM 300 Communication Research Methods
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Gives detailed view of landmark research studies in the field. Acquaints students with logic of research inquiry, design and analysis, including questions of validity, reliability, causation, etc. Imparts basics of various research methods used in the communication field, such as survey interviews, depth interviews, focus groups, content analysis, and rhetorical analysis. Students design and conduct at least one study in communication, individually or in groups. (F,W).

COMM 3015 Advanced Reporting
3.000 Credits
Prerequisite(s): COMM 2015 or COMM 201

Advanced study and practice in news reporting and writing. Students will gain experience with in-depth reporting through coverage of developing news stories. Longer articles of publishable quality are required. (OC).

COMM 302 Press Law and Ethics
3.000 Credits
Prerequisite(s): COMM 220

The basis of reportorial journalism is its foundation in the First Amendment. This course examines the legal restrictions and freedoms governing print media and explores the ethical responsibilities of print journalists. Specific topics covered include First Amendment law, the clear and present danger standard, defamation and libel, privacy, obscenity, free press/fair trial, access, shield laws, and journalism ethics.

COMM 306 Comparat. American Identities
3.000 Credits
Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270

This course will confront and complicate the following key questions: what does it mean to be an American? What is American culture? Participants in this course will respond to the questions central to the American Studies field by reading and discussing historical, sociological, literary, artistic, material culture, political, economic and other sources. Students will use this interdisciplinary study to examine the multiple identities of Americans - as determined by factors such as gender, race, class, ethnicity and religion. While emphasizing the diversity of American culture, participants will consider some core values and ideas uniting America both in historical and contemporary society. Students will be invited to seek out and share fresh narratives of the American experience.

COMM 307 Copy Editing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Course covers manuscript and electronic editing of news and feature stories, editing for libel and taste, fact-checking, writing headlines and captions, and use of reference books. Includes a review of grammar and work usage, punctuation, spelling, and style.

COMM 310 Lit Journalism/Creative Nonfic
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Students learn to identify, understand and use the techniques of fiction in the service of nonfiction material. While studying the texts as literature, students are also encouraged to view them as models for writing. Assignments include the writing and revising of articles, based on research and interviews, and written in story form, drawing on literary techniques. (YR).

COMM 315 Write & Produce for Elec Media
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

This course focuses on the basics of electronic journalism, including broadcast concepts, terminology, writing, producing, and scripting. The emphasis will be on building solid writing skills and applying them to different electronic media, including broadcast new, commercial, corporate, multimedia and web-based formats. Students will be exposed to a variety of strategies for developing ideas, researching them, creating copy and following projects through the production and evaluation process. (AY).
COMM 317  Case Studies in Tech Writing  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

COMM 317 offers both practical and conceptual studies in technical writing and is open to non-technical as well as technical students. The course offers in-depth treatment of the communication problems and various document designs common to technical writing professionals. Instructional format includes lectures and discussions based on case material derived from actual events, followed up by preparation of written documents. Topics include document design, language barriers, and the role of the technical documents in product liability. (F,W,S).

COMM 330  Feature Writing  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

An introduction to the writing of feature stories for newspapers and magazines. Students study methods of gathering information and of preparing a manuscript for publication. (AY).

COMM 338  Business/Automotive Reporting  
3.000 Credits  
Prerequisite(s): COMM 2015

This course covers two inter-related areas: finance and automotive journalism. Students learn how to cover the economy and business community, focusing on areas such as Wall Street, economic indicators, stocks and bonds. Since the University of Michigan-Dearborn is located in the heart of the world automotive industry, the course also emphasizes the skills necessary for a career in automotive journalism, specifically how to read and report auto-related financial, environmental, safety, labor, finance and manufacturing documents. An introductory course in Economics is recommended.

COMM 340  Professional Communication  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Course covers essential skills of professional written and oral communication within the organization; the purpose, process, and problems of professional communication; the influence of organizational structure; audience analysis; the writing and editing of reports (formal and informal, including memo reports) and of professional correspondence; the preparation of graphics; and the planning and delivery of oral presentations. May count toward Communications minor. (F,W,S).

COMM 345  Audio Production  
3.000 Credits  
Prerequisite(s): COMM 280 and COMM 315

This hands-on course will introduce students to the basic theories of audio and audio program production, including the fundamentals of digital audio and studio and remote recording. The course is designed to instill upon students the importance of sound in the electronic media and how its use or misuse can enhance or detract from media productions. Readings, lectures and projects are designed to teach students how to discern good audio from bad and how to avoid pitfalls media producers and directors commonly make. Through the practical application of audio concepts in the radio laboratory and through critiques of radio projects and programs, students will gain the insight and experience they will need to successfully design and execute audio strategies for the electronic media.

COMM 350  Television Production  
3.000 Credits  
Prerequisite(s): COMM 280 and COMM 315

Television production skills taught in the context of the history, aesthetics, and technology of television. Purpose of the course is to provide students with a working knowledge and critical awareness of the medium through classroom instruction and studio training. Course counts toward minor in communications. (YR).

COMM 366  Public Comm and Culture Stdies  
3.000 Credits

This gateway course provides the theoretical and methodological foundation to embark on the study of three key interrelated spheres of communication: Public and Organizational Culture, Public Advocacy and Democratic Culture, and Intercultural Communication and Global Culture. Students will have the opportunity to examine salient societal issues within each of the major areas, and explore connections between the different areas. Through a variety of class exercises and both individual and collaborative projects, the course will help students to acquire an analytical and practical "toolkit" enabling them to function effectively as communicators in culturally diverse organizations and civic contexts.

COMM 370  Narratives of Film and Lit  
3.000 Credits  
Prerequisite(s): FILM 240 or HUM 240 or ENGL 248 or FILM 248 or HUM 248 or ENGL 240

Explores the narrative conventions of literary and filmic fictions in a cultural, historical and psychoanalytic context. The course goes beyond a discussion of the relative merits of novels and their respective film adaptations and examines the more complex interchanges between the two narrative forms, the ideological function of narrative in contemporary society, and the effect of the medium of a fictional text on the reader/viewer. (OC).

COMM 380  History of American Journalism  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

This course surveys the history of American journalism from the Colonial period to the present. Topics explored include the development of print journalism, the rise of the reading public, the growth of advertising, photojournalism, and the tabloid press, and the evolution of electronic journalism from radio and television through the computer age. (YR).

COMM 390  Topics in Communication  
3.000 Credits
Examination of problems, issues, and advanced subject areas in communications. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. (OC).

**COMM 397 Communications Thesis**  
3.000 Credits

A thesis project that is the culmination of the Communications major. Students will choose the project area and write a thesis (40-50 pages) under the direction of a Communications faculty member. The thesis option is available only to students with substantial practical experience in the communication field, and requires the approval of Communications faculty.

**COMM 398 Independent Studies-Comm**  
1.000 TO 3.000 Credits

Readings, supervised practice, or analytical assignments in Communications, determined in accordance with the needs and interests of those enrolled. May count toward Communications minor. (F,W).

**COMM 401 Interpretive Journalism**  
3.000 Credits

A study in the reading and writing of newspaper columns, editorials and reviews. Course prepares students to write newspaper columns as well as reviews and interpretive pieces on the arts. It examines current writing on literature, drama, cinema, graphic arts and music, and includes a study of the newspaper/magazine column.

**COMM 402 Investigative Reporting**  
3.000 Credits  
Prerequisite(s): COMM 301 or COMM 330

A course in investigating a subject and writing a publishable story. Course covers the rudiments of investigative reporting: preliminary research, story selection, investigative strategies and resources, interviewing, and evaluation of material. Examines the history and current status of investigative reporting, including its ethics and politics. Students write and edit several articles and focus on two longer investigative pieces. (YR).

**COMM 403 Issues in Cyberspace**  
3.000 Credits  
Prerequisite(s): COMM 280

This course will explore some of the current social, political, legal, and technological issues associated with the use of new media technology to move ideas and information in a democratic society. Examples of areas to be explored include the Internet and World Wide Web, privacy, the future of the mass audience, and the meaning of the First Amendment in the 21st century. Students cannot receive credit for both COMM 403 and COMM 503. (OC)

**COMM 405 Produce for Elec & Multimedia**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and COMM 315

This course will focus on the tools and techniques of electronic and multimedia production, including the basic operations involved in creating and manipulating digital images. Students will be exposed to the processes and programs used to design Web pages and their components. This will include familiarization with how to create and display text, audio and video for multimedia. (F or W).

**COMM 410 Advanced Media Production**  
3.000 Credits  
Prerequisite(s): COMM 345 and COMM 350 and COMM 405

This course will cover advanced concepts in media production as they apply to creating images and sounds for electronic formats, including digital non-linear editing. Web design and multimedia. through seminar instruction and practical application, students will become proficient in creating media for different electronic media forms. as part of this course, students will be required to produce a video, Web or multimedia project for a client.

**COMM 415 Telecommunications Law & Policy**  
3.000 Credits  
Prerequisite(s): COMM 280

This course will cover the evolution of telecommunications law and policy in America from the Communications Act of 1934 to the present. By examining Federal Communications Commission (FCC) rules, regulations and various court decisions, students will gain an understanding of the legal and ethical problems mass media practitioners and consumers face in complex, rapidly changing electronic media environment. (YR).

**COMM 420 Critical Media Studies**  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Course presents various critical approaches to the study of the media. Perspectives include political economy, cultural studies, critical theory of the Frankfurt school and feminism. Focus of seminar portion will be on a particular medium or a particular societal issue (e.g., media and politics, gender and media, media and minorities). (YR).

**COMM 430 International Communications**  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Course covers key concepts and debates in international communications, including the politics of a New World Information Order; international news coverage; flows of data and cultural programming across national boundaries; and the control of communications resources such as satellite spectrum. (F or W).

**COMM 436 Memoir and Travel Writing**  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270

A course in narrative non-fiction that focuses on memoir and
travel writing. Reading involves several books as well as classic essay-length examples. Assignments include both short analytical papers and the writing and revising of three original articles, based on research, interviews, memory, and observation, and drawing on literary techniques. (YR).

**COMM 440 Public Relations Writing**

3.000 Credits

Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

Course covers skills and strategies of writing for organizations in a public/employee relations capacity. Applications include setting up a public relations program for an organization; writing backgrounds, position papers, newsletters and brochures; and compiling a media kit. Topics include crisis management and communication, the role of document design in creating a positive organizational image, and analysis of various publics. Students cannot receive credit for both COMM 440 and COMM 540. (YR).

**COMM 442 20th Century Public Argument**

3.000 Credits

Prerequisite(s): SPEE 101

This class is a survey of American public address in the 20th century. Students will examine and critically analyze several of the most significant speeches and rhetorical movements of the last one hundred years. Through lectures, discussions, and analysis of speeches and other artifacts, we will focus on the relationship between rhetoric and history, and how theories of rhetorical action help us appreciate the role of discourse in the effective functioning of a democratic system. Students will learn to utilize several critical perspectives as a means of understanding both historical and contemporary political discourse. (W).

**COMM 450 Principle of Organization Comm**

3.000 Credits

Prerequisite(s): COMM 340 or COMM 440

Course examines how communication networks function in organizations. Purpose: to provide an organizational context and conceptual framework for the practice of professional writing and speaking skills. Writing projects include a research report, a case study, and several shorter papers, practical and analytical, on assigned topics. Students cannot receive credit for both COMM 450 and COMM 550. (OC).

**COMM 455 Gender and Media Studies**

3.000 Credits

The course will focus on several feminist approaches used in understanding the media and attempting to create social change through the media. The role of media in the definition and reproduction of gender-based hierarchies and in the renegotiation of gender boundaries will both be explored. To this end, both mainstream and women's media will be examined. The course will take a multicultural and inter-national perspective, incorporating concerns of class, race, ethnicity, and nation as these intersect with the study of gender and media. Mainstream and alternative media will be analyzed through readings, films case studies, in-class collaborative exercises and longer term projects. News, entertainment, and advertising genres will be examined in a variety of media such as the printed press, television, video, film, and the Internet. (W).

**COMM 460 Public Relations Campaigns**

3.000 Credits

Prerequisite(s): COMM 260 and COMM 440

Focuses on strategies and tactics involved in planning and implementing a public relations campaign. Extends and refines skills acquired in earlier, prerequisite course work by incorporating management, production, and writing within a four-stage model for planning and action. This model provides a framework for role-playing, case study work, and projects done for evaluation by public relations professionals at local firms. The semester's portfolio of finished communications and "mock-ups"- including planning materials, news releases, brochures, newsletters, Internet communications, video and audio scripts – should demonstrate command of entry-level, professional abilities as a public relations campaign manager and producer. (YR).

**COMM 464 Contemporary Rhetorical Theory**

3.000 Credits

Prerequisite(s): COMM 201 or COMM 220 or COMM 290 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 250

An examination of contemporary rhetorical theories through study of representative practitioners and related developments in linguistics, philosophy, and psychology. (AY).

**COMM 477 Prof Communication Ethics**

3.000 Credits

Prerequisite(s): COMM 340 or COMM 440 or COMM 450

An examination of professional communication ethics in the organizational context, focusing on important issues, problems, and concepts. This course is designed to help students become conscious of the role of values in a wide range of professional communication situations; to locate organizational behavior in an ethical framework based on considered definitions, standards, perspectives, and criteria for evaluation and analysis; to consider individuals as well as organizations as moral agents in a changing and complex universe; and to analyze topical cases on emergent issues in communication ethics. Some sample topics: ethics in decision-making and conflict-resolution; privacy and confidentiality; sexual harassment; whistleblowing; the "engineering" of consent; corporate image and ethos; issues in documentation, record-keeping, and technology; "issues management" and corporate responsibility; groupthink; obedience and personal responsibility; employee socialization. Students cannot receive credit for both COMM 477 and COMM 577. (OC).

**COMM 481 Gender and Globalization**

3.000 Credits

Mass media, politics, and academia are full of references to globalization, and a future "world without borders." This interdisciplinary course considers the implication of
globalization for women's lives, gender relations, and feminism. Topics covered include the global factory, cross-cultural consumption, human right, global communications, economic restructuring, nationalism, and environmental challenges. Rather than survey international women's movements, this course explores how globalization reformulates identities and locations and the political possibilities they create. (AY).

**Comparative Literature (minor only)**

**MINOR OR AREA OF FOCUS**

A minor or area of focus consists of 12 hours of upper-division credit in comparative literature.

**Comparative Literature (COML)**

**COURSE OFFERINGS**

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

**COML 221 Great Books I: Ancient World**
3.000 Credits

Introduction to masterpieces of Western world literature from the ancient world. Readings include the Bible, Iliad, Odyssey, Greek drama, and Roman authors. (YR).

**COML 222 Great Books II**
3.000 Credits

Introduction to masterpieces of Western world literature from the Middle Ages and Renaissance. Readings include Dante, Chaucer, Wolfram, Cervantes, Shakespeare, Moliere, and Racine. (YR).

**COML 223 Great Books III: Modern Era**
3.000 Credits

Introduction to masterpieces of Western world literature from the Modern Era. Readings include Swift, Voltaire, Rousseau, English romantic poets, fiction and drama of the 19th and 20th century. (YR).

**COML 301 Literary Criticism**
3.000 Credits

Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

This course introduces literary criticism and theory from Aristotle to the present, focusing on the changing concept of literature's nature and function. Lectures, readings, and discussion cover such critics as Aristotle, Dryden, Pope, Johnson, Wordsworth, Coleridge, Arnold, T. E. Hulme, I. A. Richards, T. S. Eliot, and such movements as New Criticism, Phenomenology, Reader-Response, Archetypal Criticism, Psychological approaches to literature, New Historicism, Marxism, Feminism, and Deconstruction. (OC).

**COML 340 Modern European Short Fiction**
3.000 Credits

Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A careful reading of between 10 and 15 short novels (in English translation) with particular attention being paid to the manner in which their plots and characters express contemporary cultural issues. Such works as Dostoyevsky's Notes from Underground, Conrad's Heart of Darkness, and Unamuno's Abel Sanchez will be included. (AY).

**COML 341 Mod Eur Poetry in Translation**
3.000 Credits

Prerequisite(s): ENGL 231

Movements and genres of modern European poetry, from the Symbolists to the present. Included will be such poets as D'Annunzio, Cavafy, Rilke, Blok, Mayakovsky, Valery, Eliard, Pavese, Seferis, Akhmatova, Mandestram, Marinetti, Trakl, Mistrale, Vallejo, Morgenstern, Apollinaire, Loren, Transtromer, Brodsky, Milosz, and others in translation. (OC).

**COML 342 Myth and Motif**
3.000 Credits

Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of archetypal figures and thematic motifs. Their recurrent appearance in different literary periods and genres and their lineage will be examined in order to increase understanding of the works themselves and of the ages which produced them. A selection will be made from classical myth, Biblical narrative, and historical sources. Thus the figures may vary from Oedipus and Cain to Faust and Don Juan. Motifs or story patterns may include such devices as the spiritual quest, the journey into Hell, or the patricide prophecy. (AY).

**COML 343 Modern Literature: the Novel**
3.000 Credits

A careful examination of five or six significant modern novels in translation, with particular emphasis on their influence on the development of the novel, and their reflection of contemporary cultural issues. The works of such authors as Flaubert, Dostoyevsky, Tolstoy, Gide, Joyce, and Mann will be included. (AY).

**COML 344 Modern Literature: Drama**
3.000 Credits

A careful reading of selected plays from Ibsen to the contemporary theater, designed to develop appreciative criticism and an understanding of the plays in their relationships to movements to modern drama, theater, background, social forces and trends of though. (AY).

**COML 347 Clas Lit in Engl Translation**
3.000 Credits

Prerequisite(s): ENGL 230 or ENGL 231 or
ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of masterworks of ancient Greek and Roman literature with special attention to the development of epic, tragedy, comedy, and lyric poetry. Authors studied will include Homer, Virgil, Aeschylus, Sophocles, Euripides, Aristophanes, Terence, and Plautus. (AY).

**COML 355 Urban Voices: France and Italy**

3.000 Credits

This course is an interdisciplinary approach to the concepts of urban development and literary, visual and cultural responses to the process of urbanization mainly in Rome and Paris. The readings will illustrate how the city shaped the writers' creativity, as well as how their works interpret urbanization.

**COML 375 The Hero in Literature**

3.000 Credits

Reflections on myth, history, and literature, based on analyses of literary texts. The individual hero may change from term to term. The course, for example, might center on the transition from Faust to anti-Faust. In this instance, some of the writers or works might include: The Faustbook, Marlowe's Doctor Faustus, Goethe's Faust, Byron's Manfred, a Faust opera, Thomas Mann's Doktor Faustus, Gunter Grass' The Tin Drum. All reading in English translation. (OC).

**COML 390 Topics in Comparative Lit**

3.000 Credits

Examination of problems and issues in selected areas of comparative literature. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

**COML 399 Independent Studies**

1.000 TO 3.000 Credits

Readings or analytical assignments in Comparative Literature in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor.

**COML 404 Medieval Mystical Writers**

3.000 Credits

Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A study of the genre of mystical writing as it was developed and practiced throughout the Middle Ages and in 14th century England particularly. Attention will be given to the historical, religious, and cultural contexts that enabled and were created by mystical texts. In addition, the course will explore how traditional and contemporary trends in the fields of religious and literary studies can be brought to bear on the genre of mystical writing. (OC)

**COML 433 Writing Women in Renaissance**

3.000 Credits

This course will be taught in English, and will focus on the influence of Italian literary models for the construction of female literary types as well as female voices in France and Italy from 1300 to about 1600. Italian authors studied include three very influential Florentines, Dante, Petrarch and Boccaccio, as well as Castiglione and Ariosto. We will read women poets, patrons, prostitutes and queens from Italy and France such as Veronica Gambara, Isabella di Morra, Vittoria Colonna, Christine de Pizan, Louise Labe, and Marguerite de Navarre. At last issue will be women's roles and women's images in city and court culture during the early modern period, and the interaction of their writings with the literary canons of Italy and France. (OC).

**Composition (not a field of concentration)**

All UM-D students are required to complete six hours of composition in order to graduate. Most students fulfill this requirement by taking COMP 105 and 106. Each entering student should make every effort to complete the composition sequence during his or her first year on campus, since it is designed to acquaint students with expectations and strategies of university writing. Placement in the appropriate beginning course is determined by the Composition Placement Examination (CPAS). No student may enroll in a composition course before taking the Composition Placement Examination.

All students – first-time as well as transfers – must take the Composition Placement Examination, preferably at the time of enrollment or during the student's first semester on campus. Transfer students who score below the COMP 105 level will be required to take COMP 227 (which carries degree credit) even if their previous composition courses have been accepted for transfer credit. Students who did not take the Placement Examination during the orientation session should contact the Orientation Office or Writing Program Office to schedule an examination.

Based on the results of the Placement Examination, students will be placed either into COMP 099, COMP 105 or COMP 106. Students taking COMP 099, which carries additive degree credit and does not satisfy any part of the six-hour composition requirement, must pass the course with a grade of C of better before enrolling in COMP 105. Students may submit a portfolio of written work to appeal a placement decision, but no degree credit is given for courses exempted via portfolio.

Students in the Honors Program fulfill their six-hour composition requirement by taking COMP 110H and COMP 220H. Engineering students substitute COMP 270 (Technical Writing) for COMP 106, taking the course during the second semester of their sophomore year. Transfer students admitted with credit in composition from other institutions of higher education will be placed in an appropriate composition course based on their transfer credit and performance on the Composition Placement Examination, as determined by the Director of the Writing Program. Only courses judged equivalent to COMP 105 and 106 may be substituted for the required courses. Students are urged to take their composition courses at UM-D.

Under certain circumstances, credit for composition courses is given on the basis of Advanced Placement examination results. Students should consult with their academic unit for details.

UM-D does not accept hours earned in composition through placement examinations at other universities.

COMP 105 students are required to pass a program-wide final
examination or other assessment in order to proceed to COMP 106. The COMP 105 final examination is always scheduled separately in the Schedule of Classes for each term.

Composition (COMP)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

COMP 095  Engl Second Language I  
3.000 Credits
An alternative to COMP 099. Specifically designed to address the needs of students for whom English is a second language and who are not yet proficient in English. Offers intensive practice in basic English grammar and rhetoric through the writing of short papers and the reading and discussion of appropriate texts. Focuses on the conventions of written English. (OC).

COMP 099  Writing Techniques  
3.000 Credits
Course is designed to help the less-prepared student qualify for COMP 105 by providing a review of basic grammar and syntax and frequent practice in writing short papers to develop habits of unified, coherent, and correct composition. Student writing is complemented by the reading and analysis of short prose pieces selected to help students read for understanding and to learn more about writing through the study of professional authors. Must be taken by students who do not qualify for COMP 105. (F,W).

COMP 105  Composition I  
3.000 Credits
Prerequisite(s): COMP 099 or CPAS 20
Intensive study of college-level expository writing techniques through analysis of assigned texts and regular writing practice. Assignments include: 7-10 papers; period exams and quizzes; comprehensive final exam. Passing the COMP 105 final exam is a requirement for continuing on to COMP 106. (F,W).

COMP 106  Composition II  
3.000 Credits
Prerequisite(s): COMP 105 or CPAS 30 or COMP 110
Further practice and study in writing, emphasizing argumentation, critical analysis, and the research techniques attendant to undergraduate research. Assignments include at least five solid papers, graduated in length, complexity, and research expectations, and culminating in an extended research paper. (F,W).

COMP 110  Honors Composition I  
3.000 Credits
Honors Program introductory composition course. Fulfills the Composition I requirement for students in the Honors Program. Course focuses on college-level expository writing techniques through seminar-type analysis of texts read in the Honors Program and through individualized and group writing workshops. Assignments include at least five finished papers incorporating revision. Honors students, like other students in first-semester composition, must pass the standard exit exam for COMP 105 to continue on to COMP 220 (or COMP 106). (F).

COMP 220  Honors Composition II  
3.000 Credits
Prerequisite(s): COMP 110 or CPAS 30 or COMP 105
Honors Composition fulfills the Composition II requirement for students in the Honors Program. It is designed to develop research, writing, and editing skills and to give the student experience in argumentation and persuasion and in the interpretation of literary texts. Satisfies for honors students the 200-level prerequisite for upper-division English courses, except for English concentrators. (YR).

COMP 223  Intro to Creative Writing  
3.000 Credits
Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270
An introduction to the writing of poetry, the short story, and/or the play. Considerable writing analysis, criticism, and discussion. (F,W).

COMP 227  Intermed Expo and Arg  
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40
Further explorations in exposition and argumentation to develop and enhance the student's ability to write essays and/or articles. Review of basics of grammar and style. Intensive practice in writing and careful examinations of appropriate books and shorter prose works. Written assignments of 500 to 2000 words. (F,W).

COMP 267  Arab & Arab American Workshop  
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270
The Arab and Arab American Writers Workshop is a creative writing workshop focusing on poetry and fiction. Students will explore Arab American literature, writers, and themes. Students are expected to work on their own manuscripts as well as critique outside readings. The workshop will be conducted under the guidance of Arab and Arab American faculty and is open to all students.

COMP 270  Tech Writing for Engineers  
3.000 Credits
Prerequisite(s): COMP 105 or CPAS 30 or COMP 110
Instruction and practice in designing technical reports. Students study the rhetorical problems facing the professional engineer in industry and learn practical strategies for analyzing and communicating technical information to both technical and non-technical audiences. Topics include audience analysis, technical research methods, report formats (written and oral, formal and
informal), argumentation and persuasion, editing. This course fulfills the Composition II requirement for engineering students only. (F,W).

COMP 310  Lit Journalism/Creative Nonfic
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or
COMP 270 or CPAS 40

Students learn to identify, understand and use the techniques of fiction in the service of nonfiction material. While studying the texts as literature, students are also encouraged to view them as models for writing. Assignments include the writing and revising of articles, based on research and interviews, and written in story form, drawing on literary techniques. (YR).

COMP 390  Topics in Composition
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or
COMP 270 or CPAS 40

Examination of problems and issues in selected areas of rhetoric and composition. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. (OC).

COMP 485  Theories of Writing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or
COMP 270 or CPAS 40

In this course we will investigate why and how people write for particular audiences and in a variety of contexts. Subjects will include: cognitive and social theories of writing and the writing process, theories of persuasion, writing across the curriculum, writing for multiple audiences, writing in the workplace, writing for self and for publics, and teaching writing. The course will be useful to students interested in teaching writing at the K-12 level, those interested in careers in communication and those who wish to better understand how writing promotes personal and societal change. (YR)

Computer and Computational Mathematics (minor only)

MINOR OR AREA OF FOCUS

The courses in Computer and Computational Mathematics (CCM) develop skills in applying mathematical algorithms in ways useful in real world situations. A minor or area of focus consists of 12 hours of upper-division credit in courses specifically selected as CCM courses.

See College of Engineering and Computer Science for concentration in Computer and Information Science.

Computer and Computational Mathematics (CCM)
Readings or analytical assignments in Computer and Computational Mathematics in accordance with the needs and interests of those enrolled and agreed upon by the student and advising instructor.

CCM 404 Dynamical Systems
3.000 Credits
Prerequisite(s): MATH 216 and ( MATH 217 or MATH 227 )

The aim of this course is to survey the standard types of differential equations. This includes systems of differential equations, and partial differential equations, including for each type, a discussion of the basic theory, examples of applications, and classical techniques of solutions with remarks about their numerical aspects. Also included are autonomous and periodic solutions, phase space, stability, perturbation techniques and Method of Liapunov. (AY).

CCM 451 Computer Graphics
3.000 Credits
Prerequisite(s): (CCM 350 or CIS 350 or IMSE 350) or (ECE 370 and MATH 276) and (MATH 215 or MATH 205) and (MATH 217 or MATH 227)

Basic geometrical concepts: graphics output primitives, two-dimensional transformations, windowing and clipping, three-dimensional viewing, visible surface detection methods, graphical user interfaces.

CCM 458 Introduction to Wavelets
3.000 Credits
Prerequisite(s): MATH 216 and ( MATH 217 or MATH 227 )

This course will introduce the students to theory and application of wavelets using linear algebra. Topics will include the discrete Fourier transform, the fast Fourier transform, linear transformations, orthogonal decomposition, discrete wavelet analysis, the filter bank, Haar Wavelet family, Daubechies's Wavelet family and applications. Students cannot receive credit for both MATH 458 and 558. (OC)

CCM 472 Intro to Numerical Analysis
3.000 Credits
Prerequisite(s): MATH 217 or MATH 227

Solution of linear systems by Gaussian elimination, solution of nonlinear equations by iterative methods, numerical solutions of ordinary differential equations, data fitting with spline functions, numerical integration, optimization. (F).

CCM 473 Matrix Computation
3.000 Credits
Prerequisite(s): MATH 217 or MATH 227

A study of the most effective methods for finding the numerical solution of problems which can be expressed in terms of matrices, including simultaneous linear equations, orthogonal projections and least squares, eigenvalues and eigenvectors, positive definite matrices, and difference and differential equations. (AY).

Cooperative Education Program
(not a field of concentration)

Cooperative Education is a nationally recognized educational plan that integrates academic study with paid, real world work experience. UM-D cooperates with business, industry, government and other private and public agencies to offer work assignments related to students' educational programs and career objectives.

Students may earn a maximum of 10 S/E credit hours through co-op work assignments of one to three credit hours each, and a mandatory one credit-hour seminar. Students should be aware that applying for co-op does not guarantee job placement. Liberal arts students are advised to use curriculum electives to acquire the technical skills needed to improve their marketability and to avail themselves of career counseling available through the Career Services Office.

For eligibility information, see Cooperative Education in Special Programs, or contact the Cooperative Education Office, Room 1038 CB, (313) 593-5188.

Criminal Justice Studies

Criminal Justice is an interdisciplinary field that focuses on the study of criminal behavior and society’s response to it. The field draws upon the insights of the social and behavioral sciences, the physical sciences, statistics and the humanities to illuminate the issues of maintaining social order in a constitutional democracy committed to individual freedom, equality and justice. More specifically, it focuses on the causes and prevention of criminal behavior. The criminal justice system is composed of the police agencies, prosecutors, the legal profession, the courts and correctional agencies, among others. The system is part of a larger social system, which inevitably influences the effectiveness and fairness of law enforcement. Criminal Justice analyzes system responses to changes in social structure and cultural values and the reciprocal relationship between societal values and law enforcement. The program is designed to prepare students for careers in public security, criminal justice administration, law and paralegal professions, public administration, policy analysis and graduate work in the social and behavioral sciences. The program is designed to produce thoughtful, humane graduates with the technical skills and social and ethical sensitivity needed to succeed in the criminal justice field.

JOINT PROGRAM WITH PARTICIPATING COMMUNITY COLLEGES

Criminal Justice Studies is a joint program between the UM-D and participating community colleges that offer an Associate Degree in Criminal Justice. Students with an Associate Degree in Law Enforcement or Probation/Parole/Corrections can continue their study of criminal justice at UM-D and earn a BA degree.

PREREQUISITES TO THE CONCENTRATION

At least 19 hours of criminal justice course work at the community college level in a law enforcement or
corrections/probation/parole track are required. Students lacking the Associate Degree or the 19 credit hours of core coursework at the community college level will have to make arrangements with the program advisor to meet those requirements before admission to the program. Only 6 hours of academic transfer credit will be accepted for completion of police academy training programs meeting the standards of the Michigan Commission on Law Enforcement.

Because UM-D courses are 300-level or higher and are offered by the disciplines of philosophy, political science, psychology, and sociology, they may require these prerequisites: PHIL 240, POL 101, PSYC 170 or 171, and SOC 200 or SOC 201.

CONCENTRATION REQUIREMENTS

Required Core .................................................. 9 hrs
CRJ 468 Criminology
Two courses from
CRJ 363 Criminal Justice Policy and Administration
CRJ 469 Juvenile Delinquency
CRJ 470 Current Issues in Criminal Justice

Social Issues .................................................. 6 hrs
CRJ 305 Race, Justice, and Freedom in America
CRJ 322 Psychology of Prejudice
CRJ 323 Urban Politics
CRJ 350 Sociology of Poverty
CRJ 369 Civil Rights Movement in America
CRJ 384 Immigration in America
CRJ 390 Topics in Criminal Justice
CRJ 423 American Social Classes
CRJ 435 Urban Sociology
CRJ 443 Gender Roles
CRJ 455 Seminar in Contemporary Ethical Theory
CRJ 466 Drugs, Alcohol & Society
CRJ 467 Drugs, Crime & Justice
CRJ 470 Current Issues in Criminal Justice
CRJ 472 Corrections
CRJ 473 Race, Crime, & Justice

Ethics .......................................................... 3 hrs
CRJ 240 Ethics
CRJ 302 Theory of Law
CRJ 303 Justice
CRJ 308 Moral and Political Dilemmas
CRJ 335 Philosophy of Law
CRJ 445 Seminar in Contemporary Ethical Theory
CRJ 490 Topics in Criminal Justice

Legal System .................................................. 3 hrs
CRJ 316 American Judicial Process
CRJ 362 Women, Politics, and the Law
CRJ 363 Criminal Justice Policy and Administration
CRJ 413 American Constitutional Law
CRJ 414 Civil Rights and Liberties
CRJ 416 Criminal Law
CRJ 453 Sociology of Law
CRJ 471 Comparative Criminal Justice Systems
CRJ 490 Topics in Criminal Justice

Human Behavior ................................................. 3 hrs
CRJ 325 Psychology of Interpersonal Relations
CRJ 382 Social Psychology
CRJ 407 Psychology of Adolescence
CRJ 421 Group Processes
CRJ 440 Abnormal Psychology
CRJ 446 Marriage and Family Problems
CRJ 447 Family Violence
CRJ 465 Deviant Behavior and Social Disorganization
CRJ 490 Topics in Criminal Justice

Social Science Research ..................................... 3-4 hrs
CRJ 300 Political Analysis
CRJ 383 Introduction to Statistics
CRJ 410 Social Research Methods
CRJ 425 Lab in Social Psychology

Internship or Co-op Experience ............................ 3 hrs
LIBS 300 Co-op Education Seminar
AND
LIBS 395 Co-op Education Work Assignment
CRJ 478 Social Work/Criminal Justice Internship
CRJ 485 Psychology Internship
CRJ 494 Political Science Internship Seminar
CRJ 495 Political Science Internship

Cognates ..................................................... 6 hrs
An additional six hours of cognates from an approved list of 300-level or above courses. For the list of courses that qualify as cognates, consult a program advisor. Student may substitute courses with the approval of a program advisor.

MINOR OR AREA OF FOCUS

A minor consists of 15 hours of upper-division criminal justice course work, including CRJ 468 and two courses from CRJ 363, 469 or 470.

Evening and Saturday Offerings

The criminal justice program is committed to offering both a day and evening/weekend program. Evening/weekend students should watch for infrequently offered courses and take them when available. If a required course is not offered during a reasonable period, a full-time evening student may petition to substitute another course.

Internships

An internship or co-op experience of three hours is required. Students may petition the program director to have this requirement waived if they already have had comparable experience in the criminal justice field.

Criminal Justice Studies (CRJ)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

CRJ 240 Ethics 3.000 Credits
A study of ethical concepts and theories. Typical questions: is the morality of an action based on its results or on the intent of the person acting? Is ethics purely rational? What makes a good person? Ethical principles may be applied to such issues as abortion, capitalism, war, and capital punishment. (F, W).

CRJ 300  Political Analysis
3.000 Credits
Introduction to research design, data collection and analysis, sampling, and statistics for social scientists. Should be elected as soon as possible after the declaration of major. POL 101 or equivalent recommended. (F, W).

CRJ 302  Theory of the Law
3.000 Credits
A comprehensive introduction to the theoretical foundations and the political functions of law, with special emphasis on the different moral justifications of law; the relation between law and justice; the relation between law and freedom; due process and fairness in any legal system. This course is designed to have special relevance for those considering law as a career. POL 101 or equivalent recommended. (OC).

CRJ 303  Justice
3.000 Credits
An exploration of various theories of justice. The moral foundation of justice is considered. POL 101 or equivalent recommended. (AY).

CRJ 305  Race/Justice/Freedom in Amer
3.000 Credits
This course will examine the social and political thought of selected Black political thinkers. Its focus will be assess the origins, development and implications of their ideas in the context of the changing dynamics of racial politics in American and the world. POL 101 or equivalent recommended. (AY).

CRJ 308  Moral and Political Dilemmas
3.000 Credits
This course focuses on the tensions and relations between personal morality and political action by examining the moral aspect of contemporary policy issues such as the right to life, environmental policy, and discrimination. POL 101 or equivalent recommended. (YR).

CRJ 316  The American Judicial Proces
3.000 Credits
An analysis of American legal institutions, processes, doctrines, and their relationship to the formulation of public policy and the solution of social problems. POL 101 or equivalent recommended. (AY).

CRJ 322  Psychology of Prejudice
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171
A consideration of ethnic (including racial, sexual, and religious) prejudice from the psychological point of view, focusing on the mind of both the oppressor and the oppressed. (AY).

CRJ 323  Urban Politics
3.000 Credits
A survey of the political process in urban areas, giving special attention to the changing roles of cities in American politics. POL 100 or equivalent recommended. (YR).

CRJ 325  Psyec of Interpersonal Relation
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171
This course presents an overview of theory and research conducted by social psychologist that has been aimed at understanding interactions between individuals. Topics include An exploration of the research process that is used to investigate interpersonal relationships, the processes underlying social perception, friendship, liking, love, close relationships, aggression and violence in interpersonal relationships. (YR).

CRJ 335  Philosophy of Law
3.000 Credits
An examination of some of the important philosophical issues relevant to law and legal theory, including legal punishment, legal responsibility, and the relationship between law and morality. Both classical and contemporary writings will be studied. Prerequisite: a previous philosophy course or permission of instructor. (AY).

CRJ 350  Poverty and Inequality
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201
In a middle class-oriented culture, the poor experience many problems and are also considered deviant, which tend to make poverty self-perpetuating. This stratum will be explored with respect to life styles, life changes, contributing factors, characteristics, individual and social consequences, and evaluation of attempted solutions. (YR).

CRJ 362  Women, Politics, and the Law
3.000 Credits
An examination of the political behavior of women in American politics. Included is an analysis of the legal and legislative demands of American women. (AY).

CRJ 363  Cr Just Policy and Admin
3.000 Credits
The structure and processes of criminal justice administration in America, including analysis of current issues in police behavior, courts, and corrections. POL 101 or equivalent recommended. (AY).

CRJ 369  US Civil Rights Movement
3.000 Credits
A survey of race relations and civil rights activity from the late 19th century to the present. The principal focus, however, is on the period since World War II, especially on the mass-based
southern Civil Rights movement (1955-1965) and the various policy debates and initiatives of the past thirty years, most notably affirmative action and busing. We also examine critiques of non-violence and integrationism. (AY).

CRJ 382 Social Psychology
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171 or SOC 200 or SOC 201

An introductory study of interrelationships of the functioning of social systems and the behavior and attitudes of individuals. (YR).

CRJ 383 Introduction to Statistics
3.000 Credits

Frequency distributions and descriptive measures. Populations, sampling, and statistical inference. Elementary probability and linear regression. Use of statistical computer packages to analyze data. No credit for CASL math concentration, minor, or area of focus. Prerequisite: one year of high school algebra. (F, W, S).

CRJ 384 Immigration in America
3.000 Credits

A survey of the "immigrant experience" in the United States, from early 19th century to the present. Particular attention is given to enduring problems of economic adjustment and cultural assimilation, and to the impact of immigration on the host society. (AY).

CRJ 390 Topics in Criminal Justice
3.000 Credits

Examination of problems and issues in selected areas of criminal justice. Title as listed in the Schedule of Classes will change according to content. Course may be repeated when specific topics differ. (OC)

CRJ 403 Minority Groups
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The status of racial and ethnic minorities in the United States with particular reference to the social dynamics involved with regard to majority-minority relations. Topics of study include inequality, segregation, pluralism, the nature and causes of prejudice and discrimination and the impact that such patterns have upon American life. (F, W).

CRJ 407 Psychology of Adolescence
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

Considers adolescence as an interaction of rapid biological and social change. Examines the theoretical and empirical literature in some detail. Prerequisite or permission of instructor. (F, W).

CRJ 410 Quantitative Research
4.000 Credits
Prerequisite(s): SOC 200 or SOC 201

An introduction to methods of data collection and analysis. Also discussion of research design and the philosophy of social science. (YR).

CRJ 412 Men and Masculinities
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201 or ANTH 101 or WST 275 or WGST 275

This course addresses the question, "What is a man?" in various historical, cross-cultural, and contemporary contexts. A major focus on the social and cultural factors that underlie the shape and conceptions of manhood and masculinity in America as well as in a variety of societies around the globe. (AY)

CRJ 413 American Constitutional Law
3.000 Credits
Prerequisite(s): POL 101

A major theme of this course is the development of the constitution, especially focusing on the themes of judicial review: judicial self-restraint and judicial activism; the expansion of executive and legislative powers; and the rise of "substantive due process of law." POL 101 or equivalent recommended. (AY).

CRJ 414 Civil Rights and Liberties
3.000 Credits
Prerequisite(s): POL 101

An analysis of the Bill of Rights and the 14th Amendment, with particular emphasis upon recent landmark or controversial Supreme Court decisions dealing with freedom of speech and religion, rights of criminal defendants; cruel and unusual punishment, right to privacy; civil rights and equal protection clause; and apportionment. POL 101 or equivalent recommended. (YR).

CRJ 416 Criminal Law
3.000 Credits
Prerequisite(s): POL 101

A survey of the major judicial, executive, and legislative decisions in the field of criminal law. (AY)

CRJ 421 Group Processes
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171 or SOC 200 or SOC 201

Topics treated include group cohesiveness, "group think," the social structure of groups, emotional factors in group life, leadership, and development of groups. (YR).

CRJ 423 American Social Classes
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Stratification of American communities and society: a review of the findings of major studies and an introduction of methodology. (YR).

CRJ 425 Lab in Social Psychology
4.000 Credits
A broad introduction to research methods in basic and applied social psychology. Students will receive training in construction, implementation, and interpretation of scientific procedures used in the study of social psychology. Topics include: questionnaire construction, experimental design, and various multivariate analytic techniques. (AY).

**CRJ 435 Urban Sociology**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

A descriptive study of the form and development of the urban community with respect to demographic structure, spatial and temporal patterns, and functional organization. The relationship of city and hinterland. Social planning and its problems in the urban community. (YR).

**CRJ 440 Abnormal Psychology**
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

An introduction to the field of psychopathology, the study of mental disorders. Includes exposure to a number of historical and theoretical perspectives, each with their own theories, methodologies, and treatment approaches. Disorders covered will include: anxiety and mood disorders, personality disorders, schizophrenia, sexual disorders, and psychosomatic disorders. (F,W).

**CRJ 443 Gender Roles**
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171 or SOC 200 or SOC 201

This course will investigate the development of gender roles in childhood and adolescence due to either innate physiological differences or sociological patterning, the effect of gender roles upon male-female relationships within our society, and the possibility of transcending sociological gender roles in alternate modes of living. (F,W).

**CRJ 445 Contemporary Ethical Theory**
3.000 Credits
Prerequisite(s): PHIL 240

An intensive study of a topic in recent ethical theory. Topics will vary with each offering. Among the topics: ethics and law, utilitarianism, virtue theory, theories of justice, morality and emotion, ethics and partiality. (AY).

**CRJ 446 Marriage and Family Problems**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Sociological analysis of problems encountered within the institution of marriage with particular reference to such issues as choosing a marriage partner, sexual adjustment, occupational involvement, conflict resolution, child rearing, divorce and readjustment. (YR).

**CRJ 447 Family Violence**
3.000 Credits

Sociological analysis of various forms of family violence which occur disproportionately in the lives of girls and women. Topics such as incest, sexual abuse, date rape, wife battering, and elder abuse will be situated within the social and cultural context of contemporary gender relationships. Social and political responses to the phenomena will be examined. Permission of instructor is an optional prerequisite. (YR).

**CRJ 453 Sociology of Law**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Various aspects of the relationship between law and society are explored. After a look at processes of law making, attention is turned to the administration of law. This involves a study of the activities of legislatures, courts, police, and correctional agents. (YR).

**CRJ 455 Immigrant Community in N Amer Soc**
3.000 Credits
Prerequisite(s): ANTH 101

The history and culture of immigration since 1850, including: (1) formation and perseverance of immigrant communities and interethnic boundaries; (2) relations between the homeland and the immigrant; and (3) impact of migration on family life and gender roles. Prerequisite: ANTH 101 and junior or senior standing. (AY).

**CRJ 465 Deviant Behavior/Soc Disorganz**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

General analysis of the concepts of social deviance and social disorganizations: factors producing each condition, the effects of social control measures on the course of deviance and disorganization consequences for the social system, and the relationship between the two concepts. (YR)

**CRJ 466 Drugs, Alcohol, and Society**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Analyses of the sociology of substance use and abuse. Provides a sociological framework for understanding issues and evaluating our nation's responses to the phenomenon of drug use. Drawing on sociocultural and social psychological perspectives, this course systematically examines the social structure, social problems, and social policy aspects of drugs in American society. Prerequisite or permission of instructor. (YR).

**CRJ 467 Drugs, Crime, and Justice**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Provides a comprehensive analysis of the current state of research on interactions between crime and drug abuse. Examines drug distribution, organization of drug systems, and mechanisms of social control of drug systems. Analyzes the social problems associated with drugs and crime. The course
also focuses on drug-law enforcement and public policy strategies for dealing with drugs and crime. Prerequisite or permission of instructor. (YR).

CRJ 468  Criminology  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Analysis of criminal behavior in relationships hip to the institutional framework of society. Emphasis upon the more routin ized and persistent forms of criminality along with the joint roles played by victims, the criminal, the police, and all other relevant parties. (F,W)

CRJ 469  Juvenile Delinquency  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

The analysis of juvenile delinquent behavior in relationship to the institutional framework of society. Emphasis on the extent, causes, and methods of juvenile delinquency in the United States. (YR)

CRJ 470  Current Issues in Crim Justice  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Current issues in the field of criminal justice and law enforcement in the U.S. and other countries. Topics include an evaluation of police activities, problems of apprehensions and prosecution, the courts and the correctional system, and the efficacy of the legal structure in its social context. (F,W,S).

CRJ 471  Comp Crim Justice Systems  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Description, analysis, and evaluation of selected criminal justice systems throughout the world. Course focuses on the various systems, theories, methods, and functions, including common law systems and socialist law systems. (YR).

CRJ 472  Corrections  
3.000 Credits

Analysis of the legal, social, and political issues affecting contemporary correctional theory and practice. Topics covered include the history of corrections; the nature of existing institutions; the functions and social structure of correctional institutions; and alternatives to institutional incarceration, probation, and parole. (OC).

CRJ 473  Race, Crime and Justice  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

This course is an analysis of race and its relation to crime in the criminal justice system. Students will analyze and interpret the perceived connection between race and crime, while exploring the dynamics of race, crime, and justice in the United States. This course is designed to familiarize students with current research and theories of racial discrimination within America's criminal justice system.

CRJ 478  Social Work / Crim Just Intern  
3.000 TO 6.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Provides field experience in social welfare agencies, e.g., for children/adolescents, abuse, chemical dependencies, the elderly, special needs populations, criminal justice/probation, medical/public health, and families and communities. Supervision by approved field instructors. Focus is on analysis of the social context of the agency, the clients, and the staff. An internship of 80 hours is required for three (3) credits. Approval of instructor. (F,W).

CRJ 479  Women's Studies Internship  
3.000 Credits  
Prerequisite(s): WGST 275

Provides field experience in social welfare agencies, e.g., for children/adolescents, abuse, chemical dependencies, the elderly, special needs populations, criminal justice/probation, medical/public health, and families and communities. Supervision by approved field instructors. Focus is on analysis of the social context of the agency, the clients, and staff. Eighty hours on site is required for three (3) credits. Prerequisite: WGST 275 and permission of the Women's Studies Director is required. (F,W).

CRJ 485  Psychology Internship  
3.000 OR 6.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

Examines of problems and issues in selected areas of criminal justice. Title as listed in Schedule of Classes will change according to the content of the course. Course may be repeated when specific topics differ.

CRJ 490  Topics in Criminal Justice  
3.000 Credits

Examination of problems and issues in selected areas of criminal justice. Title as listed in Schedule of Classes will change according to the content of the course. Course may be repeated when specific topics differ.

CRJ 494  Pol Sci Internship Seminar  
3.000 OR 6.000 Credits

This is the academic part of the internship. Students must meet with other interns once a week to analyze political dynamics within their placements. Students are required to keep journals, prepare papers and reports, and do other written work. Anyone taking POL 495 or 496 is required to take POL 494. It may not be taken by itself. Repeatable if topic differs. Only six hours of internship credit is allowable toward concentration requirement. (F,W,S).

CRJ 495  Political Science Internship  
3.000 TO 6.000 Credits
Field study placements in national, state, local government or private agencies. Primarily for junior or senior political science concentrators or other qualified applicants. Maximum of 20 students selected each term. Students must also register for CRJ 494. Only six hours of internship is allowed toward concentration requirement. (F,W,S).

**PHYS 130** Introduction to Astronomy ............... 3 hrs

**PHYS 151** General Physics II ....................... 4 hrs

**PHYS 126** Introductory Physics II

**PHYS 150** General Physics I ........................ 4 hrs

**MATH 116** Calculus II............................. 4 hrs

**MATH 115** Calculus I .............................. 4 hrs

**MATH 113** Calculus I: Management, Life and Social
              Science ........................................ 4 hrs

**CRJ 497** Washington, D.C. Internship
            3.000 TO 6.000 Credits

Field placements in Washington, D.C. Course is offered only in summer semester. Primarily for junior or senior political science concentrators or other qualified applicants. Only six hours of internship credit is allowed toward concentration requirement.

**CRJ 498** Directed Studies
            1.000 TO 6.000 Credits

Directed individual study of any subject agreed upon by the student and the instructor. May not duplicate a formal course offering.

**Earth Sciences**

The Earth Sciences concentration is designed to provide students with a strong background in the areas of science that seek to understand Earth and its neighbors in space, including geology, GIS, oceanography, meteorology, and astronomy. The concentration leads to a BS degree that prepares students for graduate study in any of the earth sciences, for students who wish to qualify for a teaching certificate in Earth Science, or for students interested in the study of geology or astronomy as part of an undergraduate liberal arts education.

**PREREQUISITES TO THE CONCENTRATION**

**BIOL 130** Introduction to Organismal and Environmental Biology .................. 4 hrs

**CHEM 124** General Chemistry I .................. 4 hrs

**CHEM 136** General Chemistry II .................. 4 hrs

**GEOG 203** Weather and Climate .................... 3 hrs

**GEOL 118** Physical Geology .......................... 4 hrs

**GEOL 218** Historical Geology .......................... 4 hrs

**MATH 113** Calculus I: Management, Life and Social Science .................... 4 hrs

**MATH 114** Calculus II: Management, Life and Social Science .................... 4 hrs

**OR**

**MATH 115** Calculus I .......................... 4 hrs

**MATH 116** Calculus II .......................... 4 hrs

**PHYS 125** Introductory Physics I

**OR**

**PHYS 150** General Physics I .................. 4 hrs

**PHYS 126** Introductory Physics II

**OR**

**PHYS 151** General Physics II .................. 4 hrs

**PHYS 130** Introduction to Astronomy .................. 3 hrs

**PHYS 131** Introductory Astronomy Laboratory ........... 1 hrs

**CONCENTRATION REQUIREMENTS** .................... 31 hrs

**Upper Division Core** .................................. 11 hrs

**CHEM 344** Quantitative Analysis .................. 4 hrs

**GEOG 340** Remote Sensing .......................... 3 hrs

**GEOG 342** Oceanography .......................... 3 hrs

**GEOG 377** Field Methods in Geology* .................. 1 hr

*Note: may be repeated

**Research/Internship*** .................................. 3 hrs

**GEOG 498** Readings in Earth Science 3 hrs

**OR**

**GEOG 499** Laboratory and Field Research  ............ 3 hrs

**OR**

**ENST 398** Environmental Internship .................. 1 hr

**AND**

**ENST 485** Seminar in Environmental Topics ........ 2 hrs

*The research or internship must culminate in an oral presentation.

Note: No more than 6 credit hours of research in Earth Sciences can count toward the 120 hours required for graduation.

**Electives** ........................................ 17 hrs

**GEOG 390** Topics in Geography .................. 1-3 hrs

**GEOG 330** Land Use Planning and Management ........ 4 hrs

**GEOG 332** Hazardous Waste Management ............ 3 hrs

**GEOG 350** Geomorphology .......................... 4 hrs

**GEOG 370** Environmental Geology .................. 3 hrs

**GEOG 372** Energy Resources .......................... 3 hrs

**GEOG 375** Groundwater Hydrology .................. 3 hrs

**GEOG 390** Current Topics in Geology .................. 3-4 hrs

**GEOG 440** GIS in Geoscience .................. 3 hrs

**CHEM 390** Current Topics in Chemistry ............ 3-4 hrs

**ESCI 390** Topics in Environmental Science ......... 3-4 hrs

**PHYS 390** Current Topics in Physics .................. 3 hrs

**PHYS 421** Astrophysics .......................... 3 hrs

**PHYS 490** Topics in Physics .................. 3-4 hrs

Graduate-level courses in Geology can be taken for upper-division credit to satisfy concentration requirements.

**MINOR OR AREA OF FOCUS**

A minor or area of focus consists of 11 credit hours of upper-division credit in Earth Sciences.

**Economics**

A sound knowledge of economics has become increasingly important for understanding of the contemporary world and its problems. The Economics major also offers useful training for those interested in pursuing a business career, and provides excellent preparation for post-graduate work in Law, Business, and other professional fields. To meet the needs of those desiring a comprehensive introduction to economic principles and problems, ECON 201 and 202 are offered each term. For concentrators in economics a well-balanced offering of courses is designed to equip the student with an understanding of basic economic relationships, the essential tools of economic analysis, and a store of factual knowledge.
PREREQUISITES TO THE CONCENTRATION

ECON 201  Principles of Macroeconomics* .......................3 hrs
ECON 202  Principles of Microeconomics*.........................3 hrs
MATH 104  Pre-calculus for Management, Life and Social Science** ..............................................4 hrs
OR
MATH 105  Pre-calculus** ..............................................4 hrs

*Students are advised to take ECON 201 before ECON 202.
**MATH 131 does not satisfy this requirement.

CONCENTRATION REQUIREMENTS

Required courses* .................................................. 9 hrs
ECON 301  Intermediate Macroeconomics**
ECON 302  Intermediate Microeconomics**
ECON 305  Economic Statistics

*Note: MATH 104, 105 or equivalent are prerequisites to these courses. MATH 113 or 115 is strongly recommended for students wishing to pursue graduate studies in economics.
** Note: ECON 301 and 302 should be taken no later than the junior year.

Five additional courses ..................................................24 hrs
At least one of these five additional courses must be at the 400 level (excluding ECON 498 and 499).

Note: Those considering graduate study in economics are advised to take one year of calculus, MATH 217 Introduction to Matrix Algebra, ECON 415 Introduction to Econometrics and ECON 465 History of Economic Theory.

Cognates ................................................................. 6 hrs
Students must complete at least six hours in cognate courses selected from the following list: ACC 297 or 298; MATH 113, 114, 115, 116; CIS 112; CIS 121 & 122 (which together total 3 credit hours); CCM (or CIS or IMSE) 150, 200, 250; PHIL 234, 350, 485; 300- or 400-level courses (excluding internships and independent studies) in anthropology, geography, history, political science or sociology.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division (300- and 400-level courses) credit in Economics. ECON 498 may not be used to satisfy this requirement.

Economics (ECON)

COURSE OFFERINGS

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

ECON 2001  Introductory Economics 3.000 Credits
Introduction to economic reasoning, basic economic concepts and theories used in microeconomics and macroeconomics.

ECON 201  Prin: Macroeconomics 3.000 Credits
Together with ECON 202, serves to introduce the student to the basic ideas and concepts of modern economic analysis, and applies them to current economic problems, policies and issues. The focus of this course is on macroeconomics: income and wealth, employment, and prices at the national level in the United States economy. It is recommended that students take ECON 201 before ECON 202. MATH 105 is recommended but not required. (F,W).

ECON 202  Prin: Microeconomics 3.000 Credits
Together with ECON 201, serves to introduce the student to the basic ideas and concepts of modern economic analysis, and applies them to current economic problems, policies, and issues. The focus of this course is on microeconomics, the behavior of consumers and firms and their interactions in specific markets. It is recommended that students take ECON 201 before ECON 202. MATH 104 or 105 is recommended but not required. (F,W,S).

ECON 290  Topics in Economics 3.000 Credits
Examination of problems and issues in selected areas of economics. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

ECON 301  Intermediate Macroeconomics 3.000 Credits
Prerequisite(s): ECON 201 and ECON 202 and (MATH 104 or MATH 105 or MPLS 113)
A systematic study of national income accounting, the level of aggregate demand, the money market, and the determination of GNP, employment and the general level of prices. (F,W).

ECON 302  Intermediate Microeconomics 3.000 Credits
Prerequisite(s): ECON 201 and ECON 202 and (MATH 104 or MATH 105 or MPLS 113)
A systematic study of the role of prices in organizing economic activity. The tools necessary for such study will be developed and applied to the analysis of the household, the firm, and the market under varying degrees of competition and monopoly. (F,W).

ECON 305  Economic Statistics 3.000 Credits
Prerequisite(s): ECON 201 and ECON 202 and

Economic techniques including graphing and marginal analysis will also be introduced and applied to practical problems in everyday life. In addition, this course will focus on the way economic concepts can be taught at the elementary and high school level in a way that integrates economics into a broader understanding of Michigan history, government and geography. (F).
Introduction to the logic and use of statistical analysis, with emphasis on statistical inference. Topics covered include descriptive statistics, probability, estimation, hypothesis testing, and the use of linear regression analysis to study relationships between two variables. (F,W).

ECON 311 Money and Banking  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

The role of monetary factors in the determination of the level of national income, employment, and the price level; monetary theory as a framework of analysis; the banking system and the supply of money; monetary and fiscal policies for stabilization and growth. (F,W).

ECON 321 Labor in the American Economy  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

An analysis of the nature and underlying causes of the problems facing the worker in modern economic society. Includes an examination of wages, unemployment, economic insecurity, the trade union movement, collective bargaining, and labor legislation. (F,W).

ECON 325 Economics of Pov and Discrm  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

An analysis of the economic aspects of poverty and discrimination. Emphasis on the theoretical economic causes of poverty and the economic bases for discriminatory behavior, the impact of poverty and discrimination on individuals and society, and the effect of reform policies on the two problems. (AY).

ECON 331 Industrial Organization  
3.000 Credits  
Prerequisite(s): ECON 202

Theory and empirical evidence on the causes and effects of market power, especially in industrial markets. The focus is on the relationships between market structure and performance, and policy formation. (F,W).

ECON 333 Anti-Trust and Regulation  
3.000 Credits  
Prerequisite(s): ECON 202

This course uses economic theory to examine major anti-trust laws and to evaluate government regulation of industry. ECON 331, Industrial Organization, is valuable background to this course although it is not a prerequisite. (YR).

ECON 342 Economic Development  
3.000 Credits  
Prerequisite(s): ECON 201 or ECON 202

A survey of economic problems currently affecting third world countries and the various policy options available to them. Topics covered will include agrarian vs. industrial growth, and monetary and fiscal policies, planning problems, foreign exchange and debt problems. Not available to students who have passed ECON 341. (YR).

ECON 344 Economics of the Middle East  
3.000 Credits  
Prerequisite(s): ECON 201 or ECON 202

Survey of socio-economic issues of the post-WWII Middle East, using text books and web-based readings. Topics include population growth, urbanization, migration, gender issues, land reform, privatization and stabilization policies. The Arab-Israeli conflict in not a focus of study. Grade based on papers and exams.

ECON 347 International Finance  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

This course covers the theory of balance of payments problems and exchange rate changes. The theoretical models are complemented by the study of the historical evolution of the present international payments system, from the gold standard to the present. Also considers current policy issues in this area. (YR).

ECON 348 International Trade  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

This course analyzes in depth the debate of free trade vs. protectionism. Different theoretical models of the "gains from trade" are presented, as well as studies of their empirical validity. Some historical perspective is included, as well as discussion of the current situation in European integration. (YR).

ECON 351 Environmental Economics  
3.000 Credits  
Prerequisite(s): ECON 202

Course examines the economic aspects of pollution problems. Topics covered in this course include the economic theory of externalities, the theory of public goods, and the optimum use of depletable natural resources. The role of cost-benefit analysis as a part of the decision-making process is also examined. (AY).

ECON 355 Econ of the Medical Sector  
3.000 Credits  
Prerequisite(s): ECON 202

Course examines the health of a population and the health care industry, using the tools of economic analysis. Topics include the demand and supply of health services, alternate ways of financing health care, the application of cost-benefit analysis to health projects, and comparative health economic systems (e.g., Britain, Sweden). (AY).

ECON 361 U S Economic History  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

A survey of the processes of development of the United States economy, their social implications, and the sources of today's economic problems. (OC).
ECON 362  Eur and Intl Economic Hist
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

A survey of the processes of industrialization in the major non-American industrial economies, with a focus on their relevance and implications. (OC).

ECON 372  Economic Demography
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

Course offers an introduction to economic demography, focusing on the interrelation between economic and population variables, and the techniques of demographic analysis. (YR).

ECON 375  Heterodox Economics
3.000 Credits
Prerequisite(s): ECON 201 or ECON 202 or ECON 2001

Introduction to Marxian political economics, its methodology and origins, and the historical development of capitalism. Primary emphasis is on Marxian theories of the state, economic crises, and business cycles. (OC).

ECON 381  Urban Economics
3.000 Credits
Prerequisite(s): ECON 201 or ECON 202 or ECON 2001

The economics of the city and the introduction of space in economic analysis: the determination of land use patterns, the location of firms and industries, and an urban area's growth; economic analysis and policy issues concerning urban poverty, housing, transportation, the local public sector, and other urban problems. (YR).

ECON 382  Regional Economics
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

Course explores methods of economics evaluation of regions in terms of intra- and inter-regional activity. Regions may smaller than a nation, be a collection of nations, or be composed of portions of more than one nation. Theoretical topics include the theories of (1) the location of the firm, (2) spatial demand, (3) agglomeration economies, and (4) input-output analysis. Regional development policy is discussed using Michigan and Ontario as subjects. (OC).

ECON 385  Public Choice
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

Public policy decision making, particularly governmental decisions regarding economic policies. Emphasis is on the use of economic methodology to analyze resource allocation via the political system rather than through private markets. (OC).

ECON 390  Topics in Economics
1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of economics. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

ECON 407  Cost-Benefit Analysis
3.000 Credits
Prerequisite(s): ECON 202 and ECON 302

Cost-benefit analysis arguably is the most important tool in evaluating public and private policies. Conceptually, cost-benefit analysis is simple: subtract the costs from the benefits and adopt those policies yielding the greatest net benefit. In practice cost-benefit analysis is much more complicated. Costs and benefits must be summed over time, requiring a calculation of net present value. Costs and benefits must be summed over different people, requiring a social welfare function. Finally costs and benefits must be summed over a variety of goods and services, some of which do not have market values or where market values are not appropriate measures. This course reviews the techniques involved in cost-benefit analysis and employs case studies to illustrate these techniques. (AY)

ECON 411  Monetary Economics
3.000 Credits
Prerequisite(s): ECON 301 and ECON 311

This course examines financial institutions in a macroeconomic theoretical context. A rigorous treatment of monetary theory is presented followed by practical discussion of U.S. monetary policy as implemented by the Federal Reserve System. (YR).

ECON 415  Introduction to Econometrics
3.000 Credits
Prerequisite(s): (MATH 113 or MATH 115 or MPLS 116) and (ECON 305 or DS 300) and (ECON 302 or ECON 311 or ECON 321 or ECON 325 or ECON 331 or ECON 333 or ECON 342 or ECON 345 or ECON 347 or ECON 348 or ECON 351 or ECON 355 or ECON 361 or ECON 362 or ECON 372 or ECON 375 or ECON 381 or ECON 382 or ECON 385 or ECON 390 or ECON 411 or ECON 421 or ECON 465 or ECON 481 or ECON 390A or ECON 391A or ECON 390B)

The theory and practice of the statistical analysis of economic relationships. Topics covered include the construction and estimation of econometric models, emphasizing the use of multiple regression techniques. Course concludes with examples of econometric investigations and the use of econometric models for forecasting and policy analysis. (W).

ECON 421  Economics of the Labor Sector
3.000 Credits
Prerequisite(s): ECON 302

Theoretical analysis and empirical studies of the nature and operation of labor markets. Includes theories of wage determination and income distribution, the nature of unemployment, the impact of collective bargaining on the economy, the extent and economic effects of discrimination, and the nature and effects of government wage and employment policies. ECON 321, Labor in the American Economy, is
Concentrators in the English discipline have the opportunity to explore the relationships between reading and writing printed text by becoming familiar with the strategies that writers use to shape conceptions of truth. The primary goal of the English discipline is to help students develop a sensitivity to the ways spoken and printed language frame how we conceive and discuss our identities throughout history. The UM-D English Faculty is committed to this goal by offering rigorous, comprehensive courses that contextualize language in terms of the various traditions and genres of English and American literature, the history of the English language and the critical skills necessary to craft effective expository and creative writing.

Acknowledging the unique perspective provided by studying English language and literature in a part of urban America that offers vibrant multi-cultural experiences, the UM-D English concentration also exposes students to the future of English language and literature in the context of a global community both in — and beyond — Detroit. Therefore, concentrators in the English discipline may expect to develop a close relationship to the social ramifications of the written word and its potential for incorporating both communities and individuals into a larger, more internationally aware reading and listening audience.

**PREREQUISITES TO THE CONCENTRATION**

Students are required to complete the following as a prerequisite:

ENGL 200 Introduction to English Studies

This course serves as the “gateway” to the Concentration with enrollment limited to 20 students per section. ENGL 200 exposes students to the terms of English Studies, literary criticism and literary theory, knowledge essential to higher-level English courses.

Virtually all 300- and 400-level English courses require as prerequisites ENGL 200 and COMP 106 or equivalent. In addition, other prerequisites for a specific upper-level English course may be introduced by the instructor in the term in which the course is offered. Students are advised to consult the current Schedule of Classes for prerequisites each term. If a student has not satisfied the prerequisites of a course, the student may be enrolled by permission of the instructor, provided that there are other relevant qualifications.

**CONCENTRATION REQUIREMENTS**

All students concentrating in English must complete 30 hours of course work on the 300- and 400-levels. Four of these courses are required upper-level surveys:

- ENGL 311 Survey of British Literature, Beowulf to Milton
- ENGL 312 Survey of British Literature, Milton to 1900
- ENGL 313 Survey of American Literature, Colonial Period to 1900
- ENGL 314 Survey of Literature in English, 1900 to Present

Students are encouraged to take these surveys early in their careers so that they acquire an overview of literary history before taking more specialized upper-level courses. Students are required to take all four, but they can be taken at any time after ENGL 200 and are not prerequisites for other courses. Also,
please note that students who have completed ENGL 235, 236 and/or 237 in the previous curriculum may petition to transfer these credits to cover ENGL 311, 312 and/or 313 in the current curriculum.

In addition to taking the four required survey courses listed above, students are required to complete at least six upper-level electives. Students may wish to group some of these electives in the tracks listed below. Please note that students are not required to select a track for these remaining courses. However, if they wish, student may designate a “track” by taking three of their six electives in one of the following tracks:

- British Literature and Culture
- American Literature and Culture
- Writing
- World English Language and Literature (WELL)

English concentrators, whether they elect a track or not, must also fulfill the following requirements:

- The English Discipline’s “Diversity Requirement”: English concentrators must elect one course with substantial inclusion of literature in English that expands the traditional Anglo-American literary curriculum. This literature may represent various national groups, ethnic groups, genders, and subcultures. This requirement may be satisfied by electing a course in African-American literature such as ENGL 469 or by electing a course specifically designated by the English Discipline as fulfilling this requirement. Consult the current Schedule of Classes or contact the English Discipline representative for courses which satisfy the English Diversity Requirement.
- The “Historical Requirement”: English concentrators must elect one course which addresses literature prior to 1800, not including ENGL 311 or 312 or 313.
- The “Research Requirement”: English concentrators must elect one course designated “Research Intensive,” or an “Independent Studies in English” (ENGL 398/399) (see below).

Cognates ................................................................. 6hrs

English concentrators must also complete at least six hours of cognate courses which are to be selected from upper-division offerings in history, philosophy, art or music history, linguistics and humanities. Other courses that can be shown to be specifically complementary to the study of literature are sometimes approved by petition as cognates. Courses in administration, computer sciences, foreign languages, women and gender studies, humanities, art or music a valuable supplement to the concentration. Students should consult with an academic advisor before deciding to pursue a minor.

SECONDARY CERTIFICATION SUPPLEMENT

Both the major and the minor have as a supplementary requirement, not included in the 30 or 20 hours, LIBR 470 Literature for Young People.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in English. English concentrators may find a minor in business administration, computer sciences, foreign languages, women and gender studies, humanities, art or music a valuable supplement to the concentration. Students should consult with an academic advisor before deciding to pursue a minor.

HUMANITIES INTERNSHIP PROGRAM

The Humanities Internship Program offers practical experience to students concentrating in English and other humanistic fields and those interested in journalism. Students gain and demonstrate skills desired by employers, make important contacts, and explore a field of work before graduation. For more information on the Humanities Internship, see the Internship Coordinator, 3028 CB, (313) 593-5136, or inquire at the Humanities Department office in 3011 CB, (313) 593-5433.

INDEPENDENT STUDY

Independent Study (ENGL 398, 399) provides an opportunity for students to extend the work of existing courses or to explore areas not included in the current course offerings. Consult the Humanities Department Guidelines for Independent Study, available in the Humanities Department Office, 3011 CB, (313) 593-5433. To enroll in an independent research project, students must have a prior, written contract with the instructor and prior, written permission of the Department Chair. One to three credit hours available.

ELECTIVE “TRACKS” IN THE ENGLISH CURRICULUM

Students may choose to elect a “track” by taking at least 3 of their upper-level courses from one of the following four areas:

- British Literature and Culture
- American Literature and Culture
- Writing
- World English Language and Literature (WELL)

ELECTING A TRACK IS OPTIONAL, but tracks give students the ability to focus their electives if they so desire. The courses for the four tracks are as follows. The following list is subject to change. Consult the current Schedule of Classes or contact the English Discipline representative for future additions to the tracks, including Topics courses offered on a semester basis.

British Literature and Culture Track

ENGL 346 Bible and Western Tradition
ENGL 348 Warriors, Lovers, and Saints
ENGL 356 Reading Urban Monstrosity: London
ENGL 368 Survey of Twentieth-Century British/American Poetry
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<tbody>
<tr>
<td>ENGL 368</td>
<td>Survey of Twentieth-Century British/American Poetry</td>
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<td>ENGL 371</td>
<td>Survey of British Literature: Beginning to 1500</td>
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<td>ENGL 372</td>
<td>Survey of British Literature: 1500-1600</td>
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<td>ENGL 373</td>
<td>Survey of British Literature: 1600-1660</td>
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<td>ENGL 374</td>
<td>Restoration and Early Eighteenth-Century British Literature</td>
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<td>ENGL 375</td>
<td>The Age of Johnson and Burney</td>
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<td>ENGL 376</td>
<td>Survey of English Literature in the Romantic Era</td>
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<td>ENGL 377</td>
<td>Survey of Victorian Literature</td>
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<tr>
<td>ENGL 378</td>
<td>Survey of Modern English Literature</td>
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<td>ENGL 400</td>
<td>Major English Authors of the Middle Ages</td>
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<tr>
<td>ENGL 401</td>
<td>Beowulf and Other Old English Poems</td>
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<td>ENGL 404</td>
<td>Mystical Writers of the Middle Ages</td>
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<td>ENGL 405</td>
<td>Chaucer</td>
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<td>ENGL 406</td>
<td>Studies in Medieval Literature and Culture</td>
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<td>ENGL 408</td>
<td>Shakespeare I: Earlier Works</td>
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<td>ENGL 409</td>
<td>Shakespeare II: Later Works</td>
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<td>ENGL 410</td>
<td>Major English Authors of the Renaissance</td>
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<td>ENGL 412</td>
<td>Milton</td>
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<td>ENGL 413</td>
<td>English Renaissance Drama (Excluding Shakespeare)</td>
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<td>ENGL 414</td>
<td>Seventeenth-Century Readings</td>
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<td>ENGL 420</td>
<td>Major English Eighteenth-Century Authors</td>
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<td>ENGL 423</td>
<td>Restoration Drama</td>
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<td>ENGL 424</td>
<td>The Eighteenth-Century English Novel</td>
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<td>ENGL 430</td>
<td>Studies in Nineteenth-Century English Literature</td>
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<td>ENGL 431</td>
<td>English Romantic Writers</td>
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<td>ENGL 432</td>
<td>Victorian Writers</td>
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<td>ENGL 434</td>
<td>The Nineteenth-Century English Novel</td>
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<td>ENGL 440</td>
<td>Major English and American Authors of the Twentieth Century</td>
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<td>ENGL 441</td>
<td>Major English Authors of the Twentieth Century</td>
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<td>ENGL 443</td>
<td>Anglo-Irish Literature</td>
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<td>ENGL 448</td>
<td>History of the English Language</td>
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### American Literature and Culture Track

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<td>Studies in Detroit Culture</td>
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<td>ENGL 305</td>
<td>Society and Arts in Detroit</td>
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<td>ENGL 306</td>
<td>Comparative American Identities</td>
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<tr>
<td>ENGL 361</td>
<td>Survey of American Literature: 1630 to the Civil War</td>
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<td>ENGL 363</td>
<td>Survey of American Literature: Civil War to WWI</td>
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<tr>
<td>ENGL 366</td>
<td>Survey of Modern American Literature</td>
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<tr>
<td>ENGL 368</td>
<td>Survey of Twentieth-Century British/American Poetry</td>
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<td>ENGL 383</td>
<td>American English</td>
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<td>ENGL 389</td>
<td>Odyssey of Black Men in America</td>
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<td>ENGL 440</td>
<td>Major English and American Authors of the Twentieth Century</td>
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<td>ENGL 450</td>
<td>Major American Authors to the Civil War</td>
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<td>ENGL 451</td>
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<td>ENGL 452</td>
<td>Major American Authors of the Twentieth Century</td>
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<td>ENGL 453</td>
<td>Contemporary American Novel</td>
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<td>ENGL 455</td>
<td>Studies in Nineteenth-Century American Literature</td>
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<td>ENGL 459</td>
<td>Major American Authors to 1860</td>
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<td>ENGL 469</td>
<td>Twentieth-Century African-American Literature</td>
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<td>ENGL 4705</td>
<td>Voices of Black Women in Literature, Film, Music</td>
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<td>ENGL 477</td>
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<td>Literature of Journalism/Creative Nonfiction</td>
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<td>ENGL 317</td>
<td>Studies in Technical Writing</td>
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<td>ENGL 323</td>
<td>Advanced Creative Writing</td>
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<td>ENGL 327</td>
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<td>ENGL 330</td>
<td>Feature Writing for Magazines and Newspapers</td>
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<td>ENGL 436</td>
<td>Memoir and Travel Writing for Publication</td>
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<td>ENGL 464</td>
<td>Contemporary Rhetorical Theory</td>
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<td>ENGL 465</td>
<td>Discourse Analysis</td>
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<td>ENGL 467</td>
<td>Script-Writing Workshop</td>
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<td>ENGL 468</td>
<td>Writing Young Adult Fiction</td>
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<td>ENGL 485</td>
<td>Theories of Writing</td>
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### WELL Track

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<td>ENGL 381</td>
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<td>ENGL 389</td>
<td>Odyssey of Black Men in America</td>
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<td>ENGL 477</td>
<td>African-American English</td>
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<td>ENGL 482</td>
<td>History of the English Language</td>
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<td>ENGL 484</td>
<td>World Englishes</td>
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Some courses will fit in a track or tracks depending on their content for a given semester. These include:

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<th>Course Code</th>
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<tr>
<td>ENGL 341</td>
<td>Religion and Literature</td>
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<tr>
<td>ENGL 349</td>
<td>Bible in/as Literature</td>
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<td>ENGL 370</td>
<td>Narratives of Film and Literature</td>
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<td>ENGL 386</td>
<td>Gender Issues in Literature</td>
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<td>ENGL 390</td>
<td>Topics in English</td>
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<tr>
<td>ENGL 442</td>
<td>Studies in Twentieth-Century Literature</td>
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<td>ENGL 444</td>
<td>Seminar in Twentieth-Century Poetry</td>
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<td>ENGL 445</td>
<td>Twentieth-Century Women Authors</td>
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<td>ENGL 454</td>
<td>Postmodern Literature</td>
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<tr>
<td>ENGL 486</td>
<td>Queer Theory and Literature</td>
</tr>
<tr>
<td>ENGL 488</td>
<td>Environmental Literature and Representations of Nature</td>
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Some courses will not be placed in any track. These include:

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<tr>
<th>Course Code</th>
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<tr>
<td>ENGL 301</td>
<td>Literary Criticism</td>
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<tr>
<td>ENGL 340</td>
<td>Modern European Short Fiction</td>
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<tr>
<td>ENGL 342</td>
<td>Myth and Motif</td>
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<td>ENGL 344</td>
<td>Modern Literature: The Novel</td>
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<td>ENGL 345</td>
<td>Modern Literature: Drama</td>
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<tr>
<td>ENGL 347</td>
<td>Classical Literature in English Translation</td>
</tr>
<tr>
<td>ENGL 394</td>
<td>Psychology and Theater</td>
</tr>
<tr>
<td>ENGL 461</td>
<td>Modern English Grammar</td>
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</tbody>
</table>
English (ENGL)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

ENGL 200  Intro to English Studies  
3.000 Credits  
Prerequisite(s): COMP 105 or COMP 110 or CPAS 30

An introduction to English Studies for English concentrators. The course provides students with the interpretive, analytical and basic research skills, the critical vocabulary, the understanding of genre, and the knowledge of major critical approaches necessary for the study of literature. Readings will consist primarily of poetry, fiction, drama, and non-fiction prose written in English by British and American authors, but the course will also include other historical and cultural texts as well as works of criticism. Students will submit at least 20 pages of written work for extensive instructor feedback. (F,W)

ENGL 223  Intro to Creative Writing  
3.000 Credits  
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

An introduction to the writing of poetry, the short story, and/or the play. Considerable writing, analysis, criticism, and discussion. (F,W).

ENGL 230  Introduction to Literature  
3.000 Credits

Introduces students to imaginative literature in several genres, including, for example, fiction, poetry, and drama. Stress will be both on appreciation of the aesthetic and cultural value of reading literature and on understanding the process of reading sensitively and intelligently.

ENGL 231  Intro to Literature: Poetry  
3.000 Credits

A disciplined introduction to the reading of poetry, English and American. (F,W).

ENGL 232  Intro to Literature: Fiction  
3.000 Credits

A disciplined introduction to the reading of short stories and novels, English and American. (F,W).

ENGL 233  Intro to Literature: Drama  
3.000 Credits

A disciplined introduction to the reading of plays, English and American. (F,W).

ENGL 235  Engl Lit, Beginnings to 1660  
3.000 Credits

A study of the literary history of England from the Anglo-Saxon era to 1660, including Milton, designed to introduce students to important authors, works, and literary movements in their historical contexts. Also designed to introduce students to the various ways of writing about literature and to various tools for literary research. Although ENGL 235 is continued in ENGL 236, either course may be elected by itself. ENGL 235, 236, or 237 are prerequisites to the concentration in English. (F).

ENGL 236  Engl Lit, 1660 to the Present  
3.000 Credits  
Prerequisite(s): COMP 105 or CPAS 30 or COMP 110

A study of the literary history of England from the Restoration to the 20th century, designed to introduce students to important authors, works and literary movements in their historical context. Also designed to introduce students to various ways of writing about literature and to the various tools of literary research. Although ENGL 236 is a continuation of ENGL 235, either course may be elected by itself ENGL 235, 236, or 237 are prerequisites to the concentration in English. (W).

ENGL 237  Survey of Amer Literature  
3.000 Credits  
Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270

A survey of American literature from the Colonial period to the early 20th century, designed to expose students to major American authors, works, and literary movements. Topics covered include Puritanism, the literature of the American Revolution, American Romanticism, Transcendentalism, the 19th century poetic tradition, Realism and Naturalism, early 20th century poetry and prose, and 20th century social fiction. Students may elect ENGL 237 in place of 236 to fulfill their prerequisites to the concentration in English. (AY).

ENGL 239  Intro to Lit: African American  
3.000 Credits

A study of African-American literature designed to expose students to important periods, works, and authors within historical context. Topics will include slavery, reconstruction, the Great Migration, the Harlem Renaissance, and the contemporary renaissance in Black women's literature. Students will be required to read, critically discuss, analyze, and write their responses to several literary genres that will be incorporated (fiction, drama, poetry).

ENGL 248  Introduction to Film Studies  
3.000 Credits

This course will introduce students to the development of world cinema by integrating the aesthetics of film with its technology, and its social and economic milieu. It will train the students in analyzing the formalist qualities of the medium, and in understanding the evolution of its various genres and styles. (YR).

ENGL 301  Literary Criticism  
3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

This course introduces literary criticism and theory from
Aristotle to the present, focusing on the changing concept of literature's nature and function. Lectures, readings, and discussion cover such critics as Aristotle, Dryden, Pope, Johnson, Wordsworth, Coleridge, Arnold, T.E. Hulme, T.S. Eliot, and such movements as New Criticism, Phenomenology, Reader-Response, Archetypal Criticism, Structuralist-Semiotic Criticism, Psychological approaches to literature, New Historicism, Marxism, Feminism, and Deconstruction.

ENGL 304 Studies in Detroit Culture
3.000 Credits
This course is an attempt to define a modern cultural history of Detroit. Taught by two faculty members, the emphasis of the course will vary but the following aspects of the city's cultural history will be covered in some detail: its literature, arts, music, and architecture; its social conditions and broader American context. (AY).

ENGL 305 Society and Arts in Detroit
3.000 Credits
This course is an attempt to define a modern cultural history of Detroit. A team of three or four faculty members will explore the relationship between society and the arts in Detroit from several aspects: Detroit's literature, arts, music, and architecture; its social conditions and broader American context. Field trips into the city are also included. Course not open to students who have completed ARTH 304, ENGL 304, HIST 304, HUM 304, or SOC 304. Does not satisfy a concentration period requirement. (AY).

ENGL 306 Comparat. American Identities
3.000 Credits
Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270
This course will confront and complicate the following key questions: what does it mean to be an American? What is American culture? Participants in this course will respond to the questions central to the American Studies field by reading and discussing historical, sociological, literary, artistic, material culture, political, economic and other sources. Students will use this interdisciplinary study to examine the multiple identities of Americans - as determined by factors such as gender, race, class, ethnicity and religion. While emphasizing the diversity of American culture, participants will consider some core values and ideas unifying America both in historical and contemporary society. Students will be invited to seek out and share fresh narratives of the American experience.

ENGL 310 Lit Journalism/Creative Nonfic
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40
Students learn to identify, understand and use the techniques of fiction in the service of nonfiction material. While studying the texts as literature, students are also encouraged to view them as models for writing. Assignments include the writing and revising of articles, based on research and interviews, and written in story form, drawing on literary techniques. (YR).

ENGL 311 British Lit: Beowulf to Milton
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)
A study of British literature from the Anglo-Saxon period to the works of John Milton, designed to introduce students to important authors, works, and literary movements in their wider historical and cultural contexts. (YR)

ENGL 312 British Lit: Milton to 1900
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)
A study of British literature from the works of John Milton to 1900, designed to introduce students to important authors, works, and literary movements in their wider historical and cultural contexts. (YR)

ENGL 313 American Lit: Colonial to 1900
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)
A study of American literature from the Colonial period to 1900, designed to introduce students to important authors, works, and literary movements in their wider historical and cultural contexts. (YR)

ENGL 314 Brit & Amery Lit: 1900-Present
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)
A study of British and American literature from 1900 to the present, designed to introduce students to important authors, works, and literary movements in their wider historical and cultural contexts. (YR)

ENGL 317 Case Studies in Tech Writing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40
ENGL 317 offers both practical and conceptual studies in technical writing and is open to non-technical as well as technical students. (Engineering students may take ENGL 317 for elective credit.) The course offers in-depth treatment of the communication problems and various document designs common to technical writing professionals. Instructional format includes lectures and discussion based on case material.
derived from actual events, followed up by preparation of written documents. Topics will include document design, language barriers, and the role of technical documents in product liability. (AY).

ENGL 323 Advanced Creative Writing
2.000 TO 3.000 Credits
Prerequisite(s): ENGL 223

Practice in writing poetry, the short story, the novel, and/or the play. May be repeated to a maximum of six credit hours. (OC).

ENGL 327 Advanced Exposition
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

A study of rhetorical theory and its application to various types of expository essays. Writing assignments will reflect the types of essays studied. May be repeated to a maximum of six credit hours. (YR).

ENGL 330 Feature Writing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

An introduction to the writing of feature stories for newspapers and magazines. Students study methods of gathering information and of preparing a manuscript for publication. (AY).

ENGL 340 Modern European Short Fiction
3.000 Credits
Prerequisite(s): ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239

A careful reading of between 10 and 15 short novels (in translation), with particular attention being paid to the manner in which their plots and characters express contemporary cultural issues. Such works as Dostoyevsky's Notes from Underground, Conrad's Heart of Darkness, and the Unamuno's Abel Sanchez will be included. Does not satisfy period requirement for concentration. (OC).

ENGL 344 Modern Literature: The Novel
3.000 Credits
Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of archetypal figures and thematic motifs. Their recurrent appearance in different literary periods and genres and their lineage will be examined in order to increase understanding of the works themselves and of the ages which produced them. A selection will be made from classical myth, Biblical narrative, and historical sources. Thus, the figures may vary from Oedipus and Cain to Faust and Don Juan. Motifs and story patterns may include such devices as the spiritual quest, the journey into Hell, or the patricide prophecy. Does not satisfy period requirement for concentration. (AY).

ENGL 345 Modern Literature: Drama
3.000 Credits

A careful reading of selected plays from Ibsen to the contemporary theater, designed to develop appreciative criticism and an understanding of the plays in their relationships to movements in modern drama, theater, background social forces, and trends of thoughts. Does not satisfy period requirement for concentration. (OC).

ENGL 346 Bible and Western Tradition
3.000 Credits

A detailed study of major episodes from the Bible, first as a literary work, and second as it is reflected in both poetry and the visual arts during the Renaissance and Baroque periods. Included are selected works by such masters as John Donne, George Herbert, and John Milton in poetry and Michelangelo, Raphael, and Leonardo da Vinci in painting and sculpture. (AY).

ENGL 347 Classical Lit/Engle Translation
3.000 Credits
Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of masterworks of ancient Greek and Roman literature with special attention to the development of epic, tragedy, and comedy. Authors studied will include Homer, Virgil, Aeschylus, Sophocles, Euripides, Aristophanes, Terence, and Platos. Does not satisfy period requirement for concentration. (OC).

ENGL 348 Warriors, Lovers and Saints
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An investigation of the ways in which religious ideas and practices have informed works of literature, and vice versa. Surveying a variety of genres and themes, the course will focus mainly on British and/or American literature and its engagement with Judea-Christian religion, though some attention may be devoted to other literary and religious traditions (e.g., ancient and medieval texts, European and world literature, Islam and Eastern religions).
ENGL 200)

An in-depth examination of various personalities of the Middle Ages, both historical and fictional, who are distinctive for their martial prowess, their reputation as lovers, their piety, or some combination of these traits. Attention to these figures (e.g., Roland, Tristan, St. Augustine, and Abelard) will enable the class to consider important medieval norms of behavior, such as chivalry, courtly love, and Christian faith. Satisfies Medieval concentration requirement. (OC).

ENGL 349 The Bible In/As Literature
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

This course will study selected readings from the Bible, first in regard to their reception, interpretation, and reappraisal by later literary tradition. Biblical selections will cover both the Old and New Testaments, while later readings will be drawn from various literary periods. (OC)

ENGL 356 Reading Urban Monstrosity
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

This course questions the literary techniques and forms the English writers developed between 1660 and 1900 to characterize and imagine London to be a unified community and to counter the growing perception of London as a "monstrous city." This image of "the English-speaking City" as an uncontrollable monster may be explored in writings by Daniel Defoe, Jane Austen, Elizabeth Gaskell, Robert Louis Stevenson, Charles Dickens, Thomas Hardy, and Joseph Conrad.

ENGL 361 Am Lit:1630 to Civil War
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A brief cultural survey of pre-Civil War writers, including the Colonial writers, followed by a critical examination of the "classic" authors from Irving and Cooper to Emerson, Hawthorne, and Melville. Satisfies American literature prior to World War I requirement. (AY).

ENGL 363 Am Lit: Civil War to WW I
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A survey of trends in prose and poetry with reference to the development of American Literary thought and practice from Whitman and Twain to World War I. Satisfies American literature prior to World War I requirement. (AY).

ENGL 366 Modern American Literature
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)


ENGL 368 20C/21C British/Amery Poetry
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A survey of 20th-century British and/or American poetry and poets, including such authors as Wallace Stevens, W.H. Aden, T.S. Eliot, Dylan Thomas, Langston Hughes, and Sylvia Path. Satisfies 20th-century concentration requirement. (AY).

ENGL 370 Narratives of Film and Lit
3.000 Credits
Prerequisite(s): ENGL 240 or FILM 240 or HUM 240 or HUM 248 or ENGL 248 or FILM 248

Explores the narrative conventions of literary and filmic fictions in a cultural, historical, and psychoanalytic context. Goes beyond a discussion of the relative merits of novels and their respective film adaptations and examines the more complex interchanges between the two narrative forms, the ideological function of narrative in contemporary society, and the effect of the medium of a fictional text on the reader/viewer. (AY).

ENGL 371 Engle Lit from Begin-1500
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A survey of Old and Middle English literature (mostly in translation) designed to acquaint students with the development of themes and techniques of English authors writing before 1500. Satisfies Medieval concentration requirement. (OC).

ENGL 372 Eng Lit: 1500 to 1600
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

**ENGL 373 English Lit 1600-1660**
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of English literature from Johnson, Bacon, and Donne through the Metaphysical, the Cavaliers, and Melton’s early poems. Representative prose works will also be studied. Satisfies Renaissance concentration requirement. (OC).

**ENGL 374 Restoration Early 18th Can Lit**
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 250)

A survey of English literature of the Restoration and early 18th century, with special emphasis on verse satire (Swift, Montague, and Pope), Restoration drama (Ben, Witchery, and Congreve), and the origins of the English novel (Defoe, Fielding, and Richardson). (OC)

**ENGL 375 The Age of Johnson and Burney**
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of English Literature of the late 18th century. Readings address the literary gothic, Boswell's journals, the "graveyard school" of poetry, Samuel Johnson's poetry and prose, the 1789 revolutionary fervor, and the novels of Frances Burney and Jane Austen.

**ENGL 376 Brit Lit in Romantic Era**
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of English literature from 1789 to 1832 with special emphasis on the rise of Romantic poetry. Satisfies 19th-century concentration requirement. (OC).

**ENGL 377 Victorian Poetry and Prose**
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of British poetry and prose during the reign of Queen Victoria 1837 to 1901. Satisfies 19th-century concentration requirement. (OC).

**ENGL 378 Modern Engl Literature**
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of English literary trends from 1900 to the present. Satisfies 20th-century concentration requirement. (OC).

**ENGL 381 Intro to Postcolonial Studies**
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 250

This course offers a general introduction to Postcolonial Studies - a field of cultural inquiry that questions how personal identity (specifically race, language, and ethnicity) shapes, and is shaped by, the politics of colonization and nationalism. Students will clarify the subject of Postcolonial Studies by examining a variety of cultural and linguistic objects (literature, film, TV-journalism, slave- and middle-passage-narrative, and political manifesto) from a variety of cultural perspectives (Arab American, Anglo-Indian, West African, and Caribbean).

**ENGL 383 American English**
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and ( ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)


**ENGL 386 Gender Issues in Literature**
3.000 Credits
Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of gender issues in English and American literature. The exact topic will vary from semester to semester, but the course may feature such topics as gay and lesbian literature, feminist criticism, images of masculinity, the representation of sexual ideologies, etc. Depending on the content, the course may satisfy the period requirement of the English concentration. Course may be repeated for credit when specific topic differs. (OC).
ENGL 389  The Odyssey of Blk Men in Amer  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

This course will examine the struggle of African American men for personal, political, and creative expression. This course incorporates several literary genres (narrative, fiction, essay, drama, and poetry) and the literary voices of black men who range from professional writers to politicians, from athletes to actors. Students will be required to critically read, discuss, analyze, and write their own responses to the literature found in the texts.

ENGL 390  Topics in English  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

Examination of problems and issues in selected areas of English. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

ENGL 394  Psychology and Theater  
3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 223 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

The linkages between psychology and theater are analyzed from the perspective of the actor, the audience, and the analyst (both psychotherapeutic and literary). This includes ties between plays and theories of human behavior, psychodrama, and self-insight through performance. Class involves a significant experiential component.

ENGL 398  Independent Studies in English  
1.000 TO 3.000 Credits

Readings or analytical assignments in English, selected in accordance with the needs and interests of those enrolled and agreed upon by the instructor and the student. (F,W).

ENGL 399  Independent Studies in English  
1.000 TO 3.000 Credits

Readings or analytical assignments in English, selected in accordance with the needs and interests of those enrolled and agreed upon by the instructor and the student. (F,W).

ENGL 400  Maj Engl Auth of the Mid Ages  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A concentrated study of the works of three or four major authors of medieval England, from the 13th through the 15th centuries. Satisfies Medieval concentration requirement. (OC).

ENGL 401  Lit of Anglo-Saxon England  
2.000 TO 3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A literary analysis of Beowulf and other old English poems. Some attention will be given to the structure and pronunciation of Old English. Satisfies Medieval concentration requirement. Students cannot receive credit for both ENGL 401 and ENGL 501. (OC).

ENGL 404  Medieval Mystical Writers  
3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 270 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A study of the genre of mystical writing as it was developed and practiced throughout the Middle Ages and in 14th-century England particularly. Attention will be given to the historical, religious, and cultural contexts that enabled and were created by mystical texts. In addition, the course will explore how traditional and contemporary trends in the fields of religious and literary studies can be brought to bear on the genre of mystical writing. (OC)

ENGL 405  Chaucer  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An introduction to the poetry of Chaucer, with primary reference to the Canterbury Tales and some attention to Chaucer’s short poems. Satisfies Medieval concentration requirement. Students cannot receive credit for both ENGL 405 and ENGL 505. (YR).

ENGL 406  Studies in Medieval Lit/Cult  
3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An intensive study of a single author, movement, genre, or theme in the Medieval period. Lectures will explore historical and cultural contexts and the relevance of contemporary methodologies to the study of Medieval texts. Consult department schedule for specific subjects to be explored. Satisfies Medieval component of the English concentration requirement. (OC).
ENGL 408  Shakespeare I: Earlier Works
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Intensive study of selected works from the first half of Shakespeare's career, designed to increase the student's critical appreciation and understanding. Satisfies the concentration requirement for a course in Shakespeare. Students cannot receive credit for both ENGL 408 and ENGL 508. (OC).

ENGL 409  Shakespeare II: Later Works
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Intensive study of selected works from the second half of Shakespeare's career, designed to increase the student's critical appreciation and understanding. Satisfies the concentration requirement for a course in Shakespeare. Students cannot receive credit for both ENGL 409 and ENGL 509. (OC).

ENGL 410  Maj Engl Authors of the Renais
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An investigation of significant themes and attitudes current in the Renaissance, as seen through an intensive examination of the works of two or three major authors, such as More, Spenser, Bacon, and Donne. Satisfies Renaissance concentration requirement. (OC).

ENGL 412  Milton
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of Paradise Lost and Paradise Regained, Areopagitica and the shorter poems, including Samson Agonistes and Comus. Consideration is given to historical background and to other writings by Milton insofar as they illuminate his major works. Satisfies Renaissance concentration requirement. Students cannot receive credit for both ENGL 412 and ENGL 512. (YR).

ENGL 413  Engl Ren Drama, Exc Shakespr
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

2.000 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An examination of representative works of Elizabethan and Stuart playwrights, with special attention being given to the literary history reflected in the plays. Satisfies Renaissance concentration requirement. (OC).

ENGL 414  Seventeenth-Century Readings
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of mid-17th century authors or literary movements, such as Browne, Burton, and the metaphysical poets. Satisfies Renaissance concentration requirement. Students cannot receive credit for both ENGL 414 and ENGL 514. (OC).

ENGL 420  Maj Engl 18th-Century Authors
2.000 TO 3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of two or three authors, such as Dryden, Pope, Swift, or Samuel Johnson. Satisfies Restoration and 18th-century concentration requirement. Students cannot receive credit for both ENGL 420 and ENGL 520. (OC).

ENGL 423  Restoration Drama
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of playwriting and theatrical performance in England from Charles II's opening of the theaters in 1660 to the Licensing Act of 1737. Playwrights and movements include historical drama (Dryden, Rowe), tragicomedy (Souterne), urban social satire (Behn, Etherege, Gay, Centlivre, and Congreve), subversive comedy (Behn and Wycherley), sentimental comedy (Steele), and revisions of Shakespeare.

ENGL 424  18th-Century English Novel
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 250)

A study of the rise and development of the English novel during the 18th century. Consideration is given to such novelists as Defoe, Richardson, Fielding, Sterne, and Smollett. Satisfies Restoration and 18th-century concentration requirement. Students cannot receive credit for both ENGL 424 and ENGL 524. (OC).
ENGL 430  Stud in 19th-Century Brit Lit
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COM220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Intensive study of a special topic in 19th-century English literature. The course may treat a single author (e.g., Dickens), a movement (e.g., the Pre-Raphaelites), or a theme (e.g., literary responses to the French Revolution, the literature of mental crisis, Victorian social criticism). Consult a departmental schedule for further information. Satisfies 19th-century concentration requirement. (OC).

ENGL 431  British Romantic Writers
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of two or three Romantic writers such as Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, Scott, and Hazlitt, with attention to the historical and literary contexts in which they wrote. Satisfies 19th-century concentration requirement. Students cannot receive credit for both ENGL 431 and ENGL 531. (OC).

ENGL 432  Victorian Writers
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of two or three Victorian authors such as Carlyle, Arnold, Mill, Tennyson, Browning, and Ruskin, with attention to the literary and historical contexts in which they wrote. Satisfies 19th-century concentration requirements. Students cannot receive credit for both ENGL 432 and ENGL 532. (OC)

ENGL 434  The Victorian Novel
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A study of the English novel during the 19th century. Consideration is given to such novelists as Austen, Dickens, Thackeray, the Brontes, Eliot, and Hardy. Satisfies 19th-century concentration requirement. (OC).

ENGL 436  Memoir and Travel Writing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270

A course in narrative non-fiction that focuses on memoir and travel writing. Reading involves several books as well as classic essay-length examples. Assignments include both short analytical papers and the writing and revising of three original articles, based on research, interviews, memory, and observation, and drawing on literary techniques. (YR).

ENGL 440  Major 20C/21C Engl/Amer Auths
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive examination of the works of such authors as Eliot, Joyce, Pound, Woolf, Lawrence and Faulkner, or an in-depth study of a particular literary genre, such as the modern short story sequence, focusing on such writers as Joyce, Anderson, O’Connor, Cheever and Carver. Students cannot receive credit for both ENGL 440 and ENGL 540. (OC).

ENGL 441  Major 20C/21C English Authors
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of several modern English authors, such as Shaw, Joyce, Forster, Dylan Thomas, D.H. Lawrence, and Woolf. Satisfies 20th-century concentration requirement. Students cannot receive credit for both ENGL 441 and ENGL 541. (OC).

ENGL 442  Studies in 20C/21C Lit
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Intensive study of a special topic in twentieth century British or American literature. The course may treat a single author (e.g., E. M. Forster), a movement (e.g., Postmodernism), a genre (e.g., modern short story), or a theme (e.g., Literature of World War). Satisfies 20th-century concentration requirement.

ENGL 443  Anglo-Irish Literature
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A survey of the major and some of the minor Irish writers (in English) of the late 19th and 20th centuries. Readings and discussions will focus primarily on the works of Yeats, Synge, and Joyce. Satisfies 20th-century concentration requirement. (OC).
ENGL 444  Sem in 20C/21C Poetry 
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

A seminar focusing on the poems of two or three English and/or American poets of this century. Intensive discussion of individual poems, along with lectures on authors’ critical and historical backgrounds. Satisfies 20th-century concentration requirement. (YR).

ENGL 445 20C/21C Women Authors
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An analysis of images and problems of women as defined by significant British and American women writers of the twentieth century. Style and narrative technique will also be closely examined. Students cannot receive credit for both ENGL 445 and ENGL 545. (OC).

ENGL 450  Maj Am Auth to the Civil War
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of two or three American authors, such as Taylor, Franklin, Emerson, Hawthorne, or Melville, from the pre-Civil War period of American literature. Satisfies American literature prior to World War I concentration requirement. Students cannot receive credit for both ENGL 450 and ENGL 550. (AY).

ENGL 451  Maj Am Auth Civ War to WWI
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of two or three major authors from the period between the Civil War and World War I, such as Whitman, Twain, Emily Dickinson, or Henry James. Satisfies American literature before World War I concentration requirement. Students cannot receive credit for both ENGL 451 and ENGL 551. (AY).

ENGL 452  Major 20C/21C American Authors
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An intensive study of several modern American authors, from the World War I to the present, such as Langston Hughes, Frost, Hemingway, and Faulkner. Satisfies 20th-century concentration requirement. Students cannot receive credit for both ENGL 452 and ENGL 552. (AY).

ENGL 453 Contemporary American Novel
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or CPAS 40 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Study of selected American novels and novelists since WWII with an eye to their social, political, and literary contexts. Course will focus on major works by major authors and representative works by lesser-known writers in order to explore technical, thematic and critical crosscurrents among the works. Course fulfills 20th-century area requirement for English concentrators. Students cannot receive credit for both ENGL 453 and ENGL 553. (OC).

ENGL 454 Postmodern Literature
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

This course explores the expression of postmodernism in literature (primarily fiction) and critical theory. Selected works of fiction and creative non-fiction will be analyzed in terms of the problems and issues raised by the postmodern movement. Course may be used to fulfill the 20th-century requirement in the English concentration. Students cannot receive credit for both ENGL 454 and ENGL 554. (AY).

ENGL 455 Stud in 19th-Cent Amer Lit
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENG 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Intensive study of a special topic in 19th-century American literature. The course may treat a single author (e.g., Whitman), a movement (e.g., transcendentalism), or a theme (e.g., utopianism, technological and industrial development, or democratic values). Consult a departmental schedule for further information. Satisfies American literature prior to World War I concentration requirement. (OC).

ENGL 461 Modern English Grammar
3.000 Credits
Prerequisite(s): LING 280 or LING 281

The morphological and syntactic analysis of the structure of present day English considered in the light of modern linguistic science. Does not satisfy period requirement for concentration.
Students cannot receive credit for both ENGL 461 and ENGL 561. (AY).

**ENGL 464 Contemporary Rhetorical Theory**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An examination of contemporary rhetorical theories through study of representative practitioners and related developments in linguistics, philosophy, and psychology. Students cannot receive credit for both ENGL 464 and ENGL 564. (AY).

**ENGL 465 Discourse Analysis**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (COMM 201 or COMM 220 or COMM 290 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 250)

An examination of the syntactic and semantic devices and structures underlying communication in written texts and oral interaction. Material to be analyzed will vary from term to term (technical reports, scholarly articles, newspaper stories) but examples will be drawn primarily from the written language. Students cannot receive credit for both ENGL 465 and ENGL 565. (OC).

**ENGL 466 Script-Writing Workshop**  
3.000 Credits  
Prerequisite(s): (COMP 105 or CPAS 30) and (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 240 or HUM 240 or HUM 248 or ENGL 248 or FILM 240 or FILM 248)

This writing intensive course will train students to compose a film script, focusing on the substance, structure, and style of an original screenplay. The course will be conducted as a workshop in which students will first, study classic scripts (and films based on these) of the film-school generation of directors, then model scenes and sequences of their own scripts on the principles of the above texts, and finally, write their own respective film stories in accordance with an appropriate narrative structure and design. (YR).

**ENGL 467 Writing Young Adult Fiction**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and ENGL 223

In this course participants will explore the young adult novel from the point-of-view of a reader and a writer. They will read recently published and critically acclaimed popular young adult novels. They will use these texts to explore such issues as gender, race and identity as they relate to young adult lives and their respective cultures generally. They will use these texts as models for the production of their own texts and will consider the constraints and benefits of constructing and writing to a particular audience. They will consider if and why young adult novels are abbreviated or limited in relationship to adult literature. In addition to reading about ten novels, they will complete several creative exercises leading up to a final portfolio. Students will not receive credit for both ENGL 468 and ENGL 568.

**ENGL 469 20th-Century Afr-Amer Lit**  
3.000 Credits  
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An intensive study of major 20th-century African-American writers. Fiction, poetry, autobiography, and drama will be examined but one genre will be stressed in any given term, e.g., the novel. Lectures will provide historical and biographical context for analysis and discussion of the works. Students cannot receive credit for both ENGL 469 and ENGL 569. (OC).

**ENGL 470 Black Women / Lit, Film, Music**  
3.000 Credits  
Prerequisite(s): FILM 240 or FILM 248 or FILM 385 or AAAS 239 or AAAS 275 or WGST 275 or WGST 370 or HUM 221 or HUM 222 or HUM 223 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 237 or ENGL 239 or ENGL 248 or ENGL 200

This course takes an interdisciplinary approach as it explores the intersections of identity (among them race, class, and gender) as they infuse the literature, film, and music of Black women. To paraphrase Chela Sandoval, this course presents a series of methods, not only for analyzing texts, music, and film, but for creating identities that are capable of speaking to, against, and through power. The diverse work of such theorists as Ella Shohat, Jacqueline Bobo, Valerie Smith, and Sasha Torres will be utilized. (YR).

**ENGL 472 Reading in Multicult Contexts**  
3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 30) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An examination of the effect of different cultural backgrounds on reading and literature. Topics include contrastive rhetoric, folk narrative, and multicultural juvenile literature. This course does not satisfy requirements for the English concentration. Not open to English concentrators. Students cannot receive credit for both ENGL 472 and ENGL 572. (YR).

**ENGL 477 African American English**  
3.000 Credits  
Prerequisite(s): LING 280 or LING 281 or LING 480 or LING 580

An examination of the structure, history and use of African-American English. Topics will include the pronunciation, grammar and vocabulary of African-American English, theories
of origin, linguistic repertoire and code-switching in African-American communities, the Ebonics controversy, and the role of this variety in education and identity formation. Students cannot receive credit for both ENGL 477 and ENGL 577.

ENGL 482 History of the English Lang
3.000 Credits
Prerequisite(s): LING 280 or LING 480

A thorough grounding in the history and structure of the English language. At issue are the linguistic and ideological origins of the concept of Standard English, and the strengths and limitations of different methods of analyzing the history of the language. The course will emphasize sound change, grammatical change, and their sociological context. (YR)

ENGL 484 World Englishes
3.000 Credits
Prerequisite(s): LING 280 or LING 480

A study of the origin and significance of different forms of English throughout the world. Contact with other languages, pidginization, creolization, standardization, and the formation of the three circles of English are examined. (YR)

ENGL 485 Theories of Writing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

In this course we will investigate why and how people write for particular audiences and in a variety of contexts. Subjects will include: cognitive and social theories of writing and the writing process, theories of persuasion, writing across the curriculum, writing for multiple audiences, writing in the workplace, writing for self and for publics, and teaching writing. The course will be useful to students interested in teaching writing at the K-12 level, those interested in careers in communication and those who wish to better understand how writing promotes personal and societal change. (YR)

ENGL 486 Queer Theory & Literature
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or AAAS 239)

This course analyzes issues of sexuality using the lens of queer theory to understand how writers have imagined the history and structure of the English language. At issue are the linguistic and ideological origins of the concept of Standard English, and the strengths and limitations of different methods of analyzing the history of the language. The course will emphasize sound change, grammatical change, and their sociological context. (YR)

ENGL 488 Env Lit & Reps of Nature
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 200 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A literary analysis of our culture's changing attitudes toward nature and environmental concerns. Readings will include English and American authors from the 18th century to the present, such as Wordsworth, Thoreau, Melville, Darwin, J. S. Mills, John Muir, Robinson Jeffers, Rachel Carson, Loren Eisley, and John McPhee. Students cannot receive credit for both ENGL 488 and ENGL 588. (AY).

A thorough grounding in the history and structure of the English language. At issue are the linguistic and ideological origins of the concept of Standard English, and the strengths and limitations of different methods of analyzing the history of the language. The course will emphasize sound change, grammatical change, and their sociological context. (YR)

ENGL 484 World Englishes
3.000 Credits
Prerequisite(s): LING 280 or LING 480

A study of the origin and significance of different forms of English throughout the world. Contact with other languages, pidginization, creolization, standardization, and the formation of the three circles of English are examined. (YR)

ENGL 485 Theories of Writing
3.000 Credits
Prerequisite(s): COMP 106 or COMP 220 or COMP 270 or CPAS 40

In this course we will investigate why and how people write for particular audiences and in a variety of contexts. Subjects will include: cognitive and social theories of writing and the writing process, theories of persuasion, writing across the curriculum, writing for multiple audiences, writing in the workplace, writing for self and for publics, and teaching writing. The course will be useful to students interested in teaching writing at the K-12 level, those interested in careers in communication and those who wish to better understand how writing promotes personal and societal change. (YR)

ENGL 486 Queer Theory & Literature
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or AAAS 239)

This course analyzes issues of sexuality using the lens of queer theory to understand how writers have imagined the history and structure of the English language. At issue are the linguistic and ideological origins of the concept of Standard English, and the strengths and limitations of different methods of analyzing the history of the language. The course will emphasize sound change, grammatical change, and their sociological context. (YR)

ENGL 488 Env Lit & Reps of Nature
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 200 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A literary analysis of our culture's changing attitudes toward nature and environmental concerns. Readings will include English and American authors from the 18th century to the present, such as Wordsworth, Thoreau, Melville, Darwin, J. S. Mills, John Muir, Robinson Jeffers, Rachel Carson, Loren Eisley, and John McPhee. Students cannot receive credit for both ENGL 488 and ENGL 588. (AY).

Environmental Science

The environmental science concentration provides students with a strong background in areas of science related to environmental concerns and with an opportunity to study environmental problems from a scientific point of view that integrates biology, chemistry, earth science, and physics. This concentration leads to a BS degree in CASL and prepares students for careers in waste management, environmental consultation, teaching, environmental health and resource management.

PREREQUISITES TO THE CONCENTRATION

Biol 130 Introduction to Organismal and Environmental Biology.......................... 4 hrs

Chem134 General Chemistry IA.......................... 4 hrs
OR Chem 144 General Chemistry IB .................. 4 hrs

Chem 136 General Chemistry IIA .................... 4 hrs
OR Chem 146 General Chemistry IIB ............... 4 hrs

Geog 203 Weather and Climate ..................... 3 hrs
Geol 118 Physical Geology ......................... 4 hrs

Math 113 Calculus I: Management, Life and Social Science............................ 4 hrs
Math 114 Calculus II: Management, Life and Social Science.............................. 4 hrs
OR Math 115 Calculus I............................... 4 hrs
Math 116 Calculus II................................. 4 hrs

Phys 125 Introductory Physics I .................... 4 hrs
OR Phys 150 General Physics I* .................... 4 hrs

*Note: Students in the Environmental Chemistry track must elect PHYS 125 or PHYS 150.

CONCENTRATION REQUIREMENTS ............. 41-49 hrs

Upper Division Core................................................................ 22 hrs

Esci 304 Ecology........................................ 4 hrs
Chem 344 Quantitative Analysis........................ 4 hrs
Esci 301 Environmental Science...................... 4 hrs
ENST 385 Environmental Internship ................................. 1 hr

OR

Note: LIBS 395 may be substituted for ENST 385 if the cooperative education work assignment is environmentally oriented.

ENST 485 Seminar on Environmental Topics ............................... 2 hrs

Research/Internship .................................................................... 3 hrs

At least three upper-division credit hours in Geology (beyond courses applied to other portions of the concentration requirements).

At least three upper-division credit hours in Environmental Science (beyond courses applied to other portions of the concentration requirements).

ESCI 395 Seminar on Environmental Issues ............................................. 1 hr

ESCI 349 Environmental Chemistry Laboratory ........................................... 1 hr

ESCI 420 Advanced Field Ecology .......................................................... 4 hrs

ESCI 497 Seminar in Chemistry* ............................................................ 1 hr

ESCI 498 Readings in Chemistry* ............................................................ 1-3 hrs

ESCI 499 Laboratory Research in Chemistry* ........................................... 1-3 hrs

ESCI 522 Introduction to Toxicology ....................................................... 3 hrs

At least eight additional credit hours selected from:

BCHM 370 Principles of Biochemistry ................................................. 3 hrs

BCHM 470 Biochemistry I ................................................................. 3 hrs

BCHM 471 Biochemistry II ............................................................... 3 hrs

BCHM 472 Biochemistry Laboratory I ........................................... 1 hr

BCHM 473 Biochemistry Laboratory II ........................................... 1 hr

CHEM 368 Physical Chemistry I ......................................................... 3 hrs

CHEM 390 Current Topics in Chemistry* ......................................... 1-3 hrs

CHEM 447 Instrumental Methods of Analysis .................................... 4 hrs

CHEM 469 Physical Chemistry II ......................................................... 3 hrs

CHEM 490 Topics in Chemistry* ......................................................... 1-3 hrs

CHEM 497 Seminar in Chemistry* ......................................................... 1 hr

CHEM 498 Readings in Chemistry* ......................................................... 1-3 hrs

CHEM 499 Laboratory Research in Chemistry* ..................................... 1-3 hrs

CHEM 390 Current Topics in Chemistry* ................................................. 1-3 hrs

CHEM 447 Instrumental Methods of Analysis .................................... 4 hrs

CHEM 469 Physical Chemistry II ......................................................... 3 hrs

CHEM 490 Topics in Chemistry* ............................................................. 1-3 hrs

CHEM 497 Seminar in Chemistry* ......................................................... 1 hr

CHEM 498 Readings in Chemistry* ......................................................... 1-3 hrs

CHEM 499 Laboratory Research in Chemistry* ..................................... 1-3 hrs

ESCI 352 Introduction to Toxicology ....................................................... 3 hrs

* Note: Acceptable when topic is environmentally oriented.

Earth Science Track

BIOL 140 Introduction to Molecular and Cellular Biology ................................................. 4 hrs

OR

PHYS 126 Introductory Physics II ......................................................... 4 hrs

OR

PHYS 151 General Physics II ................................................................. 4 hrs

GEOL 377 Field Methods ................................................................. 1 hr

At least eleven additional credit hours in upper-division Geology and physical geography courses. (Physical geography offerings include GEOG 310 and ESCI 330.)

Individualized Track

This track is a highly selective program for qualified students with well-conceived academic goals.

BIOL 140 Introduction to Molecular and Cellular Biology ................................................. 4 hrs

OR

PHYS 126 Introductory Physics II ......................................................... 4 hrs

OR

PHYS 151 General Physics II ................................................................. 4 hrs

A minimum of 12 upper-division credit hours in natural sciences courses that address a common theme. Individualized specializations must be developed in consultation with the Environmental Science program advisor, and the proposed coursework must be approved by the Environmental Science Program Committee before the student achieves senior standing.

UPPER-DIVISION COURSEWORK

Forty-eight credit hours in upper-division courses are required for graduation. The Environmental Science concentration requirements include a minimum of 37 credit hours in upper-division courses. Consequently, up to 11 additional upper-division credit hours may be required for graduation.
MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in Environmental Science.

Environmental Science (ESCI)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ESCI 275</td>
<td>Intro to Environmental Science</td>
<td>3.000</td>
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<td>Prerequisite(s):</td>
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<td></td>
<td>ESCI 275*</td>
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<td>ESCI 276</td>
<td>Intro to Environmental Sci Lab</td>
<td>1.000</td>
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<td>Prerequisite(s): ESCI 275*</td>
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<tr>
<td>ESCI 301</td>
<td>Environmental Science</td>
<td>4.000</td>
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<td>Prerequisite(s):</td>
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<td></td>
<td>(CHEM 124 or CHEM 134 or CHEM 144) and GEOL 118 and BIOL 130</td>
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<tr>
<td>ESCI 304</td>
<td>Ecology</td>
<td>4.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): BIOL 130 and (MATH 113 or MATH 115 or MPLS 116)</td>
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<tr>
<td></td>
<td>Co-requisite(s): ESCI 304L</td>
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<tr>
<td>ESCI 305</td>
<td>Intro to GIS and Cartography</td>
<td>4.000</td>
</tr>
<tr>
<td>ESCI 315</td>
<td>Aquatic Ecosystem</td>
<td>4.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): BIOL 130 and (CHEM 124 or GEOL 118)</td>
<td></td>
</tr>
<tr>
<td>ESCI 320</td>
<td>Field Biology</td>
<td>4.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): BIOL 101 or BIOL 130</td>
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<tr>
<td>ESCI 326</td>
<td>Environmental Management</td>
<td>4.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): (BIOL 304 or ESCI 304) and ESCI 301</td>
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</tr>
<tr>
<td>ESCI 330</td>
<td>Land Use Planning and Mgmt</td>
<td>4.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): (BIOL 130 and GEOL 118) or ESCI 275</td>
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</tr>
<tr>
<td>ESCI 332</td>
<td>Hazardous Waste Management</td>
<td>3.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): GEOL 118 or ESCI 275</td>
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<tr>
<td>ESCI 348</td>
<td>Environmental Chemistry</td>
<td>3.000</td>
</tr>
<tr>
<td></td>
<td>Prerequisite(s): CHEM 344</td>
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</tbody>
</table>

A distribution course which surveys major environmental problems. Concepts discussed are ecology, environmental chemistry, methods of investigating the environment, and possible solutions to environmental problems. Three hours lecture. (YR).

A laboratory course dealing with the principles of environmental science. Through laboratory and field studies, analyses are made of air, water, soil, energy, and natural resources as they relate to environmental issues of pollution and conservation. Field trips to local water and recycling facilities are included. Four hours laboratory (with field trips). (OC).

A survey of historical and current environmental problems, with emphasis on understanding causes, consequences, and control. Topics include human population growth, air pollution, water pollution, and waste disposal. Laboratory emphasizes an experimental approach to environmental problems, including data collection, analysis, and interpretation. Lecture and laboratory/recitation.

Relationships between organisms and their environments. Patterns in the physical environment, physiological and behavioral adaptations, population dynamics, energy flow, nutrient cycling; succession. Three hours lecture, four hours laboratory (with field trips). (F).

The basic elements of geographic information systems, map interpretation and map design. Principles and methods of spatial data collection, analysis, and display are introduced. (W)
ESCI 349 Environmental Chemistry Lab  
1.000 Credits  
Prerequisite(s): ESCI 348* or CHEM 348*  
Collection and analysis of air, water, soil, and organisms for pollutants such as noxious gases, heavy metals, and trace organics. EPA-approved methods are emphasized. Four hours laboratory. (AY,W).

ESCI 352 Introduction to Toxicology  
3.000 Credits  
Prerequisite(s): CHEM 225  
An introduction to the principles of toxicology with an emphasis on environmental toxicology. Major topics include toxic agents, toxicological mechanisms, and use of toxicological reference literature. Discussion of chemical carcinogenesis, genetic toxicology, immunotoxicology, teratology, and toxic responses of the skin, eyes and nervous system. Three hours lecture. (AY,W).

ESCI 370 Environmental Geology  
3.000 Credits  
Prerequisite(s): GEOL 118  
Interactions between people and the physical environment. Geological hazards and natural processes, such as earthquakes, volcanism, floods, landslides, and coastal processes. Relationships between geology and environmental health, including chronic disease, water use and pollution, waste disposal, mineral resources, and energy use. Three hours lecture. (AY).

ESCI 372 Energy Resources  
3.000 Credits  
Prerequisite(s): GEOL 118 or ESCI 275 or ESCI 301  
Origin and development of fossil fuels (petroleum, coal, natural gas) and of radioactive ores used in nuclear power. Renewable and alternative energy sources, including hydro, solar, wind, biomass, and geothermal power. Environmental impacts of energy use. Three hours lecture. (OC).

ESCI 375 Groundwater Hydrology  
3.000 Credits  
Prerequisite(s): GEOL 118  

ESCI 390 Topics in Environmental Sci  
1.000 TO 3.000 Credits  
****NO DESCRIPTION AVAILABLE****

ESCI 395 Seminar on Environmental Issues  
1.000 Credits  
Readings, discussions, and presentations which examine current environmental issues. One hour seminar. Permission of instructor. (F,W).

ESCI 414 Limnology  
4.000 Credits  
Prerequisite(s): BIOL 130 and (CHEM 136 or CHEM 146)  
A study of the physical, chemical, and biological characteristics of freshwater lakes. Laboratories will emphasize field study of area lakes and impoundments. Three hours lecture, four hours laboratory. BIOL/ESCI 304 or ESCI 275 recommended. (OC).

ESCI 416 Stream Ecology  
4.000 Credits  
Prerequisite(s): BIOL 304  
A study of the physical, chemical and biological characteristics of streams and rivers. Three hours lecture, four hours laboratory. (OC).

ESCI 420 Advanced Field Ecology  
4.000 Credits  
Prerequisite(s): BIOL 304 or BIOL 320 or ESCI 320  
An intense study of behavioral ecology and field-oriented research at an advanced level, utilizing ecological habitats on campus and in surrounding urban areas. Focus will be on plant/animal interactions and will include pollution ecology, reproduction and distribution ecology, optimal foraging theory, as well as hypothesis testing of animal migration and distribution of species in extreme urban environments. Three hours lecture, four hours laboratory. (OC).

ESCI 497 Seminar in Environmental Sci.  
1.000 Credits  
Readings, discussion, and presentation of research in selected areas of study. One hour seminar. Permission of instructor. (OC).

ESCI 498 Indep Study in Environ Sci  
1.000 TO 3.000 Credits  
Library research and independent study performed under the guidance of a faculty member. Four to twelve hours readings. Permission of instructor. (F,W,S).

ESCI 499 Lab Research in Environ Sci  
1.000 TO 3.000 Credits  
Directed laboratory or field research performed under the guidance of a faculty member. Four to twelve hours laboratory. Permission of instructor. (F,W,S).

Environmental Studies  
The solutions to the current environmental problems are complex and require teamwork and understanding between specialists and generalists in many disciplines. The AB in Environmental Studies degree program focuses on the interdisciplinary nature of environmental problem solving at the local, regional and international level. Students can choose from among four (4) focus areas. Throughout their academic studies,
students in this program interact with students in the Environmental Science program.

CAREER OPPORTUNITIES

Upon completion of this program, the graduates have a great variety of career opportunities available in both the public and private sector. For example, recent graduates hold such positions as teacher, national park naturalist, resource policy planner, Regional Director of International Joint Commission, Director of Environmental Programs for SEMCOG, regional land use planner, public health officer, and director of a public interest group. All students who qualify for graduate school should seriously consider working toward an advanced degree, which is required for most leadership positions.

INTERNSHIP PROGRAM

An important feature of this program is the internship requirement that allows the students to examine possible professional positions in an area of their interest through on-the-job experience. Some of the internships which environmental studies students have had are field analyst for the Michigan Department of Environmental Quality, hazardous waste analyst, marine safety inspector with the U.S. Coast Guard, public health sanitarian, researcher for a public interest group, national park naturalist, assistant to a state legislator, director of a community organic garden, summer camp nature director, and assistant analyst in a remote sensing operation.

PREREQUISITES TO THE CONCENTRATION

**BIOL 130** Introduction to Organismal and Environmental Biology ………………… 4 hrs

**CHEM 124** General Chemistry ………………… 4 hrs

**GEOL 118** Physical Geology ………………… 4 hrs

**CIS 123** Introduction to Computers and Information Systems ………………… 3 hrs

**OR**

**CIS 125** Survey of Computer Science ………………… 3 hrs

**OR**

**MIS 120** Fundamentals of Information Systems ………………… 3 hrs

*Note: if not taken as a college distribution requirement, to fulfill prerequisites for upper-division courses.

* MATH 104 or 105 and MATH 113 required if BIOL/ESCI 304 is taken.

**Recommend taking ECON 202, POL 101, and PSYC 170 to fulfill prerequisites for upper-division courses.

***Recommend taking BIOL 130, CHEM 124, or GEOL 118 to fulfill prerequisites for upper-division courses.

Other lower-division prerequisite courses vary according to upper-division courses students elect to take. Review the list of courses in the Environmental Core Courses and the Focus Areas to determine the proper prerequisites. Some of the prerequisites may be fulfilled through the CAS&L Distribution Requirements.

Environmental Core Courses ………………… 27-29 hrs

The graduate in Environmental Studies requires a broad background of knowledge in the Natural Sciences, the Humanities, the Social Sciences, and the Behavioral Sciences as well as interdisciplinary courses which provide a synthesis among disciplines. Students in the program will also have an opportunity to interact with a variety of environmental professionals through seminars and an internship.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOL 320</td>
<td>Field Biology</td>
<td>4 hrs</td>
</tr>
<tr>
<td>ENST 301</td>
<td>Concepts of Environmentalism</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ENST 305</td>
<td>Environmental Instrumentation and Analysis</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ESCT 301</td>
<td>Environmental Science</td>
<td>4 hrs</td>
</tr>
<tr>
<td>ENST 385</td>
<td>Internship in Environmental Studies</td>
<td>1-3 hrs</td>
</tr>
<tr>
<td>ENST 395</td>
<td>Seminar on Environmental Issues</td>
<td>1 hr</td>
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<tr>
<td>ENST 485</td>
<td>Seminar in Environmental Topics</td>
<td>2 hrs</td>
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</table>

Choose one course from the following ………………… 3 hrs

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGT 488</td>
<td>Environmental Literature and Representation of Nature</td>
</tr>
<tr>
<td>PHIL 312</td>
<td>Environmental Ethics</td>
</tr>
</tbody>
</table>

Choose two from the following ………………… 6 hrs

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENST 201</td>
<td>Cultural Ecology</td>
</tr>
<tr>
<td>ENST 325</td>
<td>Environmental Politics</td>
</tr>
<tr>
<td>ENST 351</td>
<td>Environmental Economics</td>
</tr>
<tr>
<td>ENST 491</td>
<td>Ecological Economics</td>
</tr>
</tbody>
</table>

CONCENTRATION REQUIREMENTS

A minimum of 18 hours of courses chosen from one of the following four Focus Areas:

Focus Area A: Land Resources ………………… 18 hrs

Required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 330</td>
<td>Land Use Planning &amp; Management</td>
</tr>
<tr>
<td>ENST 340</td>
<td>Remote Sensing</td>
</tr>
<tr>
<td>ENST 350</td>
<td>Environmental Law</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 350</td>
<td>Prehistoric Archeology</td>
</tr>
<tr>
<td>BIOL 304</td>
<td>Ecology</td>
</tr>
<tr>
<td>ENST 203</td>
<td>Weather and Climate</td>
</tr>
<tr>
<td>ENST 204</td>
<td>Landforms</td>
</tr>
<tr>
<td>ENST 310</td>
<td>Economic Geography</td>
</tr>
<tr>
<td>ENST 325</td>
<td>Environmental Politics</td>
</tr>
<tr>
<td>ESCI 332</td>
<td>Hazardous Waste Management</td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Introduction to GIS and Cartography</td>
</tr>
<tr>
<td>GEOL 350</td>
<td>Geomorphology</td>
</tr>
<tr>
<td>GEOL 370</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>GEOL 377</td>
<td>Field Geology*</td>
</tr>
</tbody>
</table>

*Note: can be taken up to three times.

Focus Area B: Naturalist ………………… 18 hrs

Required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 304</td>
<td>Ecology</td>
</tr>
<tr>
<td>ENST 474</td>
<td>Principles of Environmental Education</td>
</tr>
<tr>
<td>ENST 486</td>
<td>Environmental Interpretation</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 350</td>
<td>Prehistoric Archeology</td>
</tr>
<tr>
<td>ANTH 370</td>
<td>Indians of North America</td>
</tr>
<tr>
<td>ANTH 430</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
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<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>ENST 340</td>
<td>Remote Sensing</td>
</tr>
<tr>
<td>ENST 488</td>
<td>Environmental Literature and Representation of Nature</td>
</tr>
<tr>
<td>ESCI 305</td>
<td>Intro to GIS and Cartography</td>
</tr>
<tr>
<td>ENST 488</td>
<td>Environmental Literature and Representation of Nature</td>
</tr>
<tr>
<td>ESCI 315</td>
<td>Aquatic Ecosystems</td>
</tr>
<tr>
<td>ESCI 420</td>
<td>Advanced Field Ecology</td>
</tr>
<tr>
<td>GEOG 203</td>
<td>Weather and Climate</td>
</tr>
<tr>
<td>GEOG 204</td>
<td>Landforms</td>
</tr>
<tr>
<td>GEOL 342</td>
<td>Physical Oceanography</td>
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<tr>
<td>OR</td>
<td>HRM 405 Human Resource Policy and Administration</td>
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<tr>
<td><strong>Focus Area C: Resource Policy and Management</strong></td>
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<tr>
<td><strong>18 hrs</strong></td>
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<tr>
<td><strong>Required courses</strong></td>
<td></td>
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<tr>
<td>ENST 325</td>
<td>Environmental Politics</td>
</tr>
<tr>
<td>ENST 350</td>
<td>Environmental Law</td>
</tr>
<tr>
<td>OR</td>
<td>ENST 491 Ecological Economics</td>
</tr>
<tr>
<td>ESCI 304</td>
<td>Ecology</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td></td>
</tr>
<tr>
<td>ECON 372</td>
<td>Economic Demography</td>
</tr>
<tr>
<td>ENST 310</td>
<td>Economic Geography</td>
</tr>
<tr>
<td>ESCI 332</td>
<td>Hazardous Waste Management</td>
</tr>
<tr>
<td>ESCI 372</td>
<td>Energy Resources</td>
</tr>
<tr>
<td>MATH 363</td>
<td>Introduction to Statistics</td>
</tr>
<tr>
<td>POL 300</td>
<td>Political Analysis</td>
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<tr>
<td>POL 312</td>
<td>Legislative Process</td>
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<tr>
<td><strong>Focus Area D: Urban Service</strong></td>
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<tr>
<td><strong>18 hrs</strong></td>
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<tr>
<td><strong>Required courses</strong></td>
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<tr>
<td>ECON 381</td>
<td>Urban Economics</td>
</tr>
<tr>
<td>ESCI 305</td>
<td>Introduction to GIS and Cartography</td>
</tr>
<tr>
<td>EXPS 410</td>
<td>Multiculturalism</td>
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<td>GEOG 300</td>
<td>Urban Geography</td>
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<tr>
<td>POL 323</td>
<td>Urban Politics</td>
</tr>
<tr>
<td>SOC 435</td>
<td>Urban Sociology</td>
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<tr>
<td><strong>Electives</strong></td>
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<tr>
<td>ANTH 340</td>
<td>Race and Evolution</td>
</tr>
<tr>
<td>ECON 351</td>
<td>Environmental Economics</td>
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<tr>
<td>OR</td>
<td>ENST 491 Ecological Economics</td>
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<tr>
<td>ENST 350</td>
<td>Environmental Law</td>
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<tr>
<td>ESCI 332</td>
<td>Hazardous Waste Management</td>
</tr>
<tr>
<td>HIST 3695</td>
<td>The American City</td>
</tr>
<tr>
<td>POL 300</td>
<td>Political Analysis</td>
</tr>
<tr>
<td>SOC 350</td>
<td>Sociology of Poverty</td>
</tr>
<tr>
<td>SOC 410</td>
<td>Research Methods</td>
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</tbody>
</table>

**Environmental Studies (ENST)**

**COURSE OFFERINGS**

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENST 105</td>
<td>Concepts of Environmentalism</td>
<td>3.000 TO 4.000 Credits</td>
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</tbody>
</table>

Designed to explore the breadth and scope of the subject matter treated under the heading of the term "environment." The course will analyze a variety of topics from current readings, classical monographs, films, and television programs and will demonstrate the interdisciplinary nature of environmental problem solving. (F).

<table>
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<tr>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENST 201</td>
<td>Cultural Geography</td>
<td>3.000 Credits</td>
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</table>

Overview of the major components of culture such as language, religion, agriculture, settlement patterns, and related landscape features in a spatial context. Emphasis on how various cultures perceive and interact with the environment. (F).

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<tr>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENST 203</td>
<td>Weather and Climate</td>
<td>3.000 Credits</td>
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</table>

The controls and climate of Earth's weather and climate including atmospheric circulation, precipitation processes, severe weather, climatic regions, and climatic change. (F).

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<tr>
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<tbody>
<tr>
<td>ENST 204</td>
<td>Landforms</td>
<td>3.000 Credits</td>
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</table>

Processes and agents that shape the landscapes and landforms of the Earth's surface. The discussion of landforms is divided into two parts: (1) constructive processes and their spatial distribution and (2) gradational processes and their spatial distribution. (W).

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENST 250</td>
<td>Environmental Careers</td>
<td>1.000 Credits</td>
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</tbody>
</table>

A course designed to acquaint students with the diversity of careers in environmental areas. Through guest lectures, the students are introduced to resource persons and learn of graduate school requirements. Recommended that students in Environmental Science and Environmental Studies elect this course prior to electing the required course ENST 385: Internship in Environmental Studies. (OC).

<table>
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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>ENST 300</td>
<td>Urban Geography</td>
<td>3.000 Credits</td>
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</tbody>
</table>

The geography of human settlement and urbanization. Particular emphasis is placed on human transformation of the physical environment, and resource use throughout history from ancient civilizations to modern megalopolises. Universal urban challenges such as sprawl, pollution, congestion, crime, poverty, etc., are addressed. (W).

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENST 301</td>
<td>Concepts of Environmentalism</td>
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</tbody>
</table>
3.000 Credits

Designed to identify the underlying concepts of any environmental issue. The course will demonstrate the interdisciplinary nature of environmental problems solving through current readings, classical monographs and films. Students will conduct a system analysis of a household and a local community. This course will not be open to students who take ENST 105. (W).

ENST 305 Env Instrumentation and Analys
3.000 Credits
Prerequisite(s): ENST 301

This course will survey the parameters which must be measured in order to properly assess the environment. Methods for the analysis of the biophysical as well as the social, psychological, and political environment will be studied. (W).

ENST 310 Economic Geography
3.000 Credits

Spatial aspects of the ways people make their living. Discussion of the spatial distribution of resources and wealth at various scales. Introduction of site selection and location analysis. (W).

ENST 312 Environmental Ethics
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 233 or PHIL 240* or ENST 105 or ENST 301

The relationship of human beings to the non-human environment raises pressing moral and political issues. This course will use the theories and concepts of philosophical ethics to explore such questions as human obligations to non-human animals; the preservation of wilderness; balancing economic, aesthetic, and spiritual values; and the problems of pollution, urban sprawl, and ecological justice. (F).

ENST 325 Environmental Politics
3.000 Credits
Prerequisite(s): POL 101

This course will examine the process of policy making on environmental and energy problems at the global level, at the national level, and at the local level. (AY).

ENST 330 Land Use Planning and Mgmt
4.000 Credits
Prerequisite(s): ESCI 275 or (BIOL 130 and GEOL 118)

Environmental aspects of land use planning, park planning, and site planning. Consideration of soils, groundwater, topography, and sensitive natural features and their role in determining land-use suitability. Examination of the mechanics and effectiveness of the planning process. Lecture and recitation. (AY).

ENST 340 Remote Sensing
3.000 Credits
Prerequisite(s): GEOL 118

Methods of aerial photography and satellite data collection. Emphasis is on techniques of mapping and interpretation of topographical maps, aerial photographs, and satellite imagery. (F).

ENST 350 Environmental Law
3.000 Credits

A survey of the current environmental laws including the National Environmental Policy Act, Michigan Environmental Protection Act, the Clean Air Act, and the Clean Water Act as well as the laws pertaining to hazardous and toxic wastes. Also included is a review of population and common law. (W).

ENST 351 Environmental Economics
3.000 Credits
Prerequisite(s): ECON 202

This course examines the economic aspects of pollution problems. Topics covered include the economic theory of externalities, the theory of the commons, the theory of public goods, and the optimum use of depletable natural resources. The role of cost-benefit analysis as an intricate part of the decision-making process will also be thoroughly examined. (AY).

ENST 365 Environmental Psychology
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

A survey of the contributions of the behavioral sciences to the understanding and solution of environmental problems that threaten our survival. Insights derived from psychology, anthropology, and computer sciences are discussed. Major topics include overpopulation, over consumption, “future shock”, cognitive limitations in our understanding of ecological-political systems, and the use of Skinnerian behavior control. (AY).

ENST 384 Env, Architecture and Design
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

A review of major theories and research findings concerning the effects of physical environments (both natural and human made) on human behavior. Topics include: environmental stressors (noise, crowding, temperature extremes, indoor and outdoor air pollution, and other aspects of urban environments); workspace ergonomics (e.g., lighting, VDTs); architectural design (privacy, territory, personal space, and aesthetics); wilderness, city parks, and other natural environments; general principles of environmental perception and cognition. (AY).

ENST 385 Environmental Internship
1.000 TO 9.000 Credits

A field assignment relating to the student's environmental interests. The student will work in an off-campus government or private business for a prescribed number of hours each week to be arranged by the adviser and employer. May be repeated up to three times. Written permission of instructor.

ENST 390 Topics in Environmental Stds
1.000 TO 9.000 Credits

Examination of problems and issues in selected areas of environmental studies. Title listed in the Schedule of Classes.
will change according to the content. Course may be repeated for credit when specific topics differ.

**ENST 395  Sem on Environmental Issues**
1.000 Credits

Readings, discussions, and presentations which examine current environmental issues. One hour seminar. Written permission of instructor. (YR).

**ENST 436 Human Ecology**
3.000 Credits

Deals with the forms and modes of change of social structure and culture, as affected by interactions with environment, population, and technology. Emphasis is given to territorially based social structures.

**ENST 456 Ecological Economics**
3.000 Credits

Prerequisite(s): (ECON 201 * or ECON 202*) and ENST 301*

A review of major theories and issues concerning the relationship between ecological and economic systems. Topics include these questions: What is the purpose of economics activity? How important is the preservation of the natural world compared to the production of economic goods? How do principles of social and intergenerational equity affect the use of resources and choice of goods to be produced? The course utilizes a transdisciplinary approach in the development of new models where conventional economics and ecology alone have been ineffective in addressing questions of sustainability and equity. (AY).

**ENST 474 Environmental Education**
2.000 TO 3.000 Credits

An analysis of environmental education at elementary and secondary levels, particularly stressing the environment as a teaching resource. Community resources as they relate to environmental education are also investigated. (AY).

**ENST 485 Seminar in Environ Topics**
2.000 Credits

A seminar course taken during the student's senior year to provide an opportunity for students with diverse environmental interests to interact and synthesize the information and skills acquired during their previous studies. (W).

**ENST 486 Environmental Interpretation**
2.000 TO 3.000 Credits

Course deals with the interpretation of the environment, its characteristics, and its presentation to school groups as well as to the general public. Intended to acquaint students with a variety of skills and techniques necessary for interpreting the environment to others. Extensive use is made of the UM-D Environmental Study Area. (AY).

**ENST 488 Env Lit & Reps of Nature**
3.000 Credits

Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 200 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239

A literary analysis of our culture's changing attitudes toward nature and environmental concerns. Readings will include English and American authors from the 18th century to the present, such as Wordsworth, Thoreau, Melville, Darwin, J.S. Mill, John Muir, Robinson Jeffers, Rachel Carson, Loren Eiseley, and John McPhee. Students cannot receive credit for both ENST 488 and ENST 588. (AY).

**ENST 490 Dir Research in Envir Studies**
1.000 TO 6.000 Credits

This course will provide students with an opportunity to conduct an independent research investigation on topics in environmental studies under the direction of various faculty members. The results will be presented in a paper and public seminar. May be repeated.

**ENST 491 Topics in Environmental St**
3.000 Credits

The examination of problems and issues in selected areas of environmental studies. The title listed in the Schedule of Classes will change according to the content. The course may be repeated for credit when the specific topic differs. Also offered for graduate credit. (OC).

**ENST 497 Seminar in Environmental Sci**
1.000 Credits

Readings, discussions and presentation of research in selected areas of study. One hour seminar.

**ENST 498 Independent Study**
1.000 TO 3.000 Credits

Readings or analytical assignments in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor, which shall not duplicate a formal course offering. Permission of instructor.

**ENST 499 Independent Study**
1.000 TO 3.000 Credits

Readings or analytical assignments in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor, which shall not duplicate a formal course offering. Permission of instructor.

**Film Studies (minor only)**

Designed as an interdisciplinary program, the minor provides an intellectually challenging and cross-culturally oriented approach to the study of cinema.

**MINOR OR AREA OF FOCUS**

In order to minor in Film Studies, a student must fulfill the following requirements:
Prerequisite
One 3 credit, 200-level course from the list of courses.

Required courses
15 credits in upper-level courses, at least 9 of which should be from the list of courses below. Students may also elect to take the following courses for upper-level credit: FILM 332 French Cinema, FREN 333 From Novel to Screen, SPAN 450 Hispanic Cinema, COMM 350 Writing and Producing for Electronic Media, or COMM 315 Writing for Electronic Media.

Film Studies (FILM)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

FILM 240  Film and Society  
3.000 Credits
A survey of the major genres of film, chiefly in historical and political perspective, but also in the light of important intellectual frameworks (e.g., feminism, psychoanalytical theory). The films selected, both Western and non-Western, will be examined both for their visual codes of meaning and for their wider role in developing a powerful social language in various cultural contexts. (YR).

FILM 248  Introduction to Film Studies  
3.000 Credits
This course will introduce students to the development of world cinema by integrating the aesthetics of film with its technology, and its social and economic milieu. It will train the students in analyzing the formalist qualities of the medium, and in understanding the evolution of its various genres and styles. (YR)

FILM 345  American Silent Cinema  
3.000 Credits
Prerequisite(s): FILM 240 or HUM 240 or FILM 248 or HUM 248 or ENGL 248

This course will cover the history of American silent cinema from 1893 to approximately 1928, noting and attempting to account for key technological, aesthetic, economic, and social trends, including the development of motion picture technology and early attempts to monopolize film production; the materialization of independent producers and the film industry's move to southern California; the rise of nickelodeons and picture palaces; the emergence of the star system; the establishment of Hollywood as a symbol of consumer culture; the evolution of the classical Hollywood style; alternatives to Hollywood's system of production; and the advent of sound era and its effects upon film production. (OC).

FILM 357  Asian National Cinemas  
3.000 Credits
Prerequisite(s): FILM 240 or ENGL 240 or HUM 240 or FILM 248 or HUM 248 or ENGL 248

This course will introduce students to the national cinemas of the following Asian nations: China, India and Japan; and other related film industries in Hong Kong, Taiwan and Iran. in contrasting the evolution of cinema in the East, with the dominant genres and conventions of Hollywood and European cinematic traditions, the course will enable students to critically examine non-western narratology; the interaction of various nationalist movements with the institution of cinema; and the ways in which Asian cinema has been inflected by various indigenous performance practices and other visual representations. (OC).

FILM 360  French New Wave Cinema  
3.000 Credits
Prerequisite(s): FILM 240 or HUM 240 or ENGL 248 or FILM 248 or HUM 248

This course is an exploration of the French New Wave, one of the most influential movements in French film history, as well as Western film theory and praxis. The evolution of the movement will be traced from the 1950s through the late 1960s. The course will concentrate on the themes as well as the theoretical foundations of a movement that set out to redefine filmmaking. The primary focus will be on style, culture and politics of the New Wave filmmakers and their subsequent influence on avant-garde and independent filmmaking. (OC).

FILM 370  Narratives of Film and Lit  
3.000 Credits
Prerequisite(s): ENGL 240 or HUM 240 or FILM 240 or ENGL 248 or HUM 248 or FILM 248

Explores the narrative conventions of literary and filmic fictions in a cultural, historical and psycho-analytical context. The course goes beyond a discussion of the relative merits of novels and their respective film adaptations and examines the more complex interchanges between the two narrative forms; the ideological function of narrative in contemporary society; and the effect of the medium of a fictional text on the reader/viewer. (OC).

FILM 374  The History of German Cinema  
3.000 Credits
Prerequisite(s): GER 301

In this course, we explore the history of German cinema through primary and secondary texts on films from the silent period through unification. Concomitantly, we will read a Mary Fulbrook's history of Germany in order to place these films within the proper historical contexts and in order to enable us to examine the ways in which German history has insinuated itself in all film genres. The film selection highlights the major movements in German cinema since its inception and gives particular attention to the representations of German history and the ways in which German history makes itself apparent in a variety of genres. The class will also consider the interactions between German cinema and Hollywood through clips highlighted in lectures and student presentations. (OC).

FILM 385  Black Cinema  
3.000 Credits
Prerequisite(s): FILM 240 or ENGL 240 or HUM 240 or FILM 248 or ENGL 248 or HUM 248

This course will examine selected films for African American...
This course will analyze how Hollywood as the nation's dream factory has manufactured fantasies and cultural myths that have constructed the image of American citizenship, both for Americans and non-Americans. It will establish the ideological function of Hollywood texts as providing unifying symbols for a fragmented society. (YR).

**FILM 467 Script-Writing Workshop**

3.000 Credits
Prerequisite(s): (COMP 105 or CPAS 30) and (COMP 106 or CPAS 40) or COMP 220 or COMP 270 and (ENGL 240 or FILM 240 or HUM 240 or ENGL 248 or FILM 248 or HUM 248)

This writing intensive course will train students to compose a film script, focusing on the substance, structure, and style of an original screenplay. The course will be conducted as a workshop in which students will first study classic scripts (and films based on these) of the film-school generation of directors, then model scenes and sequences of their own scripts on the principles of the above texts, and finally, write their own respective film stories in accordance with an appropriate narrative structure and design. (YR).

**FILM 477 Ethnographic Film**

3.000 Credits
Prerequisite(s): FILM 240 or HUM 240 or ENGL 240 or FILM 248 or HUM 248 or ENGL 248 or ANTH 101

This course will analyze ethnographic films as a medium for the construction of meaning in and across cultures. It will teach students to understand how the putatively "real" content of documentary film creates a mixture of fantasy, news and "science." Covering texts as varied as National Geographic photographic layouts, traditional ethnographic films made by anthropologists, and auto-ethnographies of cultural groups such as Native Americans and the Trobriand Islanders of Papua New Guinea, the course will aim to deconstruct such oppositions as indigene vs. alien, us vs. them, and self vs. other. Students cannot receive credit for both FILM 477 and FILM 577. (AY).

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**French/French Studies**

(See also International Studies Concentration)

UM-D offers undergraduates two degree programs involving French: International Studies and French Studies. Both are designed to enable concentrators to take practical advantage of the study of one of the world's leading languages and cultures. As they complete their degree requirements, International and French Studies concentrators acquire knowledge and skills that prepare them for careers in numerous fields, both in the United States and abroad.

Students who do not concentrate in International Studies or French Studies may wish to choose French as a minor or an area of focus.

**FRENCH STUDIES CONCENTRATION**

The concentration in French Studies offers students a thorough training in the language and culture of the more than 200 million people who live in France and other Francophone areas in the world. In so doing, it familiarizes them with a vital and influential tradition in literature and the arts which spans twelve centuries and a language of importance in the realms of business, politics, science and technology.

French Studies recognizes the need to provide today's students with a much broader education in French than that afforded by traditional degrees devoted primarily to literature. Consequently, it requires concentrators to complete coursework in four general areas: language (including the specialized language of business) culture/civilization, film, as well as literature. For the same reason, French Studies takes as its purview the French-speaking world as a whole. Although it places emphasis on France, the concentration also provides an introduction to the other French-speaking countries of Europe, Asia, Africa, and North and South America which are playing roles of increasing prominence in global affairs.

As designed, the French Studies Program offers graduates a wide variety of educational and employment possibilities. It prepares them for careers in government service, in print and electronic journalism, and in language-related professions such as translating and interpreting. It also enables them to enter the teaching profession and to pursue advanced study in French at the master's and doctoral level. With supplementary training in areas such as political science, law, and management, graduates of the program could embark on careers in international affairs, law, and business.

**PREREQUISITES TO THE CONCENTRATION**

Students concentrating in French Studies must successfully complete FREN 202 or demonstrate equivalent French language proficiency.

**CONCENTRATION REQUIREMENTS**

A minimum of 24 credit hours in upper-division French classes must be completed as outlined below.

**Required courses**

- FREN 301 Advanced Conversation and Composition I
- FREN 302 Advanced Conversation and Composition II
One specialized language course ........................................ 3 hrs
  FREN 305  Language of Business
  FREN 306  Cultural Introduction to French Business
  FREN 408  Writing and Translating

One civilization/culture course ............................................ 3 hrs
  FREN 336  French Civilization of Past
  FREN 337  France in the 20th Century
  FREN 338  France of Today
  FREN 339  Francophile Literature and Civilization

One film course ............................................................... 3 hrs
  FREN 332  French Cinema
  FREN 333  From Novel to Screen

One literature course ....................................................... 3 hrs
  FREN 330  French Literature: Middle Ages-18th Century
  FREN 331  French Literature: 19th-20th Century
  FREN 333  From Novel to Screen
  FREN 334  Workshop in French Theater
  FREN 339  Francophile Literature and Civilization
  FREN 433  Contemporary French Theater

Two additional upper-level French courses ................................ 6 hrs

Notes
1. FREN 333 and FREN 339 are listed under two headings. Students may count them under one or the other of the headings as they wish, but not under both.
2. Concentrators are encouraged to strengthen their knowledge of French language and culture by participating in any of the approved study-abroad programs.

Cognates.............................................................................. 6 hrs
Students must complete at least six additional hours of upper-level coursework, approved by an advisor, in appropriate disciplines in the Behavioral Sciences, Humanities, and Social Sciences Departments. Students may consider taking the Humanities Internship as one of their cognate courses.

MINOR OR AREA OF FOCUS
A minor or area of focus consists of 12 hours of upper-division credit (300-400 level) in French.

French (FREN)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

FREN 101  Beginning French I
  4.000 Credits
  Prerequisite(s): FREN 101
  Second course in the two-course elementary sequence. Continued emphasis on culture and the four skills of listening, speaking, reading, and writing. (W).

FREN 201  Intermediate French I
  4.000 Credits
  Prerequisite(s): FREN 102
  An intermediate language course designed to increase the student’s ability to read, speak, and write French. The course will utilize a wide range of reading selections representative of modern French prose as the basis for class discussions and written assignments. A systematic review of grammar and oral exercises should enable the student to make definite progress in conversation and composition. (F).

FREN 202  Intermediate French II
  4.000 Credits
  Prerequisite(s): FREN 201
  Continuation of French 201. Further readings in modern French prose, extensive practice in conversation and composition. (W).

FREN 234  French Conversation
  1.000 TO 2.000 Credits
  Prerequisite(s): FREN 202
  Development of conversational skills through discussion of contemporary readings and the use of communicative activities and games. Emphasis will be placed on vocabulary acquisition by students, on improving their pronunciation, and on increasing their overall fluency in French. (S).

FREN 301  Advanced Conversation and Comp
  3.000 Credits
  Prerequisite(s): FREN 201
  An advanced course in conversation, composition, and syntax. Numerous oral reports and weekly written assignments based on readings from current sources; discussion of a recent French motion picture; translation exercises and the study of specific topics in French grammar. (F).

FREN 302  Advanced Conversation and Comp
  3.000 Credits
  Prerequisite(s): FREN 301
  Continuation of French 301. (W).

FREN 305  Language of Business
  3.000 Credits
  Prerequisite(s): FREN 301
  A systematic presentation of the vocabulary and conventions of business French. Students will receive extensive training in composing business letters, reports, visas, and similar texts. They will be exposed to French practices in correspondence, accounting and record keeping. They will also be required to translate various business documents from English to French (and vice versa) and to familiarize themselves with the
specialized vocabulary of computers. (OC).

FREN 306 Cult Intro to French Business
3.000 Credits
Prerequisite(s): FREN 301

An introduction to the practices and organization of the French business world. Students will learn how a typical French firm is structured and how business is normally conducted in France. Special attention will be given to those differences in organization and operation which contrast French businesses with our own. The class will also examine the impact of history and general cultural attitudes on French business practices of today. (OC).

FREN 308 Advanced Writing
3.000 Credits
Prerequisite(s): FREN 301

Intensive practice in writing expository prose in French. Students will complete a wide variety of writing assignments (resumes, critical analyses, explications de texte, and the like) over the course of the semester. Class sessions will be devoted to the discussion of student papers and technical issues related to effective writing. Students should expect to prepare several drafts of each assignment under the close supervision of the instructor. (OC).

FREN 330 French Lit: Md Ages-18 Century
3.000 Credits
Prerequisite(s): FREN 301

A survey of French literature through the Enlightenment based on the study of individual masterpieces of principal French authors: Villon, Rabelais, Montaigne, Pascal, Moliere, Racine, Montesquieu, Voltaire, and Rousseau. (OC).

FREN 331 French Lit: 19th-20th Century
3.000 Credits
Prerequisite(s): FREN 301

The sequel to FREN 330. A survey of French literature from Romanticism to the Theater of the Absurd and the nouveau roman. Writers studied will include Balzac, Stendhal, Baudelaire, Flaubert, Proust, Gide, Camus, Sartre, Beckett, and Sarraute. (OC).

FREN 332 French Cinema
3.000 Credits
Prerequisite(s): FREN 301

A survey of French films from the experiments of the turn of the century to the trends of the present day. Representative silent films, "classic" and "new-wave" movies of the 1930's and 50's, as well as contemporary productions will be presented in their cultural context and the contributions of major French directors to filmmaking will be highlighted. Attention will also be given to the basic elements of film as a means of expression: camera angle, distance, movement, and editing. (OC).

FREN 333 From Novel to Screen
3.000 Credits
Prerequisite(s): FREN 301

A consideration of classic film versions of French prose fiction with attention to the theoretical questions raised by translation from written to visual form. Works by Renard, Maupassant, Daudet, Duras, and Pagnol and their filmed versions by such directors as Duvivier, Renoir, Pagnol, Resnais, and Berri will be studied. (OC).

FREN 334 Workshop in French Theater
3.000 Credits
Prerequisite(s): FREN 301

This course will provide a brief survey of representative masterpieces of the French theater. Students will be required to read and analyze a number of celebrated plays and then to perform selected scenes from them. (OC).

FREN 336 French Civilization of Past
3.000 Credits
Prerequisite(s): FREN 301

An introduction to the civilization of France (from the Middle Ages to the 20th Century). This course will examine the social and historical developments and the accomplishments in the arts and literature that have combined to shape the French nation. (OC).

FREN 337 France in the 20th Century
3.000 Credits
Prerequisite(s): FREN 301

An introduction to France of the Third, Fourth, and Fifth Republics. This course will examine the major political, social, and economic issues of France of the 20th century as well as its contributions to literature and the arts. (OC).

FREN 338 France of Today
3.000 Credits
Prerequisite(s): FREN 301

An exploration of various facets of contemporary French civilization. Although students will consider historical and political developments since World War II, special attention will be given to the values and attitudes of the French, to the contrasting modes of life in Paris and the provinces, and to important forms of popular culture. (OC).

FREN 339 Francophone Lit and Civil
3.000 Credits
Prerequisite(s): FREN 301

An introduction to twentieth-century award-winning texts from the Caribbean, Canada, North Africa and West Africa. Students will analyze the strategies through which these powerful, dramatic, post-colonial writers address such issues and themes of universal relevance as love and the search for identity, while also expressing the experience and culture realities of his or her own country. Representative authors include Birago Diop, Simone Schwartz-Bart, Arlette Coustre, Anne Hebert, Roch Carrier, Michel Tremblay, and Tehar Ben Jelloun. (OC).

FREN 385 French Across the Curriculum
1.000 Credits
Prerequisite(s): FREN 202
Course is attached to an upper-level course in another discipline and taken concurrently with it. Course materials in French are related to the subject matter of the second course and are discussed with a French-area faculty member. Materials are also integrated into the assignments of the second course. (F,W).

FREN 398 Independent Studies
1.000 TO 3.000 Credits

Readings or analytical assignments in French in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. (F,W).

FREN 399 Independent Studies
1.000 TO 3.000 Credits

Readings or analytical assignments in French in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. (F,W).

FREN 408 Writing and Translating
3.000 Credits
Prerequisite(s): FREN 301 and FREN 302

A course designed to increase the written fluency of students who have already assimilated the advanced grammatical concepts introduced in the 301-302 sequence. Students will prepare weekly written assignments and will translate and analyze passages written in various styles. (OC).

FREN 433 Contemporary French Theater
3.000 Credits
Prerequisite(s): FREN 301 and (FREN 302 or FREN 305 or FREN 306 or FREN 308 or FREN 330 or FREN 331 or FREN 332 or FREN 333 or FREN 334 or FREN 336 or FREN 337 or FREN 338 or FREN 339 or FREN 385)

An examination of various facets of contemporary French theater. Particular emphasis will be placed on the way the Theater of the Absurd expresses the senselessness and absurdity of the human condition. Authors such as Cocteau, Sarte, Anouilh, Giraudoux, Ionesco, Beckett, and Vian will be studied. (OC).

FREN 490 Topics in French
1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of French. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

General Studies (see Bachelor of General Studies: Two plus Two requirements, page 55 of this Catalog)

Geography (GEOG)
(not a field of concentration)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

GEOG 201 Cultural Geography
3.000 Credits

Overview of the major components of culture such as language, religion, agriculture, settlement patterns, and related landscape features in a spatial context. Emphasis on how various cultures perceive and interact with the environment. (F).

GEOG 202 Intro to Cartography
3.000 Credits

An overview of modern cartography and the important roles maps play in today's world. This course will introduce the students to basic mapping concepts, map interpretation and map analysis, different types of maps, misuse of maps, use of remotely sensed and digital data mapping, and the creation of maps.

GEOG 203 Weather and Climate
3.000 Credits

The controls and conditions of Earth's weather and climate including atmospheric circulation, precipitation processes, severe weather, climatic regions, and climatic change. (F).

GEOG 204 Landforms
3.000 Credits

Processes and agents that shape the landscapes and landforms of the Earth's surface. The discussion of landforms is divided into two parts: (1) constructive processes and their spatial distribution and (2) gradational processes and their spatial distribution. (W).

GEOG 205 Geography of the United States
3.000 Credits

A regional analysis of the United States that stresses the difference in the physical elements of landscapes that explain differences in economic development, cultural attainment, and land use and which, in turn, motivate regional interdependencies and interrelationships. (W).

GEOG 300 Urban Geography
3.000 Credits

The geography of human settlement and urbanization. Particular emphasis is placed on human transformation of the physical environment, and resource use throughout history from ancient civilizations to modern megalopolises. Universal urban challenges such as sprawl, pollution, congestion, crime, poverty, etc., are addressed.

GEOG 305 Intro to GIS and Cartography
4.000 Credits

The basic elements of geographic information systems, map interpretation and map design. Principles and methods of spatial data collection, analysis, and display are introduced. (W)
GEOG 307  Geography of Western Europe
3.000 Credits

An analysis of the strengths, weaknesses, interrelationships, and interdependence of selected countries of this economically advanced region. (OC).

GEOG 310  Economic Geography
3.000 Credits

Spatial aspects of the ways people make their living. Discussion of the spatial distribution of resources and wealth at various scales. Introduction of site selection and location analysis.

GEOG 315  Political Geography
3.000 Credits

The spatial dimensions of political activity from the local to the global scale. Themes include: control of territory, relations among political entities, and political ideology.

GEOG 390  Topics in Geography
1.000 TO 3.000 Credits

Selected topics to be announced. (OC).

GEOG 399  Independent Study
1.000 TO 3.000 Credits

Readings or analytical assignments in accordance with the needs and interests of those enrolled and agreed upon by the student and the advising instructor.

Geology (minor only)
(See Earth Science for concentration.)

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in geology.

Geology (GEOL)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

GEOL 118  Physical Geology
4.000 Credits
Prerequisite(s): (CHEM 124 or CHEM 134 or CHEM 144) and (MATH 105 or MATH 113 or MATH 115 or MPLS 113)
Co-requisite(s): GEOL 118L

An introduction to the study of geologic processes at work in the earth's interior and on its surface. Rocks and minerals, the origin and evolution of the continents, and the gradual and catastrophic processes that shape surface and bedrock features. Three hours lecture, three hours laboratory. (W).

GEOL 218  Historical Geology
4.000 Credits
Co-requisite(s): GEOL 218L

A generalized study of the history of the earth, with emphasis on the fossil record of life development, the stratigraphic sequence of deposits and paleogeography. Laboratory work will include the study of geologic and topographic maps and fossils of prominent invertebrate phyla. (YR).

GEOL 305  Intro to GIS and Cartography
4.000 Credits

The basic elements of geographic information systems, map interpretation and map design. Principles and methods of spatial data collection, analysis, and display are introduced. (W)

GEOL 332  Hazardous Waste Management
3.000 Credits
Prerequisite(s): GEOL 118 or ESCI 275

Environmental problems associated with solid and hazardous waste. Regulations governing the generation, transport, and disposal of hazardous waste. Waste management techniques, including reduction, reuse, recycling, treatment, incineration, and land disposal. Three hours lecture.

GEOL 340  Remote Sensing
3.000 Credits
Prerequisite(s): GEOL 118

Methods of aerial photography and satellite data collection. Emphasis is on techniques of mapping and interpretation of topographical maps, aerial photographs, and satellite imagery. Three hours lecture. (YR).

GEOL 342  Physical Oceanography
3.000 Credits

An introduction to physical and chemical oceanography, fundamental marine processes and plate tectonics. Interactions between the oceans and atmosphere and the effect of greenhouse gases on the oceans and the role of physical processes in global climate change will be studied.

GEOL 350  Geomorphology
4.000 Credits
Prerequisite(s): GEOL 118 or (GEOG 203 and GEOG 204)

This introductory course is designed to familiarize students with the fundamentals of river behavior and the general principles in fluvial morphology, sedimentation, and hydraulics and stream bank erosion. Applications of these principles are shown utilizing a stream classification system. Problem solving techniques for watershed management, stream restoration, non-point source pollution and integration of ecosystem concepts in watershed management are presented. A combination of both lecture and field applications are provided. (F, AY)

GEOL 370  Environmental Geology
3.000 Credits
Prerequisite(s): GEOL 118
Interactions between people and the physical environment. Geological hazards and natural processes, such as earthquakes, volcanism, floods, landslides, and coastal processes. Relationships between geology and environmental health, including chronic disease, water use and pollution, waste disposal, mineral resources, and energy use. Three hours lecture. (AY).

GEOL 372 Energy Resources
3.000 Credits
Prerequisite(s): GEOL 118 or ESCI 275 or ESCI 301

Origin and development of fossil fuels (petroleum, coal, natural gas) and of radioactive ores used in nuclear power. Renewable and alternative energy sources, including hydro, solar, wind, biomass, and geothermal power. Environmental impacts of energy use. Three hours lecture. (AY).

GEOL 375 Groundwater Hydrology
3.000 Credits
Prerequisite(s): GEOL 118


GEOL 377 Field Methods
1.000 Credits
Prerequisite(s): GEOL 118

A week-long intensive field course dealing with geological field methods and analysis of geological terrains. Use of Brunton compass and clinometer, recognition and identification of geological structures, preparation and interpretation of geological maps, and use of aerial photographs. May be repeated for credit when destination varies. Organizational meeting followed by one-week trip. (YR).

GEOL 390 Current Topics in Geology
1.000 TO 3.000 Credits
Prerequisite(s): GEOL 118

A course in special topics current to the field of geology. Topics and format for the course may vary. See current Schedule of Classes. (OC).

GEOL 440 GIS in Geoscience
3.000 Credits

Advanced applications of GIS in the Geosciences. Topics include raster-based modeling, visualization techniques, geostatistics and various spatial analysis tools that are used to solve real world problems in the geosciences. Topics include various geologic hazards, pollutions, impact of climate change and other environmental/geologic phenomena.

GEOL 475 Contaminant Hydrogeology
3.000 Credits
Prerequisite(s): GEOL 375

Advanced lecture treatment of selected topics in subsurface hydrology including contaminant transport and fate of organic and inorganic constituents, aquifer test analysis, and the use of modeling in the analysis of selected case histories. (AY).

GEOL 490 Advanced Topics in Geology
3.000 Credits

Current topics from various areas in pure and applied geosciences will be reported upon by students, faculty and guest speakers. May include extended field trips. (OC).

GEOL 498 Independent Study in Geology
1.000 TO 3.000 Credits

Library research and independent study performed under the guidance of a faculty member. Permission of instructor. (F,W,S).

GEOL 499 Laboratory and Field Research
1.000 TO 3.000 Credits

Directed laboratory or field research performed under the guidance of a faculty member. Four to twelve hours laboratory or field study. Permission of instructor. (F,W,S).

German (minor only, but see International Studies concentration)

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit (four courses at the 300-400 level) in German.

German (GER)

COURSE OFFERINGS

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

GER 101 Beginning German I
4.000 Credits

First course in a two-course elementary German sequence. Listening comprehension, speaking, reading, writing, and culture are emphasized. Course materials promote the use of language to communicate with others and to function in the German-speaking world. (F).

GER 102 Beginning German II
4.000 Credits
Prerequisite(s): GER 101

Second course in the two-course elementary sequence. Continued emphasis on culture and the four skills of listening, speaking, reading, and writing. (W).

GER 105 Conversational German
2.000 Credits

The course is designed to help students develop basic oral communication skills in German. Emphasis is on a maximum use of spoken German in real or simulated everyday situations...
during each class period. The essentials for grammar will be taught through patterns rather than analytical presentation. May not be used to fulfill the symbolic language requirement.

**GER 201 Intermediate German I**
4.000 Credits
Prerequisite(s): GER 102

An intermediate language course in speaking, reading, and writing German. Class assignments and discussions will be based on a wide variety of material ranging from German language films to anthologies of German prose. There will be a review of grammar, but emphasis is on reading and discussion. (F).

**GER 202 Intermediate German II**
4.000 Credits
Prerequisite(s): GER 201

A continuation of GER 201, with an even greater emphasis on reading and speaking. (W).

**GER 234 German Conversation**
1.000 TO 2.000 Credits
Prerequisite(s): GER 102

Development of conversational skills through discussion of contemporary readings and the use of communicative activities and games. Emphasis will be placed on vocabulary acquisition by students, on improving their pronunciation, and on increasing their overall fluency in German. (OC).

**GER 301 Adv Conversation and Comp**
3.000 Credits
Prerequisite(s): GER 202

Advanced conversation and composition primarily based on current sources. Frequent essays and oral reports in German. (F).

**GER 302 Adv Conversation and Comp**
3.000 Credits
Prerequisite(s): GER 202

Advanced conversation and composition primarily based on current sources. Frequent essays and oral reports in German. (W).

**GER 305 Language of Business**
3.000 Credits
Prerequisite(s): GER 301

The course will familiarize the student with the general vocabulary and form of business correspondence in German, general business conventions in the German-speaking countries as well as with some major specific areas of business such as banking, auto, chemical, tourism, etc. (AY).

**GER 306 Cultural Intro to German Bus**
3.000 Credits
Prerequisite(s): GER 301

An in-depth study of current specific business practices as carried on between English and German speaking businesses and agencies. Learning to understand the German's business strategies and business attitudes, the focus is on developing cultural sensitivity towards the needs and national practices of German business. Liaison will be established with German/American businesses in this area. Can be taken with or without GER 305. (OC)

**GER 371 Germ Lit: Classic and Romantic**
3.000 Credits
Prerequisite(s): GER 301

Readings include works by Lessing, Schiller, Goethe, Meist, E.T.A. Hoffmann, and Novalis. Analyses in lectures, discussion and writing will try to illuminate the works themselves and the world views of their age. (AY).

**GER 372 Introduction to German Lit**
3.000 Credits
Prerequisite(s): GER 301

A survey of German Literature from 19th century realism to the contemporary post-modernism and neo-realism. Writers studied will include both canonical and non-canonical authors, for example, Gerhard Hauptmann, Marie-Luise Fleisser, Georg Kaiser, Irmgard Keun, Bertolt Brecht, Anna Seghers, Ilse Aichinger, and Christa Wolf. The class will be a combination of lecture and discussion with a substantial writing component. (AY).

**GER 374 The History of German Cinema**
3.000 Credits
Prerequisite(s): GER 301

In this course, we explore the history of German cinema through primary and secondary texts on films from the silent period through unification. Concomitantly, we will read a Mary Fulbrook's history of Germany in order to place these films within the proper historical contexts and in order to enable us to examine the ways in which German history has insinuated itself in all film genres. The film section highlights the major movement in German cinema since its inception and give particular attention to the representations of German history and the ways in which German history makes itself apparent in a variety of genres. The class will also consider the interactions between German cinema and Hollywood through clips highlighted in lectures and student presentations. (OC).

**GER 376 Contemporary German Cultures**
3.000 Credits
Prerequisite(s): GER 301

An exploration of the assumptions which underlie everyday life in German-speaking countries (Federal Republic of Germany, Austria, Switzerland). Topics include social intercourse, school systems, medicine, citizens' understanding of nation, and individuals' relationship to space. (YR).

**GER 377 German Culture & Civilization**
3.000 Credits
Prerequisite(s): GER 301

An introduction to the civilization of the German-speaking countries of Europe from the Middle Ages to the 20th Century. The course examines the arts, history, culture, and institutions that have shaped the Germanic societies.
GER 380  Praktikum  
1.000 Credits  
Prerequisite(s): GER 301  

This course will be offered in conjunction with a 300- or 400-level German literature, film, or cultural course in translation taught by a member of the German faculty. The one-credit course will be conducted entirely in German. Students will develop their language skills dealing with the topics of the course in translation. They will also be required to read related texts in German. Students who successfully complete the Praktikum and the corresponding German in translation course can receive four credits of German. The topics will vary depending on the English language content course. Students must be concurrently registered in appropriate 300- or 400-level courses taught by a German instructor. (OC).

GER 385  German Across the Curriculum  
1.000 Credits  
Prerequisite(s): GER 202  

Course is attached to an upper-level course in another discipline and taken concurrently with it. Course materials in German are related to the subject matter of the second course and are discussed with a German-area faculty member. Materials are also integrated into the assignments of the second course. (F,W).

GER 390  Topics in German  
3.000 Credits  

Examination of problems and issues in selected areas of German. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

GER 398  Ind Studies in German Lit  
1.000 TO 3.000 Credits  

Readings or analytical assignments in German selected in accordance with the needs and interests of those enrolled. (F,W).

GER 399  Ind Studies in German Lit  
1.000 TO 3.000 Credits  

Readings or analytical assignments in German selected in accordance with the needs and interests of those enrolled. (F,W).

GER 490  Topics in German Lit and Civ  
3.000 TO 4.000 Credits  

Examination of problems and issues in selected areas of German studies. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

GER 499  Adv Individual Proj in German  
1.000 TO 4.000 Credits  

Advanced individual study project in German language, literature, or civilization may be pursued under the direction of a faculty supervisor. (OC).

Greek (not a field of concentration, see Modern and Classical Languages)  

Health Policy Studies  

The study of social factors and their relationship to the health care system has become increasingly important in recent decades. It is now widely accepted that understanding the social dimensions of health, illnesses, and the health care system is crucial for all the health-related professions and for an informed consumer citizenry as well.

In recognition of its importance, the UM-D offers a Bachelor of Arts concentration in Health Policy Studies. This program provides future health professionals with a strong behavioral and social science orientation but also draws on resources in humanities, management, education and engineering. Students study important perspectives that enable them to broaden and deepen their understanding of health care and health systems. The objective is to provide students with analytic frames of reference, as well as research and evaluation approaches that illuminate issues and provide a good basis for approaching problems the health care delivery field. These include the economics and politics of health care delivery, sociological perspectives, cross-cultural comparisons of health care systems, ethical considerations, computer applications, and practical work in aspects of the American system. Much of the course work is developed around a policy orientation.

Students participate in undergraduate coursework that prepares them for health-related work, strengthens their position for admission to graduate programs, and enhances professional socialization. This program is intended for students interested in health services administration, health policy and planning and the health professions such as medicine, dentistry and nursing.

Health Policy Studies (HPS) is not only a major, it is also available as a minor and as an area of focus for the Bachelor of General Studies (BGS) and the Bachelor of Arts in Liberal Studies.

Joint Programs with Community College Degrees in Allied Health and Nursing  

Students who have completed an Associate Degree program from an accredited community college in Nursing (RN) or Allied Health (including, inter alia, Health Information Technology, Health Services Manager, Medical Assistant, Pharmacy Technician, Physical Therapist Assistant, Radiography Technician, Respiratory Therapy Assistant, Surgical Technology, and Diagnostic Medical Sonographer), with an overall GPA of 2.5 or higher, may apply for admission to Health Policy Studies through the joint program. Students who have been accepted will be able to transfer up to 62 credit hours of their Associate’s Degree program toward an AB in Health Policy Studies.

Students transferring into HPS under the joint program will have to complete distribution requirements, including prerequisites to the concentration, concentration requirements and an HPS track, as set forth in the next sections. The transferred allied health and nursing courses may only be used for the HPS bachelor’s degree; that is, a student who comes to UM-D through the joint program, but subsequently changes majors from HPS will lose many of the 62 transferred credit hours, retaining only those course credits that would otherwise
transfer to UM-D.

**PREREQUISITES TO THE CONCENTRATION**

The following courses fulfill distribution requirements as well as serve as prerequisite courses for certain HPS core courses.

- SOC 200 (preferred) OR SOC 201
- ECON 2001 OR 201
- Any 100 or 200 level PHIL course (PHIL 240 preferred)
- POL 101

**CONCENTRATION REQUIREMENTS**

The Bachelor of Arts in Health Policy Studies includes three components of requirements: CASL General Education Distribution Requirements (approximately 42 credit hours)—HPS students are required to take 6 credit hours in the Behavioral and Social Analysis Area of Inquiry, instead of the usual 9 hours) within which certain prerequisites are taken; Health Policy Studies Core Courses (31 hours) and one of several tracks (15 hours). The degree, like other CASL degrees, requires a minimum of 120 hours, 48 of which are upper division.

**Health Policy Studies Core**

All HPS majors take 31 hours of core courses. HPS 440 Medical Sociology, should be taken first as it is intended as a gateway course to Health Policy Studies. HPS 410 Social Research Methods, should also be taken early on, as it shows students how to read scientific articles and familiarizes students with basic statistics. HPS 402 Health Policy Studies Senior Seminar is a capstone course for the major, bringing together the various issues raised in the program and looking at both the past and the likely future of the health care system, hence students should enroll for this course after they have taken most of the other HPS courses. HPS 401 Health Policy Studies Internship should be taken in the senior year.

**Required courses**

- HPS 440 Medical Sociology
- HPS 410 Social Research Methods
- HPS 364 Health Policy and Administration
- HPS 442 Medical Ethics
- HPS 456 Health Care and the Law
- HPS 403 Medical Information Systems
- HPS 404 Financing the Health and Medical Systems
- ECON 355 Economics of the Medical Sector

One course from the following group of three courses

- SOC 448 Comparative Health Care Systems
- ANTH 340 Medical Anthropology
- PSYC 455 Health Psychology

**OR (by permission of the HPS Director)**

- HPS 401 Internship
- HPS 405 Administrative Culture and Representation in Health and Human Services
- HPS 402 Health Policy Studies Senior Seminar

**Health Policy Studies Tracks**

All HPS majors take a 12 credit hour track. These tracks provide training in areas directly applicable to careers in health care services. Increased public interest in the American health care system has created a demand for administrators in hospitals, neighborhood clinics, long-term care facilities, group practices, ambulatory facilities, managed care entities such as health maintenance organizations (HMO) and preferred provider organizations. Employment in such organizations may require specialized training in management and the social and behavioral sciences.

Students with an eye toward the occupations within these organizations will find an optimal combination of background and skill through completing one of the tracks, below, and thus improve their chances of working successfully in the health care field or enhance their chances of admission to graduate programs.

Some of the courses in the tracks within the School of Management require additional prerequisites, such as accounting courses, ACC 298 and ACC 299; or Principles of Microeconomics, ECON 202; or MIS or CIS introductory courses. Other tracks also include courses that have prerequisites, such as CHEM 225 or BIOL 140.

**Health Planning Track**

Four courses from the following list*

- ANTH 415 Nutrition and Human Development
- ANTH 430 Medical Anthropology
- BIOL 380 Epidemiology
- BIOL 390 Topics (when applicable to health planning)
- CHEM 352 Introduction to Toxicology
- HPS 405 Administrative Culture and Representation in Health and Human Services
- IMSE 334 Organization of Hospital Systems
- POL 311 Interest Groups
- POL 312 Legislative Process
- POL 360 American Policy Processes
- PSYC 412 Psychology of Aging
- PSYC 413 The Psychology of Death and Dying
- PSYC 455 Health Psychology
- SOC 350 Poverty and Inequality
- SOC 422 Structure of American Society
- SOC 423 American Social Classes
- SOC 426 Society and Aging
- SOC 450 Political Sociology
- SOC 457 Family, Aging and the Law
- SOC 483 Images of Organizations

*Note: Courses used to fulfill HPS Core requirements may not also be used to fulfill Track Requirements.

**Health Behavior and Health Education Track**

Four courses from the following list*

- ANTH 340 Race and Evolution
- ANTH 415 Nutrition and Human Development
- ANTH 430 Medical Anthropology
- BIOL 380 Epidemiology
- EDC 300 Educational Psychology
- HPS 405 Administrative Culture and Representation in Health and Human Services
- SOC 447 Family Violence
PSYC 4725  Motivation and Behavior

No more than one from the following three courses
PSYC 300  Life Span Developmental Psychology
PSYC 302  Psychology of Child Development
PSYC 412  Psychology of Aging

Management Information Systems Track

MIS 310  Information Systems in Management
MIS 321  Database Systems I
MIS 331  Information Systems Development
MIS 351  Networking and Collaborative Computing
LE 452  The Legal Environment of Business

*Note: Courses used to fulfill HPS Core requirements may not also be used to fulfill Track Requirements.

Human Resources Track

Four courses from the following list
HRM 405  Human Resource Policy and Administration
HRM 406  Staffing, Training and Development
HRM 407  Compensation and Performance Management
HRM 408  Management-Union Relations
OB 354  Behavior in Organizations
OB 401  Management Skills Development
OB 402  Organizational Change and Development
OB 485  Seminar: Organizational Behavior
LE 452  The Legal Environment of Business

Marketing Track

Four courses from the following list
ENT 400  Introduction to Entrepreneurship
LE 452  The Legal Environment of Business
MKT 352  Marketing Principles and Policies
MKT 382  Consumer Behavior
MKT 402  Marketing Management
MKT 436  Business to Business Marketing
MKT 456  Advertising and Sales Promotion
MKT 454  Marketing Research

Finance Track

Four courses from the following list
FIN 401  Corporate Finance
FIN 402  Advanced Corporate Finance
FIN 407  Investment Fundamentals
FIN 445  Corporate Financial Models and Applications
FIN 484  Seminar: Financial Management
LE 452  The Legal Environment of Business

Individualized Track

Students with special interests can design their own tracks in conjunction with the HPS Program Director. Individualized tracks have included gerontology, medical social work, and organizational behavior.

Health Policy Studies As A Minor Or BGS/BLS Area Of Focus

The Health Policy Studies Program offers an area of focus called Health Services Administration for the BGS or the BA in Liberal Studies. In conjunction with the HPS Program Director, students may select from the following list of courses: HPS 440, HPS 401, HPS 402, HPS 403, HPS 404, HPS 405, HPS 410, HPS 442, HPS 364, HPS 448, and HPS 456.

The minor in Health Policy Studies consists of five courses from the foregoing eleven courses. It is recommended that the minor include HPS 440, Medical Sociology and, at a minimum, either HPS 456 Health Care and the Law or HPS 442 Medical Ethics.

Premedical students should consider a minor in Health Policy Studies. The International Organization of Medical Sciences Conference of Medical Education addressed a number of issues, including the question of premedical education. The Conference emphasized the need for colleges to offer courses in the social and behavioral sciences so that future physicians would develop an understanding of the larger health care system and the social factors that influence health and illness. Since that time, other national organizations have continued to recommend that premedical students should take courses in the social and behavioral sciences that have a focus on the health care system and on the experience of health and illness. HPS offers an ideal set of courses that may be taken as a minor for a student planning on attending medical school. Students should contact the HPS Program Director to design a minor that would provide the breadth and depth of a social and behavioral science emphasis related to the delivery of medical care.

Health Policy Studies (HPS)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
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<tbody>
<tr>
<td>HPS 364</td>
<td>Health Policy and Admin</td>
<td>3.000</td>
<td>POL 101</td>
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<tr>
<td>HPS 390</td>
<td>Topics in Health Policy Stds</td>
<td>3.000</td>
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<tr>
<td>HPS 401</td>
<td>Health Pol Studies Internship</td>
<td>3.000</td>
<td></td>
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<tr>
<td>HPS 402</td>
<td>HPS Senior Seminar</td>
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A survey of the structure and processes of health administration in America, including analysis of current issues in health policy. (F,W,S).

A practical experience; volunteering is done in a health care delivery setting combined with a support seminar to develop An understanding of health care system issues and problems.

Focus on current issues and practical problems in health care organization, delivery, and financing. Use of the case method (where appropriate) to demonstrate and discuss real problems and approaches in functioning health care institutions in
Southeastern Michigan. Taught primarily from the point of view of individuals responsible for administering or advising such institutions. (F,W,S).

**HPS 403 Medical Information Systems**  
3.000 Credits

Medical Information Systems deals with how information is created, stored, and used in health care settings. Areas of interest for this course include fundamentals of computers and data management, medical information documentation in the form of paper and electronic medical records, health data privacy issues, disease classification and scoring systems, quality assurance in health care delivery, commonly used health care statistics, reimbursement methodologies, health care monitoring by internal processes and external review agencies, and vital statistics and disease surveillance systems. The course also includes some hands-on computer applications instruction to familiarize students with commonly used software platforms utilized in health care administration. Students cannot receive credit for both HPS 403 and HPS 503. (W)

**HPS 404 Financing Health & Medical Sys**  
3.000 Credits  
Prerequisite(s): ECON 201

The American health care system faces two problems: access to health services and high and rising costs. This course looks at the problems of uninsured citizens as well as the strains placed on health care facilities in providing services for them. Europeans have dealt with problems of access and cost controls through universal health care coverage and the course takes up various models in use today. The course also looks at American health insurance and "managed care" programs such as HMOs and PPOs as methods of providing health coverage as well as controlling costs. The course introduces students to services provided by the government including Medicare, Medicaid and State Children's Health Insurance Program (SCHIP). Students will learn the basics of creating a budget under constraints such as contractual limitations and Diagnosis-Related Groups (DRGs). Offered once a year, ordinarily in the Winter semester. Students cannot receive credit for more than one of the following: HPS 404, HPS 451, HPS 504, HPS 551, or PADM 451.

**HPS 405 Healthcare Administration**  
3.000 Credits  
Prerequisite(s): HPS 400

This course introduces students to administrative models and skills that can be used at a supervisory level. These conceptions include strategic planning, marketing, organizational communications, quality assurance, project management and team skills, supervision and evaluation, conflict resolution and office cultures and politics. A critical and historical perspective is used to understand the origins and meanings of these conceptions and the extent to which they correspond with the service mentality of health and human services. Applications to the health and human services will be central to the course.

**HPS 410 Quantitative Research**  
4.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

An introduction to methods of data collection and analysis. Elementary statistics data are analyzed using computerized statistics programs. A discussion of research design and the philosophy of social science is also included. Students cannot receive credit for both HPS 410 and HPS 510. (F,W,S).

**HPS 440 Medical Sociology**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

An analysis of health and illness behavior from the point of view of the consumer, as well as medical professionals, the structure, strengths and weaknesses of the medical care delivery system in the U.S.; the impact of culture and personality on illness behavior; and a study of the institution of medicine and activities of health care professionals. Students cannot receive credit for both HPS 440 and HPS 540. (F,W,S).

**HPS 441 Medical Ethics**  
3.000 Credits  
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 340 or PHIL 350 or PHIL 355 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 445 or PHIL 485 or PHIL 490

An examination of moral issues in medicine. Among the problems to be considered are truth-telling and paternalism in the doctor-patient relationship, psychosurgery and behavior control, death and euthanasia, the allocation of scarce resources, and genetic counseling and control. Specific attention will be given to ethical theories and to philosophical concepts such as rights, autonomy, and justice. Students cannot receive credit for both HPS 442 and HPS 542. Prerequisite(s): any previous course in Philosophy or permission of instructor. (F,W,S).

**HPS 442 Medical Ethics**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

An introduction and overview of the English, Swedish, and People's Republic of China health care systems. Focus on cultural and other organizational characteristics, unique features, approaches, and ability to solve problems. Emphasis on how the three systems help us understand the American health care system. Students cannot receive credit for both HPS 448 and HPS 548. (F,W,S)

**HPS 456 Health Care and the Law**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201 or POL 364

A sociological study of legal issues in health care, including regulation of hospitals, consent for treatment, confidentiality, experimentation, family planning, children's rights, access to health care, the emphasis will be on the organizational and personal consequences of legal requirements. Junior/Senior standing is a requirement. Students cannot receive credit for both HPS 456 and HPS 556. (AY).
HPS 498 Independent Study
1.000 TO 3.000 Credits

Readings or analytical assignments in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor, which shall not duplicate a formal course offering. (F,W,S)

HPS 499 Independent Study
1.000 TO 3.000 Credits

Readings or analytical assignments in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor, which shall not duplicate a formal course offering. (F,W,S)

Hispanic Studies (SPAN)

Of the thousands of languages in the world today, Spanish ranks among the top five in the number of speakers. Spanish is the native language of some 300,000,000 persons who live in Spain, Mexico, and eighteen other countries of the Caribbean and Central and South America. In addition, there are some 36,000,000 native Spanish-speakers in the United States. The study of the Spanish language and its cultures is quite practical. Given the Hispanic presence in the United States and the proximity of our Spanish-speaking neighbors in Latin America, proficiency in Spanish is increasingly advantageous and even necessary for numerous professions and careers.

Students interested in pursuing the study of Spanish language and culture for professional and career reasons, for teaching, or for graduate studies can enroll in one of two concentrations: Hispanic Studies or International Studies (see International Studies Concentration). Students may also use Spanish as a minor or area of focus.

HISPANIC STUDIES CONCENTRATION

PREREQUISITES TO THE CONCENTRATION

Students desiring to concentrate in Hispanic Studies must successfully complete SPAN 202 or exhibit equivalent Spanish language proficiency.

CONCENTRATION REQUIREMENTS

A minimum of 24 credit hours in upper division Spanish classes must be completed as outlined below.

Required courses..........................................................9hrs
SPAN 301 Advanced Conversation and Composition I
SPAN 302 Advanced Conversation and Composition II
SPAN 305 Language of Business

One civilization/culture course from the following .......... 3 hrs
SPAN 356 Spanish Civilization and Culture
SPAN 357 Latin American Civilization and Culture
SPAN 358 Spain in the Twentieth Century

One literature course from the following ...................... 3 hrs
SPAN 350 Masterpieces of Latin American Literature
SPAN 351 Masterpieces of Spanish Literature

Two 400-level language courses from the following........... 4-5 hrs
SPAN 406 Advanced Written Expression
SPAN 409 Oral Expression
SPAN 420 Introduction to Translation
SPAN 450 Hispanic Cinema

Other Spanish area offerings.................................4-5 hrs

Notes

Concentrators must take at least one course that deals specifically with Spanish (peninsular) topics such as SPAN 351, 356 or 358 and at least one course that deals specifically with Latin American topics such as SPAN 350 or 357.

Concentrators are encouraged to spend a semester or year in one of the many approved study-abroad programs.

Cognates .................................................................6hrs

Students must complete at least six hours of upper-level coursework, approved by an advisor, in appropriate disciplines in the Behavioral Sciences, Humanities, or Social Sciences Departments. Students may consider taking the Humanities Internship as one of the cognate courses.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit (four courses at the 300-400 level) in Spanish.

Spanish (SPAN)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

SPAN 101 Beginning Spanish I
4.000 Credits
First course in the two-course elementary Spanish sequence. Listening comprehension, speaking, reading, writing, and culture are emphasized. Course materials promote the use of language to communicate with others and to function in Hispanic culture. (F,S).

SPAN 102 Beginning Spanish II
4.000 Credits
Prerequisite(s): SPAN 101
Second course in the two-course elementary Spanish sequence. Continued emphasis on culture and the four skills of listening, speaking, reading, and writing. (F,W,S).

SPAN 201 Intermediate Spanish I
4.000 Credits
Prerequisite(s): SPAN 102
An intermediate-level course designed to increase the proficiency in listening, speaking, reading, and writing within a cultural context. Emphasis is placed on acquiring new vocabulary and expanding the use of grammar structures. Course materials promote the use of language to communicate with others and to function in Hispanic culture. (F).

SPAN 202 Intermediate Spanish II
Continuation of SPAN 201 with emphasis on the development of all language skills. (W).

**SPAN 254 Spanish Conversation**  
2.000 Credits  
Prerequisite(s): SPAN 102  

This course provides extensive oral practice to reinforce vocabulary and grammar concepts and to improve pronunciation. Conversational skills are developed through discussion and use of communicative exercises, activities, and games. (OC).

**SPAN 301 Adv Conversation and Comp I**  
3.000 Credits  
Prerequisite(s): SPAN 202  

An advanced course in conversation, composition, and syntax designed to strengthen existing skills. An intensive review of grammar combined with pronunciation and vocabulary exercises should enable the student to make progress in composition and conversation. Oral and written assignments will be based on readings from contemporary sources. (F).

**SPAN 302 Advan Conversation Comp II**  
3.000 Credits  
Prerequisite(s): SPAN 301  

Continuation of SPAN 301 with emphasis on the command of conversational and writing skills. (W).

**SPAN 305 Language of Business**  
3.000 Credits  
Prerequisite(s): SPAN 301  

An introduction to the language and practices of the Hispanic world of business. Particular emphasis will be placed on learning the terminology used in typical business correspondence and documents. A variety of businesses will be examined and practice in reading and composing business letters will be provided. (AY).

**SPAN 350 Masterpiece of Latin Amery Lit**  
3.000 Credits  
Prerequisite(s): SPAN 301  

A survey of Latin American literature from the colonial period to the present. Emphasis will be placed on such influential and outstanding contemporary authors as Borges, Garcia Marquez, Paz, Poniatowska, Rosario, Ferre, and Rulfo. (AY).

**SPAN 351 Masterpieces of Spanish Lit**  
3.000 Credits  
Prerequisite(s): SPAN 301  

An overview of Spanish Peninsular literature beginning with the Medieval period. Students read and discuss outstanding works from a variety of literary periods and genres. Works by authors such as Cervantes, Lope de Vega, Calderon, Galdos, Unamuno, Lorca, and Goytisolo are included. (AY).

**SPAN 353 Latino Literature**  
3.000 Credits  
Prerequisite(s): SPAN 301  

The course offers a selection of literary representations from a range of Latino groups with an emphasis on Cubans, Dominicans, Mexicans, and Puerto Ricans in the United States. Students examine these minority groups and the realities of their migrations through a variety of literary periods and genres.

**SPAN 356 Spanish Civilization and Cult**  
3.000 Credits  
Prerequisite(s): SPAN 301  

A survey of Spanish civilization from its origins to the present. The course explores the achievements of the Spanish people in art, architecture, music, literature, and the sciences and examines aspects of contemporary Spanish institutions and society. Students may not receive credit for both HUM 256 and SPAN 356. (AY).

**SPAN 357 Latin American Civiliztn Cult**  
3.000 Credits  
Prerequisite(s): SPAN 301  

A survey of Hispanic culture in the Americas from its inception to the present. The course examines the contributions of the Latin American ethnic groups and explores the relationship between Latin America's past and contemporary achievements and problems. Students may not receive credit for both HUM 257 and SPAN 357. (AY).

**SPAN 358 Spain in the Twentieth Century**  
3.000 Credits  
Prerequisite(s): SPAN 301  

A cultural study of the institutions, issues, and values of Spanish society in the twentieth century as seen in art, architecture, music, literature, film, and the media. Special emphasis is placed on contemporary Spain from the end of the Franco era through the development of a democracy. (OC).

**SPAN 385 Spanish Across the Curriculum**  
1.000 TO 6.000 Credits  
Prerequisite(s): SPAN 202  

Course is attached to an upper-level course in another discipline and taken concurrently with it. Course materials in Spanish are related to the subject matter of the second course and are discussed with a Spanish-area faculty member. Materials are also integrated into the assignments of the second course. (OC).

**SPAN 390 Topics in Spanish**  
3.000 Credits  
Prerequisite(s): SPAN 301  

Examination of problems and issues in selected areas of Spanish. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

**SPAN 398 Independent Studies in Spanish**  
1.000 TO 6.000 Credits
Readings or analytical assignments in Spanish in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. Students may receive a maximum of six credit hours for a combination of 398-399. (F,W).

SPAN 399 Independent Studies in Spanish
1.000 TO 6.000 Credits

Readings or analytical assignments in Spanish in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. Students may receive a maximum of six credit hours for a combination of 398-399. (F,W).

SPAN 406 Advanced Written Expression
2.000 Credits
Prerequisite(s): SPAN 302

Through the reading and analysis of authentic materials students will develop and improve their writing skill in various narrative styles such as dialogue, description, essay or research paper. Writing as a process involving editing and revision will be emphasized. (AY).

SPAN 409 Oral Expression
2.000 Credits
Prerequisite(s): SPAN 302

A course designed to increase the conversational skills of advanced-level students. A variety of activities and assignments will help students refine their oral accuracy and expand upon the number of social situations in which they can function. (AY).

SPAN 420 Introduction to Translation
3.000 Credits
Prerequisite(s): SPAN 302

An introduction to the history, theory and practice of English-to-Spanish and Spanish-to-English translation. Emphasis will be placed on material selected from the fields of business and commerce, the legal system, and brief passages of literature. Class projects will include translations of advertisements, brochures, and documents provided by area businesses. (AY).

SPAN 421 Advanced Translation
3.000 Credits
Prerequisite(s): SPAN 305 and SPAN 420

The course will continue to apply the translation theory and techniques introduced in Spanish 420, and it will continue to focus on English-to-Spanish and Spanish-to-English non-literary translation. Emphasis will be placed on materials selected from the fields of business, advertising, and legal discourse. Class projects will include translation of advertisements, legal documents, and business brochures. (AY,W).

SPAN 450 Hispanic Cinema
3.000 Credits
Prerequisite(s): SPAN 301

An introduction to the history and critical analysis of representative Hispanic films of major directors from Spain and Latin America. Emphasis will be placed on the historical, political, and cultural content of these films as they reflect the problems, customs, and contradictions of Hispanic culture. (AY).

SPAN 490 Topics in Spanish
3.000 Credits

Examination of problems and issues in selected areas of Spanish language, literature, culture and/or civilization. Title as listed in the Schedule of Classes changes according to content. Course may be repeated for credit when specific topic differs. (OC).

History

History is the art and science of understanding humanity in time; it seeks to recreate the context of changing human activities, be they cultural, economic, political, or social. Because of its special concern for time, history is a valuable field of study for those who want an understanding of where humanity has been and where it is going, and of the world and their own place in it. Furthermore, this field provides a solid background for those who seek a career in teaching, government work, law, or business, honing skills of critical thinking and analysis. In its role bridging disciplines of the social sciences and the humanities, history also enriches an individual's personal life and environment.

PREREQUISITES TO THE CONCENTRATION

Students desiring to concentrate in history are required to elect three of the following courses as prerequisites. The faculty strongly advises that students take these courses during their freshman or sophomore year:

HIST 101 Ancient World
HIST 102 Medieval World
HIST 103 Modern World
HIST 104 Chinese Civilization
HIST 105 Japanese Society and Culture
HIST 106 African Past
HIST 111 American Past I
HIST 112 American Past II
HIST 113 Islamic Civilization to 1500
HIST 114 Islamic Civilization: 1500 to Present

Current or former CASL Honors students may use HIST 261, 262, 263 and/or 264 to fulfill these requirements.

CONCENTRATION REQUIREMENTS

For a concentration in history, students are required to complete 27 hours in history courses beyond the three prerequisite courses numbered 300 or above. Concentration courses should be distributed to include: 1) at least six hours in the history of the United States and/or its colonial period; 2) at least nine hours in non-U.S. history (students are strongly advised to take at least three credits of Chinese, Japanese, African, or Middle Eastern history); 3) HIST 300 the Study of History which must be taken before the end of the junior year; 4) HIST 497 Topics in History a research seminar, which is normally taken in the senior year. Students may also elect HIST 498 Senior Honors Thesis.

Cognates .................................................................6hrs

Six hours from advanced courses (courses numbered 300 or above) in economics, literature, philosophy, political science,
sociology, anthropology, psychology, art history and music history. A course will count only if the adviser accepts it as directly related in subject matter to the student's concentration program.

PORTFOLIO

History concentrators must compile a writing portfolio that is approved by the history faculty. The portfolio consists of a paper each from HIST 300 and HIST 497, plus two additional papers from any upper-division history course taken at UM-D.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in history (at least six hours of U.S. history and six hours of non-U.S. history).

PREPARATION FOR GRADUATE STUDY

History concentrators who intend to pursue graduate study in history are strongly advised to take the following courses: CIS 150 Introduction to Computing; French, German, or another foreign language related to one's concentration program (with approval of advisor); and MATH 363 Introduction to Statistics for Social/Behavioral Scientists.

ADVISING

History concentrators should consult with an adviser before the beginning of each semester.

History (HIST)

COURSE OFFERINGS

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST 101</td>
<td>Ancient World</td>
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<tr>
<td>HIST 102</td>
<td>Medieval World</td>
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<tr>
<td>HIST 103</td>
<td>Modern World</td>
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HIST 101 Ancient World


HIST 102 Medieval World

The events and traditions that characterized the centuries spanning the fall of the Roman and Persian empires to the dawn of the modern era. Attention will focus on demographic patterns, the changing nature of social inequality, the conditions of material life, the rise of the state, technological development, and the scientific revolution. (F,W).

HIST 103 Modern World

An introductory course in modern history beginning in the eighteenth century. Emphasis on social, political and economic trends, including the impact of nationalism, imperialism, industrialization, dictatorships, and democratic institutions. (F,W).

HIST 104 Chinese Civilization

3.000 Credits

A broadly based introductory study of China that exposes the student to a culture very different from our own and helps that student to understand Chinese institutions and values. It explores essential elements of Chinese civilization in comparative reference to the development of Western civilization. Recommended for freshmen and sophomores. (YR).

HIST 105 Japanese Society and Culture

3.000 Credits

A survey of Japanese society and culture in the traditional and modern periods, treated within the comparative framework of the history of the western world. It examines the development of traditional Culture under Chinese influence and the subsequent interaction with modern western nations. Recommended for freshmen and sophomores. (F).

HIST 106 An Intro to the African Past

3.000 Credits

Survey of the social, economic, political, intellectual and cultural heritage of the African peoples from prehistory to the present. Emphasis on internal dynamics of African society through five millennia, as well as the impact of external forces on African life. Themes of particular interest: the roots of African culture, the trans-Atlantic slave trade and the African Diaspora in the New World, the European Conquest, and the character of the colonial order and the ongoing struggle to end the legacy of alien domination. (YR).

HIST 108 Latin America: The Colonial Era

3.000 Credits

This course will examine the colonial period in Latin American history from the Spanish and Portuguese contact and conquest to the early nineteenth-century wars for independence. It will focus on the background of European colonization, the process of interaction between Natives and Europeans, the growth and development of colonial society, the shifting uses of land and labor, and the roots of the nineteenth-century revolutionary movements. (OC).

HIST 109 Latin America: The Modern Era

3.000 Credits

This course examines the modern era in Latin American history from the early nineteenth-century wars for independence to the present day. The course will focus on the formation of the Latin American states, the development and growth of Latin American culture and society, the legacy of slavery, the transition to capitalism in the region, the growth of export economies and dependency, and the rise of nationalism and revolutionary movements in the region. (OC).

HIST 111 The American Past I

3.000 Credits
A survey of the events, ideas, and social changes that have shaped American development to 1865. (F,W).

HIST 112 The American Past II 3.000 Credits

A survey of industrializing and industrial America (or: "how things came to be the way they are"). Among the topics covered: economic development, racial and ethnic assimilation, urban growth and decay, and political reform. (F,W).

HIST 113 Islamic Civilization to 1500 3.000 Credits

Will cover the rise of Islam, the Umayad and Abbasid Caliphates, history of the major political and sectarian schisms in the Islamic world, the migration/invasion of Turks and Mongols, Sufism and the spread of Islam to other cultures; in addition to providing students with a practical overview of primarily Middle Eastern history since the rise of Islam, this course will explore the tension between the unity and diversity in Islamic civilization. (YR).

HIST 114 Islamic Civ: 1500 to Present 3.000 Credits

This is a standard introductory survey course, open to all students. This course will be a sequence to HIST 113, although it has no prerequisite. It will focus on the evolution of the multi-ethnic and multi-confessional Ottoman and Safavid/Qajar Empires into modern nation-states. In addition to providing students with a practical overview of the history of the Middle East since 1500, this course will examine two overarching questions: How do accumulated traditions influence historical transitions? How should we understand Islamic Civilization in the age of the modern nation-states? (YR).

HIST 205 Business in Japan: Environment 3.000 Credits

How did Japan accomplish its economic success? How are businesses in Japan managed? To answer these questions, this course examines the social context of industries, organization and management of a company, cultural traits that contributed to Japanese-style management, and the historical background of modern Japanese culture.

HIST 261 Western Culture I 3.000 Credits

First of a series of four courses. An interdisciplinary course on the nature of the Western classical and Biblical traditions. It examines Western values, attitudes, history, art history, the roots of scientific thought, logic and social institutions such as the family and the state. Included are works of literature, history, philosophy, and art history. (F).

HIST 262 Western Culture II 3.000 Credits

Prerequisite(s): HIST 261 or HUM 261 or SSCI 261

Second of four courses on Western Civilization required of all Honors Students. The course covers the period of the Middle Ages, Renaissance, and Reformation. Focus is on the ways in which Biblical and Classical traditions are preserved, adapted, transformed, or discarded under the pressures of new social and political formations. Materials are drawn from literature, philosophy, political theory, art. (W).

HIST 263 Western Culture III 3.000 Credits

Prerequisite(s): (HIST 261 or HUM 261) and (HIST 262 or HUM 262)

This course covers the period from the 17th to 19th centuries. Focus is on the emergence of scientific thought, enlightenment political theory, romantic individualism, and the great 19th-century intellectual revolutions of Darwinism, Marxism, and feminism. Materials are drawn from literature, philosophy, and political and scientific writings. Third of four courses on Western Civilization required of all Honors Students. (YR).

HIST 264 Western Culture IV 3.000 Credits

Prerequisite(s): (HIST 263 or HUM 263 or LIBS 263 or SSCI 263 or SOC 263) and (HIST 262 or HUM 262 or LIBS 262 or SSCI 262) and (HIST 261 or HUM 261 or LIBS 261 or SSCI 261)

Fourth of four courses required of all Honor Students. This course covers the period from late 19th-century to the present. Focus is on selected major issues of Western civilization in the modern era: science and human values, bureaucratic and totalitarian societies, psychoanalytical thought, feminism, nihilism, and existentialism. (W).

HIST 290 Topics in History 3.000 Credits

Problems and issues in selected areas of history. Title listed in Schedule of Classes changes according to content. Courses may be repeated for credit when specific topics differ. (OC).

HIST 291 Topics in History 3.000 Credits

Problems and issues in selected areas of history. Title listed in Schedule of Classes change according to content. Courses may be repeated for credit when specific topics differ. (OC).

HIST 300 The Study of History 3.000 Credits

Prerequisite(s): HIST 101 or HIST 102 or HIST 103 or HIST 104 or HIST 105 or HIST 111 or HIST 112 or HIST 113 or HIST 114
A study of the theories of historical analysis, styles of historical writing, and approaches to historical research including literary, sociological, and psychological forms. Primarily for history majors, who should elect it in their junior year. (YR).

**HIST 301 Armenia in World History**

3.000 Credits

A general survey of Armenian history and culture from the fifth century B.C. to the present, with stress on cultural and political interrelationships with other countries in the Near and Middle East and the European states during the period of modern imperialism. Attention is given to politics, art, architecture, literature, religion, and international relations. Armenian history and culture are discussed in relation to Mesopotamian, Byzantine, Roman, Arabic, Ottoman, and modern European civilizations and politics. (AY).

**HIST 302 Russian Intellectual History**

3.000 Credits

Examines the historical myths that supported traditional Russian institutions, the literature that expressed these myths in symbolic form, the relationships between the social classes, and the conflict of values and goals in 19th-century Russia. through the literature of the period the course explores social, intellectual, and political movements. The material is organized to consider both revolutionary and reactionary ideologies, origins of each, and the dynamics between them. (AY).

**HIST 303 The Birth of Civilization**

3.000 Credits

Course examines the nature of the intellectual structure of the ancient Egyptians, Mesopotamians and Hebrews, and the social structures and historical developments of those cultures. Emphasis is on the evolution of civilization, the contrasts between Egypt and Mesopotamia, and most importantly, the shifts from mythical to philosophical thinking and discourse. (YR).

**HIST 304 Studies in Detroit Culture**

3.000 Credits

A modern cultural history of Detroit. Usually taught by two faculty members, the course emphasizes the role of literature, art, and music, and architecture in the city's history. (OC).

**HIST 305 Society and Arts in Detroit**

3.000 Credits

A cultural history of Detroit that explores the relationship between society and the arts. (OC).

**HIST 306 20th-C Russian Intel History**

3.000 Credits

Study of the relationships between revolutionary philosophies and actions; the dilemma of the Russian Revolution and the dilemma of its "success"; the interaction of art, literature, and revolutionary movements. The course examines historical developments through novels, poetry, and philosophy. (AY).

**HIST 307 Early Russian History**

3.000 Credits

A history of Russia from its prehistoric origins to the beginning of the 19th century, focusing on political and economic development, cultural and religious dynamics, foreign relations, and expansion in Asia. Stress is placed on political dynamics, including the forces of democracy in Russia's past. (AY).

**HIST 308 Imperial Russia**

3.000 Credits

A history of Russia from the time of Peter the Great to the Russian revolutions of 1917. Attention is given to internal affairs, economic development, foreign relations, the failure of reforms, and the emergence of the revolutionary movement. (AY).

**HIST 309 The Russian Revolutions**

3.000 Credits

Provides a broad overview of Russian history leading to the Russian revolutions of 1917, and a more detailed analysis of the revolutions of 1905 and 1917 and the subsequent development of the Soviet Union up to the present. Roots of present Soviet behavior will be sought in Russia's past. (AY).

**HIST 314 England: Tudors and Stuarts**

3.000 Credits

A political, economic, and social survey of England from 1485 to the end of the 17th century. Focus is on the interrelation of society and politics as well as on the rise of England to major international status. (AY).

**HIST 315 Modern Britain**

3.000 Credits

Course focuses on Great Britain from the time of the Industrial Revolution to the present. Major problems considered are industrialization, the British empire and its disintegration, the democratization of British political life, the creation of the welfare state, and Britain's role in the contemporary world. (AY).

**HIST 316 African American History**

3.000 Credits

This course traces the experience of African Americans from their first landing in Virginia in 1619 through slavery and the Civil War. Emphasis will be placed on the origins of racism, the development of the slave system in the United States and the historical developments that led to the Civil War. (YR).

**HIST 318 Early American Republic**

3.000 Credits

This course examine the history of the United States from the ratification of the Federal Constitution through the Presidency of Andrew Jackson. Particular attention is given to the process of political party formation, the impact of the "market revolution" upon life, the origins and ramifications of the Second Great Awakening, the antebellum reform movements,
and slavery. (YR).

**HIST 319 Civil War & Reconstruction**
3.000 Credits

This course examines America's pivotal middle period, a period of rising sectional tensions, bloody civil war, and protracted debate about the promise and limits of equality in the United States. Among the topics covered are the meaning of freedom in antebellum America, territorial expansion and the development of slavery as a political issue, the collapse of the national party system and the secession crisis, the meaning of the American Civil War, and the postwar settlement of reconstruction. (YR).

**HIST 321 Late Imperial China**
3.000 Credits

A survey of Chinese society around 1800: demography, family life and lineage organization, farming and handicraft industries, intellectual trends, popular culture, education, social stratification, and social control under imperial bureaucracy. (F).

**HIST 322 Traditional China**
3.000 Credits

Chinese history from the beginning of western contact in the early 19th century to construction of the People's Republic under Mao Tse-tung; included are traditional order, Western impact, rebellions, nationalism, and revolution. (F).

**HIST 323 History of Modern China**
3.000 Credits

Chinese history from ancient times to around 1800 with emphasis on the development of Confucian government and the great cultural tradition. (F).

**HIST 325 Traditional Japan**
3.000 Credits

Traditional Japan from ancient times to around 1800; emphasis is placed on the evolution of Japanese institutions under the cultural influences of China. (AY).

**HIST 326 Modern Japan**
3.000 Credits

Japan from around 1850 to present. The course considers the impact of foreign contacts on the Tokugawa system, the emergence of Japan as a modern state, Westernization and nationalistic reaction, the rise of militarism, the Pacific War, economic growth and social changes after the war, and changes in the U.S.-Japan relations. (AY).

**HIST 329 Medieval Society**
3.000 Credits

An analysis of social institutions and ideas from the High Middle ages through the discussion of original sources. (F).

**HIST 330 The Renaissance**
3.000 Credits

This interdisciplinary study of Renaissance Culture focuses on its preeminent center, Italy, in the 15th and 16th centuries. The course investigates major aspects of art, music, literature, and philosophy and their relationships to social, economic, and political structures.

**HIST 331 The Reformation Era: 1500-1648**
2.000 TO 3.000 Credits

A study of the nature, course, and impact of the Protestant Reformation in Europe, Humanism, the Counter-Reformation, and the cultural and social implications of Protestantism also receive attention. (YR).

**HIST 333 Europe in Age of Rev: 1750-1815**
3.000 Credits

History of Europe during a period when established patterns of thought, social structure, and institutions were violently challenged. (AY).

**HIST 334 Europe in Age of Imp: 1815-1914**
3.000 Credits

Europe in the age of nationalism, industrialism, imperialism, and democracy; background and origins of World War I. (YR).

**HIST 335 20th-Century Europe, 1890-1945**
3.000 Credits

Europe before, during, and after World War I; the rise of communism and fascism; World War II. (AY).

**HIST 336 The Contmp World, 1945-Present**
3.000 Credits

The post-war world, U.S.-Soviet rivalry, European/Japanese renaissance, the Chinese Revolution; decolonization and the emergence of the Third World. (OC).

**HIST 337 Islamic Movemnts Mid East Hist**
3.000 Credits

Will compare several Islamic movements in Middle Eastern history, starting with the rise of Islam in Mecca and Medina. Later impulses toward Islamic revival all looked back to the first movement, and hoped to capture both its spirit and its success. With this as background, the course will move to address two questions; How did later Islamic movements understand the history of the rise of Islam? How have later Islamic movements had to adapt their methods and their ideology to different historical circumstances? (AY).

**HIST 338 Women & Islam Mid East History**
3.000 Credits

This course will introduce students to Islam's normative stance towards women, to complications in that normative stance, to theories about gender and history and, finally, to a consideration of the changing and varied attitudes about women and gender in
the modern Middle East. (YR).

**HIST 339**  Ottoman Empire in 19th Century  
3.000 Credits

Study of the Ottoman Empire from the treaty of Kucuk Kaynarca in 1774 until the outbreak of World War I. The course will examine such topics as modernization, imperialism, the rise of Christian nationalisms, democracy, pan-Islam, Islamic modernism and changing ideas about gender. There will be no formal course prerequisite, although it is expected that the schedule will indicate something such as “recommended that HIST 113 be taken concurrently”. (YR).

**HIST 340**  Freud's Vienna: 1866-1920  
3.000 Credits

An analysis of the place of Vienna in the cultural history of the modern west; particular attention is given to the Vienna of Franz Josef (1848-1916) through the disciplines of history, art, architecture, music, literature, philosophy and psychoanalysis. Included are works by Freud, Schnitzler, Kraus, and Zweig. (AY).

**HIST 341**  Hist, Lit, & 20th Century Iran  
3.000 Credits

A study of modern Iranian culture, through standard historical writings and the works of modern poets and authors, course will emphasize conflicts facing political and social elites, arising from invasions, Civil war, and modernization. There will be no formal course prerequisite, although it is expected that the schedule will indicate something such as “recommended that HIST 113 be taken concurrently”. (YR).

**HIST 343**  Germany Before Hitler  
3.000 Credits

An analysis of the cultural and intellectual life during one of Germany's greatest eras. Lectures and discussions are based on German literature, art, film, philosophy, architecture, and history. The background of Weimar culture and the rise of Hitler's Germany are also considered. (AY).

**HIST 345**  West Africa Since 1800  
3.000 Credits

A history of the West African peoples since 1800, which focuses on their unique cultural heritage. Themes include: West Africa before the advent of alien domination, the European Conquest, West Africa under the Colonial regimes, and the liquidation of colonial rule and the reassertion of West African independence. (AY).

**HIST 349**  Thomas Edison and his Era  
3.000 Credits

This course will introduce students to the life and work of Thomas Edision. Breaking with the stereotype of the lone inventor/genius, we will examine how Edison helped shape and was in turn shaped by the context of the Gilded Age America - when the United States emerged as an urban, industrial nation. Lectures and discussions will be supplemented by slides, films, and visits to the Edison-related sites at The Henry Ford. Throughout the course the following themes will be explored: invention and the labor process, the significance of manufacturing and marketing, and the origins of modern consumer culture. (OC).

**HIST 3520**  Lebanon in Modern Middle East  
3.000 Credits

HIST 3520 will study the modern history of Lebanon and the country's involvement in broader Arab and Middle Eastern politics from the period when the country's modern boundaries were established in 1920 to the end of its fifteen-year-long civil war in 1990. The course will focus on the relations of the Lebanese state, its various ethno-confessional communities and political groupings with the Great Powers like France, the United Kingdom, the Soviet Union and the United States of America, as well as with the influential Arab states in the region, in particular Egypt, Syria, Saudi Arabia and Iraq. Particular attention will be paid to the impact of the Arab-Israeli conflict and the presence of Palestinian refugees on internal Lebanese politics. The course will also analyze the diverse, sometimes contrasting, visions among Lebanon's various local elites towards the country's place in the region and the world and how these visions underwent change in light of evolving internal social and external political developments. (YR)

**HIST 354**  The United States and Vietnam  
3.000 Credits

The Vietnam War was a major turning point in U.S. history. This course focuses on French rule in Indo-China; U.S. interests in the region; U.S. involvement after 1945: the military, economic, and social nature of that intervention; and the consequences of the war. (YR).

**HIST 355**  Eng Colonies in Amer,1607-1763  
3.000 Credits

European expansion into North America; colonial societies, ideas, and institutions; imperial policy and administration, and accompanying changes in Amerindian and African cultures, and New World ecologies. (F).

**HIST 356**  American Revolution, 1763-1815  
3.000 Credits

The causes, character, and consequences of the American Revolution, and the shaping of a new nation through the War of 1812. (W).

**HIST 358**  Emerg of Modern U.S.,1876-1916  
3.000 Credits

An intensive study of the history of the United States from the end of Reconstruction to America's entry into World War I. Particular attention is paid to the social, economic, and intellectual aspects of the period and to the origins of 20th-century America. (AY).

**HIST 359**  Era of World Wars:1916-1946  
3.000 Credits

An intensive study of the history of the United States from 1916
to 1946. Topics include World War I and its aftermath, the Depression, the New Deal, World War II, and post-war settlements and problems. (AY).

HIST 360 The U.S. Since 1946
3.000 Credits

This course focuses on the era bracketed by the Truman through the present administrations. Particular attention is given to the New Deal, the Truman policy of containment, the Cold War, relations with China, McCarthyism, the Korean war, the civil rights movements, the New Frontier, involvement in Vietnam, and the problems of contemporary America. (AY).

HIST 3601 Michigan History
3.000 Credits

This course covers some of the major trends and developments in the history of the state of Michigan from its aboriginal past put to the present day. The course will focus upon placing the state's history within a broader national and international context and will focus upon such topics as aboriginal settlement and culture, colonization, American settlement and statehood, industrialization, immigration, and political development. (AY)

HIST 3602 Comparat. American Identities
3.000 Credits
Prerequisite(s): COMP 106 or CPAS 40 or COMP 220 or COMP 270

This course will confront and complicate the following key questions: what does it mean to be an American? What is American culture? Participants in this course will respond to the questions central to the American Studies field by reading and discussing historical, sociological, literary, artistic, material culture, political, economic and other sources. Students will use this interdisciplinary study to examine the multiple identities of Americans - as determined by factors such as gender, race, class, ethnicity and religion. While emphasizing the diversity of American culture, participants will consider some core values and ideas uniting America both in historical and contemporary society. Students will be invited to seek out and share fresh narratives of the American experience.

HIST 361 United States Economic History
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

A survey of the processes of development of the United States economy, their social implications, and the sources of today's economic problems. (F).

HIST 362 Eur and Intern'l Econ History
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

A survey of the processes of industrialization in the major non-American industrial economies, with a focus on their relevance and implications. (W).

HIST 363 Rel in Amer Hist:1607-1865
3.000 Credits

A survey of the religious movements and trends in America from the 17th century to the Civil War, with emphasis on Puritanism, 18th-century revivalism, and 19th-century denominationalism and social reform. (AY).

HIST 3635 The 1960s in America
3.000 Credits

This course aims to interweave the civil rights movement, the Vietnam War, the student movements, the women's movement, and other developments of the period to place them in an historical context of a complicated era of change. The course compels students to critically evaluate social movements, political developments, cultural trends, and foreign policies by close examination of primary documents as well as critical evaluations of the various ways that scholars have interpreted the period. (OC)

HIST 364 Rel in Am Hist II:1865-Present
3.000 Credits

A survey of American religion from the Civil War to the present, with emphasis on ethnicity and religion and post-World War II revivals of religion. (AY).

HIST 365 Honors Seminar
3.000 Credits

To teach habits of informed criticism based on critical analysis of primary and secondary texts. This course will give Honors students the opportunity to learn reflective, critical listening and inquiry skills, which are essential to informed discussion of the Honors core course material. The content of specific courses will vary from semester to semester according to individual instructors. (YR).

HIST 3651 Women Leadership/Social Change
3.000 Credits
Prerequisite(s): HIST 112 or WGST 275

The purpose of this seminar is to examine women's leadership in movements for social change. We will approach this topic through the study of historical examples, drawn primarily from the twentieth-century United States, and including movements for economic justice, race relations, sexual identity, peace, gender equality, public health, and social welfare. (W).

HIST 3665 Automobile in American Life
3.000 Credits

The course will explore a wide array of distinct, though interconnected, subjects such as: the manufacturing, engineering and design of the automobile and its role to industrial and technological developments and consumer trends; the automobile's role in America's industrial growth and the impact that industrialization had upon American society; the automobile's role in urbanization and urban sprawl; the mass marketing of the automobile and its connection to broader social constructions of class, race, and gender; the environmental impact of the automobile; and the automobile's use and meaning as a cultural symbol and its relation to the American identity. Through the use of diverse mediums such as personal recollections, popular music, film, photographs, advertisements, automobile ephemera, literature, poetry and more traditional written sources the course will examine America's ongoing
fascination with the automobile. (OC)

HIST 366  Henry Ford and His Place
3.000 Credits

Using the biography of Henry Ford as a touchstone, the course will examine the trajectories of historical change and regional development between 1870 and 1950. Of fundamental concern will be southeastern Michigan's transformation from a 19th century outpost on the Great Lakes to the nation's "engine of change" in the 20th century. Henry Ford was the major player in that revolutionary transformation. This course examines his role in history and mythology as well as the causes and implications of that transformation. (YR)

HIST 368  Black Exp in U.S.:1865-Present
3.000 Credits

The history of blacks in America is traced from the Reconstruction era and the rise of Jim Crow segregation to the Civil Rights movement of the 1960's and the current period. Special attention is paid to the migration of blacks to the north and the social-economic situation which they encountered there. Specific topics to be addressed include formation of the NAACP. (AY).

HIST 369  Civil Rights Movement in Amer
3.000 Credits

A survey of race relations and civil rights activity from the late 19th century to the present. The principal focus, however, is on the period since World War II, especially on the mass-based Southern civil rights movement (1955-1965) and the various policy debates and initiatives of the past thirty years, most notably affirmative action and busing. We also examine critiques of non-violence and integrationism. (AY).

HIST 3695  American City
3.000 Credits

This course examines the development of urban America from the European-style port cities of the colonial period through the edge cities of today. The bulk of the course will focus on the late 19th and 20th century urban environment with an eye towards understanding the diverse residents, cultures, economies, and geographies that have shaped American cities. We will cover everything from developments in transportation, architecture, business, and technology to immigration, politics, and urban culture. Broad concerns and constituencies have shaped the urban public sphere, the physical development of cities and the experience of living as an urbanite and, consequently, they will receive much of our attention. American patterns of development will then be placed in context with those of other nations and cultures. (AY).

HIST 370  Women in Am-Hist Perspective
3.000 Credits

A survey of women's role in American society from colonial times to the present, emphasizing both change and continuity in women's experience. (AY).

HIST 371  American Ideas, 1607-1865
3.000 Credits

Ideas about God and humanity, nature and society, which constituted the spirit of the age from the 17th century to the Civil War. (AY).

HIST 372  American Ideas Since 1865
3.000 Credits

A survey of American thought since the Civil War, with particular emphasis on literature, cultural criticism, political theory, and theology. The course also surveys developments in painting and architecture. (AY).

HIST 374  History of Industrial Technology
3.000 Credits

Focusing on western Europe and the United States since the Industrial Revolution, this course will examine the history of manufacturing technologies and will include the following topics: mechanization and the rise of the factory; mass production; the process of innovation; design and diffusion of new technologies; technology and the changing nature of work; automation and lean production systems. Through readings, class discussions, and examination of artifacts (actual tools and machines), students will consider the central role played by technology in the making of modern society.

HIST 375  Heterodox Economics
3.000 Credits

Prerequisite(s): ECON 201 and ECON 202

Introduction to Marxian political economics, its methodology and origins and the historical development of capitalism. Primary emphasis is on Marxian theories of the state, economic crises, and business cycles. (W).

HIST 377  History of Consciousness
3.000 Credits

Traces changes in the way people have viewed themselves, the world and changes in the forms or orders of thinking; in other words, changes in consciousness and concepts of the unconscious. The mode is intellectual history and involves studies of the ideas of philosophers, psychologists and literary artists. The class will examine ancient and "primitive" consciousness as well as forms of society. (AY).

HIST 379  Language, Myth & Dreams
3.000 Credits

An examination of the relationships between language, myth, dreams, and thinking processes; considers the work of such scholars as Ernst Cassirer, Noam Chomsky, and Freud; studies the nature of the mind from philosophical, psychological and literary perspectives. (AY).

HIST 380  Intell Hist of Modern Europe
3.000 Credits

An examination of the intellectual currents from the scientific
revolution, the Enlightenment, the currents of 19th and 20th century thought including romanticism, conservatism, liberalism, socialism, Darwinism. Includes analysis of the reactions to World War I, the Russian Revolution, and World War II. Readings include works by Descartes, Rousseau, Marx, Darwin, Zola, Freud, Kafka and Koestler. (AY).

HIST 382  U. S. Military History
3.000 Credits

Through readings, lectures and movies we will explore the relationship between American national character and America's employment of military power from the 17th to the 20th centuries. (AY).

HIST 383  Labor in America
3.000 Credits

A survey of urban workers from colonial times to the present. Among the topics covered are changing standards of living, the experiences of industrial work, labor organization, and working-class politics. (YR).

HIST 384  Immigration in America
3.000 Credits

A survey of the "immigrant experience" in the United States, from the early 19th century to the present. Particular attention is given to enduring problems of economic adjustment and cultural assimilation, and to the impact of immigration on the host society. (AY).

HIST 385  Modern France
3.000 Credits

A history of France from the French Revolution to the present. The major emphasis is on the political evolution of France with some attention to social and economic development. (AY).

HIST 386  Compar History of Technology
3.000 Credits

This course will examine the history of technology from a comparative perspective: studying the development and impact of technology in different societies during various historical eras. Topics include: irrigation control and the rise of ancient empires; technology's role in the industrial revolution; technological innovation and the pace of social change. Current issues and various analytical perspectives in the history of technology will also be examined.

HIST 387  Aspects of the Holocaust
3.000 Credits

A survey of how and why millions of Jews, Gypsies, Slavs, and political and "racial" enemies of the Reich were so quickly and determinedly slaughtered. (OC).

HIST 389  Nazi Germany
3.000 Credits

History of National Socialism, its goals and structure. also addressed are the nature of the dictatorship; the role of the historian in interpreting the era and the use and evaluation of historical documents. (OC).

HIST 390  Topics in History
3.000 Credits

Problems and issues in selected areas of history. Title as listed in Schedule of Classes changes according to content. Course may be repeated for credit when specific topics differ. (F,W).

HIST 391  Topics in History
3.000 Credits

Examination of problems and issues in selected areas of history. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (F,W).

HIST 398  Independent Studies in History
1.000 TO 3.000 Credits

Readings or analytical assignments in history in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. (F,W).

HIST 465  The Family in History
3.000 Credits

An analysis of the emergence of the modern family from the 16th century to the present with focus on the history of childrearing, family size and structure, intra-familial and inter-generational relationships and population patterns. (AY).

HIST 485  History Internship
3.000 TO 6.000 Credits

The internship offers students experience in types of work available to liberal arts graduates. Regular meetings between the internship Coordinator and the intern are required. Credit applies to the degree as a general elective and does not apply to any concentration. Maximum total hours credit: 12. Graded Pass/Fail. (F,W).

HIST 490  Selected Topics in History
3.000 Credits

Examination of problems and issues in selected areas of history. Title as listed in Schedule of Classes changes according to content. Course may be repeated for credit when specific topics differ. Primarily, but not exclusively, for undergraduate history concentrators. Students are introduced to current issues in the area of historical research and learn how to appreciate selected writings, which represent the best of recent scholarship. (F,W).

HIST 497  History Seminar
3.000 Credits

A seminar to provide experience in historical research and writing. (F,W).

HIST 498  Senior Honors Thesis
3.000 Credits

Two successive semesters of independent work on a major
research paper under the direction of a member of the discipline and the program coordinator. (F,W).

**HIST 499  Advanced Ind Studies in Hist**  
1.000 TO 4.000 Credits

Readings and analytical writing in history, in accordance with the interests of the student and approval of the instructor. Students must submit a written proposal of study for approval. (F,W).

**Humanities**

The humanities concentration is an interdisciplinary program designed for students seeking a broadly-based education encompassing several fields of humanistic endeavor. It is also recognized by many professional schools as a suitable undergraduate concentration. The concentration is flexible and is designed to be adaptable to individual needs and desires. Each student declaring a humanities concentration will be assigned an advisor who will work closely with the student in planning a program.

**PREREQUISITES TO THE CONCENTRATION**

**Required courses** ................................. 20 hrs  
French, German, or Spanish 201 and 202 ..................... 8 hrs

A two-course sequence from each of two of the following areas  
Art History, Communications, Comparative Literature (Great Books), English, Film Studies, History, Linguistics, Music History, Philosophy and Western Culture (Honors) ...... 12 hrs

**CONCENTRATION REQUIREMENTS**

9 hours each in any three of the following areas: ............... 27 hrs

African American Studies, Art History, Communications, Comparative Literature, English, Film Studies, French Studies, German, Hispanic Studies, History, Linguistics, Music History, Philosophy, Women’s Studies, and World Literature in Translation

9 additional hours in one of the two following tracks

**Track A**  
Senior Thesis or Project..................................... 6 hrs  
One Humanities Course...................................... 3 hrs

**Track B**  
Senior Independent Study.................................... 3 hrs  
Two Humanities Courses.................................... 6 hrs

The following restrictions should also be noted:  
The same course cannot satisfy both Distribution and Concentration/Cognate Requirements.  
Only 65 hours in the courses listed under the Humanities Department can count in the 120 hours for degree.

**MINOR OR AREA OF FOCUS**

A minor or area of focus consists of 12 hours of upper-division credit in the courses labeled “Humanities.”

**Humanities (HUM)**

**COURSE OFFERINGS**  
(Note: An “e” denotes that the prerequisite course may be taken concurrently.)

**HUM 100  Introduction to Humanities**  
3.000 Credits

An introduction to the visual arts, music, and drama in western and world societies. Through study of individual works, the course teaches appreciation of the arts in their aesthetic and technical qualities, and understanding of the arts as expressions of diverse societies, varied historical conditions, and shared human experiences. (YR).

**HUM 170  Studies in Humanities**  
3.000 Credits

An interdisciplinary examination of selected key ideas in contemporary western thought. Emphasis will be placed upon how the issues and problems in question manifest themselves in popular and high culture. (YR).

**HUM 171  Styles in 19th Century**  
3.000 Credits

An introduction to the two principal styles of the 19th century, romanticism and realism, viewed within the general evolution of European civilization. After reading works of the classical tradition, the class will study masterpieces that illustrate the romantic and realist movements. (OC).

**HUM 200  The Human Condition**  
3.000 Credits

The human condition as seen in selected works of philosophy and literature. Typical issues: the meaning of life, the existence of God, moral responsibility for human actions, and the role of society in promoting or hindering human excellence. (YR).

**HUM 201  Religions of the World**  
3.000 Credits

A study of religion in essence, in manifestation, and in relationship with the other dimensions of culture; a treatment of man’s religious interests and the various ways in which he has sought to pursue these interests. Surveys major world religions. (OC).

**HUM 221  Great Books I: Ancient World**  
3.000 Credits

Introduction to masterpieces of Western world literature from the ancient world. Readings include the Bible, Iliad, Odyssey, Greek drama, and Roman authors. (YR).
HUM 222  Gr Bks II: Midd Ages and Ren
3.000 Credits

Introduction to masterpieces of Western world literature from the Middle Ages and Renaissance. Readings include Dante, Chaucer, Wolfram, Cervantes, Shakespeare, Moliere, and Racine. (YR).

HUM 223  Gr Bks III: Modern Era
3.000 Credits

Introduction to masterpieces of Western world literature from the Modern Era. Readings include Swift, Voltaire, Rousseau, English romantic poets, fiction and drama of the 19th and 20th century. (YR).

HUM 240  Film and Society
3.000 Credits

A survey of the major genres of film, chiefly in historical and political perspective, but also in light of important intellectual frameworks (e.g., feminism, psychoanalytical theory). The films selected, both Western and non-Western, will be examined both for their visual codes of meaning and for their wider role in developing a powerful social language in various cultural contexts. (OC).

HUM 248  Introduction to Film Studies
3.000 Credits

This course will introduce students to the development of world cinema by integrating the aesthetics of film with its technology, and its social and economic milieu. It will train the students in analyzing the formalist qualities of the medium, and in understanding the evolution of its various genres and styles. (YR).

HUM 261  Honors: West Cult I: Origins
3.000 Credits

First in a series of four courses. An interdisciplinary course describing the nature of the Western classical and Biblical traditions. Will examine Western values, attitudes, history, art history, the roots of scientific thought, logic, and social institutions such as the family and the state. Included will be works of literature, history, philosophy, and art history. (YR).

HUM 262  Honors: Western Culture II
3.000 Credits

Prerequisite(s): HUM 261 or HIST 261

Second of four courses on Western Civilization required of all Honors students. course covers the period of the Middle Ages, Renaissance, and Reformation. Focus is on ways in which the Biblical and Classical traditions are preserved, adapted, transformed, or discarded under the pressures of new social and political formations. Materials will be drawn from literature, philosophy, political theory, and art of the period. (YR).

HUM 263  Honors: Western Cult III
3.000 Credits

Prerequisite(s): (HUM 261 or HIST 261) and (HUM 262 or HIST 262)

Third of four courses on Western Culture required of all Honors students. Course covers period from 17th to 19th centuries. Focus is on the emergence of scientific thought, Enlightenment political theory, Romantic individualism, and the great 19th-century intellectual revolutions of Darwinism, Marxism, and feminism. Material will be drawn from literature, philosophy, and political and scientific writings of the period. (YR).

HUM 264  Honors: West Cult IV: Mod Era
3.000 Credits

Prerequisite(s): (HUM 261 or HIST 261 or LIBS 261 or SSCI 261) and (HUM 262 or HIST 262 or LIBS 262 or SSCI 262) and (HUM 263 or HIST 263 or LIBS 263 or SSCI 263 or SOC 263)

Fourth of four courses in Western Culture required of all Honors students. Course covers period from late 19th century to present. Focus is on selected major issues of Western civilization in the modern era: science and human values, bureaucratic and totalitarian societies, psychoanalytical thought, feminism, nihilism, existentialism. (AY).

HUM 270  Intro to Africana Studies
3.000 Credits

This gateway course in the AAAS Minor will engage the students in the intellectual issues, historical perspectives and cultural debates in African and African American Studies. Using a trans-disciplinary approach the AAAS faculty teaching this course as a team will draw from the disciplinary strengths of the Humanities, the Social Sciences and the Behavioral Sciences. Texts will include literature, film, music, art, theater, and other forms of popular and folk culture. The course will routinely invite speakers and performers to the class and engage the campus community in these events. (YR)

HUM 275  Intro to Women's Studies
3.000 Credits

A multidisciplinary and multicultural introduction to Women's Studies. An overview of the theories and topics in the Social Sciences, Behavioral Sciences, Humanities, and Natural Sciences that are pertinent to upper-division courses in Women's Studies. (YR).

HUM 290  Topics in Humanities
1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of the humanities. Title as listed in Schedule of Classes will change according to content. Course may be repeated when specific topics differ. (OC).

HUM 304  Studies in Detroit Culture
3.000 Credits

This course is an attempt to define a modern cultural history of Detroit. Taught by two faculty members, the emphasis of the course will vary but the following aspects of the city's cultural
history will be covered in some detail: its literature, arts, music and architecture; its social conditions and broader American culture context. (OC).

HUM 305  Society and Arts in Detroit  
3.000 Credits

This course is an attempt to define a modern cultural history of Detroit. A team of three or four faculty members will explore the relationship between society and the arts in Detroit from several aspects: Detroit's literature, arts, music, and architecture, its social conditions and broader American context. Field trips into the city are also included. (OC).

HUM 310  Art of India  
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106 or HUM 100 or HUM 150 or HUM 170 or HUM 171 or HUM 200 or HUM 201 or HUM 221 or HUM 222 or HUM 223 or HUM 240 or HUM 261 or HUM 262 or HUM 263 or HUM 264 or HUM 275 or HUM 290

An introduction to the classical and medieval civilization of India through the historical presentation of its art forms. The course will examine the philosophical, literary, and visual structures of Hinduism, Buddhism, and Islam and how these have interacted to create traditional and modern Indian culture.

HUM 311  Art of China  
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106 or HUM 100 or HUM 150 or HUM 170 or HUM 171 or HUM 200 or HUM 201 or HUM 221 or HUM 222 or HUM 223 or HUM 240 or HUM 261 or HUM 262 or HUM 263 or HUM 264 or HUM 275 or HUM 290

An introduction to the civilization of traditional China through the historical presentation of its art forms, literary achievements, and philosophical structures. The course will survey the Buddhist, Taoist, and Confucian content of Chinese art and culture from the Shang to the Ch'ing dynasties.

HUM 312  Art of Japan  
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106 or HUM 100 or HUM 150 or HUM 170 or HUM 171 or HUM 200 or HUM 201 or HUM 221 or HUM 222 or HUM 223 or HUM 240 or HUM 261 or HUM 262 or HUM 263 or HUM 264 or HUM 275 or HUM 290

An introduction to Japanese culture through the historical presentation of its varied art forms. Drama, music and the fine arts are studied within the context of Buddhist and Shinto religious practices.

HUM 313  Chinese Painting  
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

A historical survey of the painting of China from the earliest examples found in tombs through works influenced by the West from the modern period. Students will be introduced to Eastern philosophy and relevant literary genres which provide a context for the development of the Chinese painting tradition.

HUM 314  Psychology and Life History  
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

The theory and practice of the life-historical method in psychology and other social sciences. Students will study the dynamics of the life-historical interview, read selected case material and literary autobiographies, and see how first-person accounts are used in the social sciences. They will also tape-record a series of interviews and convert them into a life-historical documents. (YR).

HUM 315  Early Chinese Art and Archaeol  
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

An examination of the art and architecture of early China (Neolithic through Eastern Han). Recent excavations that have significantly changed our view of the early period will be given emphasis. Students will analyze relevant literary and philosophical texts in translation to enhance understanding of the cultural context.

HUM 321  Popular Culture  
3.000 Credits

This course examines the art forms of contemporary popular culture, including rock 'n roll, movies, television, advertising design, and commercial architecture. Our critical inquiry emphasizes the development of the aesthetics and the myths of our modern mass media environment, as well as relationships between popular and "high" culture. (AY).

HUM 335  Intro to Gospel Music  
3.000 Credits

This course explores the history and aesthetics of Black sacred music within cultural context. Major figures (Thomas A. Dorsey, Mahalia Jackson, The Winans Family, Kirk Franklin), periods (slavery, Great Migration, Civil Rights movement), and styles (folk and arranged Negro spirituals, congregational songs, and gospel songs–traditional to contemporary) will be studied through recording, videos, film, and at least one field experience. Underlying the course is the theory (Mellonee Burnim and Pearl Williams-Jones) that gospel music is an expression of African American culture that fuses both African and European elements into a unique whole. (OC).
An introduction to the study of the musical genre of opera through consideration of major operas based upon literary and dramatic works. Covers examples of operas of all eras, from the time of Monteverdi to present. (OC).

HUM 346 Bible and Western Tradition
3.000 Credits

An examination of Biblical literature in various English translations, with emphasis on genres and the use of Biblical materials in European and American literature, art, and music. (OC).

HUM 348 Warriors, Lovers, and Saints
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

An in-depth examination of various personalities of the Middle Ages, both historical and fictional, who are distinctive for their martial prowess, their reputation as lovers, their piety, or some combination of these traits. Attention to these figures (e.g., Roland, Tristan, St. Augustine, and Abelard) will enable the class to consider important medieval norms of behavior, such as chivalry, courtly love, and Christian faith. Satisfies Medieval concentration requirement. (OC).

HUM 349 Bible In/As Literature
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

This course will study selected readings from the Bible, first in regard to their own literary, historical, and cultural contents, and then in regard to their reception, interpretation, and reapplication by later literary tradition. Biblical selections will cover both the Old and New Testaments, while later readings will be drawn from the various literary periods. (OC)

HUM 354 American Silent Cinema
3.000 Credits
Prerequisite(s): FILM 240 or HUM 240 or FILM 248 or HUM 248 or ENGL 248

This course will cover the history of American silent cinema from 1893 to approximately 1928, noting and attempting to account for key technological, aesthetic, economic, and social trends, including the development of motion picture technology and early attempts to monopolize film production; the materialization of independent producers and the film industry's move to southern California; the rise of nickelodeons and picture palaces; the emergence of the star system; the establishment of Hollywood as a symbol of consumer culture; the evolution of the classical Hollywood style; alternatives to Hollywood's system of production; and the advent of the sound era and its effect upon film production. (OC).

HUM 355 Urban Voices: France and Italy
3.000 Credits

This course is an interdisciplinary approach to the concepts of urban development and literary, visual and cultural responses to the process of urbanization mainly in Rome and Paris. The readings will illustrate how the city shaped the writers' creativity, as well as how their works interpret urbanization.

HUM 356 Reading Urban Monstrosity
3.000 Credits
Prerequisite(s): (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

This course questions the literary techniques and forms the English writers developed between 1660 and 1900 to characterize and imagine London to be a unified community and to counter the growing perception of London as a "monstrous city." This image of "the English-speaking City" as an uncontrollable monster may be explored in writings by Daniel Defoe, Jane Austen, Elizabeth Gaskell, Robert Louis Stevenson, Charles Dickens, Thomas Hardy, and Joseph Conrad.

HUM 357 Asian National Cinemas
3.000 Credits
Prerequisite(s): FILM 240 or HUM 240 or FILM 248 or HUM 248 or ENGL 248

This course will introduce students to the national cinemas of the following Asian nations: China, India and Japan; and other related film industries in Hong Kong, Taiwan and Iran. in contrasting the evolution of cinema in the East, with the dominant genres and conventions of Hollywood and European cinematic traditions, the course will enable students to critically examine non-western narratology; the interaction of various nationalist movements with the institution of cinema; and the ways in which Asian cinema has been influenced by various indigenous performance practices and other visual representations. (OC).

HUM 360 French New Wave Cinema
3.000 Credits
Prerequisite(s): FILM 240 or HUM 240 or FILM 248 or HUM 248 or ENGL 248

This course is an exploration of the French New Wave, one of the most influential movements in French film history, as well as Western film theory and praxis. The evolution of the movement will be traced from the 1950s through the late 1960s. The course will concentrate on the themes as well as the theoretical foundations of a movement that set out to redefine filmmaking. The primary focus will be on the style, culture and politics of the New Wave filmmakers and their subsequent influence on avant-garde and independent filmmaking. (OC).
HUM 371  Philosophy in Literature  
3.000 Credits  
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 411 or PHIL 442 or PHIL 485 or PHIL 490  
An exploration of philosophical problems as they are encountered in works of literature. Students electing this course must have successfully completed a previous course in philosophy or have permission of the instructor. (OC).

HUM 385  Black Cinema  
3.000 Credits  
Prerequisite(s): ENGL 240 or HUM 240 or ENGL 248 or HUM 248 or FILM 240 or FILM 248  
The course will examine selected films from African American and African film traditions in order to analyze how their cultural production is responsive to the conditions of social oppression, economic underdevelopment, and neo-colonialism. How film traditions define” Black aesthetics” will also be discussed. (AY).

HUM 387  Film and Feminisms  
3.000 Credits  
Prerequisite(s): ENGL 240 or HUM 240 or FILM 240 or FILM 248 or HUM 248 or ENGL 248  
This course will establish the role of mainstream cinema in the construction of female gender roles in contemporary Western society. The course will engage with debates in feminist film theory and the role of avant-garde and non-Western cinema in challenging the gender ideology of mainstream cinema. (YR).

HUM 389  Nazi Germany  
3.000 Credits  
The course traces the development of the Nazi movement from its ideological roots to Hitler's dictatorship, 1933-1945. political events are interpreted in their social and cultural context to provide a comprehensive view of National Socialism. (OC).

HUM 390  Topics in Humanities  
1.000 TO 3.000 Credits  
Examination of problems and issues in selected areas of the humanities. Title as listed in Schedule of Classes will change according to content. Course may be repeated when specific topics differ. (OC).

HUM 395  Japanese Art I  
4.000 Credits  
Japanese art from prehistoric Jomon period to end of Edo period, including painting, sculpture, architecture, and applied arts. Cultural developments on Asian mainland will be treated to provide proper placement of Japanese art within greater East Asian cultural context. Taught at the Japan Center for Michigan Universities, Hikone, Shiga Prefecture, Japan. (F).

HUM 396  Japanese Art II  
4.000 Credits  
Prerequisite(s): HUM 395  
Continuation of Japanese Art I. Historical development of Japanese painting from Asuka to Edo periods. Approach both chronological and thematic in nature. Secular and religious painting will be discussed. Taught at the Japan Center for Michigan Universities, Hikone, Shiga, Prefecture, Japan. (W).

HUM 397  Humanities Thesis/Project  
6.000 Credits  
The Humanities Thesis/Project is the culmination of the Humanities concentration, normally completed in the Senior year. Students will develop either a thesis or a research project designed to integrate and deepen their study of the three disciplines chosen for their concentration. The thesis will be done under the direction of one or more faculty members in their areas of concentration. The research project will normally be done in collaboration with a faculty member or with an external organization, as approved by the student's project supervisor. Restricted to students in the Humanities concentration who have completed nine hours of upper-division courses with a "Humanities" listing.(F,W,S).

HUM 398  Independent Studies in Hum  
1.000 TO 3.000 Credits  
Readings or analytical assignments in the humanities in accordance with the needs and interests of those enrolled and agreed upon by the student and advising instructor. (F,W).

HUM 399  Independent Studies in Hum  
1.000 TO 3.000 Credits  
Readings or analytical assignments in the humanities in accordance with the needs and interests of those enrolled and agreed upon by the student and advising instructor. (F,W).

HUM 409  Feminist Theories  
3.000 Credits  
Prerequisite(s): WGST 275 or WST 275 or SOC 200 or SOC 201  
This course examines the different perspectives that feminist theorists have offered to analyze the unequal conditions of women's and men's lives. Students taking this course will develop an understanding of how theory functions as a way to know, understand and change the world. They will also be provided with a lens for comparing the assumptions and implications of alternative theoretical perspectives. A particular emphasis of this course is on theorizing the interrelationships among gender, race, class, sexuality and nationality. Course material includes applications of feminist theory to issues such as gender identity formation; sexuality; gender, law and citizenship; women and work; and the history and politics of social movements. Student will not receive credit of both HUM 409 and HUM 509. (AY)
HUM 415 Existentialism and Its Sources
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

An exploration of existentialism through the study of literary and philosophical texts. Particular themes such as freedom, commitment, alienation, and death will be considered in an attempt to formulate an existential conception of the human condition. (OC).

HUM 433 Writing Women in Renaissance
3.000 Credits

This course will be taught in English, and will focus on the influence of Italian literary models for the construction of female literary types as well as female voices in France and Italy form 1300 to about 1600. Italian authors studied include three very influential Florentines, Dante, Petrarch and Boccaccio, as well as Castiglione and Ariosto. We will read women poets, patrons, prostitutes and queens from Italy and France such as Veronica Gambara, Isabella di Morra, Vittoria Colonna, Christine de Pizan, Louise Labe, and Maguerite de Navarre. At issue will be women's roles and women's images in city and court culture during the early modern period, and the interaction of their writings with the literary canons of Italy and France. (OC).

HUM 457 American Cinema
3.000 Credits
Prerequisite(s): ENGL 240 or HUM 240 or ENGL 248 or HUM 248 or FILM 240 or FILM 248

This course will analyze how Hollywood as the nation's dream factory has manufactured fantasies and cultural myths that have constructed the image of American citizenship, both for Americans and non-Americans. It will establish the ideological function of Hollywood texts as providing unifying symbols for a fragmented society. (YR).

HUM 467 Script-Writing Workshop
3.000 Credits
Prerequisite(s): (COMP 105 or CPAS 30) and (COMP 106 or CPAS 40 or COMP 220 or COMP 270) and (ENGL 240 or HUM 240 or HUM 248 or ENGL 248 or FILM 240 or FILM 248)

This writing intensive course will train students to compose a film script, focusing on the substance, structure, and style of an original screenplay. The course will be conducted as a workshop in which students will first, study classic scripts (and films based on these) of the film-school generation of directors, then model scenes and sequences of their own scripts on the principles of the above texts, and finally, write their own respective film stories in accordance with an appropriate narrative structure and design. (YR).

HUM 470 Black Women / Lit, Film, Music
3.000 Credits
Prerequisite(s): FILM 240 or FILM 248 or FILM 385 or AAAS 239 or AAAS 275 or WST 275 or WGST 275 or WST 370 or WGST 370 or HUM 221 or HUM 222 or HUM 223 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 237 or ENGL 239 or ENGL 248 or ENGL 250

This course takes an interdisciplinary approach as it explores the intersections of identity (among them race, class, and gender) as they infuse the literature, film, and music of Black women. to paraphrase Chela Sandoval, this course presents a series of methods, not only for analyzing texts, music, and film, but for creating identities that are capable of speaking to, against, and through power. The diverse work of such theorists as Ella Shohat, Jacqueline Bobo, Valerie Smith, and Sasha Torres will be utilized. (Y).

HUM 477 Ethnographic Film
3.000 Credits
Prerequisite(s): FILM 240 or ENGL 240 or HUM 240 or FILM 248 or ENGL 248 or HUM 248 or ANTH 101

This course will analyze ethnographic films as a medium for the construction of meaning in and across cultures. It will teach students to understand how the putatively "real" content of documentary film creates a mixture of fantasy, news and "science," covering texts as varied as National Geographic photographic layouts, traditional ethnographic films made by anthropologists, and auto-ethnographies of cultural groups such as native Americans and the Trobriand Islanders of Papua, New Guinea, the course will aim to deconstruct such oppositions as indigene vs. Alien, us vs. Them, and self vs.other. Students cannot receive credit for both HUM 477 and HUM 577. (YR).

HUM 485 Internship
3.000 TO 6.000 Credits

The Humanities Internship offers students experience in types of work available to liberal arts graduates. Regular meetings between the Humanities Internship Coordinator and the intern are required. Credit applies to the degree as a general elective and does not apply to any concentration. Maximum total hours credit: 12. Graded Pass/Fail. (F,W).

HUM 490 Topics in Humanities
3.000 TO 4.000 Credits

Examination of problems and issues in selected areas of the humanities. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

HUM 497 Independent Studies in Hum
1.000 TO 3.000 Credits

Readings or analytical assignments in humanities in accordance with the needs and interests of those enrolled and agreed upon by student and advising instructor. (YR).
HUM 499  Directed Research
1.000 TO 3.000 Credits

****NO DESCRIPTION AVAILABLE****

International Studies

The interdisciplinary concentration in International Studies combines foreign language and cultural studies with a thorough grounding in a professional area such as business and management, economics, computer programming, or political science. The concentration is designed to prepare students for careers in international relations and business or other fields with an international dimension.

The concentration consists of three components at the 300-400 level:

I. Foreign Language and Cultural Component (18 hours) devoted to foreign language, culture, and civilization (including optional study abroad).

II. Professional Component (generally 15 hours plus lower division prerequisites) devoted to the basic skills of art administration, business and management, communications, computer and information science, economics, engineering, environmental studies, natural sciences, or political science (international affairs).

III. Support Studies Component (nine hours) devoted to studies (and optional internship experiences) which will provide the larger international context and additional useful skills to coordinate the subjects of Components I and II.

This program is also eminently suitable as a second concentration for students who want to add a strong international component to their major field of interest. In this case, courses taken for their first concentration may also fulfill "Professional Component" requirements in International Studies; e.g., students majoring in art administration, business and management, communications, computer and information science, economics, engineering, environmental studies, natural sciences, or political science (international affairs) can add International Studies as a second concentration by fulfilling requirements of Components I (Foreign Languages and Culture) and III (Support Studies) and counting their first major as Component II (Professional).

PREREQUISITES TO THE CONCENTRATION

For prerequisites check Components I and II under requirements for concentration.

CONCENTRATION REQUIREMENTS

Component I. Foreign Language and Culture
(French, German or Spanish)

Prerequisite
Fourth-semester proficiency (202 level) or equivalent in French, German or Spanish

Required courses
- Language 301-302 Advanced Conversation and Composition I and II
- Language 305 or 306 language of Business.

One culture and/or civilization course

Two additional upper-level courses in language, civilization/culture or literature

A literature course in the chosen language is highly encouraged.

Notes
1. Students are encouraged to spend a semester or year in one of the many approved study-abroad programs.
2. Students who wish to study two foreign languages within the framework of the International Studies Program should see the International Studies Director to design an acceptable balanced curriculum.
3. Normally students will not be permitted to count the Humanities Internship (HUM 485) as a part of the above concentration requirements. They are encouraged to elect an internship as part of their Support Studies.

Component II. Professional Studies

Option A. Business and Management

Prerequisites
- ACC 298 Principles of Accounting .......... 3 hrs
- ACC 299 Accounting Information for Decisions 3 hrs
- ECON 201 Principles of Macroeconomics .......... 3 hrs
- ECON 202 Principles of Microeconomics .......... 3 hrs
- MIS 120 Fundamentals of Information Systems .... 3 hrs
- MATH 104 Precalculus: Management, Life, and Social Sci
- MATH 105 Pre-calculus ................................. 4 hrs
- OR
- MATH 115 Calculus I .............................. 4 hrs

Required courses
- BE 401 Managerial Economics ................... 3 hrs
- MKT 352 Marketing Principles and Policies ........ 3 hrs
- OB 354 Behavior in Organizations ................ 3 hrs
- Two courses ........................................... 6 hrs

At least one from the following two are recommended:
- IB 441 International Financial Management
- IB 446 International Business
- IB 486 Seminar in International Business
- MKT 457 International Marketing

Other courses to choose from
- BA 330 Managerial Communication
- COMM 390 Professional Communication
- MKT 360 Marketing and Society

Option B. Computer and Information Science

Prerequisites
- MATH 115 Calculus I ............................. 4 hrs
- CIS 150 Computer Science I ................. 4 hrs
- OR
- CCM 150 Computer Science I ................. 4 hrs
- CIS 175 Discrete Structures ..................... 4 hrs
CIS 200  Computer Science II.................................4 hrs

Required Courses..........................................................12 hrs
CIS 350  Data Structures..................................................3 hrs

Three additional CIS upper-division courses (300-level or above excluding CIS 351, 399 and 499)..................................9 hrs

Option C. Economics

Prerequisites .................................................................13 hrs
ACC 297  Financial Accounting Concepts........................3 hrs
ECON 201  Principles of Macroeconomics........................3 hrs
ECON 202  Principles of Microeconomics........................3 hrs

MATH 113  Calculus I: Management, Life and Social Science..................................................4 hrs

OR

MATH 115  Calculus I..............................................................4 hrs

Required courses .............................................................15 hrs
ECON 347  International Finance.........................................3 hrs
ECON 348  International Trade............................................3 hrs

One additional course from the following..................................3 hrs
ECON 342  Economic Development
ECON 344  Economics of the Middle East
ECON 362  European and International Economic History

Two additional courses from the following..............................6 hrs
ECON 301  Intermediate Macroeconomics
ECON 302  Intermediate Microeconomics
ECON 305  Economic Statistics
ECON 342  Economic Development
ECON 345  Comparative Economic Systems
ECON 362  European and International Economic History
ECON 415  Introduction to Econometrics

Option D. Museum Studies

Prerequisites .................................................................12 hrs
ARTH 101  Western Art before 1400.................................3 hrs
ARTH 102  Western Art after 1400.................................3 hrs

ARTH 103  Arts of Asia.........................................................3 hrs

OR

ARTH 106  Survey of Western Architecture........................3 hrs

ECON 202  Principles of Microeconomics..........................3 hrs

Required courses.............................................................15 hrs

Pick four courses from four different areas..........................12 hrs
Asian
ARTH 311  Art of China
ARTH 312  Art of Japan

Ancient and Classical
ARTH 319  Egyptian Art
ARTH 321  Greek Art
ARTH 322  Roman Art

Medieval
ARTH 331  Early Christian and Byzantine Art
ARTH 332  Early Medieval and Romanesque Art
ARTH 333  Gothic Art and Architecture

Renaissance
ARTH 341  Early Renaissance Art
ARTH 342  High Renaissance Art
ARTH 343  Northern Renaissance Art

Baroque
ARTH 351  Southern Baroque
ARTH 352  Northern Baroque

Modern
ARTH 362  Impressionism and Post-Impressionism
ARTH 363  Early Twentieth-Century Art
ARTH 364  Later Twentieth-Century Art
ARTH 365  Modern Architecture

Also required
ARTH 410  Art Administration Seminar I..............................3 hrs

Option E. Political Science (International Affairs)

Prerequisites .................................................................12 hrs
POL 201  Introduction to Comparative Government............3 hrs
ECON 201  Principles of Macroeconomics........................3 hrs
ECON 202  Principles of Microeconomics........................3 hrs

One of the following courses .............................................3 hrs
Programming: CIS 150 or CCM 150
Analysis: POL 300
Statistics: ECON 415 or MATH 363, PSYC 381 or SOC 383

Required courses .............................................................15 hrs
Five of the following 3-hour courses or other Political Science
courses with a clearly international dimension:

POL 341  Canadian Politics
POL 350  Politics of Developing Areas
POL 355  Religion and Politics
POL 361  American Foreign Policy
POL 371  Problems in International Politics
POL 375  The Great Powers in Competition and Conflict
POL 385  Middle East Politics
POL 386  African Politics
POL 387  Southern Africa
POL 450  Revolution
POL 451  Peace and War
POL 471  American Foreign Policy I
POL 472  American Foreign Policy II
POL 473  International security Affairs
LIBS 364  The European Union

Note: Normally, students will not be permitted to count a
Political Science Internship (POL 494-497) as part of the above
concentration requirements. They are encouraged to elect an
internship as part of their Support Studies.

Option F. Environmental Studies

Prerequisites .................................................................9 hrs
3 courses to be chosen from at least two of the following areas
ESCI 275 Introduction to Environmental Science

OR

ESCI 301 Environmental Science

ENST 201, 203, 204; GEOL 118

One computing course from the following: CIS 101, 102, 103,
104, 105, 112, 150; CCM 150
Required courses .................................................................15 hrs
ENST 301 Concepts of Environmentalism .......................... 3 hrs
ENST 305 Environmental Instrumentation and
analysis .............................................................................. 3 hrs

Three additional courses from the following ......................... 9 hrs
ENST 300 Urban Geography
ENST 325 Environmental Politics
ENST 330 Land Use Planning
ENST 340 Remote Sensing
ENST 350 Environmental Law
ENST 351 Environmental Economics
ENST 365 Environmental Psychology
ENST 385 Environmental Internship
ENST 390 Topics in Environmental Studies
ENST 474 The Environment as an Educational Resource
ENST 486 Environmental Interpretation

Note: By permission, courses in Environmental Science (some of which have additional prerequisites) may be substituted.

Option G. Natural Sciences

Required courses
Fulfillment of all requirements for a minor in any natural science program (i.e., a minimum of 12 upper-division hours plus all lower-division prerequisites),
OR
Fulfillment of all concentration requirements in any natural science program.

Option H. Engineering

Required courses
Fulfillment of all requirements for a degree in any of the Engineering disciplines will satisfy all Component II (Professional) requirements for the International Studies concentration.

Due to the high number of prerequisites needed to get into upper-level engineering classes, there is no regular 15-hour (professional) component for the various engineering disciplines.

Option I. Communications

Prerequisite
SPEE 101 Principles of Speech Communication ........... 3 hrs

Required courses
COMM 430 International Communications .................. 3 hrs

Plus twelve hours taken in two different tracks listed below. Six hours must be taken in one of the four tracks. The remaining six hours must be taken from a second track. Of the 12 upper-level hours, three hours must be in a speech course and three hours in a Communications writing course.

*Indicates a Communications writing course.

Track A: Organizational and Professional Communication
COMM 317* Case Studies in Technical Writing
COMM 340* Professional Communication
COMM 440 Writing for the Organization
COMM 450 Principles of Organizational Communication
COMM 477 Professional Communication Ethics
SPEE 400 Speech Skills for Professionals

Other approved courses
COMM 300 Communication Research Methods
COMM 390 Topics in Communication
COMM 398 Independent Study in Communication
COMM 464 Contemporary Rhetorical Theory
HUM 485 Humanities Internship
LING 375 Psychology of Language
POL 328 Public Opinion and Pressure Groups
POL 329 Politics and the Media
PSYC 421 Introduction of Group Dynamics
SPEE 399 Independent Study in Speech

Component III. Support Studies

This component is designed to enhance the international dimension of the concentration and to coordinate the language and culture studies with professional preparation. Students will take three courses (9 hours) in fields such as anthropology, art history, business and management, economics, foreign cultures, history, and political science. Courses should be selected in accordance with students' particular needs and with the prior approval of the Director of International Studies.

1. Concentrators should obtain from the IS Program Director information on courses that are especially recommended for the Support Studies Component.
2. Students must obtain written approval from the IS Program Director for the three desired support studies courses before enrolling in them. A copy of the Support Studies Approval Form will be included in the students' permanent CASL file. Concentrators should notify the IS Program Director of any changes they may wish to make in their choice of Support
Studies classes as they complete the degree requirements; a corrected form will then be placed in the students' file.

3. Students may elect the Humanities Internship (HUM 485) for a maximum of three hours and avail themselves of on-the-job experience in a business, governmental, or cultural institution. See the IS Program Director for Internship Guidelines.

4. Students with appropriate background in political science may elect one of the various political science internships (POL 494-497) for a maximum of three hours.

5. Students may use upper-level courses, especially culture/civilization, literature, or film courses, in another foreign language for Support Studies credit. Students may not use courses in the same foreign language designated as Component I for Support Studies credit.

6. Students may not use identical areas for both Components II and III, e.g., students with Professional Studies (Component II) in Business and Management may not select Business and Management courses for Support Studies (Component III) credit.

7. Students' course choice in Components II and III must include a minimum total of two courses with a clearly international dimension; a greater number is highly desirable.

ADVISING

International Studies concentrators are urged to consult with faculty in the foreign languages, management, and the other professional areas before the beginning of each semester.

Students with a high school background of three to four years of French, German, or Spanish would be able to begin their studies at UM-D with the 201, 202, or even 301 foreign language class. The curriculum for such students would be more flexible than that previously described. Students with a high school foreign language background would have an additional 8-11 hours for electives in areas of their special interests.

Japanese (JPN)
(not a field of concentration)

The language courses are only open to those students participating in the unique program in Japanese language and culture offered in the Japan Center, Shiga prefecture. Consult “Japan Center for Michigan Universities” in this Catalog for further information. Students interested in learning about Japanese culture may elect the courses listed below either at the Japan Center or at UM-D.

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>JPN 128</td>
<td>Beginning Japanese I</td>
<td>5.000</td>
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<tr>
<td>JPN 129</td>
<td>Beginning Japanese II</td>
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<td>JPN 178</td>
<td>Accelerated Japanese I</td>
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<tr>
<td>JPN 225</td>
<td>Accelerated Japanese II</td>
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<tr>
<td>JPN 228</td>
<td>Intermediate Japanese I</td>
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<tr>
<td>JPN 229</td>
<td>Intermediate Japanese II</td>
<td>5.000</td>
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<tr>
<td>JPN 395</td>
<td>Japanese Society &amp; Culture I</td>
<td>3.000</td>
</tr>
<tr>
<td>JPN 396</td>
<td>Japanese Society &amp; Culture II</td>
<td>3.000</td>
</tr>
</tbody>
</table>

JPN 128  Beginning Japanese I
5.000 Credits

Continuation of JPN 128. Taught at the Japan Center for Michigan Universities, Hikone, Shiga, Japan. Seven contact hours per week. (W).

JPN 178  Accelerated Japanese I
5.000 Credits

A demanding course that brings a student with little or no knowledge of Japanese through the beginning level into the intermediate level. Taught at the Japan Center for Michigan Universities, Hikone, Shiga, Japan. Seven contact hours per week. (F).

JPN 225  Accelerated Japanese II
5.000 Credits

Continuation of JPN 128. Taught at the Japan Center for Michigan Universities, Hikone, Shiga, Japan. Seven contact hours per week. (F).

JPN 228  Intermediate Japanese I
5.000 Credits

Japanese instruction at the intermediate level. Taught at the Japan Center for Michigan Universities, Hikone, Shiga, Japan. Seven contact hours per week. (F).

JPN 229  Intermediate Japanese II
5.000 Credits

Continuation of JPN 228. Taught at the Japan Center for Michigan Universities, Hikone, Shiga, Japan. Seven contact hours per week. (W).

JPN 395  Japanese Society & Culture I
3.000 Credits

Focused on modern Japan, the course will include Japanese geography and ethnography, with an emphasis on the Japanese idea of homogeneity. Japan’s role in the international context will also be examined. Classroom work will be combined with field trips, in a writing-intensive approach. Taught at the Japan Center for Michigan Universities, Hikone, Shiga Prefecture, Japan.

JPN 396  Japanese Society & Culture II
3.000 Credits

The prehistoric and historic roots of Japan. Political economy of contemporary Japan and future directions for the country. Classroom work will be combined with field trips, in a writing-intensive approach. Taught at the Japan Center for Michigan Universities, Hikone, Shiga Prefecture, Japan.

Journalism (see Communications)
Latin (LAT)  
(not a field of concentration)

**COURSE OFFERINGS**  
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

**LAT 101**  
Beginning Latin I  
4.000 Credits

An introduction to reading and translating Latin. The strong influence of Latin on the formation and meaning of English (as well as French, Spanish, and Italian) will be used to illuminate the importance of Latin for understanding western languages and thought. Literature appropriate for the level will be read. (F).

**LAT 102**  
Beginning Latin II  
4.000 Credits  
Prerequisite(s): LAT 101

A sequel to Beginning Latin I. Literature appropriate for the level will be read. (W).

**Law and Society (minor only)**

Law and Society is a program of study that is intended for the understanding of law in its historical and social contexts. Through study of the evolution of law from ancient societies to our contemporary day, students are encouraged to see law as a dynamic institution shaped by historical forces and social values. Substantively, emphasis is given to the study of such contemporary legal issues as human freedoms and civil rights, social responsibility and the treatment of criminals, constitutional interpretation and the enunciation of citizen rights.

The Law and Society field takes up studies of the legal environment of various institutional sectors in our society. The health care, the family, and mental health systems all have detailed legal environments setting standards for professional conduct, responsibilities of various participants and enabling legislation of various kinds. Other fields, such as communications media, business enterprises, and the military also have fully elaborated legal environments.

In addition to its role as a source of research into the field of Law and Society, the Program offers an undergraduate CASL-wide minor. The Law and Society Minor is structured as follows:

**Two prerequisites**  
one course from  
PHIL 233  Critical Thinking  
PHIL 234  Symbolic Logic  
PHIL 350  Symbolic Logic

**AND**  
PHIL 240  Ethics

**Core course**  
SOC 453  Sociology of Law

**Four Track courses**: two from group A and two from group B

**Group A**: Legal environments of industries and professions  
COMM 302, 403, 415; ENST 350; PHIL 442; POL 364; SOC 454, 456, 457; PDED 425; ACC 360; HRM 408; LE 452, 453.

**Group B**: Structure and process of legal institutions  
ECON 325, 333, 385, 421, 481; PHIL 335, 445; POL 304, 312, 315, 316, 362, 363, 413, 414, 415, 4165; SOC 471.

For more information, students and faculty should contact the College of Arts, Sciences, and Letters Office of the Dean, 2002 CB, (313) 593-5490 or visit the Program website at http://casl.umd.umich.edu/behsci/ls/.

**Liberal Studies**

Whereas to concentrate in a traditional field of study implies, among other things, that a student must take at least 24 upper-division credit hours in the field of study chosen and at least six upper-division credit hours of cognates in related fields, a concentration in Liberal Studies permits the student to choose three areas of focus which, together, form a coherent and academically sound program that best responds to the interests, needs, and goals of the student.

This program is designed primarily for students who wish to receive a AB or BS but who prefer a program that offers a higher degree of flexibility than the more structured standard concentrations. The AB in Liberal Studies may also appeal to pre-law and pre-management students.

To meet the requirements for this program, a student must complete at least 48 credit hours in courses numbered 300 or above, of which at least 30 credit hours must be completed in CASL. A student must also choose and officially declare three areas of focus, after consultation with and approval of an adviser at the CASL Office of Advising and Student Records, Room 1039, CB. At least two areas of focus must be from CASL. No credit hours transferred from a community college and no lower-division courses from a four-year institution may be included in the credit hours required for any area of focus. Courses used to satisfy distribution requirements may not be employed to satisfy upper-division area of focus requirements. Further, a student may not select a course on a Pass/Fail basis to fulfill the initial 12 or 15 credit hours in any of the three areas of focus.

Note: There may be prerequisites for the upper-division courses. This is especially true for areas of focus in the sciences, mathematics, computer science, and engineering. Consult course descriptions.

The following courses, though offered under the rubric of Liberal Studies, cannot be used to fulfill any of the requirements for the three areas of focus:

**Liberal Studies (LIBS)**

**COURSE OFFERINGS**  
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

**LIBS 101**  
Ends of Acad Success in DL  
1.000 Credits

This course is intended to introduce students to the nature and
purpose of higher education, and of academic inquiry, with particular reference to the distance learning environment. academic planning, information literacy, bibliographic search techniques and the evaluation of electronic information are discussed. The problems and pitfalls of independent study through distance learning are examined together with ways to integrate cooperative learning and collaboration into distance education.

LIBS 111  To Infinity and Beyond
3.000 Credits
Co-requisite(s): COMP 105

In this seminar we explore the emergence and evolution of concepts surrounding zero, infinity, and dimension. These mathematical topics are introduced in a historical context as the by-products of human enterprise. Students study foundations of number systems, investigate objects with fractional dimensions, gain an understanding of logic as it applied to proof methodology, and develop visualization skills, creating a tangible experience with abstract mathematical objects and concepts. The supporting material is drawn from selected readings, as well as films and videos. (F).

LIBS 112  Car Culture
3.000 Credits
Co-requisite(s): COMP 105

A study of the impact of the automobile on contemporary American culture and society using the concepts and approaches of the multidisciplinary field of Science and Technology Studies. The course examines the social contexts and consequences of how cars are designed, assembled, marketed, driven, and regulated; their role in shaping individual, group, and national identity; and their place in the American imagination. (F).

LIBS 113  The World in a Grain of Sand
3.000 Credits
Co-requisite(s): COMP 105

From a single artifact (an object or a text), students will learn to build an understanding of an entire culture in a given historical moment. First by analyzing the artifact and then by building a larger context in which to interpret the significance of that artifact, students will also build their own academic community. By the end of the course, each student will have mastered the use of all library research resources and have developed a specific expertise in an area of research related to the artifact. By the end of the course, the class will have organized its own academic conference on the artifact in which they will share their research and insights. The professor will be a specialist in the area from which the artifact is selected and will guide you in your mastery of research skills and acculturation to academic life. (F).

LIBS 114  The Roots of American Activism
3.000 Credits
Co-requisite(s): COMP 105

This course examines the history, rhetoric, and social context of American citizen activism in the nineteenth and early twentieth centuries. Topics will include African American Abolitionist and civil rights activism, women's suffrage, the home economics movement, the labor movement, educational reform, and student political involvement on college campuses. We will also pay special attention to how these movements played out locally. Our goal throughout will be to understand how ordinary citizens used language to effect social change - and How we today might do the same. (F)

LIBS 115  Shakespeare: Stage/Page/Screen
3.000 Credits
Co-requisite(s): COMP 105

This course will expand the study of Shakespeare from its traditional literary medium to its heritage of performance on a variety of stages and to its adaptation to the mediums of film and television. Elucidating Marshall McLuhan's axiom - "the medium is the message" - the course will enable students to understand how a text is inflected by its medium. Students in this seminar are required to participate in a class trip to the Stratford Shakespeare Festival in Ontario, Canada. Costs for the tickets and lodging will be partially subsidized. Likely student costs: food and transportation. For further information contact the instructor. (F)

LIBS 116  Fast Food Nation
3.000 Credits
Co-requisite(s): COMP 105

This course explores the role of fast food in our society. Fast food is something we take for granted, yet it has helped shape our culture as well as our economy and is a key symbol of the American lifestyle to the rest of the world. In this course we will examine the history of the fast food industry, the nature of work in the fast food sector, the global reach of corporations like McDonald's and Starbucks, the environmental impact of food production, and the rise of the "slow food" movement. The course will introduce students to perspectives from the social and behavioral sciences including economics, sociology, anthropology, environmental studies, science and technology studies, politics, and history. (F)

LIBS 117  The Conscious Brain
3.000 Credits
Co-requisite(s): COMP 105

This course will use visual perception and its organization in the brain and related phenomena such as attention and memory as tools to explore the issue of where in the brain consciousness is located, and what the necessary and sufficient criteria for consciousness are. a central remise is that consciousness, formerly the sole province of philosophers, can now be studied empirically using scientific methodologies. (F)

LIBS 118  Gender & Relationships
3.000 Credits
Co-requisite(s): COMP 105

This course will focus on gender and close relationships. We will examine how pop culture (including popular movies and self-help psychology books) tend to construct gender as a naturally occurring dichotomy, emphasizing the "vast" differences between women and men. For example, John Gray's relationship self-help book titled "Men are from Mars, Women are from Venus" has sold millions of copies and has helped to
perpetuate the idea that women and men are so different as to be considered different species. The course will introduce students to perspectives from various disciplines including psychology, sociology, communications and gender studies. Using theory and scientific research from these various disciplines, students will learn to critically examine the ways that gender and close relationships are portrayed in our society.

LIBS 119  Culture Wars 3.000 Credits  Co-requisite(s): COMP 105

This course explores the aspects of the conflict between religion and science in America using the Scopes Trial of 1925 as the primary case study. The trial centered on the teaching of certain ideas generally thought to be part of Charles Darwin's theory of evolution via natural selection. These claims will be evaluated by examining the science of Darwin's "On the Origin of Species". The political debate will be examined first in the context of Thomas Jefferson's writings on democratic policy and science, and then from the perspective of early populist and fundamentalist reaction to Darwinism. The subsequent development of Darwinism patterns in American social, ethical, and literary thought will also be explored, as will the rise of the modern creationist movement. The course will conclude with an analysis of the political, educational, and scientific response to that movement.

LIBS 120  World War II and the Cinema 3.000 Credits  Co-requisite(s): COMP 105

This course seeks to explore how the Second World War has been depicted to American audiences during the previous half century. It focuses on ten major films. The first half of the course examines a series of themes uppermost in the minds of directors during the conflict; the second half of the course will explore how the legacy of the war has been remembered during the previous half century.

LIBS 121  East Meets West: Global Conn 3.000 Credits  Co-requisite(s): COMP 105

This seminar will introduce students to the following: (1) key primary sources for China and East Asia that focus on global interconnections and exchanges; (2) key theoretical issues tied to thinking about global interconnections; and (3) suggested further readings in secondary sources. Upon completion, students will be familiar with some of the basic ways to think and to find out about exchanges and interactions in world history, and to incorporate Chinese and East Asian materials (in translation) into their research.

LIBS 122  Writing About College Life 3.000 Credits  Co-requisite(s): COMP 099

In this class we will look at how our own experiences conform to or challenge popular myths and narratives about the historical and contemporary college experience in America. We will study how college life is constructed in novels, newspapers, diaries, letters, personal interviews, essays, textbooks and films. While reading and writing about the college experience, we will address the intersection between fact and fiction and explore how print and visual representations might shape our perceptions of our world. Overall, students' own stories as college students will be crucial to the class's investigation, assessment and production of college life narratives.

LIBS 123  Cognitive Science Fiction 3.000 Credits  Co-requisite(s): COMP 105

What does it mean to be human? Can machines fall in love? Can our consciousness be transmitted to another human being or substance? Is language fundamental to communication of thought? If so how would communication with other life forms proceed? These questions have traditionally been the domain of science fiction. However, given advances in technology, scientists are asking these questions with increasing frequency. This course explores the interplay between science and fiction. Each week we will examine a particular question through both science and fiction (books, films, etc) and see to what extent the science coincides with, or deviates from, the fiction. There will be a heavy emphasis on topics in cognitive science - an interdisciplinary science of mind and intelligence encompassing fields such as cognitive psychology, philosophy, linguistics, neuroscience and artificial intelligence.

LIBS 191  Reentry to Education 3.000 Credits

Working adults who have been out of the classroom for some years will discover their academic strengths and will learn about the educational services, courses, and programs available at UM-D and elsewhere. Insights will be developed in the use of counseling services, the selection and planning of a degree program, and the methods of improving learning skills.

LIBS 200  Computer Literacy 1.000 TO 3.000 Credits

An introductory course in computing for students who do not intend to become computer programmers or designers. The course explores the nature and origins of computing, and examines its uses and limitations in such applications as teaching/learning, buying/selling and information storage/retrieval. The social implications of the computer revolution will be examined and limited programming will be provided with a small, home computer.

LIBS 300  Co-Op Education Seminar 1.000 Credits

Required co-op seminar is a corequisite or immediate post-requisite of the initial co-op work assignment (LIBS 395). Course seeks to correlate the off-campus work experience with academic learning and career orientation issues through discussion and evaluation of work experiences as they are likely to be encountered by the liberal arts graduate through analysis of job-seeking information and skills. Evaluation of student performance is based upon discussion and the quality of required assignments.
LIBS 307 Labor and Literature  
3.000 Credits  
Prerequisite(s): COMP 105 or CPAS 30

This course traces the development of the modern U.S. labor force through historical documents and literary works. Topics to be covered include: the rise of manufacturing labor, the immigrant work force, the rise of industrial unions, the post-industrial worker. (YR).

LIBS 320 Library Research Skills  
1.000 Credits

Development of library research skills utilizing periodical and newspaper indexes, reference materials, government documents, biographical sources.

LIBS 364 The European Union  
3.000 Credits  
Prerequisite(s): COMP 105

This course examines the history and politics of European integration, notably institutional development, decision-making procedures and dynamics, and policy formulation in the European Union. The course will concentrate on the intergovernmental conferences and treaty reform, the relationship between European politics at the subnational, national and supranational levels; the role of national, institutional, and non-state actors; problems of accountability and legitimacy; the economic and monetary union; and enlargement. The course will also address questions of globalization and technology, and the American perception of the EU. (OC).

LIBS 395 Co-op Education Work Assignment  
1.000 TO 3.000 Credits

Student is eligible to compete for job openings listed with the co-op office by employers. After application and interview, employers hire the student best suited to employer's job needs. Study/career-related paid positions are either alternating full-time or parallel part-time. Under a cooperative work agreement the student submits academic learning objectives and evaluations to co-op faculty advisor, who, upon review of employer evaluation, determines credit for co-op learning experience. Students must fulfill the seminar and study term requirements of the program.

Linguistics (minor only)

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in linguistics.

Linguistics (LING)

COURSE OFFERINGS  
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

LING 280 Introduction to Linguistics  
3.000 Credits

The basic concepts, scope, and methodology of the descriptive and historical study of the English language. (F,W,S).

LING 281 Language, Thought, and Culture  
3.000 Credits

A practical application of linguistic principles to many aspects of human behavior. Some of the topics covered will be language and thought, first and second language acquisition, social dialects, and reading. (OC).

LING 375 Psychology of Language  
3.000 Credits  
Prerequisite(s): PSYC 171 or PSYC 170 or LING 280

The nature of human language as seen from the perspective of experimental psychology. The course introduces the student to current developments in linguistic theory. (OC).

LING 383 American English  
2.000 TO 3.000 Credits  
Prerequisite(s): LING 280 or LING 281

The development of American English and its dialects interpreted in the light of cultural history and process of language change. (YR).

LING 385 Gender Differences in Language  
3.000 Credits  
Prerequisite(s): LING 280 and LING 281

Examines theories of differences between male and female speakers of English, focusing on phonological, syntactic, semantic, stylistic, and conversational features, with analyses of differences in speaking strategies and agendas of male and female speakers, as well as split-gender language situations in the workplace, home, and social settings.

LING 388 Language Pathologies  
3.000 Credits  
Prerequisite(s): LING 280 or LING 281

A survey of language pathologies, spoken and written; production and reception; primary and secondary (those arising from other medical dysfunctions: stroke, muscular dystrophy, multiple sclerosis, cerebral palsy, cleft, deafness). Attention to pathologies related to psychoses and neurological disorders. (AY).

LING 390 Topics in Linguistics  
3.000 Credits

Examination of problems and issues in selected areas of linguistics. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

LING 399 Independent Studies in Ling  
1.000 TO 3.000 Credits

Readings or analytical assignments in linguistics in accordance
with the needs and interests of those enrolled and agreed upon by the student and advising instructor. (F,W).

**LING 425 Language and Society**
3.000 Credits
Prerequisite(s): ANTH 101 or LING 280 or LING 281

An examination of the social functions of speech through readings and exercises, emphasizing schools and other applied settings. Topics include ethnic and social class dialects, codeswitching, and the organization of conversation. Students cannot receive credit for both LING 425 and LING 525. (YR).

**LING 461 Modern English Grammar**
3.000 Credits
Prerequisite(s): LING 280 or LING 281

The morphological and syntactic analysis of the structure of present-day English considered in the light of modern linguistic science. Students cannot receive credit for both LING 461 and LING 561. (F,W,S).

**LING 464 Contemporary Rhetorical Theory**
3.000 Credits
Prerequisite(s): COMM 2015 or COMM 220 or COMM 250 or COMM 260 or COMM 280 or COMM 290 or ENGL 223 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 240 or ENGL 248 or ENGL 250

An examination of contemporary rhetorical theories through study or representative practitioners and related developments in linguistics, philosophy, and psychology. Students cannot receive credit for both LING 464 and LING 564. (AY).

**LING 465 Discourse Analysis**
3.000 Credits
Prerequisite(s): LING 280 or LING 281

An examination of the syntactic and semantic devices and structures underlying communication in written texts and oral interaction. Material to be analyzed will vary from term to term (technical reports, scholarly articles, newspaper stories) but examples will be drawn primarily from the written language. Students cannot receive credit for both LING 465 and LING 565. (OC).

**LING 476 Sociolinguistics**
3.000 Credits
Prerequisite(s): LING 280 or LING 480

An examination of sociolinguistic approaches to the issue of variation in language. Areas to be considered include ways of defining and constructing language, different types of language varieties, how variation is structured in language, the role of sociolinguistic variation in linguistic change, and the significance of linguistic acts of identity. (YR)

**LING 477 African American English**
3.000 Credits
Prerequisite(s): LING 280 or LING 281 or LING 480 or LING 580

An examination of the structure, history and use of African-American English. Topics will include the pronunciation, grammar and vocabulary of African-American English, theories of origin, linguistic repertoire and code-switching in African-American communities, the Ebonics controversy, and the role of this variety in education and identity formation. Students cannot receive credit for both LING 477 and LING 577.

**LING 480 Concepts in Linguistics**
3.000 Credits

An examination of foundational concepts in linguistic and sociolinguistic theory, which explores the intellectual and philosophical problems raised by these concepts. Issues covered include the metalinguistic nature of language studies, the relation of language to the communication systems of other species, the physiological basis of language, language variation, language function and instrumentality, and innate versus learned behavior. Designed for students pursuing the Endorsement in ESL Teaching. (YR)

**LING 482 History of the English Lang**
3.000 Credits
Prerequisite(s): LING 280 or LING 480

A thorough grounding in the history and structure of the English language. At issue are the linguistic and ideological origins of the concept of Standard English, and the strengths and limitations of different methods of analyzing the history of the language. The course will emphasize sound change, grammatical change, and their sociolinguistic context. (YR)

**LING 484 World Englishes**
3.000 Credits
Prerequisite(s): LING 280 or LING 480

A study of the origin and significance of different forms of English throughout the world. Contact with other languages, pidginization, creolization, standardization, and the formation of the three circles of English are examined. (YR)

**LING 490 Topics in Linguistics**
3.000 Credits

Examination of problems and issues in selected areas of linguistics. Titles as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

### Mathematics

Students who desire to specialize in mathematics may be broadly classified into the following six groups: 1) those who wish specifically to become teachers of mathematics in high school; 2) those whose interests lie primarily in the study of mathematics as a science, the purpose of such students being usually to continue their studies at the graduate level in order to become teachers at the college level, or persons otherwise engaged in an occupation in which knowledge of higher mathematics is required; 3) those whose interests lie in the field of engineering and/or physics, with emphasis on applied mathematics; 4) those who wish to divide their program between
mathematics and related fields such as physics or chemistry; 5) those who wish to study mathematical statistics; 6) those whose interests lie primarily in computers and computational mathematics.

PREREQUISITES TO THE CONCENTRATION

Students desiring to concentrate in mathematics are required to have successfully completed MATH 115, 116, 200, 215, 216, and 227.

CONCENTRATION REQUIREMENTS

Required courses

A total of at least 30 hours of coursework must be elected in mathematics and cognate areas at the 300- or 400-levels. Students are required to elect 24 hours of coursework in mathematics including:

1. Courses chosen in accordance with one of the following two options:
   a) Algebra Option: elect 412, 413, 451, and at least one of 452, 492 and 455.
   b) Analysis Option: elect 412, 451, either 452 or 492, and at least one of 331, 395, 413 and 473.

3. Any two other mathematics courses numbered 300 through 499 approved for Mathematics majors.

Students who wish to use graduate-level courses, numbered 500 or higher, as part of the 24 hours of upper-level coursework required for the concentration, must submit a petition to obtain the approval of the Program Advisor in Mathematics.

Students seeking secondary teacher certification must take MATH 331, MATH 486, EDD 450 and EDD 451. Also, MATH 395 and a course in statistics are recommended for such students. None of the following MATH courses may be used to fulfill any requirements of either a Mathematics concentration or a Mathematics minor: 363, 385, 386, 387, 442, 443, 444, 445, 446, 447, 449 and 486. For further details see the latest edition of the “Advising Newsletter,” published twice a year, available from the Mathematics Department Office.

Students must also elect six hours of coursework at the 300 level or above in cognate areas such as statistics, computer science, logic, chemistry, physics, and engineering. As examples of cognates, any physics or chemistry course at the 300 level or higher is acceptable, as is any STAT, CIS, ECE or ME course at the 300 level or higher. Other courses include IMSE courses at level 300 or higher (except IMSE 334) and PHIL 350 and 485. Finally, cognate credit is given for CHEM 225 and 226, and for CIS 290 if CIS 200 has been completed. Particular courses other than those above must be approved by the mathematics program advisor. CCM 150 or CIS 150 or a 3 credit-hour CIS course that has CIS 150 as a prerequisite is required for the concentration.

CREDIT BY EXAMINATION

The department grants credit for Calculus I to those students who have received a score of three, four, or five on the AB Exam or a score of three on the BC Exam of the Advanced Placement Program Tests of the College Entrance Examination Board. Credit is granted for both Calculus I and Calculus II to those students who have received a score of four or five on the BC Exam of the Advanced Placement Program Tests. In each case, the student is then eligible to elect the next calculus course in the calculus sequence.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours in mathematics courses approved for upper-level credit in the mathematics concentration program.

Mathematics (MATH)

COURSE OFFERINGS

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

MATH 080  Introductory Algebra  3.000 Credits

Topics include operations with signed numbers, translation from words into mathematical language, introduction to operations with polynomials and factoring polynomials, linear equations and inequalities, graphing, radicals, and quadratic equations. This course is offered as a service to students who need extra preparation in algebra skills as well as students who have never had algebra. The course is graded on an A, B, C, no credit basis. Students intending to elect this course should have taken at least one year of high school mathematics. This Course is offered for additive credit.(F,W,S).

MATH 090  Intermediate Algebra  3.000 Credits

A continuation of introductory algebra. Emphasis is on extending introductory concepts as well as introducing new concepts. Factoring polynomials, simplifying rational expressions, solving linear and quadratic equations and inequalities, solving systems of equations, rational exponents and radicals, graphing of parabolas and circles, functional notation, and introduction to logarithms. The course is graded on an A, B, C, no credit basis. Students intending to elect this course should have taken at least one year of high school mathematics. This course is offered for additive credit.(F,W,S).

MATH 104  Precalc: Mgt, Life, & Soc Sci  4.000 Credits

Primary purpose of this course is to prepare students for success in the non-trigonometry-based calculus, or for success in any other course that requires a strong background in non-trigonometric mathematics. Following some review of basic algebraic concepts and procedures, and of some analytic geometry, topics include linear, quadratic, rational, exponential
and logarithmic functions, as well as their respective functional inverses. The relationships between the graphs of these functions, solutions to equations involving these functions, and applications of these functions receive detailed attention. The geometric approach to linear programming, for determining solutions to certain types of optimization problems, is covered as an application of systems of linear inequalities. (This course is not for students who need MATH 115, MATH 116, or MATH 205/215. Credit will not be given for both MATH 104 and MATH 105.) Students intending to elect this course should have taken at least two years of high school algebra (or MATH 090) and one year of high school geometry. (F,W,S).

MATH 105 Pre-Calculus
4.000 Credits

Primary purpose of this course is to prepare students for success in trigonometry-based calculus, non-trigonometry-based calculus, or for success in any other course that requires a strong background in pre-calculus level mathematics. Topics include some review of basic algebraic concepts and procedures, and of some analytic geometry. Emphasis is placed on linear, quadratic, rational, exponential, logarithmic, and trigonometric functions, as well as their respective functional inverses. The relationships between the graphs of these functions, solutions to equations involving these functions, and applications of these functions receive detailed attention. Prerequisites: 2 years of HS algebra (or MATH 090) and 1 year of HS geometry. Students cannot receive credit for both MATH 104 and MATH 105. (F,W,S).

MATH 113 Calc I: Mgt, Life and Soc Sci
4.000 Credits
Prerequisite(s): MATH 105 or MATH 104 or MPLS 113

Primarily a study of the differential and integral calculus of algebraic, logarithmic, and exponential functions of one variable. Topics include limits, continuity, differentiation, integration, graphing, marginal analysis, optimization, related rates, area, and volume. Designed for students in management, social sciences, and some of the biological sciences. (This course does not fulfill the calculus requirements for concentration in chemistry, physics, biochemistry, engineering, or mathematics. Credit cannot be received for both MATH 113 and MATH 115.) (F,W,S).

MATH 114 Calc II: Mgt, Life and Soc Sci
4.000 Credits
Prerequisite(s): MATH 113 or MATH 115 or MPLS 215

Multivariable calculus (including partial differentiation and multiple integrals) and some elementary differential equations. Introduction to probability and statistics (including the normal distribution), and systems of linear equations using matrix methods (including the simplex process). Students cannot receive credit for both MATH 114 and MATH 116. (F,W).

MATH 115 Calculus I
4.000 Credits
Prerequisite(s): MATH 105 or MPLS 113

Functions and their graphs; limits and continuity of functions; differentiation; algebraic and trigonometric functions; applications of derivatives; definite and indefinite integrals; applications of definite integral. This course includes computer labs. Students cannot receive credit for both MATH 113 and MATH 115. (F,W,S).

MATH 116 Calculus II
4.000 Credits
Prerequisite(s): MATH 115 or MPLS 116

Transcendental functions; techniques of integration; improper integral; infinite sequences and series; Taylor's theorem; topics in analytic geometry; polar coordinates; parametric equations. This course includes computer labs. Students cannot receive credit for both MATH 114 and MATH 116. (F,W,S).

MATH 131 Conceptual Mathematics
4.000 Credits

In this course, the student is exposed to both the practical and the abstract nature of mathematics. The usefulness of mathematics is seen by considering such topics as problem solving, graph theory, inductive and deductive reasoning, and statistics. The abstract nature of mathematics and its methodology is seen by a study of an algebraic structure such as a group. Another important aspect of this course is the historical development of mathematics. Finally, the student is exposed to specific areas of mathematics in order to develop his/her appreciation of and skill level with mathematical concepts, facts, and processes. Students intending to elect this course should have taken the equivalent of one year of high school algebra and one year of high school geometry. This course is not open to mathematics concentrators. (F,W,S).

MATH 200 Math Proof and Structures
2.000 Credits
Prerequisite(s): MATH 116 or MPLS 215

This course is designed for students either considering a concentration in mathematics or intending to take MATH 331, 412, or 451, among others. The course covers basic mathematical concepts needed in upper-level mathematics courses such as set theory, logic, and methods of mathematical proof. Additional topics may include equivalence relations, functions and mappings, and algebraic structures. (F,W).

MATH 205 Calc III for Engin Students
3.000 Credits
Prerequisite(s): MATH 116 or MPLS 215

Vectors in the plane and space; topics from multivariable calculus including partial differentiation and multiple integration, with an emphasis on applications; line integrals and Green's theorem. This course includes computer labs. Students cannot receive credit for both MATH 205 and MATH 215. (F,W,S).

MATH 215 Calculus III
4.000 Credits
Prerequisite(s): MATH 116 or MPLS 215

Vectors in the plane and space; vector-valued functions and curves; functions of several variables including limits, continuity, partial differentiation and the chain rule; multiple integrals and coordinate transformations; integration in vector
fields, Green's Stokes' theorems. This course includes computer labs. Students cannot receive credit for both MATH 205 and MATH 215. (F,W,S).

**MATH 216  Intro to Diff Equations**  
3.000 Credits  
Prerequisite(s): MATH 205 or MATH 215


**MATH 217  Intro to Matrix Algebra**  
2.000 Credits  
Prerequisite(s): MATH 114 or MATH 116 or MPLS 215

Systems of equations; matrices; determinants; the n-dimensional real vector spaces; orthonormal basis; linear transformations; eigenvalues and eigenvectors. Students cannot receive credit for both MATH 217 and MATH 227. (F,W,S).

**MATH 227  Introduction to Linear Algebra**  
3.000 Credits  
Prerequisite(s): MATH 116 or MPLS 215

An introduction to the theory and methods of linear algebra with matrices. Topics include: systems of linear equations, algebra of matrices, matrix factorizations, vector spaces, linear transformations, eigenvalues and eigenvectors, science and engineering applications, computational methods. Students cannot receive credit for both MATH 227 and MATH 217. (F,W,S).

**MATH 226  Discrete Math Meth Comptr Engr**  
4.000 Credits  
Prerequisite(s): MATH 116 or MPLS 215

An introduction to fundamental concepts of discrete mathematics for computer engineering. Topics will be chosen from: set theory, partially ordered sets, lattices, Boolean algebra, semi-groups, rings, graphical representation of algebraic systems, graphs and directed graphs. Applications in various areas of computer engineering will be discussed. (YR).

**MATH 297  The Nature of Mathematics**  
3.000 Credits

Mathematics will be presented in a way so that Honors Program students (including nonscience majors) can learn what makes mathematics a fascinating field of study rather than a collection of dry formulas. A few "Great Theorems" will be studied in their historical context, inter-connections between mathematics and science will be studied, and some famous personalities will be presented.

**MATH 315  Applied Combinatorics**  
3.000 Credits  
Prerequisite(s): MATH 200 and ( MATH 227 or MATH 217 )

An introduction to methods and applications of enumerative and configural combinatorics. Students study several elegant and useful techniques for counting and/or generating the elements in large and unwieldy finite sets. Students will also study topics in graph theory that are applicable to real world problems. Topics include basic counting principles, the principle of inclusion-exclusion, generating functions and recurrence relations. Topics from graph theory include graph models, paths, circuits, cycles, connectedness, planarity, coloring, directed graphs, networks and network flows. (OC).

**MATH 325  Mathematical Statistics I**  
3.000 Credits  
Prerequisite(s): MATH 114 or MATH 116

Brief overview of summary and display of data; probability concepts; discrete and continuous random variables and associated probability models, expectation, independent random variables, probability generating functions and moment generating functions; sampling distributions, the central limit theorem, the t-distribution; properties of estimators, interval estimation. (AY).

**MATH 331  Survey of Geometry**  
3.000 Credits  
Prerequisite(s): MATH 116 and MATH 200

A development of Euclidean geometry as a formal axiom system and an introduction to non-Euclidean geometries and to Transformational Geometry. Geometric models and the history of geometry are stressed. Development of students' geometric intuition as well as their ability to work in a formal axiom system is emphasized. (F).

**MATH 363  Introduction to Statistics**  
3.000 Credits

Frequency distributions and descriptive measures. Populations, sampling, and statistical inference. Elementary probability and linear regression. Use of statistical computer packages to analyze data. Students can receive credit for only one of MATH 363, STAT 363, SOC 383, and STAT 325. Students intending to elect this course should have taken at least one year of high school algebra. (F,W,S).

**MATH 372  Computing with Mathematica**  
3.000 Credits  
Prerequisite(s): MATH 217 or MATH 227

The Course explores a variety of topics from different areas of undergraduate mathematics including calculus, matrix algebra, number theory, geometry, and discrete mathematics. Students learn to design customized Mathematica functions to solve specific problems in these areas using the symbolic, computational, graphics, and programming tools provided within Mathematica. (YR).

**MATH 385  Math for Elemen Teachers I**  
3.000 Credits

The purpose of this and the courses MATH 386 and MATH 387 is to provide future teachers with a perspective for understanding the mathematics taught in the elementary and middle schools. Emphasis is placed on modeling real-world
problems. Topics include elementary set properties, numeration and estimation, the integers, elementary number theory, and the rational number system. An investigative approach involving problem solving, reasoning and proof, connections and communication will be emphasized. Calculator and computer technology will support the investigation of these topics. (F,W).

MATH 386 Math for Elem Teachers II
3.000 Credits
Prerequisite(s): MATH 385

Continuing the theme of MATH 385, the topics include the decimal number system, ratios and proportions, integer number system, 2-D geometry of shape measurement. (F,W,S).

MATH 387 Math for Elem Teachers III
3.000 Credits
Prerequisite(s): MATH 386

Continuing the theme of MATH 386, the topics include data analysis, statistics and probability, the real number system, 3-D geometry of shape and measurement, geometric concepts of similarity and congruence, coordinate geometry, and transformational geometry. (F,W,S).

MATH 390 Topics in Mathematics
1.000 TO 3.000 Credits

A course designed to offer selected topics in different areas of mathematics. The specific topic or topics will be announced together with the prerequisites each term. Course may be repeated for credit when specific topics differ.

MATH 391 Topics in Mathematics Education
1.000 TO 3.000 Credits

A course designed to offer selected topics in mathematics related to K-12 education. The specific topic or topics will be announced together with the prerequisites each term. Course may be repeated for credit when specific topics differ. (OC).

MATH 395 Elementary Number Theory
3.000 Credits
Prerequisite(s): MATH 205 or MATH 215

Properties of the integers, the division algorithm, Euclid's algorithm, Fermat's theorems, unique factorization of integers into primes, congruences, arithmetic functions, Diophantine equations, continued fractions, quadratic reciprocity. (W).

MATH 399 Independent Studies in Math
1.000 TO 3.000 Credits

Independent study in mathematics for topics at the junior level. Topics and objectives chosen by agreement between student and instructor.

MATH 404 Dynamical Systems
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)

The aim of this course is to survey the standard types of differential equations. This includes systems of differential equations, and partial differential equations, including for each type, a discussion of the basic theory, examples of applications, and classical techniques of solutions with remarks about their numerical aspects. Also included are autonomous and periodic solutions, phase space, stability, perturbation techniques and Method of Liapunov. Students cannot receive credit for both MATH 404 and MATH 504. (AY).

MATH 405 Integral Equations
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)


MATH 412 First Course in Modern Algebra
3.000 Credits
Prerequisite(s): MATH 200 and (MATH 217 or MATH 227)

Introduction to groups, subgroups, group homomorphisms, factor groups, simple groups, cyclic groups. Sylow theorems, rings, ideals, integral domains, fields, polynomial rings, Kronecker's theorem, also properties of the integral, rational, real, and complex numbers. Students cannot receive credit for both MATH 412 and MATH 512. (W).

MATH 413 Linear Algebra
3.000 Credits
Prerequisite(s): MATH 200 and MATH 216 and (MATH 217 or MATH 227)

Vector spaces, linear transformations and matrices, determinants, inner product spaces, bilinear and quadratic forms, Hamilton-Cayley theorem, eigenvalues and eigenvectors, spectral theorem. Students cannot receive credit for both MATH 413 and MATH 513. (YR)

MATH 420 Stochastic Processes
3.000 Credits
Prerequisite(s): MATH 325 and (MATH 217 or MATH 227)

Review of distribution theory. Introduction to stochastic processes, Markov chains and Markov processes, counting, Poisson and Gaussian processes. Applications to queuing theory. Students cannot receive credit for both MATH 420 and MATH 520. (YR).

MATH 425 Mathematical Statistics II
3.000 Credits
Prerequisite(s): MATH 325

Interval estimation and pivotal quantities; maximum likelihood estimation; hypothesis tests; linear models and analysis of variance; bivariate normal distribution, regression and correlation analysis; nonparametric methods. Students cannot receive credit for both MATH 425 and MATH 525. (YR).
MATH 442  Geometry for Teachers  
3.000 Credits  
Prerequisite(s): MATH 387

Properties of two and three-dimensional figures are covered, including congruence, symmetry, transformation, and measurement. Trigonometry from a geometric perspective and the use of trigonometry in problem solving are included. Topics also include coordinate geometry and visualization as well as the nature of axiomatic reasoning and the role it has played in the development of mathematics. An investigative approach involving problem solving, reasoning and proof, connections, and communication will be emphasized. Calculator and computer technology will support the investigation of these topics. Classroom resources and materials are considered. Different levels of geometric thinking will be explored.

MATH 443  Algebra for Teachers  
3.000 Credits  
Prerequisite(s): MATH 386

Algebraic structure is emphasized, especially as it relates to arithmetic. Emphasis is on the development of algebraic reasoning and generalizations with the appropriate pedagogy. Curriculum issues relevant to teaching algebra for conceptual understanding are included. Major topics include algebraic representations of linear, exponential, power and quadratic patterns, systems of equations, and applications. An investigative approach involving problem solving, reasoning and proof, connections and communications will be emphasized. Classroom resources and materials are considered as well as calculators and computer technology as problem-solving tools to aid in algebraic thinking. Students cannot receive credit for both MATH 443 and MATH 543. (F,W,S).

MATH 444  Data Anlys,Prob&Stat forTchrs  
3.000 Credits  
Prerequisite(s): MATH 387

Concepts of probability using both experimental and theoretical models are considered with an emphasis on the use of probability models to describe physical phenomena and to make and interpret predictions. Topics in data analysis and statistics include drawing inferences from visual displays of data, applying techniques of inferential statistics, sampling and simulations to generate solutions to problems, and making appropriate inference using best fit techniques. Evaluating data and arguments to establish validity, interpreting, calculating and solving problems related to correlation, distributions, percentiles and standard scores are also included. An investigative approach involving problem solving, reasoning and proof, connections, and communication will be emphasized. Calculator and computer technology will support the investigation of these topics.

MATH 445  Number & Prop'l Rng for Tchrs  
3.000 Credits  
Prerequisite(s): MATH 442 and MATH 443

This course deepens previous work on rational number ideas and applications and explores the concepts of ratio and proportion. Content includes a variety of situations involving proportions, for example, real-world problems involving ratios, rates, and percents; geometry involving similarity; algebra involving linearity; probability involving assigning a probability to an event; and trigonometry involving slope. Distinguishing proportional situations from those that are not and reasoning proportionally in appropriate situations are emphasized. The Course includes problem solving, reasoning and proof, connections, communication, and multiple representations. No credit for CASL concentration, minor, or area of focus. Open only to certified teachers or elementary education students or by permission of instructor. Students cannot receive credit for both MATH 445 and 545. (YR).

MATH 446  Discrete Math/Modeling for Tch  
3.000 Credits  
Prerequisite(s): MATH 442 and MATH 443

This course interweaves the ideas of discrete mathematics with the approaches and strategies of mathematical modeling. It gives pre- and in-service teachers opportunities to deepen their understanding and use of mathematical models based on the concepts of discrete mathematics. Topics include recurrence, induction, permutations, combinations, binomial distributions, circuits, critical paths, minimal spanning trees, adjacency matrices, algorithm design and optimization. Systems thinking and multiple representations are emphasized. No credit for CASL concentration, minor, or area of focus. Open only to certified teachers or elementary education students. Students cannot receive credit for both MATH 446 and 546. (YR).

MATH 447  Micro in Math for Teachers  
2.000 Credits  
Prerequisite(s): MATH 385

Use of the microcomputer in the mathematics classroom with an emphasis on the LOGO programming language. Problem solving, hands-on activities, and a cooperative learning environment are emphasized. Students cannot receive credit for both MATH 447 and MATH 547. (S).

MATH 449  Concepts of Calc for Teachers  
3.000 Credits  
Prerequisite(s): MATH 442 and MATH 443

Concepts of Calculus for Teachers focuses on calculus concepts appropriate for middle school mathematics teachers and teacher-candidates. The course provides a deep understanding of the major concepts of calculus: rates of change, accumulation (net change), area, and limits. Students will experience concrete approaches to the various topics using problem solving, manipulatives and technology as appropriate, with the intent being to help the learners discover how the ideas of calculus are useful in a variety of settings. Visual, numeric and commonsense approaches will be used. No credit for CASL concentration, minor, or area of focus. Open only to certified teachers or elementary education students. Students cannot receive credit for both MATH 449 and 549.

MATH 451  Advanced Calculus I  
3.000 Credits  
Prerequisite(s): MATH 200 and MATH 216 and (MATH 217 or MATH 227)

Properties of the real number system; point set theory for the real line including the Bolzano-Weierstrass theorem; sequences, functions of one variable: limits and continuity, differentiability,
Reimann integrability. (YR).

MATH 452 Advanced Calculus II
3.000 Credits
Prerequisite(s): MATH 451

Includes the rigorous study of functions of two and more variables, partial differentiation and multiple integration. Special topics include: Taylor Series, Implicit Function theorem, Weierstrass Approximation Theorem, Arzela-Ascoli Theorem. Students cannot receive credit for both MATH 452 and MATH 552. (AY).

MATH 454 Fourier and Boundary
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)

Fourier series and integrals. Their use in solving boundary value problems of mathematical physics by the method of separation of variables. Sturm-Liouville theory and generalized Fourier series, including those involving Bessel functions and Legendre polynomials, with applications. Students cannot receive credit for both MATH 454 and 554. (AY).

MATH 455 Func of a Complex Var with App
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)

Complex Number system. Functions of a complex variable, their derivatives and integrals. Taylor and Laurent series expansions. Residue theory and applications, elementary functions, conformal mapping, and applications to physical problems. Students cannot receive credit for both MATH 455 and MATH 555. (F,W).

MATH 457 Introduction to Wavelets
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)

This course will introduce the students to theory and application of wavelets using linear algebra. Topics will include the discrete Fourier transform, the fast Fourier transform, linear transformations, orthogonal decomposition, discrete wavelet analysis, the filter bank, Haar Wavelet family, Daubechies's Wavelet family, and applications. Students cannot receive credit for both MATH 458 and 558. (OC)

MATH 462 Mathematical Modeling
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)

The processes of constructing, implementing, and evaluating mathematical models of "real world" phenomena are investigated. Models involving continuous and discrete mathematical constructs are considered. Deterministic and stochastic models are compared. Examples are taken from genetics, epidemiology, queuing theory, and other fields. Students cannot receive credit for both MATH 462 and MATH 562. (AY).

MATH 472 Intro to Numerical Analysis
3.000 Credits
Prerequisite(s): MATH 217 or MATH 227

Solution of linear systems by Gaussian elimination, solution of non-linear equations by iterative methods, numerical solution of ordinary differential equations, data fitting with spline functions, numerical integration, optimization. Students cannot receive credit for both MATH 472 and MATH 572.(F).

MATH 473 Matrix Computation
3.000 Credits
Prerequisite(s): MATH 217 or MATH 227

A study of the most effective methods for finding the numerical solution of problems which can be expressed in terms of matrices, including simultaneous linear equations, orthogonal projections and least squares, eigenvalues and eigenvectors, positive definite matrices, and difference and differential equations. Students cannot receive credit for both MATH 473 and MATH 573. (AY).

MATH 480 History of Mathematics
3.000 Credits
Prerequisite(s): MATH 216 and (MATH 217 or MATH 227)

A unified view of the rise of mathematics from ancient times to the present, as seen in its conceptual developments and developers, its major themes and its applications (including computers). Students cannot receive credit for both MATH 480 and MATH 580. (OC).

MATH 486 Sec School Math for Teachers
3.000 Credits
Prerequisite(s): MATH 217 or MATH 227

Basic concepts, relationships, generalizations, and applications from the secondary school mathematics curriculum are discussed both from an advanced viewpoint and from the standpoint of the learner. Included are the roles of technology, problem solving, and current thinking on the teaching of secondary mathematics topics. Students cannot receive credit for both MATH 486 and MATH 586. (OC).

MATH 492 Introduction to Topology
3.000 Credits
Prerequisite(s): MATH 451

Metric spaces, topological spaces, continuous maps, connectedness, compactness, separation axioms. Students cannot receive credit for both MATH 492 and MATH 592. (AY).

MATH 499 Independent Studies in Math
1.000 TO 3.000 Credits

Independent study in mathematics for topics at the senior level. Topics and objectives chosen by agreement between student and instructor. (OC).
Medieval and Renaissance Studies
(minor only)

The minor in Medieval and Renaissance Studies is cross-cultural in design and covers the time period from Late Antiquity (ca. 400) to the seventeenth century. Through the interdisciplinary study of history, art, religion, language and literature, students will develop an integrated understanding of medieval and early modern civilization. Its legacy, along with its intellectual and social diversity, enhances our understanding not only of the past but of present society.

The minor in Medieval and Renaissance Studies consists of 15 credit hours from the courses listed below. Students must elect at least one course from Art History, History and English.

**Art History**
- ARTH 331 Early Christian and Byzantine Art
- ARTH 332 Early Medieval and Romanesque Art
- ARTH 334 The 14th Century
- ARTH 341 Art and Architecture in Early Renaissance Florence
- ARTH 342 High Renaissance and Mannerism
- ARTH 343 Northern Renaissance Art
- ARTH 346 The Bible and the Western tradition
- ARTH 351 Southern Baroque Art
- ARTH 352 Northern Baroque Art

**History**
- HIST 102 Medieval World
- HIST 329 Medieval Society
- HIST 330 The Renaissance
- HIST 331 The Reformation Era: 1500-1648

**English**
- ENGL 311 Survey of English Literature: Beowulf to Milton
- ENGL 371 Survey of English Literature from Beginning - 1500
- ENGL 372 Survey of English Literature: 1500 to 1600
- ENGL 400 Major Authors of the Middle Ages
- ENGL 373 Survey of English Literature: 1600-1660
- ENGL 400 Major English Authors of the Middle Ages
- ENGL 401 Literature of Anglo-Saxon England
- ENGL 404 Medieval Mystical Writers
- ENGL 405 Chaucer
- ENGL 406 Studies in Medieval Literature and Culture
- ENGL 408 Shakespeare I: Earlier Works
- ENGL 409 Shakespeare II: Later Works
- ENGL 410 Major English Authors of the Renaissance
- ENGL 412 Milton
- ENGL 413 English Renaissance Drama, Excluding Shakespeare
- ENGL 414 Seventeenth-Century Readings

**Microbiology**

The field of microbiology encompasses the study of a wide diversity of organisms, including archaea bacteria, fungi and viruses. The program in microbiology is designed to prepare students for laboratory positions in industry, government, and university research. The program also provides a foundation for graduate work in microbiology, virology, molecular biology, medicine and other areas. Certification is possible by special examination upon graduation.

**PREREQUISITES TO THE CONCENTRATION**

A solid background in mathematics is essential to success in any of the scientific disciplines. Incoming students who intend to choose a concentration in Microbiology should have completed at least three years of high school mathematics. First year students should plan to enroll in MATH 105, 113, or 114 based on the results of their math placement tests. CHEM 134 or 144 and 136 or 146 are prerequisites to many other courses in the Natural Sciences Department; students concentrating in any of the sciences should complete this sequence as soon as possible.

BIOL 130 and 140 ................................................................. 8 hrs
CHEM 124 and 136 or 146 ................................................. 8 hrs
CHEM 225, 226 and 227 ................................................. 8 hrs

MATH 113 and 114 (preferred sequence)
OR
MATH 115 and 116 ................................................................. 8 hrs

PHYS 125 and 126 (preferred sequence)
OR
PHYS 150 and 151 ................................................................. 8 hrs

**CONCENTRATION REQUIREMENTS**

A minimum of 29 credit hours in Microbiology or Biological Sciences must be completed as outlined below:

**Note:** Students should begin the chemistry sequence before electing any MICR/BIOL course.

- **Required courses**
  - MICR 385 Microbiology ................................................. 4 hrs
  - MICR 405 Applied and Environmental Microbiology .......... 4 hrs
  - MICR 406 Microbial Genetics ........................................... 4 hrs
  - MICR 440 Microbiotics * Physi Lab ................................. 4 hrs
  - MICR 485 Physiology of Microorganisms .......................... 4 hrs

- At least one credit hour from the following*
  - MICR 495 Off-campus Research in Microbiology ................ 1-3 hrs
  - MICR 497 Seminar in Microbiology ................................. 1 hr
  - MICR 498 Independent Study in Microbiology ................. 1-3 hrs
  - MICR 499 Laboratory in Microbiology Research .............. 1-3 hrs

*Note: No more than a total of six credit hours combined in MICR 495, 498, and 499 may be applied toward the 120 credit hours required for graduation

One of the following organismal/environmental courses

- MICR 309 Introduction to Mycology ................................. 4 hrs
- MICR 405 Applied and Environmental Microbiology 4 hrs
- MICR 390 Topics in Microbiology * ................................. 1-6 hrs

*when topic is appropriate – see concentration advisor for approval
Complete an additional 12 credit hours from the following list, of which at least four credit hours must be from microbiology courses.

**Microbiology Courses***
- MICR 309 Mycology ........................................ 4 hrs
- MICR 380 Epidemiology .................................. 2 hrs
- MICR 390 Topics in Microbiology ...................... 1-6 hrs
- MICR 405 Applied and Environmental Microbiology 4 hrs
- MICR 430 Medical Virology ............................. 3 hrs
- MICR 450 Virology ....................................... 4 hrs
- MICR 455 Immunology .................................. 4 hrs
- MICR 459 Pathogenic Microbiology .................... 4 hrs
- MICR 495 Off-campus Research in Microbiology .... 1-3 hrs
- MICR 497 Seminar in Microbiology Research ........ 1 hr
- MICR 498 Independent Study in Microbiology ....... 1-3 hrs
- MICR 499 Laboratory in Microbiology Research ... 1-3 hrs

*Note: All 400-level microbiology courses have MICRO 385 as a prerequisite.

**Biological Sciences Courses**
- BIOL 301 Cell Biology ..................................... 4 hrs
- BIOL 306 General Genetics .............................. 3 hrs
- BIOL 310 Histology ....................................... 4 hrs
- BIOL 370 Principles of Biochemistry .................. 3 hrs
- BIOL 390 Topics in Biological Sciences* .............. 1-4 hrs
- BIOL 470 Biochemistry I ................................ 3 hrs
- BIOL 471 Biochemistry II ................................ 3 hrs
- BIOL 472 Biochemistry Laboratory I .................... 1 hr
- BIOL 473 Biochemistry Laboratory II ................... 1 hr
- BIOL 474 Molecular Biology ............................ 4 hrs

*Note: If appropriate.

**Cognates** ......................................................... 6 hrs
A minimum of six credit hours from the following
- ANTH 430 Medical Anthropology
- MATH 325 Mathematical Statistics I
- MATH 363 Introduction to Statistics
- STAT 325 Applied Statistics I
- PHIL 442 Medical Ethics
- PHIL 485 Philosophy of Science
- PSYC 370 Physiological Psychology
- SOC 440 Medical Sociology

Other appropriate courses with approval of program advisor.

**MINOR OR AREA OF FOCUS**

A minor or area of focus consists of 12 hours of upper-division credit in microbiology.

**Microbiology (MICR)**

**COURSE OFFERINGS**
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

**MICR 309 Introduction to Mycology**
4.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140

An introduction to the biology of the fungi. Classification, structure, industrial use, gastronomic qualities, and disease-producing ability of macroscopic and microscopic forms are studied. Laboratories include microscopic and macroscopic examinations of fungi, and their growth and field studies on the occurrence and classification of edible and poisonous varieties. Three hours lecture, four hours laboratory. (OC).

**MICR 380 Epidemiology**
2.000 Credits
Prerequisite(s): BIOL 140

A study of disease occurrence and spread in human populations. The primary concern is with groups of persons, rather than individuals. Emphasizes methods of study that would contribute to understanding disease etiology. Two hours lecture. (OC).

**MICR 385 Microbiology**
4.000 Credits
Prerequisite(s): BIOL 130 and BIOL 140
Co-requisite(s): MICR 385L

The biology of microorganisms is considered through study of the properties of bacteria, fungi, algae, protozoa, and viruses. Microbial structures are discussed and correlated with their function. Aspects of cellular metabolism pertinent to microorganisms are emphasized. The interaction of microorganisms and their environment, animate and inanimate, is discussed with respect to the beneficial or harmful effects of the different microbial groups. Laboratory exercises introduce the student to basic, practical microbiological techniques and illustrate various principles of microbial life. Three hours lecture, four hours laboratory. (F.S).

**MICR 390 Topics in Microbiology**
1.000 TO 6.000 Credits
Prerequisite(s): BIOL 385 or MICR 385

Current topics in microbiology will be presented through a lecture, discussion and/or laboratory format. Topics will vary, as appropriate, and may cover any area of microbiology including studies on bacteria, algae, fungi, protozoa, viruses, biotechnology, mechanisms of pathogenesis and immunology. (OC).

**MICR 405 Applied and Envir Microbiology**
4.000 Credits
Prerequisite(s): MICR 385 or BIOL 385

The study of the diversity, structure, and function of microorganisms as they interact with their environment. Emphasis will be placed on soil microbiology (fungi, bacteria, micro-algae)
and plant-microbe interactions (pathogens, symbioses). Ecological topics include decomposition, nutrient cycling, bioremediation, and agro ecosystems. Three hours lecture, four hours laboratory. (AY,W).

MICR 406 Microbial Genetics
3.000 Credits
Prerequisite(s): MICR 385 or BIOL 385 or BCHM 470 or BIOL 470 or CHEM 470 or BIOL 306

A course that emphasizes the genetics and molecular biology of bacteria and their viruses. Topics include DNA structure and replication, recombination, DNA repair, genetic mapping, mechanisms of gene transfer, regulation of gene expression, mutagenesis, and recombinant DNA techniques. Three hours lecture, four hours laboratory per week. (AY,F).

MICR 430 Medical Virology
3.000 Credits
Prerequisite(s): MICR 385 or BIOL 385

The course provides a general description of the history and nature of animal virus disease. Emphasis is placed on the pathogenesis and clinical description of specific diseases. Three hours lecture.

MICR 440 Micro Genetics & Physi Lab
4.000 Credits
Prerequisite(s): BIOL 385* or MICR 385* or BIOL 301* or BIOL 406* or MICR 406* or BIOL 485* or MICR 485*

This course emphasizes the use of advanced microbiological techniques for understanding the genetics and physiology of microorganisms. Experiments focus on the understanding of general microbial phenomena, such as nutrition, metabolism and biochemistry; protein and nucleic acid synthesis; energy generation, enzyme regulation, membrane transport, motility, differentiation, cellular communication and the behavior of populations.

MICR 450 Virology
4.000 Credits
Prerequisite(s): (BIOL 385 or MICR 385) and CHEM 225*

The first half of this course deals with bacterial viruses, with emphasis on classical events in this field. The second half surveys the field of animal viruses, with emphasis on recent discoveries, including replication, pathogenesis, and viral association with cancers. Three hours lecture, four hours laboratory. (AY,W).

MICR 455 Immunology
4.000 Credits
Prerequisite(s): BIOL 385 or BIOL 301 or MICR 385

A detailed study of the field of immunology. Among the topics covered are various aspects of the immunological response, such as humoral or cell-mediated immunity, cell-cell interactions, and immunology as related to the cause and prevention of disease. Three hours lecture, four hours laboratory. (AY,F).

MICR 459 Pathogenic Microbiology
4.000 Credits
Prerequisite(s): BIOL 385 or MICR 385

An introduction to pathogenic microorganisms and mechanisms of microbial pathogenicity. Disease-causing bacteria, fungi, viruses, and protozoa are studied. Laboratories emphasize clinical approaches to isolation, identification, and treatment. Three hours lecture, four hours laboratory. (AY,F).

MICR 485 Physiology of Microorganisms
3.000 Credits
Prerequisite(s): (BIOL 385 or MICR 385) and CHEM 225*

An in-depth examination of the physiology of microorganisms. Areas of emphasis include the growth and nutrition of microorganisms, the development of viruses, the microbial degradation of organic compounds, the regulation of degradation reactions, and the biosynthesis of uniquely microbial compounds and secondary metabolites, such as antibiotics and toxins. Consideration is given to the natural environments of specific microorganisms. Three hours lecture, four hours laboratory. (AY,W).

MICR 495 Off-Campus Research
1.000 TO 3.000 Credits

Participation in ongoing experimental research at an off-campus laboratory (or in the field). Arrangements made between the research laboratory, (director of field study), the student, and the microbiology concentration adviser. No more than 6 hours combined from MICR 495, 498, and 499 may be credited toward the 120 hours required for a degree. Four to twelve hours laboratory. Permission of concentration advisor. (F,W,S).

MICR 497 Seminar in Microbiology
1.000 Credits

Topics of current interest in microbiology will be presented by guest lecturers, faculty members or students. Topics chosen will vary from term to term. Can be elected up to three times. One hour seminar. Permission of instructor. (W).

MICR 498 Ind Study in Microbiology
1.000 TO 3.000 Credits

Library research and independent study performed under the guidance of a faculty member. Four to twelve hours readings. (F,W,S).

MICR 499 Lab in Micro Research
1.000 TO 3.000 Credits

Directed laboratory research performed under the guidance of a faculty member. Four to twelve hours laboratory. Permission of instructor. (F,W,S).
Modern and Classical Languages
(Armenian, Greek, Swedish; not a field of concentration)

Armenian
(not a field of concentration)
Course offerings in Armenian are located below under the heading "Modern and Classical Languages (MCL)."

Greek
(not a field of concentration)
Course offerings in Greek are located below under the heading "Modern and Classical Languages (MCL)."

Swedish
(not a field of concentration)
Course offerings in Swedish are located below under the heading "Modern and Classical Languages (MCL)."
Students must be in the Swedish exchange program with Jonkoping University in the College of Engineering and Computer Science.

Modern and Classical Languages
(MCL)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

MCL 103 First-Year Swedish I
3.000 Credits
A beginning course in the Swedish language. Open only to CECS undergraduate students taking part in the College of Engineering and Computer Science’s study abroad program with the Jonkoping School of Engineering in Sweden. The course meets in Jonkoping, Sweden.

MCL 104 First-Year Swedish II
3.000 Credits
A second course in the Swedish language. Open only to CECS undergraduate students taking part in the College of Engineering and Computer Science’s study abroad program with the Jonkoping School of Engineering in Sweden. The course meets in Jonkoping, Sweden.

MCL 105 Beginning Ancient Greek I
4.000 Credits
Ancient Greek I is designed for students wishing to begin the study of Ancient Greek and will include a study of grammar and vocabulary with readings of simple Attic prose. Attention will also be given to the Greek roots of English words, including scientific and medical terms. No previous foreign language study is required as a prerequisite. (OC).

MCL 106 Beginning Ancient Greek II
4.000 Credits
Prerequisite(s): MCL 105

Ancient Greek II completes the study of Ancient Greek syntax and morphology and puts greater emphasis on reading connected passages in ancient Greek. Passages from selected classical authors, such as Herodotus, Sophocles, Aristophanes, and Plato will be read. MCL 105 is required as a prerequisite. (OC).

MCL 111 Armenian I
4.000 Credits
Introduction to basic construction and vocabulary of the Armenian language. Lab to be arranged. Completion of this course prepares the student for Armenian II. (OC).

MCL 112 Armenian II
4.000 Credits
Prerequisite(s): MCL 111

Continuation of Armenian I. Introduction to basic construction and vocabulary of the Armenian language.

MCL 205 Intermediate Ancient Greek
4.000 Credits
Prerequisite(s): MCL 106
An intermediate language course in ancient Greek designed to increase the students' ability to read Greek with accuracy and speed and improve their skill in comprehension and translation. A wide range of reading selections of Greek prose and poetry will serve as the basis for translation, class discussion, and written assignments. Although the course includes a partial review of accidence and syntax as well as assigned translations from English to Greek, primary emphasis will be placed upon reading and translating Greek texts, whether prose (e.g., Xenophon, Herodotus, Lysias, Plato) or poetry (e.g., Euripides, Aristophanes). (OC)

MCL 206 Intermediate Ancient Greek II
4.000 Credits
Prerequisite(s): MCL 205
MCL 206 is the second course in intermediate ancient Greek and is designed to provide knowledge and familiarity with the language and style of the Homeric epics, as well as an introduction to related topics. We will learn Homeric Greek and how it differs from Attic, read extensive selections from the Iliad or the Odyssey in Greek, and discuss Homer's works as poetic, literary, and cultural texts. The selections read will serve as the basis for translation, class discussion, and written assignments. Related topics to be presented include: the archaeological excavations of Troy, the scope of ancient epics, the Homeric Question and oral composition, and the nature of the Greek hero. (OC)

MCL 365 Introduction to the Qur'an
3.000 Credits
This course is an introduction to the Qur'an. This class will cover the historical and the cultural factors in which the Qur'an appeared. The class will also examine some of the major themes
covered in the Qur'an such as gender, science, pluralism, worldview and so forth. Also, will cover major schools of interpretations and methodologies ranging from the literary to the scientific. The class will be conducted in English and knowledge of Arabic is desired but not required. No prerequisites. The class will consist of lectures, discussions, and movies.

MCL 390  Topics in Arabic in Translation  
3.000 Credits

Examination of problems and issues in selected areas of Arabic language, literature and/or culture taught in English translation. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ.

MCL 490  Topics in Modern & Class Lang  
3.000 TO 6.000 Credits

An examination of various theoretical or practical concerns of the field of foreign language. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

Music (minor only)

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in music history, music theory or applied music courses.

Music, Applied  
(not a field of concentration, see Applied Music)

Music History (MHIS)  
(not a field of concentration)

COURSE OFFERINGS

(Note: An "*" denotes that the prerequisite course may be taken concurrently.)

MHIS 100  Intro to Music Masterpieces  
3.000 Credits

A study of music and its development in the western civilization from the late Renaissance to the present through examination of representative masterpieces in forms of musical expression. (F,W).

MHIS 120  History of Jazz  
3.000 Credits

The course provides an introduction to jazz styles within their cultural context. Major figures (Louis Armstrong, Duke Ellington, Charlie Parker, and others) and styles (New Orleans, Big Band, Bebop, Cool Jazz, etc.) will be studied through recordings. Ideas about jazz as the expression of African American culture will be studied. (OC).

MHIS 130  Intro to World Music  
3.000 Credits

This course is designed as an introductory survey of non-western music traditions within the field called ethnomusicology. The music is studied in terms of sounds, musical instruments, forms and their functions in the society and culture that supports them. Music studied includes that of the Middle East, India, Australia, China, Korea, and Japan. (YR).

MHIS 311  Music Before Bach  
3.000 Credits

Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 312 or MHIS 331 or MHIS 340 or MHIS 341 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 101 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390

A survey of the early history of music with emphasis on sacred and secular monophonic forms, the rise of part-singing and the opposition to it in the 17th century. (AY).

MHIS 312  Music from Bach to Brahms  
3.000 Credits

Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 311 or MHIS 312 or MHIS 331 or MHIS 340 or MHIS 341 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 101 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390

A survey of music in the 18th and 19th centuries with emphasis on the styles and forms of the major composers. (AY).

MHIS 313  Debussy and Beyond  
3.000 Credits

Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 311 or MHIS 312 or MHIS 331 or MHIS 340 or MHIS 341 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 101 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390 or MTHY 101

A survey of the profusion of musical styles and forms in our own century. (AY).

MHIS 331  Music of America  
3.000 Credits

Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MTHY 100 or MTHY 101 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390 or MTHY 315 or MAPP 125 or MAPP 126 or MAPP 135 or MAPP 136 or MAPP 145

An historical and cultural study of American music in both the written and unwritten traditions. Content of the course includes not only the various forms of classical music produced in the new world but also primitive, popular, and vernacular genres. (OC).
MHIS 332  Hist of Popular Mus in the USA
3.000 Credits
Prerequisite(s): MHIS 100

An introduction to popular music in the United States. This Course will include music of the westward movement, ragtime and blues, the roots and growth of jazz, folk music, country music, music of Broadway and Tin Pan Alley, the roots of and development of rock music, as well as the historical, political and sociological background of the United States as pertinent to music history. (YR).

MHIS 333  Intro to Gospel Music
3.000 Credits

This course explores the history and aesthetics of Black sacred music within cultural context. Major figures (Thomas A. Dorsey, Mahalia Jackson, The Winans Family, Kirk Franklin), periods (slavery, Great Migration, Civil Rights movement), and styles (folk and arranged Negro spirituals, congregational songs, and gospel songs--traditional to contemporary) will be studied through recordings, videos, film, and at least one field experience. Underlying the course is the theory (Mellonée Burnim and Pearl Williams-Jones) that gospel music is an expression of African American culture that fuses both African and European elements into a unique whole. (OC).

MHIS 340  The Concerto
3.000 Credits

Historical, comparative, and critical study of the development of the concerto, including selected works from major baroque classical, and romantic composers. Emphasis on analytical study of forms used in concertos. (OC).

MHIS 341  Symphony and Symphonic Poem
3.000 Credits
Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 311 or MHIS 312 or MHIS 313 or MHIS 340 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390

The symphony and symphonic poem developed from their origins to their more complex later forms. Comparative analysis of similar forms in different periods. (OC).

MHIS 342  The Art Song
3.000 Credits
Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 311 or MHIS 312 or MHIS 313 or MHIS 331 or MHIS 340 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390

A thorough examination of the art song, a genre combining significant poetry and musical settings, from the late 18th century to the present, with emphasis on the leading composers of Lieder: Schubert, Schumann, and Brahms, and the most important writers of the melodie from Berlioz to Faurd. (OC).

MHIS 343  Opera
3.000 Credits
Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 311 or MHIS 312 or MHIS 313 or MHIS 331 or MHIS 340 or MHIS 341 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 101 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390

A study of selected examples of music theater from the late 16th century to the present, including a comparison of the qualities of sung versus spoken drama, with emphasis on the achievements of such composers as Monteverdi, Mozart, Wagner, and Verdi. (AY).

MHIS 345  Chamber Music
3.000 Credits
Prerequisite(s): MHIS 100 or MHIS 120 or MHIS 130 or MHIS 311 or MHIS 312 or MHIS 313 or MHIS 331 or MHIS 340 or MHIS 341 or MHIS 342 or MHIS 390 or MTHY 100 or MTHY 101 or MTHY 102 or MTHY 301 or MTHY 302 or MTHY 390

This is a survey of chamber music of the baroque, classical, romantic, and 20th century. The course involves an in-depth study of composers of chamber music, analysis of problems of composing chamber music, and the stylistic analysis of the music of the various epochs. (OC).

MHIS 390  Topics in Music History
3.000 Credits

Examination of problems and issues in selected areas of music history. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specified topics differ. (OC).

MHIS 399  Independent Study
1.000 TO 3.000 Credits

Advanced readings or analytical assignments in a particular area of music. not more than three hours of independent study will be accepted toward the concentration. (F,W).

Music Theory (MTHY)
(not a field of concentration)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

MTHY 100  Fundamentals of Music
2.000 TO 3.000 Credits

Designed for the student with little or no knowledge of music. Fundamentals of musical notation, familiarization with the piano keyboard, sight-singing and ear training are included. (F).

MTHY 101  Music Theory I
3.000 Credits
Prerequisite(s): MTHY 100
Writing and analysis of melodic lines, alone and in counterpoint, leading to writing and analysis of harmony. Emphasis on being able to hear the sounds symbolized by notation. (F).

**MTHY 102**  Music Theory II  
3.000 Credits  
Prerequisite(s): MTHY 101  
Continuation of MTHY 101 including harmonic analysis, layer analysis, and beginning formal analysis. (W).

**MTHY 390**  Topics in Music Theory  
3.000 Credits  
Examination of problems and issues in selected areas of music history. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specified topics differ. (OC).

**Natural Sciences (not a field of concentration)**

Students without extensive background in science who wish to receive a general introduction to the natural sciences should elect NSCI 120 and/or 121. NSCI 120 and 121 count toward distribution requirements.

**Natural Sciences (NSCI)**

**COURSE OFFERINGS**  
(Note: An “+” denotes that the prerequisite course may be taken concurrently.)

**NSCI 120**  Matter, Energy, and Life I  
4.000 Credits  
Co-requisite(s): NSCI 120L  
A general science course with emphasis on basic principles and their applications. Includes basic life processes, the fundamentals of chemistry and physics, and human systems and genetics. NSCI 120 is complementary to but not a prerequisite for NSCI 121. Students cannot use both NSCI 120 and BIOL 100 to satisfy the natural sciences distribution requirements. Three hours lecture, three hours laboratory. (OC).

**NSCI 121**  Matter, Energy, and Life II  
4.000 Credits  
Co-requisite(s): NSCI 121L  
A general science course with emphasis on basic principles and their applications. Includes ecology and evolution, energy and energy technology, geology and astronomy. NSCI 121 is complementary to, but may be taken independently of, NSCI 120. Three hours lecture, three hours laboratory. (F,S).

**NSCI 231**  Inquiry: Physical Science  
3.000 Credits  
Prerequisite(s): EXPS 220  
This course develops a strong conceptual understanding of physical science. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include light and color, matter, and motion. (F,W,S).

**NSCI 232**  Inquiry: Earth/Planet Science  
3.000 Credits  
Prerequisite(s): EXPS 220  
This course develops a strong conceptual understanding of earth and planetary science. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include geology, weather, and astronomy. (F,W,S).

**NSCI 233**  Inquiry: Life Science  
3.000 Credits  
Prerequisite(s): EXPS 220  
This course develops a strong conceptual understanding of Life Science. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include characteristics of life, plants and animals, and ecology. (F,W,S).

**NSCI 290**  Projects in Natural Sciences  
1.000 TO 2.000 Credits  
An opportunity for non-science and lower-division science students to carry out independent projects in the natural sciences under the supervision of a faculty member. Projects range from laboratory and field observations to the development of materials and apparatus for use in laboratory exercises and classroom demonstration. In general, one credit hour corresponds to four hours of work per week. Permission of instructor. (F,W).

**NSCI 295**  Topics in Natural Sciences  
1.000 TO 3.000 Credits  
An introduction to the themes of the natural sciences reflecting their interactions with one another and society. Topics vary and are announced in the current time schedule. The course may be repeated no more than once under a different topic. One to three hours lecture, seminar, or field study.

**NSCI 332**  Inquiry: Mich Earth Science  
3.000 Credits  
This course develops a strong conceptual understanding of earth science as it applies to the state of Michigan. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include landforms, water, weather and seasons in Michigan.

**NSCI 325**  Gender and Science  
3.000 Credits  
Explores some of the history of women in science, the current status of women in science, and feminism and science. Topics will include contributions made by women before science moved into the public sphere, cultural influences on decisions to make science a career, and a feminist approach to scientific research. Three hours lecture. (AY).
A course in special topics current to natural sciences. Topic and format (seminar, lecture and laboratory) may vary. See current Schedule of Classes. (OC).

**NSCI 415** Nutrition and Health

3.000 Credits

Prerequisite(s): ANTH 101

The influence of nutrition on physical and mental development from conception to adulthood. Topics include: 1) definition and function of the essential nutrients for people, 2) basic principles of human growth and development, 3) the causes and consequences of under- and over-nutrition, 4) feeding practices for infants and children and the development of food habits, 5) nutrients and food problems in the local region and in global perspective. Students cannot receive credit for both NSCI 415 and NSCI 515. (YR).

**NSCI 490** Topics in Natural Sciences

1.000 TO 3.000 Credits

A course in special topics current to natural sciences. Topic and format (seminar, lecture and laboratory) may vary. See current Schedule of Classes. (OC).

**NSCI 497** Natural Sciences Colloquium

1.000 Credits

A series of colloquia on selected topics representing frontier areas of current research in the natural sciences. Lectures by guest speakers invited by the department constitute a major component of the course. One hour seminar. (F).

**NSCI 498** Independent Study in NSCI

1.000 TO 3.000 Credits

Provides an opportunity for students to pursue independent library-based research or readings under the direction of a faculty member. For students who wish to study an area that is interdisciplinary rather than an area focused on a single science. The student and the faculty member must complete a contract outlining the area to be studied and the product of the research.

**NSCI 499** Laboratory Research in NSCI

1.000 TO 3.000 Credits

Provides an opportunity for students to pursue independent laboratory-based research under the direction of a faculty member. For students who wish to study an area that is interdisciplinary rather than an area focused on a specific science. The student and the faculty member must complete a contract outlining the area to be studied and the product of the research.

**Philosophy**

Philosophy explores the fundamental values and assumptions of human activities such as science, the arts, religion, morality, and social and political institutions. It uses the power of human reasoning to address such questions as "What is it to know something?" "What is the best way to live? and "Is belief in God rationally justifiable?" Ultimately, philosophy has as its goal the development of a coherent view of the world and our place in it.

Philosophical inquiry helps students acquire and sharpen valuable intellectual and practical skills that can be important in their careers. These skills include effective writing, verbal argumentation, and critical thinking.

The primary value of philosophy lies in its contribution to intellectual insight and to a liberal arts education. The study of philosophy can also serve as a basis for a variety of careers, including medicine, business, and government. It is especially effective as the basis for a pre-law program. Recent developments in cognitive science and in medical and environmental ethics have broadened the range of careers and professions for which the study of philosophy can be recommended.

**PREREQUISITES TO THE CONCENTRATION**

- PHIL 100 Introduction to Philosophy
- PHIL 233 Critical Thinking
- OR
- PHIL 234 Symbolic Logic
- PHIL 240 Ethics
- PHIL 301 Ancient Philosophy
- PHIL 302 Modern Philosophy

**CONCENTRATION REQUIREMENTS**

A student may choose either a traditional concentration in philosophy (Alternative I) or a program that stresses the relationship of philosophy to other areas of study (Alternative II). With regard to both alternatives, a faculty adviser will work closely with the student to develop a coherent program.

**Alternative I** requires a total of 24 hours in philosophy courses at the 300 or 400 level and six upper-division hours of cognate courses in one or more disciplines outside philosophy. Alternative II requires a total of 18 hours in philosophy courses at the 300 or 400 level and 12 upper-division hours of cognate courses. Satisfactory completion of PHIL 301 Ancient Philosophy and PHIL 302 Modern Philosophy may be counted as part of the 24 hours in philosophy in Alternative I or as part of the 18 hours in philosophy in Alternative II.

**Cognates**

- PHIL 100 Introduction to Philosophy
- PHIL 233 Critical Thinking
- OR
- PHIL 234 Symbolic Logic
- PHIL 240 Ethics
- PHIL 301 Ancient Philosophy
- PHIL 302 Modern Philosophy

**MINOR OR AREA OF FOCUS**

A minor or area focus consists of 12 hours of upper-division credit in philosophy.

*Note on prerequisites: Always consult the current Schedule of Classes for updated information on the prerequisites and recommended preparation for a course in a given semester. If a student has not satisfied the prerequisites of a course, the student may be enrolled only by permission of the instructor.*
Philosophy (PHIL)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

PHIL 100 Introduction to Philosophy
3.000 Credits

An introduction to philosophical thinking through an examination of some timeless human problems such as the existence of God, the problem of freedom, and the attempt to find an ethical foundation for life. (F,W).

PHIL 120 Philosophy and Religion
3.000 Credits

An examination of how basic concerns of philosophy impinge on questions of religious beliefs. Using philosophical texts, the course will explore such questions as the following: Does God exist? Does human life have a purpose? How can we know whether religious claims are true?

PHIL 200 The Human Condition
3.000 Credits

The human condition as seen in selected works of philosophy and literature. Typical issues: the meaning of life, the existence of God, moral responsibility for human actions, and the role of society in promoting or hindering human excellence. (OC).

PHIL 233 Critical Thinking
3.000 Credits

A study of the nature and justification of reasoned arguments, both deductive and inductive, as they occur in natural language. A consideration of topics in language that promote an understanding of ways of reasoning, including definitions and fallacies. (F,W).

PHIL 234 Symbolic Logic
3.000 Credits
Prerequisite(s): PHIL 233

This course will examine the central themes in modern symbolic logic including consistency, truth-functionality, sentential first-order predicate logic, and the logic of identity and possibility. These themes and their relation to the wider philosophical context will be discussed. (F,W).

PHIL 240 Ethics
3.000 Credits

A study of ethical concepts and theories. Typical questions: is the morality of an action based on its results or on the intent of the person acting? Is ethics purely rational? What makes a good person? Ethical principles may be applied to such issues as abortion, capitalism, war, and capital punishment. (F,W).

PHIL 301 Ancient Philosophy
3.000 Credits

An examination of the metaphysical, epistemological, ethical, and political theories of the ancient Greek philosophers with particular attention paid to Plato and Aristotle and to the influence of their ideas on Western culture. Students electing this course must have successfully completed a previous Course in philosophy or have permission of instructor.

PHIL 302 Modern Philosophy
3.000 Credits

A study of 17th and 18th century European philosophers including such philosophers as Descartes, Spinoza, Hume, and Kant with emphasis on their metaphysical and epistemological theories and how those theories provided a foundation for science and a bedrock for modern thought. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 303 Kant and the 19th Century
3.000 Credits

The development of philosophical thought from Kant through the 19th Century. In addition to Kant, figures discussed may include Hegel, Schopenhauer, Marx, Kierkegaard, and Nietzsche. Readings in selected texts. (OC).

PHIL 304 Twentieth-Century Philosophy
3.000 Credits

A study of 17th and 18th century European philosophers including such philosophers as Descartes, Spinoza, Hume, and Kant with emphasis on their metaphysical and epistemological theories and how those theories provided a foundation for science and a bedrock for modern thought. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 305 Kant and the 19th Century
3.000 Credits

The development of philosophical thought from Kant through the 19th Century. In addition to Kant, figures discussed may include Hegel, Schopenhauer, Marx, Kierkegaard, and Nietzsche. Readings in selected texts. (OC).
A study of selected topics, movements, and figures in the philosophy of the twentieth century, including such representative subjects as continental philosophy, contemporary philosophy of mind, and analytic philosophy. Designed to meet the needs of students in literature and the history of ideas as well as philosophy students. Students electing this course must have successfully completed a previous course in philosophy or have permission of the instructor.

PHIL 305 Marxism
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 310 or PHIL 315 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

This course is an introduction to the philosophy of Marxism which emphasizes Marx's theories of human nature, alienation, class struggle, and revolution through readings of classical and contemporary texts. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor. (OC).

PHIL 310 Darwinism and Philosophy
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

Perspectives on Darwinism, including its influence on philosophy, its implications for scientific method, and its place in considerations of scientific and religious views of the cosmos. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor. (OC).

PHIL 312 Environmental Ethics
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 233 or PHIL 240* or ENST 105 or ENST 301

The relationship of human beings to the non-human environment raises pressing moral and political issues. This course will use the theories and concepts of philosophical ethics to explore such questions as human obligations to non-human animals; the preservation of wilderness; balancing economic, aesthetic, and spiritual values; and the problems of pollution, urban sprawl, and ecological justice. Prerequisite or permission of instructor. (YR).

PHIL 315 Ethics of War & Peace
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 312 or PHIL 315 or PHIL 350 or PHIL 355 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 377 or PHIL 379 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

A critical examination of the idea of freedom: the free will/determinism debate, moral and legal responsibility, punishment, and the relationship between metaphysical and social freedom. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 335 Philosophy of Law
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

An examination of some of the important philosophical issues relevant to law and legal theory, including legal punishment, legal responsibility, and the relationship between law and morality. Both classical and contemporary writings will be studied. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 340 Analytic Philosophy
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490
An introduction to philosophy as the analysis and evaluation of fundamental concepts and principles occurring in ordinary life and in the sciences. While analytic philosophy in the twentieth century is emphasized, its antecedents in the history of western philosophy will be examined. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor. (OC).

PHIL 350 Symbolic Logic
3.000 Credits

This course will examine the central themes in modern symbolic logic including consistency, truth-functionality, sentential first-order predicate logic, and the logic of identity and possibility. These themes and their relation to the wider philosophical context will be discussed. (F,W).

PHIL 365 Philosophy of Religion
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

A philosophical examination of basic religious problems, such as the nature and grounds of religious belief, the existence and nature of God, human immortality, the relations of religion and science, and the nature of religious language. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 369 Philosophy of Art
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 370 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

An examination and critique of both traditional and contemporary theories of art as well as an examination of theories of the aesthetic including theories of beauty, taste, and the aesthetic attitude. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor. (OC).

PHIL 370 Philosophy of Mind
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

A critical examination of philosophical positions that claim to distinguish between what is real and what is apparent; an evaluation of the basic principles of philosophy and of extra-philosophical disciplines. Readings of classical and contemporary texts. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 371 Philosophy in Literature
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

An exploration of philosophical problems as they are encountered in works of literature. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 375 Problems of Human Knowledge
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 590

A study of issues and problems that arise in considering the nature of knowledge: an examination of traditional theories of knowledge and recent critiques of those theories. Readings of classical and contemporary texts. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 380 Theories of Reality
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 234 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

A study of current philosophical work in the area of consciousness studies examining the nature and function of human consciousness and the problem of reconciling an objective, scientific view of consciousness with our subjective experience of it. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 384 Feminist Philosophy
3.000 Credits
Prerequisite(s): PHIL 100 or WST 275

Feminists working in philosophy, most notably in the 19th and 20th centuries, have altered the traditional philosophical canon by first, recovering women philosophers who were essentially erased from the history and secondly, by extending and contributing to the standard questions of philosophy. For example, one central question of philosophy; “What can we know with certainty?” has been transformed through a feminist lens and reinterpreted as “What does one’s gender, social location and cultural framework contribute to what one knows?” In this course we will look at the variety of feminist philosophical theories with a focus on epistemology, metaphysics and ethics.

PHIL 390 Topics in Philosophy
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 355 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

Examination of problems and issues in selected areas of philosophy. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. Typical topics: Philosophy of Language, Minds and Machines, Moral Responsibility. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 399 Independent Studies
1.000 TO 3.000 Credits

Readings or analytical assignments in philosophy in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. (F,W).

PHIL 415 Existentialism and Its Sources
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 485 or PHIL 490

An exploration of the literary sources of existentialism and a critical study of selected philosophical texts. Particular themes—death, subjectivity, alienation, commitment, and freedom—will be considered in an attempt to formulate an existential conception of the human condition. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 441 Social and Political Phil
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 490

An analysis of some fundamental problems of political and social philosophy, with special attention to the way in which theory may function as a guide to specific policies. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 442 Medical Ethics
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 445 or PHIL 490

An examination of moral issues in medicine. Among the problems to be considered are truth-telling and paternalism in the doctor-patient relationship, psychosurgery and behavior control, death and euthanasia, the allocation of scarce resources, and genetic counseling and control. Specific attention will be given to ethical theories and to philosophical concepts such as rights, autonomy, and justice. Students cannot receive credit for both PHIL 442 and PHIL 542. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 445 Contemporary Ethical Issues
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 320 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 490

An intensive study of a topic in recent ethical theory. Topics will vary with each offering. Among the topics: ethics and law, utilitarianism, virtue theory, theories of justice, morality and emotion, ethics and partiality. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

PHIL 485 Philosophy of Science
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 233 or PHIL 240 or PHIL 301 or PHIL 302 or PHIL 303 or PHIL 304 or PHIL 305 or PHIL 310 or PHIL 315 or PHIL 335 or PHIL 340 or PHIL 350 or PHIL 365 or PHIL 369 or PHIL 370 or PHIL 371 or PHIL 375 or PHIL 380 or PHIL 390 or PHIL 441 or PHIL 442 or PHIL 445 or PHIL 490

An intensive study of a topic in recent ethical theory. Topics will vary with each offering. Among the topics: ethics and law, utilitarianism, virtue theory, theories of justice, morality and emotion, ethics and partiality. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.
A critical study of the foundations of the sciences, natural and social, with emphasis on the following topics: the nature of scientific method, theories and explanation, probability and determinism, the unity of the sciences. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

**PHIL 490 Studies in Philosophy**

1.000 TO 4.000 Credits

Intensive study of a figure, movement, or issue in philosophy. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. Typical topics: Plato's dialogues, philosophical foundations of mathematics, minds and machines. (OC).

**PHIL 496 Independent Studies**

1.000 TO 3.000 Credits

Topics in philosophy not ordinarily included in other courses in philosophy. Selected in accordance with needs and interests of those enrolled.

**PHIL 497 Independent Studies**

1.000 TO 3.000 Credits

Topics in philosophy not ordinarily included in other courses in philosophy, selected in accordance with the needs and interests of those enrolled.

**PHIL 498 Independent Studies**

1.000 TO 4.000 Credits

Topics in philosophy not ordinarily included in other courses in philosophy, selected in accordance with the needs and interests of those enrolled. Credit hours will vary. (F,W).

**PHIL 499 Independent Studies**

1.000 TO 4.000 Credits

Topics in philosophy not ordinarily included in other courses in philosophy, selected in accordance with the needs and interests of those enrolled. Credit hours will vary. (F,W).

**Physics**

Physics is the study of the most fundamental properties of matter and energy. The physics program has been designed with the recognition that a student might choose to concentrate in physics for a variety of reasons. In addition to meeting the needs of those planning to continue their physics education in graduate school, the program serves those students wanting to pursue technical careers immediately after graduation, those seeking to enter medical, dental or other professional schools, and those interested in earning certification as high school teachers. After completing a core curriculum in physics and mathematics and an introduction to the life and other physical sciences, students have the opportunity to gain first-hand experience in basic and applied physics research by participating in faculty research projects both on and off campus. Similar experiences may be arranged in hospital, industrial, or government research facilities in the Detroit metropolitan area. The physics faculty have concentrated their efforts in atomic physics, statistical and condensed matter physics, biophysics, astrophysics, and the history and philosophy of physics. Physics majors have worked on problems in these specialty areas, and also on projects in the interdisciplinary application of physics in medicine and in the environment. Students wishing to emphasize the applied side of physics may do so by replacing elective courses in physics with courses offered by the College of Engineering and Computer Science.

**PREREQUISITES TO THE CONCENTRATION**

A solid background in mathematics is essential to success in any scientific discipline. Incoming students who intend a concentration in physics should have completed at least three years of high school mathematics. First-year students should plan to enroll in MATH 105, 115 or 116 based on the results of their math placement tests. PHYS 150 and 151 are prerequisites to all other physics courses. Students intending on majoring in physics should complete these courses as soon as possible.

- **CHEM 134** General Chemistry I .............................. 4 hrs
- **CHEM 144** General Chemistry I .............................. 4 hrs
- **PHYS 150** General Physics I
- **PHYS 151** General Physics II .............................. 8 hrs
- **MATH 115** Calculus .............................. 12 hrs
- **MATH 216** Differential Equations .............................. 3 hrs
- **MATH 217** Matrix Algebra
- **MATH 227** Linear Algebra .............................. 2-3 hrs

Two other science courses chosen from ................................ 8 hrs

CHEM 136 OR CHEM 146,
Biol 130 OR BIOL 140,
GEOL 118

**CONCENTRATION REQUIREMENTS** ................................ 31 hrs

**Required courses** ...................................................... 22 hrs

- **PHYS 305** Contemporary Physics .............................. 3 hrs
- **PHYS 360** Instrumentation for Scientists ................. 4 hrs
- **PHYS 401** Mechanics ........................................ 3 hrs
- **PHYS 403** Electricity and Magnetism ....................... 3 hrs
- **PHYS 406** Thermal and Statistical Physics ............... 3 hrs
- **PHYS 453** Quantum Mechanics .............................. 3 hrs
- **PHYS 460** Advanced Physics Laboratory .................. 3 hrs

Six additional credit hours of lecture courses in physics, chosen from

- **PHYS 320** Environmental Physics
- **PHYS 370** Introduction to Mathematical Physics
- **PHYS 390** Current Topics in Physics
- **PHYS 405** Optics
- **PHYS 416** Biological Physics
- **PHYS 421** Astrophysics
- **PHYS 457** Atomic and Nuclear Physics
- **PHYS 463** Solid State Physics

Three additional credit hours of laboratory courses, selected
from

PHYS 460 Advanced Physics Laboratory.............. 3 hrs
PHYS 495 Off-Campus Research............................. 1-3 hrs
PHYS 499 Laboratory Studies in Physics............. 1-3 hrs

Cognates..................................................6 hrs

Students must complete at least six additional credit hours in upper-level cognate courses selected from mathematics, statistics, natural sciences (other than physics), computer science, engineering, or other subject areas intimately related to physics and approved by the physics concentration advisor. Courses leading to knowledge of computer programming in languages such as Fortran, C++, or JAVA are particularly recommended.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 credit hours of upper-division courses in physics. No more than three credit hours of field placements, internships, or co-op courses may be applied toward a minor in physics.

Physics (Phys)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

PHYS 100 Perspectives in Physics
3.000 Credits

An introductory look at the concepts and methods of physics as well as the role of physics in society today. Examines some of the problems facing physicists and the ways they go about tackling them. Problem solving includes the use of mathematics in physical situations. The course is designed for non-concentrators interested in physics. Three hours lecture. (S).

PHYS 125 Introductory Physics I
4.000 Credits
Prerequisite(s): MATH 105* or MPLS 113
Co-requisite(s): PHYS 125L

Part I of a non-calculus, introductory, survey of physics. The concepts of physics are presented with an emphasis on the methods of solving physical problems. Topics are drawn from mechanics, waves, and thermal physics. This course and PHYS 126 are normally taken by students in biological science, preprofessional and computer science programs. Three hours lecture, one hour discussion, three hours laboratory. (F).

PHYS 126 Introductory Physics II
4.000 Credits
Prerequisite(s): PHYS 125 or PHYS 150
Co-requisite(s): PHYS 126L

A continuation of PHYS 125. Topics are drawn from electricity and magnetism, optics, and modern physics. Three hours lecture, one hour discussion, three hours laboratory. (F).

PHYS 130 Introduction to Astronomy
3.000 Credits

A one-term introduction for those interested in learning about our present state of knowledge of the universe, its origin, evolution, organization, and ultimate fate. Exciting new discoveries concerning extrasolar planets, star birth, supermassive black holes, dark matter/energy, and cosmology are discussed. Three hours lecture. (F,S).

PHYS 131 Intro Astronomy Laboratory
1.000 Credits
Prerequisite(s): PHYS 130*

An introduction to some of the important observational techniques and analytical methods used by astronomers. Ground-based and satellite data will be used to reveal physical and chemical properties of the moon, planets, stars, and the Milky Way. Outdoor exercises involving telescopic observation of the sun, variable stars, nebulae, and external galaxies are also included. Three hours laboratory. (F,S).

PHYS 150 General Physics I
4.000 Credits
Prerequisite(s): MATH 115* or MPLS 116
Co-requisite(s): PHYS 150L

Part I of an integrated, two-semester, calculus-based treatment of physics, with emphasis on the solution of physical problems through the understanding of a few basic concepts. Topics are drawn from mechanics. This course and PHYS 151 are normally taken by concentrators in physics, chemistry, biochemistry, mathematics, and engineering. Three hours lecture, one hour discussion, three hours laboratory, discussion, three hours laboratory. (F,W).

PHYS 151 General Physics II
4.000 Credits
Prerequisite(s): PHYS 150 and (MATH 116* or MPLS 215)
Co-requisite(s): PHYS 151L

A continuation of PHYS 150. Topics are drawn from electricity and magnetism, and optics. Three hours lecture, one hour discussion, three hours laboratory. (F,W).

PHYS 305 Contemporary Physics
3.000 Credits
Prerequisite(s): (PHYS 126 or PHYS 151) and (MATH 116 or MPLS 215)

An introduction to contemporary topics in physics of interest to science, mathematics and engineering students. Topics include relativity, and quantum mechanics and their applications to atoms, molecules, nuclei, solid state phenomena, and cosmology. Three hours lecture. (W).

PHYS 320 Environmental Physics
3.000 Credits
Prerequisite(s): PHYS 126 or PHYS 151

A survey of the applications of physical principles to the environment, and to the conversion, transfer, and use of energy. Problems of transportation, meteorology, and thermal pollution
PHYS 360 Instrumentation for Scientists
4.000 Credits
Prerequisite(s): PHYS 126 or PHYS 151

An introduction to the principles of electronic instrumentation used in scientific research. Methods of converting physical measurements into electronic signals by means of electrical circuits, transistors, digital and analog integrated circuits will be discussed. Digital computers as general purpose laboratory instruments will be explored. Students will complete individual projects. Three hours lecture, four hour laboratory. (F).

PHYS 370 Intro to Mathematical Physics
3.000 Credits
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 151

As introduction to those mathematical methods that are widely used in understanding the physical phenomena exhibited by Nature. Topics include vector analysis, linear algebra, complex variables, Fourier analysis, and differential equations. Emphasis is on the application of these techniques to physical problems of interest to students in mathematics, engineering, and the physical sciences. Three hours lecture. (OC).

PHYS 390 Current Topics in Physics
3.000 Credits
Prerequisite(s): PHYS 305*

A lecture course in a topic of current interest in physics. Topics vary and are announced in the current Schedule of Classes. Three hours lecture. (OC).

PHYS 401 Mechanics
3.000 Credits
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 151

A study of the classical physics of the motions of single particles, systems of particles, and rigid bodies. Topics include central force laws and planetary motion, collisions and scattering, rigid body motion, oscillations, Lagrange's equations, and Hamilton's principle. Three hours lecture. (F).

PHYS 403 Electricity and Magnetism
3.000 Credits
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 151

The study of electrostatics, magnetostatics and electrodynamics using Maxwell's equations. Of interest to engineers and physical scientists, the course focuses on the logical development of Maxwell's equations from experimental laws and on their application to electromagnetic phenomena. Three hours lecture. (W).

PHYS 405 Optics
3.000 Credits
Prerequisite(s): (MATH 205 or MPLS 215 or MATH 215) and PHYS 151

An introduction to wave and ray optics for students in engineering, mathematics, and the physical sciences. Topics of discussion include reflection and refraction at dielectric surfaces, lenses and mirrors, fiber optics, polarization, interference, and Fraunhofer and Fresnel diffraction. Additional material on coherence, Fourier optics and spatial filtering, and holography is presented as dictated by student's needs and interests, and as time permits. Three hours lecture. (AY).

PHYS 406 Thermal and Statistical Physics
3.000 Credits
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 151

A study of thermodynamic phenomena using the methods of statistical mechanics. Designed for engineering students and concentrators in mathematics and the physical sciences; extensive application is made to physical, chemical and biological systems and phenomena, including solids, liquids, gases, paramagnets, thermal radiation, DNA, hemoglobin, semiconductors, heat engines, chemical reactions, and phase transitions. Three hours lecture. (F).

PHYS 416 Biological Physics
3.000 Credits
Prerequisite(s): MATH 205 or (MATH 215 and PHYS 151)

A course based on the methodology of physics with particular emphasis on the applications of theoretical models and experimental methods to biological objects and systems. Topics may include bioelectricity, membranes, polymers, and physical chemistry of macromolecules. Three hours lecture. (OC).

PHYS 421 Astrophysics
3.000 Credits
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 305

A calculus-based introduction to several major areas of modern astrophysics for students concentrating in the physical sciences, mathematics, and engineering. Topics to be covered include observable properties of stars and star systems, stellar structure and evolution, binary systems and galactic x-ray sources, galaxies and quasars, and cosmology. Three hours lecture. (AY).

PHYS 433 Quantum Mechanics
3.000 Credits
Prerequisite(s): PHYS 305 and MATH 216

Concepts of quantum mechanics with applications of the Schrödinger wave equations to the simpler atoms, molecules, and nuclei. Topics of current interest to physicists, chemists, and biologists are discussed. Three hours lecture. (F).

PHYS 457 Atomic and Nuclear Physics
3.000 Credits
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 305

Topics in modern atomic physics such as optical and radiofrequency spectroscopy and scattering of atoms and electrons are considered. An introduction to nuclear physics, including
nuclear interactions and structure, radioactive decay, fission, and fusion. Three hours lecture. (AY).

**PHYS 460** Advanced Physics Laboratory  
3.000 Credits  
Prerequisite(s): PHYS 305* and PHYS 360

Experiments in both classical and modern physics using contemporary techniques. Commercial apparatus is used in several experiments. Advanced students are encouraged to initiate and conduct their own experiments. Instruction in the planning of experiments and the presentation of oral and written reports is included. One hour recitation, six hours laboratory. Course may be repeated for credit. (W).

**PHYS 463** Solid State Physics  
3.000 Credits  
Prerequisite(s): (MATH 205 or MATH 215 or MPLS 215) and PHYS 305

A study of the structure and properties of the solid state of matter with emphasis on crystalline solids, crystal structures, lattice dynamics, electrons in metals and semiconductors, and dielectric and magnetic properties of solids. Three hours lecture. (AY).

**PHYS 490** Topics in Physics  
1.000 TO 3.000 Credits

A lecture course in a topic of current interest in physics. Topics vary and are announced in the current Schedule of Classes. One to three hours lecture. (OC).

**PHYS 495** Off-Campus Research  
1.000 TO 3.000 Credits

Participation in ongoing experimental research at an off-campus laboratory. Assignments made by cooperative or internship agreement between the research laboratory, the student, and the physics concentration adviser. Course may be repeated for credit. Four to twelve hours laboratory. Permission of concentration adviser. (F,W,S).

**PHYS 497** Seminar in Physics  
1.000 TO 3.000 Credits

Current topics from various areas in pure and applied physics are reported upon by students, faculty, and guest lecturers. Topics presented will vary from year to year. Course may be repeated for credit. One to three hours seminar. (W).

**PHYS 498** Directed Studies in Physics  
1.000 TO 3.000 Credits

Special topics in physics chosen by agreement between student and instructor. Course may be repeated for credit. Permission of instructor. (F,W,S).

**PHYS 499** Laboratory Studies in Physics  
1.000 TO 3.000 Credits

Experimental studies in physics selected by agreement between student and instructor. Four to twelve hours laboratory. Course may be repeated for credit. Permission of instructor. (F,W,S).

### Political Science

Politics deals with “who gets what,” and political science is the study of that process of getting and maintaining power. It is an attempt to define and analyze the processes by which individuals define their interests and interact to promote those interests. At the same time it is the study of the moral ends to which power is used. The six officially-defined areas of specialty within political science are American Politics, Political Theory, Public Policy, Comparative Politics, International Relations, and Research Methodology.

### PREREQUISITES TO THE CONCENTRATION

Students concentrating in political science must take three prerequisites:

- POL 101 Introduction to American Government*
- POL 201 Introduction to Comparative Government
- POL 300 Political Analysis**

*POL 101 is the prerequisite for all upper-division courses. Junior or senior standing is a prerequisite for most 400-level courses. Students are advised to complete these prerequisite courses as early as possible. They should complete POL 101 and 201 within their first four terms and POL 300 during their fourth or fifth term.

**POL 301 does NOT fulfill the POL 300 requirement.

### CONCENTRATION REQUIREMENTS

After completing the prerequisite courses, students must complete 24 hours of upper-division political science courses. Students, except those who declared the concentration before September 1, 1986, are required to complete at least one course at the 300 level or above in each of the six fields listed below. Students are advised to complete required classes as soon as possible to prevent schedule conflicts. Those who ignore this advice may have difficulties completing their concentration requirements as they planned.

**Summary of requirements:**

- **Field Requirements:** one course from each field*............. 18 hrs
  - American Politics....................................................... 3 hrs
    - POL 311, 312, 313, 315, 316, 320, 322, 323, 327, 328, 340, 362, 413, 414, 415, 416, 489
  - Political Theory......................................................... 3 hrs
  - Public Policy.............................................................. 3 hrs
    - POL 325, 333, 360, 363, 364, 365, 490
  - Comparative Politics.................................................... 3 hrs
    - POL 341, 350, 355, 370, 385, 386, 387, 450
  - International Relations.................................................. 3 hrs
    - POL 361, 371, 375, 451, 471, 472
  - Methodology.............................................................. 3 hrs
    - POL 300*, 492

*Note: POL 300 meets both prerequisite and the methodology field requirement.

- **Additional electives to reach a total of 24 hrs**
  - Any political science course at the 300 level or above may be
used to complete the required total of 24 hours of upper-division coursework beyond POL 300 and the required field courses. Students should select specific courses in consultation with the program advisor.

At least 15 hours of political science must be taken at UM-D unless waived by petition. Only six credit hours of internship experience, whether taken as POL 495-497, as internship-related directed studies, or as any other internship experience, may be counted toward a political science concentration.

Cognates

Students must complete six hours of cognate courses at the 300 level or above in anthropology, economics, history, philosophy, psychology or sociology.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in political science.

EVENING PROGRAM OFFERINGS

The political science faculty have a commitment to a comprehensive evening program. In terms of required courses, the goal of the discipline is to offer POL 101 each semester and POL 201 and POL 300 at least once every year. If POL 201 or POL 300 is not offered during a given two-year period, a full-time evening student is allowed to petition the discipline for permission to substitute other classes. Evening students should watch for infrequently offered prerequisite classes and take them when they are available.

Political Science (POL)

COURSE OFFERINGS

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

POL 101 Intro to American Government
3.000 Credits

An examination of the structure and dynamics of the American political system. Attention is also given to basic concepts and methods applicable to the study of politics in general. (F,W).

POL 201 Intro Comparative Government
3.000 TO 4.000 Credits

An introduction to the world’s major forms of government: Western democracy, Soviet communism, and the conflict and violence of the underdeveloped countries. (F,W).

POL 205 Intro to Public Administration
3.000 Credits

Introductory study of the administrative phase of public policy development. Such aspects of administration as personnel and fiscal management are considered and related to issue of accountability, public responsibility, and notions of public interest. (F,W).

POL 250 Intro to Political Theory
3.000 Credits

This course examines the role of political theory as a tool for the critical analysis of political reality. It analyzes several dominant political conceptions such as justice, equality, democracy, civility, and authority. (YR).

POL 260 The Arms Race and War
3.000 Credits

An examination of the causes and consequences of the contemporary arms race. Special attention is given to nuclear weapons, the risk of war, and the prospect for arms control and disarmament. (YR).

POL 290 Topics in Political Science
3.000 Credits

Examination of problems and issues in selected areas of political science. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

POL 300 Political Analysis
3.000 Credits

Prerequisite(s): POL 101

Introduction to research design, data collection and analysis, sampling, and statistics for social scientists. (F, W).

POL 301 Political Analysis
3.000 Credits

Prerequisite(s): POL 101

This is the REACH version of POL 300, offered each semester on audiovisual tape. Political science concentrators may not register for this class unless a petition is approved in advance by the political science discipline. (F,W,S).

POL 302 The Theory of the Law
3.000 Credits

Prerequisite(s): POL 101

A comprehensive introduction to the theoretical foundations and the political functions of law, with special emphasis on the different moral justifications of law; the relation between law and justice; the relation between law and freedom; due process and fairness in any legal system. This course is designed to have special relevance for those considering law as a career. (OC).

POL 303 Justice
3.000 Credits

Prerequisite(s): POL 101

An exploration of various theories of justice. The moral foundation of justice is considered, as are issues of economic distribution. (AY).

POL 304 American Political Thought
3.000 Credits

Prerequisite(s): POL 101

The principal American contributions to political theory. (OC).
POL 305  Race/Justice/Freedom in Amer  
3.000 Credits  
Prerequisite(s): POL 101  
This course will examine the social and political thought of selected Black political thinkers. Its focus will be to assess the origins, development and implications of their ideas in the context of the changing dynamics of racial politics in America and the world. (AY).

POL 306  Political Ideologies  
3.000 Credits  
Prerequisite(s): POL 101  
An examination of significant modern ideologies, especially liberalism, conservatism, and Marxism. (YR).

POL 307  Marxist Thought  
3.000 Credits  
Prerequisite(s): POL 101  
The theories of selected communist thinkers and the implications that these ideas have for the contemporary world. (OC).

POL 308  Moral and Political Dilemmas  
2.000 TO 3.000 Credits  
Prerequisite(s): POL 101  
The course focuses on the tensions and relations between personal morality and political action by examining the moral aspect of contemporary policy issues such as the right to life, environmental policy, and discrimination. (YR).

POL 309  Ancient Political Theory  
3.000 Credits  
Prerequisite(s): POL 101  
An examination of the arguments for and against justice and for and against democracy in the writing of Plato and Aristotle. (YR).

POL 310  Modern Political Theory  
3.000 Credits  
Prerequisite(s): POL 101  
The course studies the origins of modern political theory and practice, and the development of "modern" democratic liberalism. (YR).

POL 311  Int Group and Pol Process  
3.000 Credits  
Prerequisite(s): POL 101  
An examination of the structure, techniques, and internal politics of interest groups, their role in policy making and relationship with political parties, legislative and executive bodies, and administrative agencies. (AY).

POL 312  Legislative Process  
3.000 Credits  
Prerequisite(s): POL 101  
An analysis of legislative systems with emphasis on the changing realities of congressional and state power and policy making. (YR).

POL 313  American State Government  
3.000 Credits  
Prerequisite(s): POL 101  
A comparative analysis of politics, political processes, and governmental institutions in American state and local governments. (YR).

POL 314  Issues in Amer Pol Thought  
3.000 Credits  
Fundamental and recurring issues in American political thought, as they appear in the most influential and representative works on public affairs since the end of the Civil War. Topics may include Social Darwinism and its progressive critics, "revisionist" critiques of the Constitution, political aspects of philosophic pragmatism, the "revolt against formalism" in law, political doctrines of Progressivism and the New Deal, mid-century changes in progressive liberalism, the revival of classical liberalism and its "fusion" with traditional conservatism, political-philosophical aspects of environmentalism, the political thought of the civil rights movement and its critics, feminism and its diversification, and the capacities of American political culture and institutions to conduct a sustained opposition to terrorism. The course concentrates on analyzing extended works of reasoning in books, essays, judicial opinions and other public documents. POL 304, American Political Thought, is recommended as a forerunner to this course.

POL 315  American Chief Executive  
3.000 Credits  
Prerequisite(s): POL 101  
The development and functions of the chief executive and an analysis of the sources and nature of executive power in American national and state government. Primary attention is given to the presidency. (YR).

POL 316  The American Judicial Process  
3.000 Credits  
Prerequisite(s): POL 101  

POL 318  Criminal Law  
3.000 Credits  
A survey of landmark Supreme Court decisions in the field of criminal law and related issues of criminal justice. State court decisions when applicable may also be included. (AY).

POL 320  Political Man  
3.000 Credits
An analysis of the political process in terms of the attitudes, values, and behavior of human beings. (OC).

**POL 322 Government of Michigan**
3.000 Credits
Prerequisite(s): POL 101
An analysis of Michigan politics with emphasis on political processes and governmental institutions. (YR).

**POL 323 Urban Politics**
3.000 Credits
Prerequisite(s): POL 101
A survey of the political process in urban areas giving special attention to the changing role of cities in American politics. (YR).

**POL 325 Environmental Politics**
3.000 Credits
Prerequisite(s): POL 101
An examination of policy making on environmental and energy problems globally, nationally, and locally. (AY).

**POL 326 Presidential/Congressional Election**
3.000 Credits
Prerequisite(s): POL 101
This course will focus on the most recent and upcoming presidential and congressional elections from the perspective of how they fit into and help illustrate the broad theoretical frameworks and findings on elections and voting behavior in political science. Topics will include nominating and general election campaigns, campaign financing, participation, party coalitions, and news media. (OC).

**POL 327 Political Parties and Elections**
3.000 Credits
Prerequisite(s): POL 101
A basic survey of American political party organization and the American election system. The course sometimes includes an examination of parties and elections in comparative perspective. (YR).

**POL 328 Public Opinion and Press Groups**
3.000 Credits
Prerequisite(s): POL 101
A study of the nature and formation of public opinion, the techniques for its measurement, and its role in the political system. (AY).

**POL 329 Politics and the Media**
3.000 Credits
Prerequisite(s): POL 101
This course investigates the new relationships that have evolved in the 20th century between the print and electronic media and our major political institutions; the structure of the modern media; their role in the “political socialization” of the citizenry; their influence on public opinion; their effects on our party and electoral system; their role in defining political reality and agenda setting; and their influence upon our political institutions and the policy-making process. (YR).

**POL 333 Citizens and Bureaucrats**
3.000 Credits
Prerequisite(s): POL 101
The focus of this course is citizen participation in administrative behavior. Attention is paid to the perspectives of both citizens and bureaucrats. The course uses broad concepts of political participation and organization behavior. (YR).

**POL 340 Federalism**
3.000 Credits
Prerequisite(s): POL 101
Federalism is considered from both legal and operational perspectives. Students examine traditional views of Federalism as well as empirical and technical studies about intergovernmental relations at national, state, and metropolitan levels. (YR).

**POL 341 Canadian Politics**
3.000 Credits
Prerequisite(s): POL 101
A survey of Canadian politics and government. It provides an understanding of the Canadian political tradition and some of the concerns of contemporary Canada; includes a focus on the cultural and socioeconomic bases of the political system, the development of constitutional structures, the scope of public policy and the dynamics of policy process. (OC).

**POL 350 Politics of the Developing Areas**
3.000 Credits
Prerequisite(s): POL 101 and POL 201
A comparative study of political cultures, party systems, governmental structures, and development problems in the emerging nations of Asia, Africa and Latin America. (AY).

**POL 355 Religion and Politics**
3.000 Credits
Prerequisite(s): POL 101
The primary focus of the course is on political movements or systems, which take a religious form or have a religious base or use a religiously rooted ideology. Possible themes or cases covered include millennialism, the Iranian Islamic revolution, the Catholic Church as a political system, liberation theology in Latin America, Zionism, and the Evangelical movement in America. (AY).

**POL 360 American Policy Process**
3.000 Credits
Prerequisite(s): POL 101
An analysis of decision-making processes in the federal government with emphasis on the congressional and executive branches. (YR).
POL 361  American Foreign Policy
3.000 Credits
Prerequisite(s): POL 101 or POL 201

Survey of American foreign policy in various regions of the world. Instances of policy making, such as the Cuban missile crisis, are explored in detail. (YR).

POL 362  Women, Politics, and the Law
3.000 Credits
Prerequisite(s): POL 101

An examination of the political behavior of women in American politics. Included is an analysis of the legal and legislative demands of American women. (AY).

POL 363  Cr Just Policy and Admin
3.000 Credits
Prerequisite(s): POL 101

The structure and processes of criminal justice administration in America, including analysis of current issues in police behavior, courts, and corrections. (AY).

POL 364  Health Pol and Administration
3.000 Credits
Prerequisite(s): POL 101

Structure and processes of health administration in America, including analysis of current issues in health policy. (AY).

POL 365  Energy Policy
3.000 Credits
Prerequisite(s): POL 101 and POL 205

The course reviews the important elements in energy policy and a brief history of that development. It also considers what factors have been important in those developments. Finally, there is discussion of the potential for policy developments at all levels of government. (OC).

POL 370  Communist & Post-Communist Sys
3.000 Credits
Prerequisite(s): POL 101

China and Russia are the focal points of this course. Among questions explored are: How are Russia and China ruled? are their forms of government and their economic systems "moderating" and becoming more like those of the United States? How successful have these governments been in meeting the needs of the people? (OC).

POL 371  Problems in Intl Politics
3.000 Credits
Prerequisite(s): POL 101

Present-day problems in world politics, with particular emphasis on the great powers and on areas and events of political conflict in the contemporary world. (YR).

POL 375  Great Pwrs Comp and Conflict
3.000 Credits
Prerequisite(s): POL 101

This course focuses on the foreign policies of major international powers, such as Soviet Russia, China, and the Western European democracies. (YR).

POL 385  Middle East Politics
3.000 Credits
Prerequisite(s): POL 101

The course focuses on the Israeli-Palestine conflict in its domestic, regional, and world-wide dimensions. (AY).

POL 386  African Politics
3.000 Credits
Prerequisite(s): POL 101

The internal dynamics of African politics, with special attention paid to contemporary problems and issues, particularly parties, the military, ethnic conflict, rural politics, and social transformation. (AY).

POL 387  Southern Africa
3.000 Credits
Prerequisite(s): POL 101 or POL 201

The focus of this course is on the politics of Southern Africa, especially of South Africa but including Zimbabwe, Mozambique, Angola, Zambia, and others. The international dimensions of regional politics are also covered. (AY).

POL 390  Topics in Political Science
3.000 Credits

Examination of problems and issues in selected areas of political science. Title as listed in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

POL 398  Independent Studies
1.000 TO 3.000 Credits

Readings or analytical assignments in Political science in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor.

POL 399  Independent Study
1.000 Credits

****NO DESCRIPTION AVAILABLE****

POL 413  American Constitutional Law
3.000 Credits
Prerequisite(s): POL 101

A major theme of this course is the development of the constitution, especially focusing on the themes of judicial review; judicial self-restraint and judicial activism; the expansion of executive and legislative powers; and the rise of "substantive due process of law." (AY).
414  Civil Rights and Liberties  
3.000 Credits  
Prerequisite(s): POL 101

An analysis of the Bill of Rights and the 14th Amendment, with particular emphasis upon recent landmark or controversial Supreme Court decisions dealing with freedom of speech and religion, rights of criminal defendants; cruel and unusual punishment, right to privacy; Civil rights and equal protection clause; and apportionment. (YR).

POL 415  Problems in Constitutional Law  
3.000 Credits  
Prerequisite(s): POL 101

Selected areas of constitutional law of current interest. Topics to be announced. (AY).

POL 416  Criminal Law  
3.000 Credits

A survey of the major judicial, executive, and legislative decisions in the field of criminal law. (AY).

POL 450  Revolution  
3.000 Credits  
Prerequisite(s): POL 101

A consideration of violent political change and the conditions which promote it. The course covers both revolutionary theories and empirical research. Specific revolutions are considered. (YR).

POL 451  Peace and War  
3.000 Credits  
Prerequisite(s): POL 101

An examination of the causes of war and the means of securing peace. (YR).

POL 460  Science, Tech & Pub Policy  
3.000 Credits

This course explores the intersection of science, technology, and public policy. Scientific knowledge and technological innovations are exceptionally powerful resources for policymakers and for societies; they also pose great challenges and risks. This course will look at how science and technology affect the pursuit of policy goals in areas such as public health, environmental sustainability, economic growth, and national security. Students will not receive credit for more than one of POL 460, POL 560, and PPOL 560.

POL 466  Politics & Policies Soc Welfare  
3.000 Credits

The course examines the relationship between politics and public policy as related to the provision of social welfare programs in the United States.

POL 471  American Foreign Policy I  
3.000 Credits  
Prerequisite(s): POL 101 or POL 201

American foreign policy in Western Europe, Russia, and Latin America. (OC).

POL 472  American Foreign Policy II  
3.000 Credits  
Prerequisite(s): POL 101 or POL 201

American foreign policy in the non-western world. (OC).

POL 473  International Security Affairs  
3.000 Credits  
Prerequisite(s): POL 101

International Security is the branch of world politics concerned with the threats, primarily military in nature, to the peace and security of the nation, states, and the international community. (AY).

POL 489  Seminar in Urban Politics  
3.000 Credits

Selected topics in urban politics.

POL 490  Seminar in Public Administration  
2.000 TO 3.000 Credits

Selected topics in public administration.

POL 491  Seminar in Political Science  
3.000 Credits

Selected topics in political science. Title as listed in Schedule of Classes changes according to content. Course may be repeated for credit when topics differ. (AY).

POL 492  Seminar in Political Analysis  
3.000 Credits

An advanced in-depth look at the problems and techniques of empirical research. Gives special attention to research design, data collections, measurement, and validity. Statistics for social scientists will also be covered. (OC).

POL 494  Internship Seminar  
3.000 Credits

This is the academic part of the internship. Students meet with other interns once a week to analyze political dynamics within their placements. Students are required to keep journals, prepare papers and reports, and do other written work. Anyone taking POL 495 or 496 is required to take POL 494. It may not be taken by itself. Repeatable if topic differs. Only six hours of internship credit is allowable toward concentration requirement.

POL 495  Political Science Internship  
3.000 TO 6.000 Credits

Field study placements in national, state, county, local government or private agencies. Primarily for junior or senior political science concentrators or other qualified applicants.
Maximum of 20 students selected each term. Students must also register for POL 494. Only six hours of internship credit is allowed toward concentration requirement.

**POL 496**  
Canada Internship  
3.000 Credits

Field study placements in Canada at national, provincial, or local levels, or in private agencies. Course is offered only in spring semester. Primarily for junior or senior political science concentrators, or other qualified applicants. Students must also register for POL 494. Only six hours of internship credit is allowed toward concentration requirement.

**POL 497**  
Washington, D.C. Internship  
3.000 TO 6.000 Credits

Field placements in Washington, D.C. Course is offered only in summer semester. Primarily for junior or senior political science concentrators or other qualified applicants. Only six hours of internship credit is allowed toward concentration requirement.

**POL 498**  
Directed Studies  
1.000 TO 6.000 Credits

Directed individual study of any subject agreed upon by the student and the instructor. May not duplicate a formal course offering. (OC).

**POL 499**  
Directed Studies  
1.000 TO 6.000 Credits

Directed individual study of any subjects agreed upon by the student and the advising instructor, which shall not duplicate a formal course offering.

**Psychology**

As the science of human experience and behavior, psychology has a vast range. At one end, it borders on natural sciences such as biology and physiology, and at the other, it shares interests with social science disciplines such as anthropology and sociology. A student might choose to focus on a particular subfield of psychology by taking elective courses from within one of these areas: social, personality, clinical, developmental, environmental, industrial/organizational, cognitive, experimental and physiological. The curriculum is designed to accommodate non-concentrators who seek personal enrichment, concentrators who will go on to use psychology in a human services career or in a related field, and concentrators intending to pursue an advanced degree in psychology. Honors and internship programs provide opportunity for students to develop research skills and to gain practical experience in an applied setting.

**PREREQUISITES TO THE CONCENTRATION**

Students desiring to concentrate in psychology are required to take the following or their equivalents.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
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<tbody>
<tr>
<td>PSYC 170</td>
<td>Introduction to Psychology as a Natural Science</td>
</tr>
<tr>
<td>AND</td>
<td>PSYC 171</td>
</tr>
</tbody>
</table>

**CONCENTRATION REQUIREMENTS**

Students must complete at least 24 hours in psychology at the 300 level or above. For those transferring from a community college this requirement will ordinarily mean that the 24 hours will be completed during the junior and senior years. All students are required to complete 15 of the 24 hours in psychology at the UM-D.

Students are required to take one course in each of the following areas.

**Methods**

PSYC 415, 425, 435, 4445, or 465

**Natural Science Psychology**

PSYC 363, 370, 372, 375, 461, 463, or 464

**Social/Organizational Psychology**

PSYC 320, 322, 325, or 431

**Clinical/personality**

PSYC 440, 441, 442, or 450

**Developmental Psychology**

PSYC 300, 301, 302, 315, 407, 412, or 418

**Statistics and Experimental Design**

PSYC 381

Cognates........................................................................6 hrs

Students must also complete at least six hours in cognate courses at the 300 level or above, excluding internships or independent studies, which are to be selected from offerings in anthropology, biology, economics, education (A & C categories only), literature, mathematics, philosophy, political science or sociology. Additional areas include art history, chemistry, biochemistry, communications, history, applied statistics, music history, speech, health policy studies, geography, engineering, computers (CIS or CCM), English, environmental science, foreign languages, linguistics, microbiology, music theory, physics, environmental studies and management.

**MINOR OR AREA OF FOCUS**

A minor or area of focus consists of PSYC 170 or 171 and 12 hours of upper-division credit in psychology.

**HONORS PROGRAM IN PSYCHOLOGY**

Psychology offers an honors program which provides special opportunities for outstanding students, including a research training seminar followed by research in collaboration with faculty members. Students are formally accepted for the honors program early in their junior year. Prospective students should plan on completing PSYC 381 and a methods course by the end of fall term in their junior year. Requirements for entrance are a) GPA of 3.2 or higher in psychology and overall UM-D courses and b) informal evidence of being a superior student, such as high motivation and ability to work independently. Requirements for graduation with honors in psychology are the successful completion of:
- all requirements for psychology concentration
- PSYC 481 Computers in Psychology
- PSYC 498 Honors Seminar normally taken winter term, junior year
- PSYC 499 Honors Research normally completed during senior year
- Research proposal meeting completed early in senior year
- Final Oral Defense completed at least one month prior to graduation

PSYCHOLOGY INTERNSHIP

Juniors and seniors can obtain practical experience working under supervision in a setting relevant to psychology. Internship students will spend approximately 6 or 12 hours per week at their field placement and will attend a weekly seminar on campus. Students may register for PSYC 485 Field Work: Psychology Internship for 3 or 6 credits. Application should be made to the director of the psychology field work program.

COURSE NUMBERING SYSTEM

The courses listed below are grouped into five categories based on the second and third digits in their numbers. The categories and their numbers are: Developmental Psychology (X00-X19), Social/Organizational Psychology (X20-X39), Clinical/Personality Psychology (X40-X59), Natural Science Psychology (X60-X79), and Other (X80-X99). Asterisked (*) courses are considered to be the basic courses in the area. It is recommended that they be taken before other courses in the area.

Psychology (PSYC)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

PSYC 170 Intro to Psych as a Nat Sci
3.000 Credits
A treatment of the principles of sensation, perception, maturation, learning, motivation, memory, thought, language, and physiological bases of behavior. (F,W,S).

PSYC 171 Intro to Psych as a Soc Sci
3.000 Credits
A treatment of the principles of human development, intelligence, motivation, personality theory, social and abnormal psychology, and psychotherapy. (F,W,S).

PSYC 275 Intro to Women's Studies
3.000 Credits
A multidisciplinary and multicultural introduction to Women's studies. An overview of the theories and topics in the Social Sciences, Behavioral Sciences, Humanities, and Natural sciences that are pertinent to upper-division courses in Women's Studies. The course can be used as a prerequisite to upper-division courses in Women's Studies. (YR).

PSYC 300 Life-Span Developmental Psych
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171
Theoretical issues of psychological development from birth through late adulthood are emphasized, along with issues regarding research methods. Topics include cognitive-intellectual, personality, and social development through the life-span. (YR).

PSYC 301 Psych of Infant Development
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170
An examination of current theories and findings concerning physical, social, emotional, and intellectual development of the infant. Topics include genetic and experiential factors affecting prenatal and infant development. language, cognition, and environmental influences on development. Theory will be related to infant care practices in the home and early childhood centers. Student may not receive credit for both PSYCH 301 and PSYCH 501.

PSYC 302 Psych of Child Development
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171
An examination of current theories and findings concerning physical, social, emotional, and intellectual development from conception to late childhood. Topics include genetic and experiential factors affecting child development.

PSYC 314 Psychology and Life History
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170
The theory and practice of the life-historical method in psychology and other social sciences. Students study the dynamics of the life-historical interview, read selected case material and literary autobiographies, and see how first-person accounts are used in the social sciences. They also tape record a series of interviews and convert them into a life-historical document. (YR).

PSYC 315 Personality Development
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170
An investigation of the factors involved in the formation of personality and the changes in personality across the life-span. The influence of family, peers, and society will be emphasized. (YR).

PSYC 320 Social Psychology
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170 or SOC 200 or SOC 201
An introductory study of the inter-relationships of the functioning of social systems and the behavior and attitudes of individuals. (YR).
PSYC 321  Attitude and Social Behavior  
3.000 Credits  
Prerequisite(s): PSYC 171 or PSYC 170  
An analysis of social attitudes as they relate to personality and to membership in collective structures; the conditions of their formation and modification. (YR).

PSYC 322  Psychology of Prejudice  
3.000 Credits  
Prerequisite(s): PSYC 171 or PSYC 170  
A consideration of ethnic (including racial), sexual, and religious prejudice from the psychological point of view, focusing on the mind of both the oppressor and the oppressed. (YR).

PSYC 325  Psy of Interpersonal Relation  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
This course presents an overview of theory and research conducted by social psychologists that has been aimed at understanding interactions between individuals. Topics include: An exploration of the research process that is used to investigate interpersonal relationships, the processes underlying social perception, friendship, liking, love, close relationships, aggression and violence in interpersonal relationships. (YR).

PSYC 363  Cognitive Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
Analysis of human perceptual and cognitive functioning from an information-processing point of view. Emphasis will be placed on attention, pattern-recognition, memory, problem solving and other cognitive processes. (YR).

PSYC 365  Environmental Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
A survey of the contributions of the behavioral sciences to the understanding and solutions of the environmental problems that threaten our survival. Insights derived from psychology, anthropology, and computer science are discussed. Major topics include: overpopulation, over consumption, cognitive limitations in our understanding of ecological-political systems, and the use of Skinnerian behavioral control. (YR).

PSYC 366  Lab in Environmental Psych  
3.000 Credits  
Prerequisite(s): PSYC 381*  
Laboratory and field work experience in the applications of behavioral science knowledge to the understanding and solution of major environmental problems. Work will include group research and experimentation, as well as original individual research projects. (OC).

PSYC 370  Physiological Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
Integration of physiological concepts with behavioral phenomena. (YR).

PSYC 372  Animal Behavior  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171 or BIOL 100  
Comparative psychology. Descriptive analysis of human and animal behavior. (YR).

PSYC 375  Psychology of Language  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171 or LING 280  
The nature of human language as seen from the perspective of experimental psychology. The course introduces the student to current developments in linguistic theory. (AY).

PSYC 381  Prin of Stat and Exper Design  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
An introduction to basic principles of experimental design and statistical analysis as employed in psychological research. Topics covered include data-gathering, descriptive statistics, hypothesis-testing and one- and two-way sample experiments, correlational designs, and one- and two-way analysis of variance. (YR).

PSYC 384  Environment, Arch, and Design  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
A review of major theories and research findings concerning the effects of physical environments (both natural and human-made) on human behavior. Topics include: Environmental stressors (noise, crowding, temperature extremes, indoor and outdoor air pollution, and other aspects of urban environments); workspace ergonomics (e.g., lighting, VDTs); architectural design (privacy, territory, personal space, and aesthetics); wilderness, city parks, and other natural environments; general principles of environmental perception and cognition. (YR).

PSYC 390  Topics in Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171  
Examination of problems and issues in selected areas of psychology. Title as in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

PSYC 391  Topics in Psychology  
3.000 Credits  
Examination of problems and issues in selected areas of psychology. Title as listed in Schedule of Classes will change according to content. Courses may be repeated for credit when specific topics differ. (OC).
PSYC 394 Psychology and Theater
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

The linkages between psychology and theater are analyzed from the perspective of the actor, the audience, and the analyst (both psychotherapeutic and literary). This includes ties between plays and theories of human behavior, psychodrama, and self-insight through performance. Class involves a significant experiential component.

PSYC 3955 Women and the Workplace
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171 or WST 275 or OB 354

This course will: 1) analyze the importance, meaning, and consequences of what is culturally defined as masculine/male and feminine/female; 2) examine organizational practices that maintain the division of labor between the sexes; 3) examine social values and practices that promote the interests and the opportunities of women and that promote equality between the sexes; 4) examine women and management, including explanations for the limited numbers of women in senior management positions, gender and leadership style, and the difficulties of women managers; and 5) address the issue of work/life balance and the distinction between paid work and family work.

PSYC 398 Independent Studies in Psych
1.000 TO 3.000 Credits

Readings or analytical research in psychology selected in accordance with the interests and needs of students enrolled and agreed upon by the instructor and student. Permission of instructor. (F,W,S).

PSYC 404 Parent-Child Relations
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

This course examines parental effects on children and children's effects on parents. Emphasis is placed on how the psychologist can collect additional information on the interactions of such people as parents and their children. (YR).

PSYC 405 Gender Roles
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170 or SOC 200 or SOC 201

This course will investigate the development of gender roles in childhood and adolescence due to either innate physiological differences or sociological patterning, the effect of gender roles upon male-female relationships within our society, and the possibility of transcending sociological gender roles in alternate modes of living. Students cannot receive credit for both PSYC 405 and PSYC 505. (YR).

PSYC 407 Psychology of Adolescence
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

Considers adolescence as an interaction of rapid biological and social change. Students lacking the prerequisite may elect course with permission of instructor. Examines the theoretical and empirical literature in some detail. Students cannot receive credit for both PSYC 407 and PSYC 507. (YR).

PSYC 412 Psychology of Aging
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

This course examines development of the individual from middle adulthood through old age. Special emphasis is given to the understanding of developmental theory and issues in adulthood. Topics include socialization, family relationships, personality, and intellectual development in the aging individual. (YR).

PSYC 415 Lab in Developmental Psych
3.000 Credits
Prerequisite(s): PSYC 300 or PSYC 302 or PSYC 315 or PSYC 407 or PSYC 418

An examination of research design and methodology as related to developmental psychology. Special emphasis will be given to training students in data collection techniques used in developmental research and in providing practical experience in designing and conducting research. Students cannot receive credit for both PSYC 415 and PSYC 515. (YR).

PSYC 418 Cognitive Development
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

This course explores theories and methods in cognitive development focusing on Piaget's theory and more recent significant conceptualizations. Topics include stages of cognitive development, types of inferential process, and the acquisition of world knowledge. Discussions leading to the formation of new research ideas are emphasized. Students cannot receive credit for both PSYC 418 and PSYC 518. (YR).

PSYC 421 Group Processes
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171 or SOC 200

Topics treated include group cohesiveness, "group think," the social structure of groups, emotional factors in group life, leadership, and the development of groups. (YR).

PSYC 422 Psychology of Leadership
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

Analysis of theories and research findings in the field of leadership. Class will participate in and observe leadership-group interactions. Students cannot receive credit for both PSYC 422 and PSYC 522. (YR).

PSYC 425 Lab in Social Psychology
4.000 Credits
Prerequisite(s): PSYC 381*

A broad introduction to research methods in basic and applied social psychology. Students will receive training in construction,
implementation, and interpretation of scientific procedures used in the study of social psychology. Topics include: questionnaire construction, experimental design, and various multivariate analytic techniques. (YR).

**PSYC 4305** Psychology in the Workplace
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170 or OB 354 or HRM 405

This course introduces students to some of the Core content areas of Industrial/Organizational (I/O) psychology. These content areas include: selection, training, performance appraisal, work teams, job design, motivation, leadership, union-management relations, and stress and health in the workplace. Students cannot receive credit for both PSYC 4305 and PSYC 530. (YR).

**PSYC 431** Organizational Entry
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171 or HRM 405

An in-depth consideration of the psychological aspects of the organizational entry process. Topics to be covered include recruitment, selection, orientation, socialization, and training. (OC).

**PSYC 432** Socialization of the Child
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

An in-depth consideration of some major social systems that affect the development of the child. Students lacking the prerequisite may elect course with permission of instructor. Students cannot receive credit for both PSYC 432 and PSYC 532. (YR).

**PSYC 435** Lab in Indus/Organz Psychology
3.000 Credits
Prerequisite(s): PSYC 4305

The course will involve applying and conducting research in real or simulated organizational settings. Techniques include: quasi-experimental research design, survey research, test construction, and test validation. (YR).

**PSYC 440** Abnormal Psychology
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

An introduction to the field of psychopathology, the study of mental disorders. Includes exposure to a number of historical and theoretical perspectives, each with their own theories, methodologies, and treatment approaches. Disorders covered will include: anxiety and mood disorders, personality disorders, schizophrenia, sexual disorders, and psychosomatic disorders. Students cannot receive credit for both PSYC 440 and PSYC 540. (YR).

**PSYC 441** Intro to Clinical Psychology
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

Introduction to the logic, problems, and limitations of clinical observations and inference. Issues in diagnosis and treatment are examined, with an attempt to understand parallels between clinical interpretation and problems in other disciplines. (YR).

**PSYC 442** Child Psychopathology
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

A review of the major psychological disorders of children from birth to adolescence. These disorders are considered from a clinical and theoretical point of view. In addition to an examination of causes, approaches to treatment and behavior modification are considered. Students cannot receive credit for both PSYC 442 and PSYC 542. (YR).

**PSYC 4445** Personality Assessment Lab
Prerequisite(s): PSYC 170 or PSYC 171

This is a course in methods of assessing personality. The theory and methods of observation, interviewing, questionnaires, IQ tests, and projective tests are discussed and the employed in brief, individually designed studies. In addition to the course prerequisite, students should have three upper-level psychology credits and junior or senior standing or permission of the instructor. Students cannot receive credit for both PSYC 4445 and PSYC 544. (YR).

**PSYC 446** Human Sexual Behavior
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

A comprehensive review of facts about human sexuality, the emphasis is on psychological aspects of sex, but there is also a consideration of genetic, physiological, and anatomical aspects of sex, and contemporary issues. Students cannot receive credit for both PSYC 446 and PSYC 546. (YR).

**PSYC 450** Personality Theory
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

A comparative review and examination of leading theories of personality; their basic concepts, similarities and differences, applications in clinical psychology, in education, in social planning, and in research. Students cannot receive credit for both PSYC 450 and PSYC 550. (YR).

**PSYC 451** Prin of Counseling and Psych
3.000 Credits
Prerequisite(s): PSYC 171 or PSYC 170

An introduction to traditional and innovative methods of psychological counseling and psychotherapy with an emphasis upon the theoretical foundations of personality and behavior change. Differences and similarities among the various schools of counseling and psychotherapy will be examined among with the values and limitations common to them all. (YR).

**PSYC 455** Health Psychology
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

A discussion of the research on health promotion, psychological
factors in the development of illness, cognitive representations of health and illness, stress and coping, social support, nutrition and exercise. Focus will be on the factors related to the development and maintenance of optimal health. Students cannot receive credit for both PSYC 455 and PSYC 555. (YR).

**PSYC 456**  Sport Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

A consideration of research and theory aimed at two objectives: (a) understanding how psychological variables affect physical performance and (b) understanding how participation in sports influences psychological development. (YR).

**PSYC 461**  Learning and Memory  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

A consideration of major theories and research results related to learning and memory in humans and animals. Students cannot receive credit for both PSYC 461 and PSYC 561. (YR).

**PSYC 463**  Sensation and Perception  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

Analysis of basic sensory and perceptual phenomena with a review of relevant behavioral and physiological literature. Students cannot receive credit for both PSYC 463 and PSYC 563. (YR).

**PSYC 464**  Human Factors Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

This course will provide an overview of the field of human factors, including two major components: (1) a background in specific content areas of psychology that have direct relevance to the field, and (2) a survey of direct applications of these areas to real-world problems. The content areas include research methods, sensory and perceptual processes, learning and memory, human information processing, decision making, problem solving, and language and communications. Direct applications include accident avoidance, design of displays and instrument panels, automation, human-computer interaction, control devices, and transportation. (YR).

**PSYC 465**  Experimental Psychology  
3.000 Credits  
Prerequisite(s): (PSYC 170 or PSYC 171) and PSYC 381*

Laboratory course in Experimental Psychology, including sensation, perception, learning, memory, language, and problem solving. Students will perform standard experiments, design one or two new modified experiments, collect data, analyze results, and present them in the form of laboratory reports. (YR).

**PSYC 470**  Advanced Physiological Psych  
3.000 Credits  
Prerequisite(s): PSYC 370

Further study of the subject matter of PSYC 370. advanced study of topics in the area of psychobiology. Students cannot receive credit for both PSYC 470 and PSYC 570. (YR).

**PSYC 471**  Reproductive Phys and Beh  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

An in-depth examination of reproduction from a physiological and psychological viewpoint. Physiological topics include anatomy, hormones, and neural mechanisms. Psychological topics include behavior development and descriptions. Students cannot receive credit for both PSYC 471 and PSYC 571. (YR).

**PSYC 4725**  Motivation and Behavior  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

Study of the psychobiological aspects of motivated behavior. Topics include hunger, addiction, aggression, sleep, and achievement. Students cannot receive credit for both PSYC 4725 and PSYC 572. Prerequisites or permission of instructor. (YR).

**PSYC 473**  Clinical Neuropsychology  
3.000 Credits  
Prerequisite(s): PSYC 370

This course is an in-depth examination of the field of clinical neuropsychology including a review of brain anatomy and physiology, theories of neural organization, and disorders of the nervous system. In addition, students will learn techniques utilized in neuropsychological assessment. (Prerequisite may be waived for students with Natural Science background.) (YR).

**PSYC 480**  History of Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

An overview of the development of modern psychology from the 17th century to the present, with particular emphasis on the beginning of psychology in America. The philosophical assumptions of various schools of psychology will be examined. (YR).

**PSYC 481**  Computers in Psychological Res  
3.000 Credits  
Prerequisite(s): PSYC 381

An introduction to the use of computers in data analysis and psychological research. Students will receive training in computer programming using SPSSPC and other software packages. Topics will include: correlation, regression, analysis of variance, and several multivariate techniques. (YR).

**PSYC 485**  Psychology Internship  
3.000 OR 6.000 Credits  
Prerequisite(s): PSYC 171 or PSYC 170

The psychology internship offers experience in a wide variety of placements dealing with human services. These include programs related to child abuse, crisis intervention, geriatrics, human resources/staff development, mental retardation, probation departments, teenage runaways, substance abuse, and women's issues. The program is designed for juniors and seniors
with a concentration in psychology or behavioral sciences and involves training in listening and helping skills. Written permission of instructor required. Students cannot receive credit for both PSYC 485 and PSYC 585. (F,W).

PSYC 490 Advanced Topics in Psychology
3.000 Credits

Examination of problems and issues in selected areas of psychology. Title in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

PSYC 492 Individual Research
1.000 TO 3.000 Credits

No more than 6 hours may be counted for concentration. Arrangements will be made for adequately prepared students to undertake individual research under the direction of a staff member. The students, in electing, should indicate the staff member with whom the work has been arranged. Students cannot receive credit for both PSYC 492 and PSYC 592. (YR).

PSYC 497 Seminar in Psychology
3.000 Credits

Small seminar examination of problems and issues in selected areas of psychology. Title in Schedule of Classes will change according to content. Course may be repeated for credit when specified topics differ. Written permission of instructor required.

PSYC 498 Psychology Honors Seminar
3.000 Credits

Preparation for Honors research project. Involves discussion of and writing on: choosing a topic, reviewing the literature, selecting a research method and design, and developing a research proposal. (YR).

PSYC 499 Psychology Honors Research
3.000 Credits
Prerequisite(s): PSYC 498

Participation with two faculty members in work leading to the honors thesis. This work involves active participation in research and will culminate in an independent research report, the honors thesis. Open only to psychology honors candidates. (F,W).

Religious Studies (minor only)

It is impossible to understand even our own Western cultural context without some detailed knowledge of the traditions, influence and rationale of its religious underpinnings. In light of that fact, a Religious Studies minor has been established to provide a focus for discussions of the ethical standards and the cultural orientations which have been fostered by various religions. It is also the objective of this program to provide a background in the religious beliefs of other cultures in order to give students insight into the basis of actions that otherwise might seem merely arbitrary.

Religious Studies is an interdisciplinary course of study which has required one prerequisite course of three credit hours (PHIL 100, PHIL 120 or HUM 201) and 15 upper-division credit hours in at least three disciplines. The participating disciplines have included Anthropology, Art History, Comparative Literature, English, History, Philosophy, Political Science and Sociology. To satisfy the upper-division credit-hour requirement, one course has been required from each of these three categories: Religious Traditions (ENGL 346; ANTH 440; HIST 331, 337, 363, 364), Religious Applications (ARTH 331; COML 342; POL 308, 355; LIBS 568; SOC 455) and Religious Thinking (PHIL 365; ANTH 360).

Religious Studies (RELS)

COURSE OFFERINGS
(Nota: An “*” denotes that the prerequisite course may be taken concurrently.)

RELS 120 Philosophy and Religion
3.000 Credits

An examination of how basic concerns of philosophy impinge on questions of religious beliefs. Using philosophical texts, the course will explore such questions as the following: Does God exist? Does human life have a purpose? How can we know whether religious claims are true?

RELS 201 Religions of the World
3.000 Credits

A study of religion in essence, in manifestation, and in relationship with the other dimensions of culture; a treatment of man's religious interests and the various ways in which he has sought to pursue these interests. Surveys major world religions. (OC).

RELS 331 Erly Christian Byzant Art
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

Borrowing its formal language from late antiquity and its symbolism from other mystery cults, the art of early Christianity emerged from the Roman catacombs to monumental expression under emperors Constantine and Justinian. Special attention will be devoted to the invention of a new symbolic language in art and to the development of church architecture.

RELS 332 The Reformation Era: 1500-1648
3.000 Credits

A study of the nature, course, and impact of the Protestant Reformation in Europe, Humanism, the Counter-Reformation, and the cultural and social implications of Protestantism also receive attention. (YR).

RELS 333 Intro to Gospel Music
3.000 Credits

This course explores the history and aesthetics of Black sacred music within cultural context. Major figures (Thomas A. Dorsey, Mahalia Jackson, The Winans Family, Kirk Franklin), periods (slavery, Great Migration, Civil Rights movement), and
styles (folk and arranged Negro spirituals, congregational songs, and gospel songs—traditional to contemporary) will be studied through recording, videos, film, and at least one field experience. Underlying the course is the theory (Mellonee Burnim and Pearl Williams-Jones) that gospel music is an expression of African American culture that fuses both African and European elements into a unique whole. (OC).

**RELS 337 Islamic Movements Mid East Hist**
3.000 Credits

Will compare several Islamic movements in Middle Eastern history, starting with the rise of Islam in Mecca and Medina. Later impulses toward Islamic revival all looked back to the first movement, and hoped to capture both its spirit and its success. With this as background, the course will move to address two questions; How did later Islamic movements understand the history of the rise of Islam? How have later Islamic movements had to adapt their methods and their ideology to different historical circumstances? (AY).

**RELS 341 Religion and Literature**
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An investigation of the ways in which religious ideas and practices have informed works of literature, and vice versa. Surveying a variety of genres and themes, the course will focus mainly on British and/or American literature and its engagement with Judaeo-Christian religion, though some attention may be devoted to other literary and religious traditions (e.g., ancient and medieval texts, European and world literature, Islam and Eastern religions). (OC)

**RELS 342 Myth and Motif**
3.000 Credits
Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of archetypal figures and thematic motifs. Their recurrent appearance in different literary periods and genres and their lineage will be examined in order to increase understanding of the works themselves and of the ages which produced them. A selection will be made from classical myth, Biblical narrative, and historical sources. Thus the figures may vary from Oedipus and Cain to Faust and Don Juan. Motifs or story patterns may include such devices as the spiritual quest, the journey into Hell, or the patricide prophecy. (AY).

**RELS 346 Bible and Western Tradition**
3.000 Credits

A detailed study of major episodes from the Bible, first as a literary work, and second as it is reflected in both poetry and the visual arts during the Renaissance and Baroque periods. Included are selected works by such masters as John Donne, George Herbert, and John Milton in poetry and Michelangelo, Raphael, and Leonardo da Vinci in painting and sculpture. (OC).

**RELS 349 Bible In/As Literature**
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

This course will study selected readings from the Bible, first in regard to their own literary, historical, and cultural contents, and then in regard to their reception, interpretation, and reapplication by later literary tradition. Biblical selections will cover both the Old and New Testaments, while later readings will be drawn from various literary periods. (OC)

**RELS 355 Religion and Politics**
3.000 Credits

The primary focus of the course is on political movements or systems, which take a religious form or have a religious base or use a religiously rooted ideology. Possible themes or cases covered include millennialism, the Iranian Islamic revolution, the Catholic Church as a political system, liberation theology in Latin America, Zionism, and the Evangelical movement in America. (AY).

**RELS 360 Myth, Magic, and Mind**
3.000 Credits

A broadly based introduction to the range of human mythical and magical traditions. Sophomore standing; ANTH 101 highly recommended. (YR).

**RELS 363 Rel in Amer Hist:1607-1865**
3.000 Credits

A survey of the religious movements and trends in America from the 17th century to the Civil War, with emphasis on Puritanism, 18th-century revivalism, and 19th-century denominationalism and social reform. (AY).

**RELS 364 Rel in Am Hist II:1865-Present**
3.000 Credits

A survey of American religion from the Civil War to the present, with emphasis on ethnicity and religion and post-World War II revivals of religion. (AY).

**RELS 365 Introduction to the Qur'an**
3.000 Credits

This course is an introduction to the Qur'an. This class will cover the historical and the cultural factors in which the Qur'an appeared. The class will also examine some of the major themes covered in the Qur'an such as gender, science, pluralism, worldview and so forth. Also, will cover major schools of interpretations and methodologies ranging from the literary to the scientific. The class will be conducted in English and knowledge of Arabic is desired but not required. No prerequisites. The class will consist of lectures, discussions, and movies.
Roughly speaking, we will begin by exploring three aspects of the subject: Historical context of the writing of the Bible i.e. during the organizing and communicating of each segment. History of the canonization: the ideas and rationale behind including some books but not others. History in the Bible. In more specific terms, this will entail examining who wrote the Bible, when and why. The narrative incorporates the movement from an oral tradition to a written one and will demand some focus on certain pivotal moments, e.g., Ezra’s reading (cf. Ezra-Nehemiah), or the historical events in Kings and Chronicles, or the defeat of the northern kingdom of Israel in 722 B.C.E. (BC) and of the southern kingdom of Judah in 589 B.C.E.

RLES 385  Philosophy of Religion  
3.000 Credits

A philosophical examination of basic religious problems, such as the nature and grounds of religious belief, the existence and nature of God, human immortality, the relations of religion and science, and the nature of religious language. Students electing this course must have successfully completed a previous course in philosophy or have permission of instructor.

RLES 390  Topics in Religious Studies  
3.000 Credits

Examination of problems and issues in selected areas of religious studies. Title in Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. Junior standing required.

RLES 401  Religion in Contemp US Culture  
3.000 Credits

The purpose of this course is to provide people in contemporary multi-religious America, foundational information about beliefs and practices of several of the world’s religions sufficient to engage in inter-religious dialogue. Special emphasis will be given to changes the American religious landscape after 1965 with the passage of new immigration laws. The course will combine lectures and visits to a variety of Metropolitan Detroit religious centers including Hindu, Buddhist, Jain, Sikh, Jewish, Christian, Muslim, and Native American. (S).

RLES 404  Medieval Mystical Writers  
3.000 Credits

Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239)

A study of the genre of mystical writing as it was developed and practiced throughout the Middle ages and in 14-th century England particularly. Attention will be given to the historical, religious, and cultural contexts that enabled and were created by musical texts. In addition, the course will explore how traditional and contemporary trends in the fields of religious and literary studies can be brought to bear on the genre of mystical writing. (OC)

RLES 440  Religion and Culture  
3.000 Credits

An introduction to the comparative study of religious systems. Explores religious beliefs and practices in non-Western cultures; surveys theoretical approaches to the study of religion; and discusses how religions grow, develop, and change. ANTH 101 recommended. (YR).

RLES 455  Sociology of Religion  
3.000 Credits

Prerequisite(s): SOC 200 or SOC 201

Religion as a social institution; its purposes, methods, structure, and beliefs, and its relation to other institutions. Compares the world’s major religions over time. Students cannot receive credit for both SOC 455 and SOC 555. (YR)

RLES 498  Independent Study  
3.000 Credits

Prerequisite(s): HUM 201 or PHIL 120

This course provides an opportunity for qualified students interested in Religious Studies to pursue independent research under the direction of a qualified faculty member. The project must be defined in advance, in writing, and must be a topic not currently offered in the regular curriculum.

Science and Technology Studies  
(minor only)

In a democratic society increasingly reliant on science and technology, it is crucial for citizens to understand the social, political, ethical, economic, and environmental issues at stake in the development, distribution, consumption, and control of the products of science and technology. Science and Technology Studies (STS) is an interdisciplinary program in which the methods and perspectives of various disciplines in the humanities, social sciences, and behavioral sciences are used to examine the social contexts from which science and technology emerge, the intertwined organizations of people and things used to implement scientific and technological systems, the social consequences of these systems, and the cultural reactions to them.

In keeping with the UM-D’s location and its historic and continuing connections to the automobile industry, the STS Program gives special attention to the impact of the automobile and the automobile industry on American society. The program’s introductory course, for example, analyzes the social and political aspects of the automobile by examining the technical reasons for the emergence of the internal combustion engine, the reorganization of factories and the development of suburbs, and the iconic status of the car in American culture. A website on “The Automobile in American Life and Society” (www.autolife.umd.umdich.edu) has been developed by the STS Program and is used in the introductory course.

Most of the courses in STS are cross listed with other disciplines, and the STS faculty hold appointments in such fields as Anthropology, Art History, Biological Sciences,
Communications, Economics, English, Environmental Studies, History, Mathematics, Mechanical Engineering, Philosophy, Psychology and Sociology.

A minor in STS is particularly relevant for students who live and work in southeast Michigan and makes an appropriate complement to any field of study in the arts and sciences, engineering, education, or management.

Students who wish to minor in STS must complete STS 300 Introduction to Science and Technology Studies and four courses from the list below, with at least one course from each of the three areas. Contact the STS Director for updated information about course offerings.

**Required courses**

**STS 300** Introduction to Science and Technology Studies

Science, Technology and Cultures........................................ 3 hrs

One course from the list below

- STS 310 Computers and Society
- STS 326 Gender and Science
- STS 340 Race and Evolution
- STS 345 Cultural Ecology and Evolution
- STS 349 Thomas Edison and His Era
- STS 3695 The American City
- STS 374 History of Industrial Technology*
- STS 386 Comparative History of Technology*
- STS 403 Issues in Cyberspace
- STS 409 Human Body, Growth and Health
- STS 410 Darwinism and Philosophy
- STS 430 Medical Anthropology
- STS 485 Philosophy of Science
- STS 488 Environmental Literature and Representations of Nature

Science, Technology and Labor.......................................... 3 hrs

One course from the list below

- STS 305 Social Issues in Auto Design and Engineering*
- STS 307 Labor and Literature*
- STS 310 Computers and Society
- STS 321 Labor in the American Economy*
- STS 383 Labor in America*
- STS 421 Economics of the Labor Sector*
- STS 441 Sociology of the Auto Industry*
- STS 442 Sociology of Work*
- STS 464 Human Factors in Psychology

Science, Technology and Environments................................ 3 hrs

One course from the list below

- STS 301 Concepts of Environmentalism*
- STS 305 Social Issues in Auto Design and Engineering*
- STS 308 Urban Geography
- STS 309 Economic Geography*
- STS 312 Environmental Ethics
- STS 325 Environmental Politics*
- STS 365 Environmental Psychology*
- STS 3695 The American City*
- STS 384 Environment, Architecture, and Design*
- STS 484 Technological Risk and Society

One additional course from any of the above.

*An asterisk indicates a course that contains some attention to the automobile.

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**Science and Technology Studies (STS)**

**COURSE OFFERINGS**

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

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<th>Course Code</th>
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<td>STS 300</td>
<td>Intro to Sci &amp; Technol Studies</td>
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An examination of the social contexts and consequences of science and technology, with special attention to the impacts of the automobile and automobile industry on American society. Topics include the automobile's role in the history of manufacturing; the impact of various production techniques on work and workers; the effects of the automobile on the natural environment, the design of cities and development of suburbs, and ways of life; the iconic status of the car in American culture and the relationship between automobile design and aesthetics. (YR).

**STS 301** Concepts of Environmentalism

3.000 Credits

Designed to identify the underlying concepts of any environmental issue. The course will demonstrate the interdisciplinary nature of environmental problem-solving through current readings, classical monographs, and films. Students will conduct a systems analysis of a household and a local community. A major research paper on an environmental topic will be required. The course will not be open to students who take ENST 105. (W).

**STS 305** Social Issues in Auto Design

3.000 Credits

Prerequisite(s): COMP 105 or COMP 110 or CPAS 30

An examination of the impact of four contemporary social issues - vehicle safety, energy consumption, environmental impact, and a changing workforce - on the design and engineering of automobiles in the context of globalization and rapid technological change. Using a series of case studies, the course will focus on the ways social concerns, government regulation, and professional ethics, as well as industry standards and technical considerations, affect the decision-making processes of automobile designers and engineers.

**STS 308** Urban Geography

3.000 Credits

The geography of human settlement and urbanization. Particular emphasis is placed on human transformation of the physical environment, and resource use throughout history from ancient civilizations to modern megalopolises. Universal urban challenges, such as sprawl, pollution, congestion, crime, poverty, etc., are addressed. (W).
STS 309  Economic Geography  
3.000 Credits

Spatial aspects of the ways people make their living. Discussion of the spatial distribution of resources and wealth at various scales. Introduction of site selection and location analysis. (W).

STS 310  Computers and Society  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

A sociological discussion of computers and other information technology starting with the larger concept of technology and social change, an exploration of various forms of information technology, their history and development, their relationship to the changing social structure of a post-industrial society like 20th/21st-century USA. Case studies could include "Computers and the Workplace," "Computers in Medicine," "Computers and Education," and "Computers in Popular Culture." Course concludes with a discussion of new social problems and possible futures. (OC).

STS 312  Environmental Ethics  
3.000 Credits  
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 200 or PHIL 233 or PHIL 240

The relationship of human beings to the non-human environment raises pressing moral and political issues. This course will use the theories and concepts of philosophical ethics to explore such questions as human obligations to non-human animals; the preservation of wilderness; balancing economic, aesthetic, and spiritual values; and the problems of pollution, urban sprawl, and ecological justice.

STS 321  Labor in the American Economy  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

An analysis of the nature and underlying causes of the problems facing the worker in modern economic society. Includes an examination of wages, unemployment, economic insecurity, the trade union movement, collective bargaining, and labor legislation. (F,W).

STS 325  Environmental Politics  
3.000 Credits

An examination of policy making on environmental and energy problems globally, nationally, and locally. (AY).

STS 326  Gender and Science  
3.000 Credits

This course will explore some of the history of women in science, the current status of women in science and feminism and science. Topics will include contributions made by women before science moved into the public sphere, cultural influences on decisions to make science a career, and a feminist approach to scientific research. (AY).

STS 340  Race and Evolution  
3.000 Credits

An evolutionary survey of the biological differences among human populations in response to such factors as climate, culture, disease, nutrition, and urbanization. The meaning of racial variation is discussed in terms of adaptation to environmental stress. "Race" is rejected; racism is discussed. (AY).

STS 345  Cultural Ecology & Evolution  
3.000 Credits

An introduction to the study of human ecology. This course employs the case-study method to develop an evolutionary and biocultural perspective on the relationship between human beings and their environments. (AY).

STS 349  Thomas Edison and His Era  
3.000 Credits

This course will introduce students to the life and work of Thomas Edison. Breaking with the stereotype of the lone inventor/genius, we will examine how Edison helped shape and was in turn shaped by the context of the Gilded Age America when the United States emerged as an urban, industrial nation. Lectures and discussions will be supplemented by slides, films, and visits to the Edison-related sites at The Henry Ford. Throughout the course the following themes will be explored: invention and the labor process, the significance of manufacturing and marketing, the origins of modern consumer culture. (OC).

STS 365  Environmental Psychology  
3.000 Credits  
Prerequisite(s): PSYC 170 or PSYC 171

A survey of the contributions of the behavioral sciences to the understanding and solution of environmental problems that threaten our survival. Insights derived from psychology, anthropology, and computer science are discussed. Major topics include overpopulation, overconsumption of resources and energy, future shock, cognitive limitations in our understanding of ecological-political systems, and the use of behavioral control. (YR).

STS 366  Henry Ford and His Place  
3.000 Credits

Using the biography of Henry Ford as a touchstone, the course will examine the trajectories of historical change and regional development between 1870 and 1950. Of fundamental concern will be southeastern Michigan's transformation from a 19th century outpost on the Great Lakes to the nation's "engine of change" in the 20th century. Henry Ford was the major player in that revolutionary transformation. This course examines his role in history and mythology as well as the causes and implications of that transformation. (YR).

STS 3695  The American City  
3.000 Credits

This course examines the development of urban America from the European-style port cities of the colonial period through the edge cities of today. The bulk of the course will focus on the late 19th and 20th century urban environment with an eye towards understanding the diverse residents, cultures, economies, and
geographies that have shaped the American cities. We will cover everything from developments in transportation, architecture, business, and technology to immigration, politics, and urban culture. Broad concerns and constituencies have shaped the urban public sphere, the physical development of cities and the experiences of living as an urbanite and, consequently, they will receive much of our attention. American patterns of development will then be placed in context with those of other nations and cultures.

STS 374  Hist of Industrial Technology
3.000 Credits

Focusing on western Europe and the United States since the Industrial Revolution, this course will examine the history of manufacturing technologies and will include the following topics: mechanization and the rise of the factory; mass production; the process of innovation; design and diffusion of new technologies; technologies and the changing nature of work; discussions, and examination of artifacts (actual tools and machines), students will consider the central role played by technology in the making of modern society.

STS 383  Labor in America
3.000 Credits

A survey of urban workers from colonial times to the present. Among the topics covered are changing standards of living, the experiences of industrial work, labor organizations, and working-class politics. (YR).

STS 384  Environment/Architect/Design
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

A review of major theories and research findings concerning the effects of physical environments (both natural and human-made) on human behavior. Topics include: environmental stressors (noise, crowding, temperature extremes, indoor and outdoor air pollution, and other aspects of urban environments); workspace ergonomics (e.g., lighting, VDTs); architectural design (privacy, territory, personal space, and aesthetics); wilderness, city parks, and other natural environments; general principles of environmental perception and cognition. (YR).

STS 386  Comparative Hist of Technology
3.000 Credits

This course will examine the history of technology from a comparative perspective; studying the development and impact of technology in different societies during various historical eras. Topics include: irrigation control and the rise of ancient empires; technology's role in the industrial revolution; technological innovation and the pace of social change. Current issues and various analytical perspectives in the history of technology will also be examined.

STS 390  Topics in STS
3.000 Credits

Examination of problems and issues in selected areas of Science and Technology Studies. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topics differ. (OC).

STS 403  Issues in Cyberspace
3.000 Credits
Prerequisite(s): COMM 280

This course will explore some of the social, political, legal, and technological issues associated with the use of new media technology to move ideas and information in a democratic society. Examples of areas to be explored include the Internet and World Wide Web, privacy, the future of the mass audience, and the meaning of the First Amendment in the 21st Century. (AY).

STS 409  Human Body, Growth & Health
3.000 Credits

An evolutionary and bio-cultural perspective to the study of human physical growth from conception to old age. Topics include the history of the study of human growth, basic principles of development, evolution of the human growth pattern, environmental and genetic determinants of growth, and the relationship of physical development to psychology and cultural behavior. Cases are discussed from Africa, Latin America, Japan, and the United States. (AY).

STS 410  Darwinism and Philosophy
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 210 or PHIL 200 or PHIL 233 or PHIL 240

Perspectives on Darwinism, including its influence on philosophy, its implications for scientific method, and its place in considerations of scientific and religious views of the cosmos.

STS 421  Economics of the Labor Sector
3.000 Credits
Prerequisite(s): ECON 302

Theoretical analysis and empirical studies of the nature and operation of labor markets. Includes theories of wage determination and income distribution, the nature of unemployment, the impact of collective bargaining on the economy, the extent and economic effects of discrimination, and the nature and effects of government wage and employment policies. ECON 321, Labor in the American Economy, is valuable background to this course, although it is not a prerequisite.

STS 430  Medical Anthropology
3.000 Credits

A comprehensive examination of how culture mediates processes of illnesses and healing. Comparative materials examined, which provide a context for an anthropological analysis of modern biomedicine. (YR).

STS 441  Sociology of the Auto Industry
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The American auto industry is examined in its relations hip to the economic and political structures of 20th-century U.S. This includes a focus on the social history of the industry as well as a discussion of the nature of auto work. Proposals for changing
social relations at work are also examined. The course concludes
with an examination of the impact of the industry on a local
community (Detroit). (F.W).

**STS 442  Sociology of Work**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The study of work roles in modern society. The impact of
industrialization, professionalization, and unionization on the
conditions of work, worker motivation, and job satisfaction.
Career choice processes and career patterns, occupational status
and prestige, and occupations associations are among the topics
to be considered. (YR).

**STS 464  Human Factors Psychology**
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

This course will provide an overview of the field of human
factors, including two major components: (1) a background in
specific content areas of psychology that have direct relevance
to the field and (2) a survey of direct applications of these areas
to real-world problems. The content areas include research
methods, sensory and perceptual processes, learning and
memory, human information processing, decision making. (YR).

**STS 484  Technological Risk and Society**
3.000 Credits
Prerequisite(s): PSYC 170 or PSYC 171

An exploration of how technology, social/political mechanisms,
and human behavior interact. Topics include: How do lay people
view the risks of nuclear power, genetic engineering, and other
new technologies? How "rational" are their perceptions? What is
the role of human behavior in causing technological accidents
and catastrophes? How can complex technologies best be
managed and regulated in a democratic society? (YR).

**STS 485  Philosophy of Science**
3.000 Credits
Prerequisite(s): PHIL 100 or PHIL 120 or PHIL 200 or PHIL 233 or PHIL 240

A critical study of the foundations of the sciences, natural and
social, with emphasis on the following topics: the nature of
scientific method, theories and explanation, probability and
determinism, the unity of the sciences. (OC).

**STS 488  Env Lit & Reps of Nature**
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270) and (ENGL 230 or ENGL 231)

A literary analysis of our culture's changing attitudes toward
Nature and environmental concerns. Readings will include such
English and American authors from the 18th century to the
present, as for example, Gilbert White, Wordsworth, Thoreau,
Melville, Darwin, J.S. Mill, Robinson Jeffers, Rachel Carson,
Loren Eiseley, and John McPhee. (AY).

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### Social Sciences (SSCI)
(not a field of concentration)

**COURSE OFFERINGS**

(Note: An “*” denotes that the prerequisite course may be taken
concurrently.)

**SSCI 390  Topics in Social Sciences**
3.000 credits

Examination of problems and issues in selected areas of social
science. Title as listed in the Schedule of Classes will change
according to content. Course may be repeated for credit when
the specific topic differs. (OC)

### Sociology

The field of sociology has grown in scope and importance as
society has grown more complex and pluralistic. The modern
individual is involved in a tightly integrated, sometimes
conflicting, network of social groups, families, institutions,
governmental, economic, educational and religious bodies, and
specialized community organizations. Sociology studies the
internal structure by which society is organized, the
development and dynamics of the various groupings within it
and the influences of these upon the individual. The
undergraduate program in sociology provides a focus for general
liberal education, as well as for preparation for careers in
sociology. These include careers in social work and related
human services, law, criminal justice, labor relations, public
administration, business management, human relations,
marketing and public opinion research.

**PREREQUISITES TO THE CONCENTRATION**

A student desiring to concentrate in sociology is required to
have completed an introductory course in sociology, or to
complete SOC 200 or SOC 201 at UM-D. The introductory
course (or its equivalent) is the prerequisite for all other
sociology courses.

### CONCENTRATION REQUIREMENTS

Students must complete 28 hours in sociology in course
numbered 300 or above. All students are required to complete
18 of these 28 hours in sociology at the UM-D campus. All
concentrators must complete the following courses:

**Required courses**

SOC 308  Development of Sociological Theory ...... 3 hrs
SOC 410  Social Research Methods* ........... 4 hrs
Macro Sociology ........................................ 3 hrs

One of the following

SOC 422  Structure of American Society
SOC 423  American Social Classes
SOC 450  Political Sociology
SOC 453  Sociology of Law
SOC 455  Sociology of Religion
SOC 457  Family, Aging and the Law
SOC 458  Sociology of Education
SOC 460 American in a Global Society

Public Issues ..............................................................3 hrs
One of the following
SOC 350 Poverty and Inequality
SOC 402 Genocide
SOC 403 Minority Groups
SOC 446 Marriage and Family Problems
SOC 465 Deviant Behavior/Social Disorganization
SOC 468 Criminology
SOC 469 Juvenile Delinquency

Organizations .............................................................3 hrs
One of the following
SOC 439 Sociology of Professions
SOC 440 Medical Sociology
SOC 442 Sociology of Work
SOC 456 Health Care and the Law
SOC 461 Corrections Officers and Inmates
SOC 477 Family Violence
SOC 483 Complex Organizations

The Individual and Society ...........................................3 hrs
One of the following
SOC 382 Social Psychology
SOC 426 Society and Aging
SOC 443 Gender Roles
SOC 445 The Family

Senior Seminar ..........................................................3 hrs
SOC 497 Senior Research Seminar

*Note: Double majors in sociology and psychology may use PSYC 425 in combination with PSYC 381 or SOC 383 as a substitute.

Students are required to develop a portfolio before graduation. Please see a sociology advisor for specific portfolio requirements.

Cognates .....................................................................6 hrs
Students must also complete six hours in cognate courses from two of the following six disciplines: anthropology, economics, history, political science, computer science, or statistics courses in mathematics. Internships in these disciplines can not be used to satisfy the cognate requirement.

MINOR OR AREA OF FOCUS

A minor or area of focus consists of 12 hours of upper-division credit in sociology.

SOCIAL WORK/CRIMINAL JUSTICE INTERNSHIP

Provides field experience in social welfare or criminal justice agencies, e.g., for children/adolescents, in residential programs, in abuse remediation, in probation, for chemical dependencies, in victim advocacy, for elderly, in prisons, for special needs populations, in court services, and for families and communities. Instructor and student will, work together to determine appropriate intern placement.

Sociology (SOC)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

SOC 200 Understanding Society
3.000 Credits

An introduction to the study of human groups with special attention devoted to an analysis of contemporary American society. (F,W).

SOC 201 Contemporary Social Problems
3.000 Credits

The study of major social problems with particular reference to American society. Problems such as crime, mental disorders, addiction, drug abuse, suicide, racial conflict, urban decay, pollution, population, and family disorganization are studied both from a descriptive and theoretical point of view and analyzed collectively as a manifestation of a complex, industrial society. (YR).

SOC 263 Western Culture III
3.000 Credits

Prerequisite(s): (HUM 262 or HIST 262) and (HUM 261 or HIST 261)

The third of four courses on Western Culture required of all honors students. Covers the period from 17th to 19th centuries. Focus in on the emergence of scientific thought, Enlightenment political theory, Romantic individualism, and the great 19th century intellectual revolutions of Darwinism, Marxism, and feminism. Materials will be drawn from literature, philosophy, political, and scientific writings of the period. (YR).

SOC 264 West Cult IV: The Modern Era
3.000 Credits

Prerequisite(s): (HUM 261 or HIST 261 or LIBS 261 or SSCI 261) and (HUM 262 or HIST 262 or LIBS 262 or SSCI 262) and (HUM 263 or HIST 263 or SOC 263 or SSCI 263 or LIBS 263)

Fourth of four courses in Western Culture required of all Honors students. Course covers period from 19th century to present. Focus will be on selected major issues of Western Civilization in the modern era: science and human values, bureaucratic and totalitarian societies, psychoanalytical thought, feminism, nihilism, existentialism. (YR).

SOC 275 Intro to Women’s Studies
3.000 Credits

A multidisciplinary and multicultural introduction to Women’s studies. An overview of the theories and topics in the Social Sciences, Behavioral Sciences, Humanities, and Natural sciences that are pertinent to upper-division courses in Women's Studies. The course can be used as a prerequisite to upper-division courses in Women's Studies. (YR).
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<th>Course Code</th>
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<tr>
<td>SOC 304</td>
<td>Studies in Detroit Culture</td>
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<td>SOC 306</td>
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<td>multiple identities of Americans -</td>
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<td></td>
<td>as determined by factors such as gender</td>
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<td></td>
<td>, race, class, ethnicity and religion.</td>
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<td>While emphasizing the diversity of</td>
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<td>American culture, participants will</td>
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<td>consider some core values and</td>
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<td>ideas uniting America both in historical</td>
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<td>and contemporary society. Students will</td>
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<td>be invited to seek out and share fresh</td>
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<td></td>
<td>narratives of the American experience.</td>
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<tr>
<td>SOC 308</td>
<td>Sociological Theory</td>
<td>3.000</td>
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<td>Prerequisite(s): SOC 200 or SOC 201</td>
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<tr>
<td></td>
<td>A historical survey of the major</td>
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<td>theorists and their works from the</td>
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<td></td>
<td>beginnings of sociological positivism</td>
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<td></td>
<td>to contemporary theories. (YR).</td>
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<tr>
<td>SOC 310</td>
<td>Computers and Society</td>
<td>3.000</td>
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<td></td>
<td>Prerequisite(s): SOC 200 or SOC 201</td>
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<tr>
<td></td>
<td>A sociological discussion of computers</td>
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<td></td>
<td>and other information technology.</td>
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<td>Starting with the larger context of</td>
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<td>technology and social change, an</td>
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<td>exploration of various forms of</td>
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<td>information technology, their history</td>
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<td>and development, their relationship to</td>
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<td></td>
<td>the changing social structure of a</td>
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<td></td>
<td>post-industrial society like 20th/21st</td>
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<td>century USA. Case studies could</td>
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<td>include &quot;Computers and the Workplace,&quot;</td>
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<td>&quot;Computers in Medicine,&quot; &quot;Computers</td>
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<td></td>
<td>and Education,&quot; and &quot;Computers in</td>
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<td>Popular Culture.&quot; Course concludes</td>
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<td>with a discussion of new social</td>
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<td></td>
<td>problems and possible futures.</td>
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<td>SOC 350</td>
<td>Poverty and Inequality</td>
<td>3.000</td>
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<td>Prerequisite(s): SOC 200 or SOC 201</td>
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<td></td>
<td>In a middle class-oriented culture, the</td>
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<td>poor experience many problems and are</td>
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<td></td>
<td>also considered deviant which tend to</td>
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<td>make poverty self-perpetuating. This</td>
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<td>stratum will be explored with</td>
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<td>respect to life styles, life chances,</td>
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<td>contributing factors, characteristics,</td>
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<td>individual and social consequences,</td>
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<td></td>
<td>and evaluation of attempted solutions.</td>
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<td>(YR).</td>
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<tr>
<td>SOC 382</td>
<td>Social Psychology</td>
<td>3.000</td>
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<td>Prerequisite(s): SOC 200 or PSYC 170 or</td>
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<td>PSYC 171 or SOC 201</td>
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<td></td>
<td>An introductory study of the</td>
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<td>interrelationships of the</td>
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<tr>
<td></td>
<td>functioning of social systems and the</td>
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<td></td>
<td>behavior and attitudes of individuals.</td>
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<td>(YR).</td>
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<tr>
<td>SOC 383</td>
<td>Introduction to Statistics</td>
<td>3.000</td>
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<tr>
<td></td>
<td>Frequency distributions and descriptive</td>
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<td>measures. Populations, sampling, and</td>
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<td>statistical inference. Elementary</td>
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<td>probability and linear regression. Use</td>
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<td>of statistical computer packages to</td>
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<td></td>
<td>analyze data. Students electing this</td>
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<td>course should have completed a</td>
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<td>minimum of one year of high school</td>
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<td>algebra. Students can receive credit</td>
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<td>for only one of MATH 363, STAT 363,</td>
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<td>SOC 383, and STAT 325. (F,W,S).</td>
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<td>SOC 390</td>
<td>Topics in Sociology</td>
<td>3.000</td>
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<tr>
<td></td>
<td>Examination of problems and issues in</td>
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<td>selected areas of sociology. Title in</td>
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<td>Schedule of Classes will change</td>
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<td>according to course content. Course</td>
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<td>may be repeated for credit when specific</td>
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<td>topics differ. (F,W).</td>
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<td>SOC 398</td>
<td>Directed Readings</td>
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<td>Prerequisite(s): SOC 200 or SOC 201</td>
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<td>Reading assignments in sociology. No</td>
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<td>more than a total of six credit hours</td>
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<td>of SOC 398 and SOC 498 may be applied</td>
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<td>toward concentration. Permission of</td>
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<td>instructor required. (F,W,S).</td>
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<td>SOC 402</td>
<td>Genocide</td>
<td>3.000</td>
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<td>Prerequisite(s): SOC 200 or SOC 201</td>
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<td>Applies concepts and theories dealing</td>
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<td>with rumor, prejudice, group</td>
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<td>contagion, and mass movements to the</td>
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<td>Jewish, Armenian, and American-Indian</td>
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<td>genocides. in addition, psychological,</td>
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<td>philosophical, and political issues</td>
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<td>related to genocide are addressed.</td>
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<td></td>
<td>(YR).</td>
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<td>SOC 403</td>
<td>Minority Groups</td>
<td>3.000</td>
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<td>Prerequisite(s): SOC 200 or SOC 201</td>
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<tr>
<td></td>
<td>The status of racial and ethnic</td>
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<td>minorities in the United States</td>
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with particular reference to the social dynamics involved with regard to majority-minority relations. Topics of study include inequality, segregation, pluralism, the nature and causes of prejudice and discrimination and the impact that such patterns have upon American life. Students cannot receive credit for both SOC 403 and SOC 503. (F,W).

SOC 4045 Dissed: Differ, Power, Discrim
3.000 Credits

Have you ever been dissed? Why are some people targets of disrespect? This class examines the unequal distribution of power - social, economic, and political - in the United States and other countries that results in favor for privileged groups. We will examine a variety of institutional practices and individual beliefs that contribute to disrespect. We will look at ways that beliefs and practices, like viewing inequality as consequence of a 'natural order', obscure the processes that create and sustain social discrimination. We will engage in the intellectual examination of systems, behaviors, and ideologies that maintain discrimination and the unequal distribution of power and resources. Students will not receive credit for both SOC 404 and SOC 504.

SOC 4075 Sexual Praxis and Theory
3.000 Credits
Prerequisite(s): WST 275 or SOC 443 or PSYC 405 or ANTH 406 or ANTH 101

This course will offer an overview of sexual differences including: the socio-cultural construction of gender, sexual behavior, and orientation; sex and sexualities in language and literature; and diversity by race, class, and cultural heritage. These topics will enable students to understand human sexuality within and across a continuum removing notions of duality, or polarity, in sexual behaviors and orientations. Examples both from within Western society and from non-Western societies may be used to further this position. Theoretical perspectives may encompass sociological and anthropological work, literary theory and criticism, queer theory, and multi-disciplinary discussions/discourse. Texts may include: Sex and the Machine: Readings in Culture, Gender and Technology, The Anatomy of Love, The Lesbian and Gay Studies Reader, Second Skins: The Body Narratives of Transsexuality, and Lesbian and Gay Marriage.

SOC 409 Feminist Theories
3.000 Credits
Prerequisite(s): WGST 275 or WST 275 or SOC 200 or SOC 201

This course examines the different perspectives that feminist theorists have offered to analyze the unequal conditions of women's and men's lives. Students taking this course will develop an understanding of how theory functions as a way to know, understand and change the world. They will also be provided with a lens for comparing the assumptions and implications of alternative theoretical perspectives. A particular emphasis of this course is on theorizing the interrelationships among gender, race, class, sexuality and nationality. Course material includes applications of feminist theory to issues such as gender identity formation; sexuality; gender, law and citizenship; women and work; and the history and politics of social movements. Student will not receive credit of both SOC 409 and SOC 509. (AY)

SOC 410 Quantitative Research
4.000 Credits
Prerequisite(s): SOC 200 or SOC 201

An introduction to methods of data collection and analysis. Elementary statistics data are analyzed using computerized statistics programs. A discussion of research design and the philosophy of social science is also included. Students cannot receive credit for both SOC 410 and SOC 510. (YR).

SOC 411 Program Evaluation
3.000 Credits
Prerequisite(s): SOC 200 or PSYC 170 or PSYC 171 or POL 101 or SOC 201

The application of social research procedures in assessing whether a human service program is needed, likely to be used, conducted as planned, and actually helps people in need. The course will cover research design and measurement as well as issues of how to get research findings utilized. Students cannot receive credit for both SOC 411 and SOC 511. (YR).

SOC 412 Men and Masculinities
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201 or ANTH 101 or WGST 275

This course address the question, "What is a man?", in various historical, cross-cultural, and contemporary contexts. A major focus on the social and cultural factors that underlie and shape conceptions of manhood and masculinity in America as well as in a variety of societies around the globe. (AY).

SOC 422 Structure of American Society
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Analyzes the institutional structure of American society, with a view of determining the degree of its integration. Students cannot receive credit for both SOC 442 and SOC 522. (YR).

SOC 423 American Social Classes
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Analyses stratification of American communities and society; a review of the findings of major studies and an introduction to methodology. Students cannot receive credit for both SOC 423 and SOC 523. (YR).

SOC 426 Society and Aging
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Personal, interpersonal, and institutional significance of aging and age categories, sociological dimension of aging based on social, psychological, and demographic factors. Attention to social networks and institutionalization. Students cannot receive credit for both SOC 426 and SOC 526. (YR).

SOC 430 Population Problems
3.000 Credits
Social causes and consequences of population structure and change. How variations in fertility, mortality, and migration arise and how they affect society. Illustrations from the United States and a variety of developed and underdeveloped countries. (YR).

**SOC 435 Urban Sociology**
3.000 credits
Prerequisite(s): SOC 200 or SOC 201

A descriptive study of the form and development of the urban community with respect to demographic structure, spatial and temporal patterns, and functional organization. The relationship of city and hinterland. Social planning and its problems in the urban community. Students cannot receive credit for both SOC 435 and SOC 535. (YR).

**SOC 436 Personality and Society**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Deals with the forms and modes of change of personality, social structure, and culture; examines their interactions with body/population, niche/environment, and technology. (YR).

**SOC 439 Sociology of Professions**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Course begins with a review of the sociological literature on the profession. It then focuses on the medical, legal, and business/managerial professions as case studies of the development of professions in post-industrial society. Intrinsic to the definition of profession is "autonomy." The course will explore what is happening to professions and professional autonomy in highly bureaucratized and corporatized societies, where we speak of deprofessionalization and proletarianization of professions. (YR).

**SOC 440 Medical Sociology**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

An analysis of health and illness behavior from the point of view of the consumer, as well as of medical professionals, the structure, strengths, and weaknesses of the medical care delivery system in the U.S.; the impact of culture and personality on illness behavior; and a study of the institution of medicine and activities of health care professionals. Students cannot receive credit for both SOC 440 and SOC 540. (F,W,S)

**SOC 441 Sociology of the Auto Industry**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The American auto industry is examined in its relationship to the economic and political structures of 20th-century United States. This includes a focus on the social history of the industry as well as a discussion of the nature of auto work. Proposals for changing social relations at work are also examined. Concludes with an examination of the impact of the industry on a local community (Detroit). Students cannot receive credit for both SOC 441 and SOC 541. (F,W)

**SOC 442 Sociology of Work**
Prerequisite(s): SOC 200 or SOC 201

Study of work roles in modern society. The impact of industrialization, professionalization, and unionization on the conditions of work, worker motivation, and job satisfaction. Career choice processes and career patterns, occupational status and prestige, and occupational associations are among the topics considered. Students cannot receive credit for both SOC 442 and SOC 542. (YR)

**SOC 443 Gender Roles**
3.000 Credits
Prerequisite(s): SOC 200 or PSYC 170 or PSYC 171 or SOC 201

This course will investigate the development of gender roles in childhood and adolescence due to either innate physiological differences or sociological patterning, the effect of gender roles upon male-female relationships within our society, and the possibility of transcending sociological gender roles in alternate modes of living. Students cannot receive credit for both SOC 443 and SOC 543. (F,W,S).

**SOC 444 The Medical Profession**
3.000 Credits
Prerequisite(s): SOC 200 or POL 201

Professions are the hallmark of modern society, and the medical profession is a prototype of what is meant by a profession. This course will examine the nature and history of the American medical profession, how it developed and changed since the early 1800's. What is the nature of the profession today? What social forces have shaped it? What does the future hold? These are some of the questions the course will address. (W).

**SOC 445 The Family**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The family as an institution shaped by other aspects of society, as a social system with its own dynamics, and as a primary group affecting the lives of its members. Historical and contemporary materials from the United States and other cultures. Students cannot receive credit for both SOC 445 and SOC 545. (F,W,S).

**SOC 446 Marriage and Family Problems**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Sociological analysis of problems encountered within the institution of marriage with particular reference to such issues as choosing a marriage partner, sexual adjustment, occupational involvement, conflict resolution, child rearing, divorce and readjustment. Students cannot receive credit for both SOC 446 and SOC 546. (YR)

**SOC 447 Family Violence**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 301 or SOC 443 or PSYC 405 or WGST 405 or SOC 201
Sociological analyses of various forms of family violence which occur disproportionately in the lives of girls and women. Topics such as incest, sexual abuse, date rape, wife battering, and elder abuse will be situated within the social and cultural context of contemporary gender relationships. Social and political responses to the phenomena will be examined. Students cannot receive credit for both SOC 447 and SOC 547. (YR)

**SOC 448 Comparative Health Care Sys**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

An introduction and overview of the English, Swedish, and People's Republic of China health care systems. Focus on cultural and other organizational characteristics, unique features, approaches and ability to solve problems. Emphasis on how the three systems help us understand the American health care system. Students cannot receive credit for both SOC 448 and SOC 548. (YR).

**SOC 449 Black Family in Contemp Amer**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The African-American family is examined in relationship to the historical and contemporary forces that have shaped its characteristic patterns of family life. These forces include the influence of slavery, urbanization, racial discrimination and urban poverty, the patterns of family life include parental roles, family structure, kinship relations, and gender roles. (YR).

**SOC 450 Political Sociology**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Examines how society effects the distribution and exercise of power through analyzing linkages between power, participation, and perspectives. Studies of political participation and social organization, ideology and social conflict, as well as political socialization, represent some of the major parameters. Students cannot receive credit for both SOC 450 and SOC 550. (YR)

**SOC 452 Marxism**
3.000 Credits
Prerequisite(s): SOC 200 or POL 101 or ECON 201 or ECON 202 or SOC 201

Surveys of Marxist and neo-Marxist thought, discussing philosophy, economics, history, and socialism. Topics include Marx's view of the nature of man, class conflict, the dialectic in history, the labor theory of value, monopoly capital and imperialism. problems of socialist societies such as economic development and rule of elites will also be discussed. (AY).

**SOC 453 Sociology of Law**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Various aspects of the relationship between law and society are explored. After a look at processes of law making, attention is turned to the administration of law. This involves a study of the activities of legislatures, courts, police, and correctional agents. Students cannot receive credit for both SOC 453 and SOC 553.

(Courses rotate annually in the years indicated.)

**SOC 454 Mental Health and the Law**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Courts and legislatures now control much of the work of mental health professionals such as social workers, counselors, therapists, and psychologists. This course looks at problems encountered in putting the laws and policies into effect. These implementation problems are much the same in other areas of government action, such as poverty programs and pollution control. Students cannot receive credit for both SOC 454 and SOC 554. (YR)

**SOC 455 Sociology of Religion**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Religion as a social institution; its purposes, methods, structure, and beliefs, and its relation to other institutions. Compares the world's major religions over time. Students cannot receive credit for both SOC 455 and SOC 555. (YR)

**SOC 456 Health Care and Law**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201 or POL 364

A sociological study of legal issues in health care, including regulation of hospitals, consent for treatment, confidentiality, experimentation, family planning, children's rights, access to health care. the emphasis will be on the organizational and personal consequences of legal requirements. Junior/Senior standing is a requirement. Students cannot receive credit for both SOC 456 and SOC 556. (AY).

**SOC 457 Family, Aging and the Law**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

The law exerts a powerful impact on the family and the elderly. This course interprets the effects of laws concerning guardianship, competence, nursing home regulation, marriage, divorce, custody, adoption, abortion, and child sexual abuse.

**SOC 458 Sociology of Education**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Education as a social institution; its purposes, methods, structure, and philosophy, and its relation to other institutions, particularly in the urban setting. Students cannot receive credit for both SOC 458 and SOC 558. (YR)

**SOC 460 America in a Global Society**
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201

Social changes in America are studied from an internal and an external perspective. The internal dynamics of social change emphasize the role of social movement, e.g., the impact of the civil rights movement on American culture and politics. The external perspective sees America as part of a changing global
society. The development of the capitalist world system from its origin in Western Europe to its present global reach is examined. Contemporary American social problems are examined in relation to America's position in a rapidly changing world. Students cannot receive credit for both SOC 460 and SOC 560. (AY)

SOC 465 Deviant Behavior/Soc Disorganz  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

General analysis of the concepts of social deviance and social disorganizations: factors producing each condition, the effects of social control measures on the course of deviance and disorganization consequences for the social system, and the relationship between the two concepts. Students cannot receive credit for both SOC 465 and SOC 565. (YR)

SOC 466 Drugs, Alcohol, and Society  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Analyses of the sociology of substance use and abuse. Provides a sociological framework for understanding issues and evaluating our nation's responses to the phenomenon of drug use. Drawing on sociocultural and social psychological perspectives, this course systematically examines the social structure, social problems, and social policy aspects of drugs in American society. Prerequisite or permission of instructor. (YR).

SOC 467 Drugs, Crime, and Justice  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Provides a comprehensive analysis of the current state of research on interactions between crime and drug use. Examines drug distribution, organization of drug systems, and mechanisms of social control of drug systems. Analyzes the social problems associated with drugs and crime. The course also focuses on drug-law enforcement and public policy strategies for dealing with drugs and crime. Prerequisite or permission of instructor. (YR).

SOC 468 Criminology  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Analysis of criminal behavior in relations hip to the institutional framework of society. Emphasis upon the more routinized and persistent forms of criminality along with the joint roles played by victims, the criminal, the police, and all other relevant parties. (YR).

SOC 469 Juvenile Delinquency  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201


SOC 470 Current Iss in Criminal Justic  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Current issues in the field of criminal justice and law enforcement in the U.S. and other countries. Topics include An evaluation of police activities, problems of apprehensions and prosecution, the courts and the correctional system, and the efficiency of the legal structure in its social context. (F,W,S).

SOC 471 Comp Criminal Justice Systems  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Description, analysis, and evaluation of selected criminal justice systems throughout the world. Course focuses on the various systems, theories, structures, methods and functions, including common law systems and socialist law systems. (YR).

SOC 472 Corrections  
3.000 Credits

Analysis of the legal, social, and political issues affecting contemporary correctional theory and practice. Topics covered include the history of corrections; the nature of existing institutions; the functions and social structure of correctional institutions; and alternatives to institutional incarceration, probation and parole. (OC).

SOC 473 Race, Crime and Justice  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

This course is an analysis of race and its relation to crime in the criminal justice system. Students will analyze and interpret the perceived connection between race and crime, while exploring the dynamics of race, crime, and justice in the United States. This course is designed to familiarize students with current research and theories of racial discrimination within America's criminal justice system.

SOC 477 Social Welfare  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

The practice of social work is examined within the context of the development of the social service professions and welfare institutions in American society. Social welfare is a concept that encompasses the provision of material resources, as well as regulation and protection of clients. Changes in welfare policy are analyzed in relationship to other institutional changes in American society. (YR).

SOC 478S Social Wrk/Criminal Just Intsp  
3.000 TO 6.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Provides field experience in social welfare or criminal justice agencies, e.g., for children/adolescents, in residential programs, in abuse remediation, in probation, for chemical dependencies, in victim advocacy, for elderly, in prisons, for special needs populations, in court services, and for families and communities. Supervision by approved field instructors. An internship of 80 hours is required for three (3) credits. Instructor and student will work together to determine appropriate intern placement.
Approval of instructor is required. (F,W).

**SOC 479  Comparative Hlth Systems:Trip**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

A unique combination of lectures, field trips, visits with general practitioners, specialists, hospital observations, talks with health policy planners, researchers, and many others. Personal experience in two health care systems. Permission of instructor. Junior/Senior standing required. Students cannot receive credit for both SOC 479 and SOC 579. (AY).

**SOC 481  Gender and Globalization**  
3.000 Credits

Mass media, politics, and academia are full of references to globalization, and a future "world without borders." This interdisciplinary course considers the implication of globalization for women's lives, gender relations, and feminism. Topics covered include the global factory, cross-cultural consumption, human rights, global communications, economic restructuring, nationalism, and environmental challenges. Rather than survey international women's movements, this course explores how globalization reformulates identities and locations and the political possibilities they create. (AY).

**SOC 482  Methods of Social Work Pract**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Examination of social work practice methods and approaches to social problems, contexts of practice and targets of change. Focus is on knowledge and skills each practice method requires to effect personal and social change. (YR).

**SOC 483  Images of Organizations**  
3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Formal bureaucratic organizations such as government agencies, hospitals, and colleges are a distinctive feature of modern industrialized societies. Analysis of types of formal organizations, their goals, structure, and consequences for intra- and inter-organizational behavior helps to understand how to deal with a complex world. Students cannot receive credit for both SOC 483 and SOC 583. (YR).

**SOC 490  Advanced Topics in Sociology**  
3.000 Credits

Examination of problems and issues in selected areas of sociology. Title as listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs.

**SOC 497  Senior Research Seminar**  
3.000 Credits  
Prerequisite(s): SOC 410

This course is intended as the culmination of a student's prior work in sociology. Each student will conduct an applied research project that draws upon sociological concepts and issues. The product of this research will be an essential component of the student's concentration portfolio.

**SOC 498  Independent Study**  
1.000 TO 3.000 Credits  
Prerequisite(s): SOC 200 or SOC 201

Analytical assignments in sociology. No more than a total of six credit hours of SOC 398 and SOC 498 may be applied toward concentration. Permission of instructor required. (F,W,S).

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**Spanish (see Hispanic Studies)**

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**Speech (SPEE)**

*(not a field of concentration; see Communications)*

**COURSE OFFERINGS**

(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

**SPEE 101  Principles of Speech Comm**  
3.000 Credits

Consideration of the basic elements of effective interpersonal, small group, and public communication. Designed to give the student increased self-confidence through practical experience in presenting speeches, with emphasis on delivery skills and training in the skills of analysis, organization, development, and adaptation of ideas. (F,W).

**SPEE 310  Interpersonal Communication**  
3.000 Credits  
Prerequisite(s): SPEE 101

Course adopts an activities-centered approach to understanding and applying principles and methods associated with successful interpersonal communication. Among other things, students will learn and refine the "art of conversation," interviewing techniques, non-verbal variables, the ethics of one-on-one encounters, and self-disclosure techniques. (OC).

**SPEE 320  Public Argument and Advocacy**  
3.000 Credits  
Prerequisite(s): SPEE 101

Students gain perspectives and experience as both critical consumers and informed producers of public discourse. Designed to give the student increased self-confidence through practical experience in presenting speeches, with emphasis on delivery skills and training in the skills of analysis, organization, development, and adaptation of ideas. (AY).

**SPEE 330  Argumentation and Debate**  
3.000 Credits  
Prerequisite(s): SPEE 101

This course covers the logical and legal foundations of the argumentation process. Offers practical and theoretical experience in analysis, reasoning, case-building, evaluation of evidence, refutation, and cross-examination. (AY).
SPEE 340  Theories of Persuasion
3.000 Credits
Prerequisite(s): SPEE 101

A study of the theories of persuasion. Consideration will be given to the psychological appeals and logical reasoning skills that secure the acceptance of ideas, attitudes, values, and beliefs. This course provides practical experience in persuasive speaking as well as theoretical analysis of representative persuasive speaking. (AY).

SPEE 399  Independent Studies in Speech
1.000 TO 3.000 Credits

Readings or analytical assignments in speech in accordance with the needs and interests of those enrolled and agreed upon by the student and advising instructor. (F,W).

SPEE 400  Speech Skills for Professional
3.000 Credits
Prerequisite(s): SPEE 101

Course concentrates on aspects of organizational communication theory and specific speech skills useful for professionals in education, government, business and industry. Representative topics include formal and informal presentations, interviewing, dealing with media and public, audience analysis, use of graphics, negotiation and conflict resolution, non-verbal skills, listening, instructional techniques. Course may not count toward both Communications Minor and School of Education's graduate program in Training Dynamics. Students cannot receive credit for both SPEE 400 and SPEE 500. (OC).

SPEE 430  Small Group Communication
3.000 Credits
Prerequisite(s): SPEE 101

A survey of small group behavior from the perspectives of theory, research, and practice. Activities and discussion will emphasize skills in leadership, problem solving, policy making, and the development of consensus. Students cannot receive credit for both SPEE 430 and SPEE 530. (AY).

SPEE 442  20th Century Public Argument
3.000 Credits
Prerequisite(s): SPEE 101

This class is a survey of American public address in the 20th century. Students will examine and critically analyze several of the most significant speeches and rhetorical movements of the last one hundred years. Through lectures, discussions, and analysis of speeches and other artifacts, we will focus on the relationship between rhetoric and history, and how theories of rhetorical action help us appreciate the role of discourse in the effective functioning of a democratic system. Students will learn to utilize several critical perspectives as a means of understanding both historical and contemporary political discourse. (W).

Statistics (STAT)
(minor only; see Applied Statistics)

Swedish (not a field of concentration, see Modern and Classical Languages)

Women's and Gender Studies

Women's and Gender Studies (WGST) is an interdisciplinary program housed in CASL at the UM-D. Students learn across the humanities, social and behavioral sciences, and natural sciences to develop analytical and practical skills for understanding the world. The program presents a body of knowledge regarding the social construction of femininity, masculinity, and gender; the material and ideological bases and effects of patriarchy; the gendered deconstruction of knowledge and its relationship to the distribution of power and resources; and the intersections between gender, race, class, nation, dis/abilities, sexual orientation and age. Its aim is to provide a flexible, challenging course of studies for students who wish to:

- explore the voices of women and men whose experiences have often been ignored in the traditional curriculum;
- develop creative ideas at the boundaries of traditional disciplines;
- bring depth and perspective to their areas of concentration, including a focus on issues of gender, culture, class, and race;
- increase their skills in critical analysis, discourse, and writing;
- become more knowledgeable and active members of their communities.

The majority of the courses offered in Women's and Gender Studies are cross-listed with other disciplines, and its faculty hold appointments in virtually every discipline within the college, from Communications to Biology, Economics to Sociology, History to Anthropology. Students enrolled in a WGST course may elect to apply the credits either towards a Women's Studies major or minor, or in the discipline with which the class is cross-listed.

Following national trends, many majors will pursue WGST along with another major, thus allowing students to benefit from an undergraduate experience that integrates complementary knowledges and skills from across the university.

PREREQUISITES TO THE CONCENTRATION

WGST 275  Introduction to Women’s and Gender Studies*

This course is designed to introduce the student to various issues and debates within Women's and Gender Studies. Emphasis may change to reflect the specialties of each particular teaching team, but social analysis of gender, race, class, and culture form the core context.

*A grade of C- or better is required before declaring a major in WGST.

CONCENTRATION REQUIREMENTS ............. 33 hrs

Feminist Theories ................................................. 3 hrs

Students can choose to satisfy this component of the major by
taking either FEMINIST THEORIES or FEMINIST PHILOSOPHY.

Curricular Focus .......................................................... 12 hrs
Students may choose two courses from each focus area in WGST. Focus areas include either “Gender, Culture, and Representation” or “Gender and Social Institutions.”

Gender, Culture, and Representation
This focal area offers a perspective on women and gender in literature, film, the mass media, art and music. Course options include:
- WGST 315 Body Image and Culture
- WGST 385 Gender Differences in Language
- WGST 386 Gender Issues in Literature
- WGST 387 Film and Feminisms
- WGST 425 Women in Classical Antiquity
- WGST 455 Gender and Media Studies
- WGST 470 Voices of Black Women in Film, Music, Literature
- WGST 445 Studies in 20th Century British and American Literature by Women
- WGST 486 Queer Theory and Literature

Gender and Social Institutions
This focal area examines how aspects of women’s and men’s everyday lives are shaped through social institutions such as politics, the family, and the workplace. Many courses in this area look at how institutions have changed over time, and what roles feminist movements have played in creating change. Course options include:
- WGST 325 Gender and Science
- WGST 362 Women, Politics, and the Law
- WGST 405 Gender Roles
- WGST 326 Economics of Poverty and Discrimination
- WGST 407 Sexual Theory and Praxis
- WGST 412 Men and Masculinities
- WGST 420 Kinship and Marriage
- WGST 370 Women in America: Historical Perspective
- WGST 338 Women and Islam in Middle Eastern History
- WGST 3651 Women, Leadership and Social Change
- WGST 3955 Women and Organizations
- WGST 404 Dissed: Difference, Power and Discrimination
- WGST 447 Family Violence
- WGST 481 Gender and Globalization
- WGST 406 Culture and Sexuality

Capstone Experience ......................................................... 3 hrs
Students can fulfill the capstone requirement by taking either “Women’s and Gender Studies Internship,” Women’s and Gender Studies Thesis, or “Feminist Methods”

Electives ............................................................ 6 hrs
Students can fulfill the elective requirement with at least 6 credit hours in any 300/400 level Women’s and Gender Studies courses.

Cognates .............................................................. 6 hrs
Two upper-level courses, neither in Women’s and Gender Studies nor cross-listed with Women’s and Gender Studies, to ensure that the Women’s and Gender Studies major is complemented by training in a single discipline. Cognate courses will provide supporting skills or contexts for the study of women and gender.

MINOR OR AREA OF FOCUS
A minor in Women’s and Gender Studies consists of 18 credits in WGST including WGST 275 Introduction to Women’s Studies.

Prerequisite .............................................................. 3 hrs
- WGST 275 Introduction to Women’s and Gender Studies*

Required courses ........................................................ 15 hrs
- Fifteen credit hours from 300 or 400 level WGST courses including 3 credits in WGST 498 Women’s Studies Thesis.

Courses from Other Disciplines
From time to time, other disciplines offer relevant courses, often as topics (390) courses. In recent years such offerings have included COMM 390 Gender, Culture, and Film, HUM 390 Women in Global Perspective, and PSYC 390 Gender and the Individual. Such upper-division courses may also count toward the Women’s and Gender Studies minor with the approval of the Women’s and Gender Studies Director.

For more information about the Women’s and Gender Studies program, please contact the Women’s and Gender Studies office, 2040 CB. WGST Phone: (313) 593-1391 or on the web at: http://casl.umd.umich.edu/ws/.

CERTIFICATE IN WOMEN’S AND GENDER STUDIES
Students who have completed the requirements for the minor and post-baccalaureate students who complete 18 units in Women’s and Gender Studies courses may obtain a certificate in Women’s and Gender Studies. The Certificate provides students with a credential that is widely recognized in the field. It furnishes evidence of specialization that can complement and enhance career or personal goals. Participation in the certificate program may also be helpful to those who are considering pursuing a graduate degree in Women’s and Gender Studies or a related field. For further information contact the Director, Office of Women’s and Gender Studies, 2040 CB, (313) 593-1391.

Women's and Gender Studies (WGST)

COURSE OFFERINGS
(Note: An “*” denotes that the prerequisite course may be taken concurrently.)

- WGST 275 Intro to Women's Studies
  3.000 Credits

A multidisciplinary and multicultural introduction to Women’s Studies. An overview of the theories and topics in the Social Sciences, Behavioral Sciences, Humanities, and Natural Sciences that are pertinent to upper-division courses in Women’s Studies. (YR).
WGST 315  Body Image and Culture
3.000 Credits
Prerequisite(s): ANTH 101 or WST 275

This course examines the biological and sociocultural construction of body image in both men and women. We explore such cultural and social practices as nudity, tattooing, piercing, scarification, dietary habits, physical activity and sports performance and their associated myths and realities. We explore how the human body is a terrain of contested meaning within society. The course provides an examination of the causes and consequences of women's poor body image, contemporary and historically. Course materials include case studies from North America, Europe, Africa, Asia and the Pacific.

WGST 325  Gender and Science
3.000 Credits
Prerequisite(s): NSCI 101 or NSCI 120 or NSCI 121

This course will explore some of the history of women in science, the current status of women in science and feminism and science. Topics will include contributions made by women before science moved into the public sphere, cultural influences on decisions to make science a career, and a feminist approach to scientific research. (AY).

WGST 326  Poverty and Discrimination
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

An analysis of the economic aspects of poverty and discrimination. Emphasis on the theoretical economic causes of poverty and the economic bases for discriminatory behavior, the impact of poverty and discrimination on individuals and society and the effect of reform policies on the two problems.

WGST 338  Women & Islam in Mid East Hist
3.000 Credits

This course will introduce students to Islam's normative stance towards women, to complications in that normative stance, to theories about gender and history and, finally, to a consideration of the changing and varied attitudes about women and gender in the modern Middle East. (YR).

WGST 362  Women, Politics, and the Law
3.000 Credits

An examination of the political behavior of women in American politics. Included is an analysis of the legal and legislative demands of American women. (AY).

WGST 3651  Women/Leadership/Social Change
3.000 Credits
Prerequisite(s): HIST 112 or WST 275

The purpose of this seminar is to examine women's leadership in movements for social change. We will approach this topic through the study of historical examples, drawn primarily from the twentieth-century United States, and including movements for economic justice, race relations, sexual identity, peace, gender equality, public health and social welfare.

WGST 370  Women in America-Hist Perspect
3.000 Credits

A survey of American women's history from the colonial period to the present. Among the topics included are family roles, women's economic status, women's education and women in American political life.

WGST 384  Feminist Philosophy
3.000 Credits
Prerequisite(s): PHIL 100 or WGST 275

Feminists working in philosophy, most notably in the 19th and 20th centuries, have altered the traditional philosophical canon by first, recovering women philosophers who were essentially erased from the history and secondly, by extending and contributing to the standard questions of philosophy. For example, one central question of philosophy; “What can we know with certainty?” has been transformed through a feminist lens and reinterpreted as “What does one's gender, social location and cultural framework contribute to what one knows?” In this course we will look at the variety of feminist philosophical theories with a focus on epistemology, metaphysics and ethics.

WGST 385  Gender Differences in Language
3.000 Credits
Prerequisite(s): LING 280 or LING 281

Examines theories of differences between male and female speakers of English, focusing on phonological, syntactic, semantic, stylistic, and conversational features, with analyses of differences in speaking strategies and agendas of male and female speakers, as well as split-gender language situations in the workplace, home, and social settings.

WGST 386  Gender Issues in Literature
3.000 Credits
Prerequisite(s): ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200

A study of gender issues in English and American Literature. The exact topic will vary from semester to semester, but the course may feature such topics as gay and lesbian literature, feminist criticism, images of masculinity, the representation of sexual ideologies, etc. Course may be repeated for credit when specific topics differs.

WGST 387  Film and Feminisms
3.000 Credits
Prerequisite(s): ENGL 240 or HUM 240 or FILM 240 or ENGL 248 or FILM 248 or FILM 248 or HUM 248

This course will establish the role of mainstream cinema in the construction of female gender roles in contemporary Western society. The course will engage with debates in feminist film theory and the role of avant-garde and non-western cinema in challenging the gender ideology of mainstream cinema. (AY).
WGST 390  Topics in Women's Studies
3.000 Credits
Prerequisite(s): WST 275 or WGST 275

Examination of problems and issues in selected areas in Women's and Gender Studies. Title in Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. (YR)

WGST 3955  Women and Organizations
3.000 Credits
Prerequisite(s): PSYC 4305 or PSYC 431 or WST 275 or WGST 275 or OB 354

This course will: 1) analyze the importance, meaning and social values and practices that promote the interests and maintain the division of labor between the sexes; 2) examine organizational practices that maintain the division of labor between the sexes; 3) examine social values and practices that promote the interests and opportunities of women and that promote equality between the sexes; 4) examine women and management, including explanations for the limited numbers of women in senior management positions, gender and leadership style, and the difficulties of women managers; 5) address the issue of work/life balance and the distinction between paid work and family work.

WGST 404  Dissed: Differ, Power, Discrim
3.000 Credits

Have you ever been dissed? Why are some people targets of disrespect? This class examines the unequal distribution of power - social, economic and political in the United States and other countries that result in favor for privileged groups. We will examine a variety of institutional practices and individual beliefs that contribute to disrespect. We'll look at ways that beliefs and practices, like viewing inequality as consequence of a "natural order," obscure the processes that create and sustain social discrimination. We will engage in the intellectual examination of systems, behaviors and ideologies that maintain discrimination and the unequal distribution of power and resources. Student will not receive credit for both WGST 404 and WGST 504.

WGST 405  Gender Roles
3.000 Credits
Prerequisite(s): PSYC 171 or SOC 200 or SOC 201 or PSYC 170

This course will investigate the development of sex roles in childhood and adolescence due to either innate physiological differences or sociological patterning, the effect of sex roles upon male-female relationships within our society and the possibility of transcending sociological sex roles in alternate modes of living. Students cannot receive credit for both WGST 405 and WGST 505.

WGST 406  Culture and Sexuality
3.000 Credits

The study of women, men, children, socialization practices, and the genesis of sex roles cross culturally. Students cannot receive credit for both ANTH 406 and ANTH 506. ANTH 101 recommended. (YR).

WGST 407  Sexual Praxis and Theory
3.000 Credits
Prerequisite(s): WST 275 or WGST 275 or HUM 275 or PSYC 275 or ANTH 275 or SOC 443 or PSYC 405 or ANTH 406 or ANTH 101

This course will offer an overview of sexual differences including: the socio-cultural construction of gender, sexual behavior, and orientation; sex and sexualities in language and literature; and diversity by race, class, and cultural heritage. These topics will enable students to understand human sexuality within and across a continuum removing notions of duality, or polarity, in sexual behaviors and orientations. Examples both from within Western society and from non-Western societies may be used to further this position. Theoretical perspectives may encompass sociological and anthropological work, literary theory and criticism, queer theory, and multi-disciplinary discussions/discourse. Texts may include: Sex and the Machine: Readings in Culture, Gender and Technology, The Anatomy of Love, The Lesbian and Gay Studies Reader, Second Skins: The Body Narratives of Transexuality, and Lesbian and Gay Marriage.

WGST 409  Feminist Theories
3.000 Credits
Prerequisite(s): WGST 275 or WST 275 or SOC 200 or SOC 201

This course examines the different perspectives that feminist theorists have offered to analyze the unequal conditions of women's and men's lives. Students taking this course will develop an understanding of how theory functions as a way to know, understand and change the world. They will also be provided with a lens for comparing the assumptions and implications of alternative theoretical perspectives. A particular emphasis of this course is on theorizing the interrelationships among gender, race, class, sexuality and nationality. Course material includes applications of feminist theory to issues such as gender identity formation; sexuality; gender, law and citizenship; women and work; and the history and politics of social movements. Students will not receive credit of both WGST 409 and WGST 509. (AY)

WGST 412  Men and Masculinity
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201 or ANTH 101 or WST 275 or WGST 275

This course addresses the question, "What is a man?" in various historical, cross-cultural and contemporary contexts. A major focus is on the social and cultural factors that underlie and shape conceptions of manhood and masculinity in America as well as in a variety of societies around the globe.

WGST 416  Earl Mod Jpn Paint&Wood Prnts
3.000 Credits
Prerequisite(s): ARTH 101 or ARTH 102 or ARTH 103

Paintings and woodblock prints of the Edo/Tokugawa (1600-1868) and Meiji (1868-1912) periods are considered in light of competing developments that on the one hand looked to Japan's classical tradition and on the other to the influence of art and artists from China and the West. Special attention is given to
WGST 420  Kinship and Marriage
3.000 Credits
Prerequisite(s): ANTH 101

A study of the diversity of kinship and marriage systems, and of the history of kinship theory which has played a seminal role in the development of general anthropological theory. Students cannot receive credit for both ANTH 420 and ANTH 520. (OC).

WGST 425  Women in Classical Antiquity
3.000 Credits
Prerequisite(s): ARTH 101

This course examines the evidence for the lives of women in Greek, Etruscan and Roman Antiquity, from the Bronze Age through the Imperial Period. Special emphasis will be placed on the archaeological evidence, especially works of art which illustrate women's lives and their relationships with men. Documents such as dedicatory and funerary inscriptions, the poetry of Sappho and Sulpicia, and selections from the writings of Homer, Hesiod, Aristotle, Pliny, Juvenal, and other ancient authors, will also be examined critically, particularly in relationship to the works of art. Students cannot receive credit for both ARTH 425 and ARTH 525. (YR).

WGST 433  Writing Women In Renaissance
3.000 Credits

This course will be taught in English, and will focus on the influence of Italian literary models for the construction of female literary types as well as female voices in France and Italy from 1300 to about 1600. Italian authors studied include three very influential Florentines, Dante, Petrarch and Boccaccio, as well as Castiglione and Ariosto. We will read women poets, patrons, prostitutes and queens from Italy and France such as Veronica Gambara, Isabella di Morra, Vittoria Colonna, Christine de Pizan, Louise Labe, and Marguerite de Navarre. At last issue will be women's roles and women's images in city and court culture during the early modern period, and the interaction of their writings with the literary canons of Italy and France. (OC).

WGST 445  20C/21C Women Authors
3.000 Credits
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

An analysis of images and problems of women as defined by significant British and American women writers of the twentieth century. Style and narrative technique will also be closely examined. Students cannot receive credit for both ENGL 445 and ENGL 545. (OC).

WGST 447  Family Violence
3.000 Credits
Prerequisite(s): SOC 200 or SOC 201 or SOC 301 or SOC 443 or PSYC 405 or WST 405

Sociological analysis of various forms of family violence which occur disproportionately in the lives of girls and women. Topics such as incest, sexual abuse, date rape, wife battering, and elder abuse will be situated within the social and cultural context of contemporary gender relationships. Social and political responses to the phenomena will be examined. Permission of instructor is an optional prerequisite. (YR).

WGST 455  Gender and Media Studies
3.000 Credits

The course will focus on several feminist approaches used in understanding the media and attempting to create social change through the media. The role of media in the definition and reproduction of gender-based hierarchies and in the renegotiation of gender boundaries will both be explored. To this end, both mainstream and women's media will be examined. The course will take a multicultural and inter-national perspective, incorporating concerns of class, race, ethnicity, and nation as these intersect with the study of gender and media. Mainstream and alternative media will be analyzed through readings, films case studies, in-class collaborative exercises and longer term projects. News, entertainment, and advertising genres will be examined in a variety of media such as the printed press, television, video, film, and the Internet. (W).

WGST 470  Black Women / Lit, Film, Music
3.000 Credits
Prerequisite(s): FILM 240 or FILM 248 or FILM 385 or AAAS 239 or AAAS 275 or WST 275 or WST 370 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 237 or ENGL 239 or ENGL 248 or HUM 221 or HUM 222 or HUM 223 or WGST 275 or WGST 370 or ENGL 200

This course takes an interdisciplinary approach as it explores the intersections of identity (among them race, class, and gender) as they infuse the literature, film, and music of Black women. To paraphrase Chela Sandoval, this course presents a series of methods, not only for analyzing texts, music and film, but for creating identities that are capable of speaking to, against, and through power. The diverse work of such theorists as Ella Shohat, Jacqueline Bobo, Valerie Smith, and Sasha Torres will be utilized.

WGST 477  Women's Studies Internship
3.000 Credits
Prerequisite(s): ANTH 275 or SOC 275 or WST 275 or PSYC 275 or HUM 275 or WGST 275

Provides field experience in social welfare or criminal justice agencies e.g., for children/adolescents in residential programs, in abuse remediation, in probation, for chemical dependencies, in victim advocacy, for the elderly, in prisons, for special needs populations, in services, in medical/public health, in police services, and for families and communities. Supervision by approved field instructors. An internship of 80 hours is required for three (3) credits. Instructor and student will work together to determine appropriate intern placement. Approval of instructor and the Women's Studies Director in required.

WGST 481  Gender and Globalization
3.000 Credits

Mass media, politics, and academia are full of references to
globalization, and a future "world without borders." this interdisciplinary course considers the implication of globalization for women's lives, gender relations, and feminism. Topics covered include the global factory, cross-cultural consumption, human rights, global communications, economic restructuring, nationalism, and environmental challenges. Rather than survey international women's movements, this course explores how globalization reformulates identities and locations and the political possibilities they create. (AY).

**WGST 486 Queer Theory and Literature**

3.000 Credits  
Prerequisite(s): (COMP 106 or COMP 220 or COMP 270 or CPAS 40) and (ENGL 200 or ENGL 230 or ENGL 231 or ENGL 232 or ENGL 233 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or AAAS 239)

This course analyzes issues of sexuality using the lens of queer theory to understand the ways writers have imagined printed text to reflect and govern desire. This course also explores how queer theory has moved beyond a hetero-homosexual binary by offering alternative solutions to issues in literature that seem to be at political, economic and national impasses. Writers may include contemporary theorists (Sedgwick, Foucault, Butler) as well as novelists (Gaskell and Stoker), playwrights (Kushner and Wycherley) and poets (Behn and Rossetti).

**WGST 490 Topics in Women's Studies**

3.000 Credits  
Prerequisite(s): WST 275 or WGST 275 or WST 500

Examination of problems and issues related to Women's Studies. Title as listed in Schedule of Classes will change according to specific content. Course may be repeated for credit when specific topics differ.

**WGST 498 Womens & Gender St Thesis**

3.000 Credits

A thesis project that is the culmination of the minor in Women's Studies. Students meet with the instructor to reflect on past studies and plan current projects, to conduct research that addresses a gender issue in the larger community, and to write a thesis under the direction of the faculty member. Research involving participant-observer in social agencies is encouraged where appropriate.

**WGST 499 Independent Studies**

3.000 Credits

Provides opportunity for qualified Women's Studies students to pursue independent research under the direction of a qualified faculty member. Project must be defined in advance, in writing and must be in a subject not currently offered in the regular curriculum.
College of Engineering and Computer Science

Administration

Subrata Sengupta, PhD, Dean, College of Engineering and Computer Science
Keshav S. Varde, PhD, Associate Dean, College of Engineering and Computer Science
Ben Q. Li, PhD, Chair, Department of Mechanical Engineering
William I. Grosky, PhD, Chair, Department of Computer and Information Science
Swatantra K. Kachhal, PhD, Chair, Department of Industrial and Manufacturing Systems Engineering
Pankaj K. Mallick, PhD, Director, Interdisciplinary Programs
Malayappan Shridhar, PhD, Chair, Department of Electrical and Computer Engineering
Melissa Barton, Student Advisor
Laura Beer, Student Advisor
Anthony DeLaRosa, Internship Coordinator
Reinaldo Pérez, Director of Academic Services
Sandra L. Scott, Administrative Assistant
Kimberly Walkowiak, Student Advisor

Professors Emeriti

Aswad, A. Adnan, PhD, Professor Emeritus of Industrial and Manufacturing Systems Engineering
Boffi, Luiz V., ScD, Professor Emeritus of Electrical and Computer Engineering
Bolling, Fredric, PhD, Professor Emeritus of Mechanical Engineering
Cairns, J. Robert, PhD, Professor Emeritus of Mechanical Engineering
Conlon, Howard E., MS, Associate Professor Emeritus of Mechanical Engineering
Despres, Thomas A., PhD, Professor Emeritus of Mechanical Engineering
Habib, Izzeddin S., PhD, Professor Emeritus of Mechanical Engineering
Heim, Dwight S., PhD, Professor Emeritus of Electrical Engineering
Kurajian, George M., MS, Professor Emeritus of Mechanical Engineering
Miller, Murray H., PhD, Professor Emeritus of Electrical and Computer Engineering
Murtuza, Syed, PhD, Purdue University, Professor Emeritus of Electrical and Computer Engineering
Na, Tsung Y., PhD, University of Michigan, Professor Emeritus of Mechanical Engineering
Sullivan, Joseph E., MS, Associate Professor Emeritus of Electrical and Computer Engineering
Trojan, Paul K., PhD, Professor Emeritus of Metallurgical Engineering
Wolf, Louis W., PhD, Associate Professor Emeritus of Mechanical Engineering

Faculty

Akingbehin, Kiumi, PhD, Wayne State University, Professor of Computer and Information Science
Argento, Alan, PhD, University of Michigan, Professor of Mechanical Engineering
Awad, Selim Saad, PhD, Polytechnic Institute of Grenoble, Professor of Electrical and Computer Engineering
Bhide, Vivek, PhD, Ohio State University, Professor of Industrial and Manufacturing Systems Engineering
Buddhakulsomsiri, Jirachai, PhD, Oregon State University, Assistant Professor of Industrial and Manufacturing Systems Engineering
Chandra, Charu, PhD, Arizona State University, Associate Professor of Industrial and Manufacturing Systems Engineering
Chang, Chia-hao, PhD, Oregon State University, Professor of Industrial and Manufacturing Systems Engineering
Chen, Yubao, PhD, University of Wisconsin-Madison, Professor of Industrial and Manufacturing Systems Engineering
Cheng, John G., PhD, University of Tennessee, Professor of Mechanical Engineering
Chow, Chi L., PhD, DSc, University of London, Professor of Mechanical Engineering
Elenbogen, Bruce, PhD, Northwestern University, Associate Professor of Computer and Information Science
El Kateeb, Ali, PhD, Concordia University, Associate Professor of Electrical and Computer Engineering
Gjostein, Norman, PhD, Carnegie Mellon University, Clinical Professor of Engineering
Grosky, William Jr., PhD, Yale University, Professor of Computer and Information Science
Guo, Jinhua, PhD, University of Georgia, Assistant Professor of Computer and Information Science
Huntley, Hugh, PhD, University of Michigan, Associate Professor of Mechanical Engineering
Kachhal, Swatantra K., PhD, University of Minnesota, Professor of Industrial and Manufacturing Systems Engineering
Kampfnar, Roberto, PhD, University of Michigan, Associate Professor of Computer and Information Science
Kang, Hong Tae, PhD, University of Alabama, Assistant Professor of Mechanical Engineering
Kaufman, Herbert, PhD, University of Windsor, Lecturer of Electrical and Computer Engineering
Kim, Taehung, PhD, Texas A & M, Assistant Professor of Electrical and Computer Engineering
Klungle, Roger G., DSc, George Washington University, Lecturer of Industrial and Manufacturing Systems Engineering
Knight, James W., PhD, Ohio State University, Associate Professor of Industrial and Manufacturing Systems Engineering
Kridli, Ghassan, PhD, University of Missouri-Columbia, Associate Professor of Industrial and Manufacturing Systems Engineering
Lakshmanan, Sridhar, PhD, University of Massachusetts, Amherst, Associate Professor of Electrical and Computer Engineering
Lee, Cheol, PhD, Purdue University, Assistant Professor of Industrial and Manufacturing Systems Engineering
Lenox, Harry, MS, University of Michigan, Clinical Professor of Engineering
Li, Ben Q., PhD, University of California, Berkeley, Professor of Mechanical Engineering
The College of Engineering and Computer Science offers a variety of programs for students interested in engineering and computer science fields. The College offers degrees at the undergraduate, graduate, and professional levels. The programs are designed to provide students with a strong foundation in their chosen field, as well as opportunities for hands-on learning and practical experience. Students have the opportunity to work with faculty members who are experts in their fields and to collaborate with other students on projects that address real-world problems. The College also offers a range of opportunities for students to gain experience in their fields through internships and co-op programs. Whether you are interested in engineering or computer science, the College of Engineering and Computer Science offers a program that can help you achieve your goals.

**Computer Science: The Profession**

Computer and information scientists offer expertise in the effective and efficient use of computers for tackling a broad spectrum of practical challenges, usually in a team environment. Computer and information science includes the following subspecialties: operating systems, compilers, computer graphics, computer game design, computer networks and network administration, enterprise computing technologies, information and database systems and database administration, information retrieval, artificial intelligence and machine learning, robotics, theoretical computer science, programming languages, software engineering and web technologies. Software engineering is the area within computer science that is concerned with the theoretical and practical aspects of the detailed design, building, testing, modification, optimization and maintenance of large, high quality, software systems for a wide range of applications across society. Software engineers analyze users’ needs and work as part of a core team to design, create and implement high quality and cost effective new software, computer applications and utility programs. A core team may be composed of software engineering, manufacturing, design, management and marketing people who work together until the software product is released and implemented.

The College of Engineering and Computer Science offers undergraduate degrees in two computer science fields: Computer and Information Science, computer science option or information systems option, and Software Engineering.

**Career Choice**

What can help high school or community college students to decide to pursue a career in engineering or computer science? Some of the clues are an interest in and successful completion of science, mathematics and computer science courses; a desire and ability to investigate the “why” as well as the “how” of things; and an interest in the creative development of devices or systems that meet specific needs. Not all of these signs or interests will fit everyone, but they can be used as a guide.

The College of Engineering and Computer Science’s Student Records and Advising Office web page has information about careers in engineering and computer science and a number of links to very informative external web pages at: www.engin.umd.umich.edu/student_services/advising/

Click on “Career Information Web Sites for Engineering and Computer Science (external links)”.

The opportunities for women in engineering and computer science continue to increase. Women and men with strong interests in science and mathematics will find engineering and computer science challenging professions with a wide variety of employment opportunities.

Admissions counselors at UM-D and academic advisors of the College of Engineering and Computer Science are glad to talk with high school or transfer students who are faced with an important about career choice or with choosing the school that best suits their interest and abilities. Prospective students are welcome to contact the College of Engineering and Computer Science by phone or personal visit and to read the information on the College’s Web page: www.engin.umd.umich.edu.

**Educational Goals and Programs**

The mission of the College of Engineering and Computer Science is to be the leader in providing quality undergraduate and graduate programs in an environment integrated with engineering practice, research, and continuing professional education, in close partnership with the industrial community.

The College of Engineering and Computer Science’s (CECS) educational objective is to prepare its students to take positions of leadership commensurate with their interests and abilities in a world where science, engineering, and human relations are of basic importance. The College offers two modes of study: conventional programs that require only the completion of the academic subject requirements; and cooperative educational programs in which the student also completes a series of professional full-time work assignments pursued on an alternating semester basis during the junior and senior years. CECS students who wish to participate in the CECS Cooperative Education Program are encouraged to contact the CECS Cooperative Education Office, 2060 EC, early but not later than the first semester of their junior year.

Programs of study integrate fundamental mathematical and scientific theory with experiment, advanced analysis and design work to produce the coherent educational preparation required of professional engineers and computer scientists. Both the academic curriculum and the co-operative placements are planned to prepare students to become practicing engineers or computer scientists, administrators or investigators. The knowledge, skills and mental discipline gained from the degree programs of the CECS are broad and fundamental and also constitute excellent preparation for other careers, such as law and medicine.

**Undergraduate Requirements**

The College of Engineering and Computer Science (CECS) offers undergraduate programs leading to the Bachelor of Science in Engineering (BSE) degree in the following fields of specialization: computer engineering, electrical engineering, industrial and systems engineering, manufacturing engineering, and mechanical engineering. In addition, students in these BSE programs may also choose to earn a concurrent second degree in engineering mathematics. The College also offers an undergraduate degree program leading to a Bachelor of Science (BS) in Software Engineering and a Bachelor of Science in Computer and Information Science (CIS). The CIS program has two options: computer science and information systems. Students in these BS programs may also choose to earn a concurrent second degree in CIS mathematics.

The minimum credit-hour requirement for the degree programs in engineering is 125 to 128 semester credits, depending on the specific major. Participation in the engineering and computer science Cooperative Education Program requires an additional minimum of six hours (nine recommended) of co-op courses. The
BS in Software Engineering or in Computer and Information Science requires a minimum of 120 semester hours of coursework (or classroom and cooperative education experience as described under Cooperative Education Program).

The first two years can be considered pre-professional study in foundation courses covering fundamental subjects, and the last two years are the specialized, professional phase of the degree program.

The scholastic requirements for graduation are given under “Requirements for Graduation” section of this Catalog. For the detailed requirements specified by the College of Engineering and Computer Science for each of its undergraduate programs, see the sections headed Computer and Information Science, Software Engineering, CIS Mathematics, Computer Engineering, Electrical Engineering, Industrial and Systems Engineering, Manufacturing Engineering, Mechanical Engineering and Engineering Mathematics.

Students also have the option of choosing to earn a minor in addition to their major. The CECS offers a minor in Computer and Information Science. The College of Arts, Sciences, and Letters and the School of Management offer various minors of interest to CECS students. See the relevant sections of this Catalog.

The CECS Science Student Records and Advising (SRA) Office, 2000 Engineering Complex, (313) 593-5510, studentinfo@engin.umd.umich.edu is the primary contact for undergraduate students for academic advising and for information about all undergraduate degree programs of the College of Engineering and Computer Science.

More information about CECS and its programs is available through the College’s home page: www.engin.umd.umich.edu.

Admission to the College of Engineering and Computer Science

Admission requirements for entering as a freshman or a transfer student are described under Admission Requirements, General Information section of this Catalog. Admission to the College of Engineering and Computer Science (CECS) follows the traditional qualitative and selective admission standards of the UM-D. Students are admitted from high schools directly to the CECS at the freshman level or at other levels as transfer students from other colleges or universities.

A student admitted to the UM-D is expected to elect all courses at the UM-D. Only under exceptional circumstances is approval granted to elect a course outside the UM-D. See the On-Campus Courses rule, under Important Academic Policies.

Admission as a Transfer Student

The UM-D admits students as transfers who have completed course work at a community college or other four-year school.

Transfer students can enter at or before the junior level, and their preparatory work should have included foundation subjects in the areas of science, mathematics and pre-engineering or computer science in order to begin their professional coursework. Generally, the science, mathematics or pre-engineering/pre-computer science programs of other engineering schools, of community colleges and of liberal arts programs provide an appropriate preparation for admission to the College of Engineering and Computer Science.

Transfer curriculum guides are available for students interested in transferring into the BSE programs or the BS in Software Engineering or Computer and Information Science degree programs. Please consult the transfer guides available on the web: www.engin.umd.umich.edu/student_services/advising/transfers.php.

Prospective transfer students are advised not to elect more credits in any subject area than the maximums indicated on the guides since this would reduce the possibility of having elective credits to provide for later specialization after transfer.

Advisors at UM-D are available to assist any prospective student by recommending a specific program of courses at any two-year institution to be taken prior to transfer.

TRANSFER OF CREDITS

An appraisal of the previous record of a student transferring to UM-D will be made, at the time of admission, to determine the number of credits that apply toward the degree program specified by the applicant. In general, credit will be given for work taken at accredited transferring institutions for all courses in which the student has earned at least a C grade and provided that the courses can appropriately be applied as meeting requirements of the student’s chosen program of studies. Credit is not transferable for courses in which grades less than C or equivalent was earned in another institution. Irrespective of the number of credit hours the student has previously earned, a student must complete at least 30 credit hours of upper-level course work in their major at the UM-D in order to qualify for a UM-D degree.

CECS Student Records and Advising (SRA) Office

The College of Engineering and Computer Science (CECS) Student Records and Advising (SRA) Office is the primary contact for undergraduate students for academic advising and for information about all undergraduate CECS programs. The SRA Office provides the following services to CECS undergraduate students:

- academic orientation of freshmen and transfer students
- academic advising of new and continuing students
- evaluation of transfer credits, admission of cross-campus transfer applicants
- coordination of registration, drops, adds, and total withdrawals
- handling of requests for off-campus course elections
- degree audits of students’ credits toward graduation
- placement and release of academic holds
- handling of academic (probationary) actions and petitions
- readmission of previously enrolled students.

The SRA Office is located in the second floor of the Engineering Complex Building (voice: (313) 593-5510, FAX: (313) 593-9967). The Undergraduate Student Handbook, issued by SRA, is available on-line at www.engin.umd.umich.edu/publications/student_handbook.php.

Important Academic Policies

The front section of this UM-D Undergraduate Catalog and the campus’ Registration and Records web page, www.umd.umich.edu/dept/registration/, provide information
about university policies.

Listed below are some important policies affecting College of Engineering and Computer Science students. The CECS Undergraduate Student Handbook also has important information:

www.engin.umich.edu/publications/student_handbook.php

The English Composition Placement Exam is required of all students upon entering UM-D. More information at www.umd.umich.edu/casl/hum/writing/place.html

The Mathematics Placement Exam is required of all UM-D freshmen before they register for a mathematics course. All transfer students expecting to take pre-calculus or calculus I at UM-D are also required to take the mathematics placement exam.

CECS students must take and pass the mathematics course they place into. CECS students who register for a different mathematics course than the course they placed into will be disenrolled from that course.

The Orientation Office (313) 593-5550 schedules placement exams.

Prerequisite courses and co-requisite courses: A student needs to have the proper prerequisites to enroll in a course and cannot enroll in a course when one or more of its prerequisites need to be repeated because of probation. This is monitored by the College.

Grades: All courses required for CECS students must be taken for a grade. Grades count as part of a CECS student’s grade point average (GPA), except for the grades in ‘additive credit’ courses (EDF courses, or courses numbered 001 to 099).

Pass/Fail courses: CECS students cannot take required courses on an audit or Pass/Fail basis. Any course audited or taken Pass/Fail will not count towards the degree, even as a general elective. Pass/Fail or non-credit courses may be taken only for non-degree credit.

Non-Credit Courses: students cannot use non-credit courses towards their degree. A list of non-credit courses is found in the CECS Undergraduate Student Handbook given to students during academic orientation. The CECS Handbook is also available online at www.engin.umich.edu/publications/student-handbook.php

The D- Repeat Rule: Any course in which a CECS student earns the grade of D- does not carry degree credit. Any course in which a CECS student receives a D- must be repeated and must be passed with a higher grade in order for the course to count towards a CECS degree. This rule applies to all CECS students.

The On-Probation Repeat Rule: It is a CECS degree requirement that if a student’s overall cumulative GPA, CECS cumulative GPA, or both, drops below 2.0, any required courses with grades of C- or below taken during that semester must be repeated.

A student on academic probation who earns a grade of C- or below in a course that is a prerequisite course for another course, cannot elect the course without first repeating the prerequisite course. A student who elects a course without the proper prerequisites, or who needs to repeat the prerequisite because of probation, will be disenrolled from the course.

On-Campus Courses Rule: The CECS degree programs are designed to prepare professional engineers and computer scientists, to meet accreditation criteria, and to uphold the University’s exacting educational standards. To insure the integrity of its programs, the University has determined that once a student is admitted to UM-D, permission to take courses at another institution will very rarely be granted.

Course Registration

PREREQUISITE AND CO-REQUISITE COURSES

A student needs to have the proper prerequisites to enroll in a course and cannot enroll in a course when one or more of its prerequisites need to be repeated because of probation. This is monitored by the College.

CHANGES IN COURSE ELECTIONS: ADD, DROP, WITHDRAWAL

Please refer to the General Information section of this Catalog and the CECS Undergraduate Student Handbook available at www.engin.umich.edu/publications/student_handbook.php for further information on changes in course elections.

ADD

Courses that extend over the full term must be elected during the two-week period beginning on the opening day of classes of the term. For seven-week divided terms, or other scheduled terms shorter than a normal full term, course elections must be made during the first week of classes.

Revising a course election from credit to audit, or vice versa, election of the Pass/Fail Option, or changes from Pass/Fail to graded, must occur within the time periods stated for “Adding New Courses.”

DROP

Students may drop courses that extend over the full term without academic penalty during the nine-week period beginning on the first day of classes of the term. For seven-week terms, or other scheduled terms shorter than a normal full term, this period will be four weeks. A final grade of E will be recorded for an unofficially dropped course.

In the event of extraordinary circumstances realized subsequent to the stated four or nine-week, non-penalty periods, a student may petition to drop a course after the regular drop deadline. Late drop petitions, like other petitions, are handled by the CECS Student Records and Advising Office (2000 EC). A late drop petition will be considered only for important medical or other compelling reasons and not merely because a student is doing poorly in a course.

Students must contact an SRA advisor in person to discuss a late drop petition since supporting documentation is always required. Students continue to be registered for a course, and should continue attending it and doing all the assignments, unless and until their late drop petition is approved by the CECS Student Records and Advising Office.
WITHDRAW

Total Withdrawal: students may withdraw from all their courses for a given semester up to the last day of classes (NOT the last day of exams). CECS students who are totally withdrawing (withdrawing from all their classes) always need the signature of a CECS SRA advisor (Room 2000 EC).

Incomplete Coursework (I) or Absence from Final Examinations

A CECS student whose term’s coursework (other than the final examination) is incomplete in a minor way may, upon timely completion and approval of the I Contract Form, be granted the privilege of completing the coursework within a five-week period, beginning on the first day of classes of the immediately following term. If granted this privilege, a mark of I will be recorded.

A student who is unavoidably absent from a final examination, upon timely completion and approval of the X Contract Form, be granted the privilege of making up the examination within a five-week period, beginning on the first day of classes of the immediately following term. If granted this privilege, a mark of X will be recorded.

Failure to complete the required work, or to make up the final examination, within the specified time, or the denial of this privilege for an I or an X by the instructor, will result in a grade of E for the final grade.

The I or X Contract form is obtainable from the CECS Records and Advising Office, 2000 EC. The I or X remain on the transcript even after the official final grade is assigned.

In extenuating circumstances an extension beyond the stated period may be requested by means of a petition submitted to the CECS Records and Advising Office (2000 EC), which must also be approved by the instructor. However, such arrangements for completing the work must be made within the above five-week period.

Failure to complete the required work or examination within the specified time will result in a mark of I or X being automatically converted to a permanent IE or XE in the transcript, which count as an E in the student’s grade point average.

Grading System

The following (4.0) grading system is used by the CECS:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Honor Points</th>
<th>Letter Grade</th>
<th>Honor Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.0</td>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td>D+</td>
<td>1.4</td>
</tr>
<tr>
<td>B+</td>
<td>3.4</td>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>D-</td>
<td>0.7</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>E</td>
<td>0.0</td>
</tr>
<tr>
<td>C+</td>
<td>2.4</td>
<td>UE</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The honor points earned in a course are calculated by multiplying the honor points assigned for the grade by the credit hours for the course; e.g., an A grade in a three credit hour course yields 12 honor points. The semester grade point average is calculated by dividing the total honor points earned in a semester by the credit hours elected in that semester. The overall cumulative grade point average is obtained in the same manner with all courses elected at UM-D included in the calculation.

If any courses were repeated in the Fall 2005 or subsequent semesters, the most recent grade will be used in computing the grade point average, and a maximum of two previous grades in the same course will be excluded from calculation of the grade point average. A given course may be taken only a maximum of three times.

Courses in which a mark of S, P, Y, F, or NC is received are not included in grade point average calculations.

A CECS student with a class rank of junior or senior and who is in good scholastic standing may, with the approval of the College, elect a non-CECS course that is not a part of the degree requirements nor a prerequisite to any required course using the Pass/Fail Option.

Selected courses may be offered by the CECS on a grading basis of awarding only the grades of S for satisfactory work, E for failing work, and NC for no credit. Any course assigned an S mark or an NC mark will not count towards degree requirements; nor will an S or an NC mark enter into the computation of a student’s grade point average. Only CIS co-op courses with an assigned S mark may count toward degree requirements. A grade of E will be treated as a conventional E on all records.

Class Standing

The number of credit hours accumulated at the close of a given term is used to determine a student’s class standing.

<table>
<thead>
<tr>
<th>Underclassmen</th>
<th>Upperclassmen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Junior</td>
</tr>
<tr>
<td>0 to 24</td>
<td>55 to 84</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Senior</td>
</tr>
<tr>
<td>25 to 54</td>
<td>85 or more</td>
</tr>
</tbody>
</table>

Scholastic Standing

In order to attain a BSE or BS degree, a student must achieve a final overall average of 2.0 or more for all courses taken while enrolled in the CECS. In addition, the student must obtain a grade point average of 2.0 or more for all elected CECS courses.

GOOD SCHOLASTIC STANDING

To be in good scholastic standing at the end of any term, a student must have an average of 2.0 or more for the term and an overall average of 2.0 or more for all UM-D courses elected. Additionally, a student must have a 2.0 or above grade point average for all CECS courses elected. The treatment of all grade deficiencies will be as stated in the following paragraphs related to C-, D+, D-, and E grades.

GRADES LESS THAN C (2.0)

While a grade of C-, D+, or D is passing, it is not considered satisfying scholastic performance. Any deficiency of grade points (below 2.0) in either the overall grade point average (GPA) or the CECS cumulative grade point average (CECS GPA) resulting from one or more C-, D+, D, or D- grades must be made up while enrolled in this College. C-, D+, D, or D- grades are used in computing the student’s GPA or CECS GPA or both.

A student must repeat, as early as possible, any required courses
in which a C-, D+, D, or D- grade is received in a given term if either the overall GPA or CECS GPA falls below 2.0 at the end of that term. Moreover, if a student on academic probation earns a C-, D+, D, or D- grade in a prerequisite for another course, such course cannot be elected without first repeating the prerequisite course. Waiver of this requirement may be obtained only by means of a petition approved by the CECS.

Any course in which a student received D- must be repeated, even if the course was taken when the student’s overall cumulative GPA, and/or GPA in CECS courses, was above 2.0. Neither credit nor grade points are allowed for a course in which a student received an E grade. Any deficiency of grade points (below 2.0 average) resulting from one or more E grades must be made up while enrolled in this College before the student is restored to good standing. A required course in which a grade of E has been assigned must be repeated on this campus during the student’s next academic term.

CONTINUOUS ENROLLMENT IN THE COOPERATIVE EDUCATION PROGRAM

Although students on probation are normally allowed to continue their academic enrollment, they should consult immediately with the cooperative education program coordinator to review their status in the cooperative education phase of their program. Students will certainly jeopardize their ability to participate in this program if, during any term, their grade point average falls below 2.0. In the event that a student is placed on probation, the CECS reserves the right to require that the student spend another term in class and not participate in a work assignment for that term.

UNSATISFACTORY PERFORMANCE

The records of CECS students are reviewed at the end of each term by the Academic Standing Committee. Three degrees of scholastic deficiency are used by the committee to identify a student’s unsatisfactory performance resulting from C-, D+, D, D-, and E grades: warning, on probation, or required to withdraw.

In cases where the grade average for one term falls below 2.0 while the overall average remains above 2.0, the student normally will receive a warning letter by the Committee.

Probationary status (academic probation) is normally assigned to students who are not in good scholastic standing but whose records indicate a possibility for removal of deficiencies by continued enrollment. CECS students on academic probation are restricted to registering for no more than 13 credits per semester.

Students whose academic record is poor for two or three successive semesters are subject to being required to withdraw from the College. Students who have been required to withdraw may submit a formal written appeal to be readmitted at a later time, but must, in all cases, have had at least one semester of non-enrollment in CECS for their appeal to be accepted for consideration.

ACADEMIC STANDING APPEAL PROCEDURE

Students who wish to appeal a decision by the Academic Standing Committee requiring them to withdraw may do so by addressing a petition to the Executive Committee (the chief policy body) of the CECS. In all cases the Executive Committee requires a one-term non-enrollment period, to allow students who have been required to withdraw time to reflect upon their situation, to consider alternatives, and to make plans. If a negative decision is rendered at this high level, the student may, under unusual circumstances, appeal the case to the Appeals Board of the UM-D.

Requirements for Graduation

In order to secure the degree BSE or BS from the College of Engineering and Computer Science, UM-D, a student must meet the following requirements:

1. Must have been admitted to a degree program in the CECS.
2. Must satisfactorily complete the specified number of elective and required courses of the specific degree program.
3. Must attain a grade point average of C (2.0) or better for all courses completed at UM-D.
4. Must achieve a minimum grade average of C (2.0) for all CECS courses completed at UM-D.
5. Must have completed at the UM-D CECS at least 30 credit hours of upper-level CECS coursework of the degree program in which enrolled.
6. Must be enrolled for credit in the CECS during the term in which the requirements for the degree are completed.
7. Must have taken the English Composition Placement Exam and passed the appropriate composition course, as indicated by the results.
8. Must have repeated all courses that needed to be repeated, in accordance with the policies stated above.
9. Must have submitted a diploma application to the CECS Records and Advising Office (2000 EC) by the third week of the beginning of the term in which the student expects to graduate.

To obtain two bachelor’s degrees in the CECS, the student must complete the requirements of both degree programs. Consult the appropriate departments for specific requirements.

In order to obtain a BSE in an engineering major and a concurrent BSE degree in Engineering Mathematics, or a BS degree in CIS or in software engineering and a concurrent degree in CIS Mathematics, the student must complete the specified minimum credit hours of additional and separate courses in advanced mathematics from the choices listed in the Engineering Mathematics degree program or the CIS Mathematics degree program, respectively.

College of Engineering and Computer Science Academic Code of Conduct

The Academic Code of Conduct (ACC) of the College of Engineering and Computer Science is based on the premise that all students in the College will perform honestly and ethically in all graded tests, projects, and assignments. The Code of Conduct prohibits students from tampering with grades, submitting false grades, and changing academic records, as well as cheating, plagiarism, and other forms of academic dishonesty.

Sanctions for violation of the Academic Code of Conduct may include one or more of the following: a letter of reprimand, reduction in course grade, failure in the course(s), entry of action on to the student’s transcript, suspension, expulsion, and recession of a degree.

CECS students are subject to the provisions of the code in all courses. Students from other academic units are also bound by the
CECS Academic Code of Conduct in any engineering or CIS courses they may elect.

Students who have questions about how the Code applies in a particular CECS course should contact the course instructor. For any general questions or concerns about Academic Code of Conduct, students should contact a member of the CECS Academic Disciplinary Committee.

Familiarization with the code is the responsibility of every student enrolled in courses offered by the CECS. Booklets describing the code are available from the CECS Student Records and Advising Office, 2000 EC. The Academic Code of Conduct is also available on the web: www.engin.umd.umich.edu/student_services/

PHILOSOPHY OF THE CODE

At the University of Michigan, the history of an honor code dates from 1915, when the students in the College of Engineering petitioned for the establishment of such a code. At UM-D, it was used informally from 1959 until January 1965, when the first Honor Council was elected by engineering students to provide the final essential element of a formalized Honor Code.

The Academic Code of Conduct is a philosophy of life based on the cardinal principle that it is dishonorable to receive credit for work that is not the result of the individual’s efforts. This is a principle of the engineering and computer science professions and is a continuing tradition of the engineering students at the University of Michigan. To be trusted as a person and to have one’s word of honor associated with each professional undertaking will increase self-respect. A student’s diploma will then not only be a certificate of tasks accomplished, it will also stand as evidence of achievement of character.

Statement of Student Rights and Code of Student Conduct

Refer to this topic under Student Rights and Responsibilities in the General Information section of this Catalog.

Distribution Requirements

BSE DEGREE PROGRAMS

Basic Requirements for Students Enrolled in the CECS

These courses are taken in the first and second years in engineering degree programs (BSE).

CECS Requirements Satisfying Campus-Wide Requirements

These courses are to be elected by all BSE students entering UM-D as of Fall 1991.

English Composition ..............................................................6 hrs

COMP 105* and 270

* English composition is required for all entering students. Students are exempt from COMP 105 if they place out of it by the UM-D

Composition Placement Examination. Students placing out of COMP 105 will neither register for nor attend COMP 105. The Director of the Writing Program will send the names of these students to the Registrar’s Office. In the case of CECS students alone, three hours of credit by placement exam for COMP 105 will be recorded on their transcripts. Such credit by placement for COMP 105 applies only to CECS students following a CECS degree. (Students who were originally in CECS and who transfer to another academic unit do not receive credit for placing out of COMP 105.)

Humanities, and Behavioral Science or Social Science.............15 hrs

Students are required to complete two courses in the humanities area and two courses in the behavioral or social sciences area, from the choices given. A fifth, 300-level or 400-level, course is then taken in the same academic discipline as one of the courses already taken in either the humanities or behavioral/social sciences. For specific requirements, see the sections below.

Mathematics (MATH 115, 116, 205, 216, 217 [or 227]) ..........16 hrs

Chemistry ..........................................................4-8 hrs

and CHEM 146 (ISE, MFGE and ME majors only)

Economics (ECON 201) ......................................................3 hrs

Physics (PHYS 150 and PHYS 151) ...............................8 hrs

COOPERATIVE EDUCATION

DEFINITION

The Engineering Cooperative Education Program is a coordinated integration of classroom work and practical experience in business, industry and government. The student alternates terms of attendance (co-op program does provide some flexibility, if needed) in class with four-month periods of employment with a cooperating organization, at the employer’s location, while supervised by representatives of both the University and the employer. The work experience is considered an integral part of the educational process, and both the College and the participating employer share responsibility for this integration.

The Computer Information Science Cooperative Education program like that of Engineering, is an optional program for student who desire practical work experience related to a student’s academic background or individual career interests. Co-op students may be hired under any of three options: 1) alternating full-time, 2) parallel part-time, 3) summer only. Students are encouraged to complete a minimum of two work semesters with a participating employer.

OBJECTIVES, ADVANTAGES, AND REMUNERATION

Emphasis is placed on the educational and training value of work assignments. The student’s earnings, though substantial, must be considered only as an attractive by-product of the cooperative educational processes. As a result, convenience of location or transportation and personal preferences of the student must yield to educational advantages if these advantages cannot be otherwise achieved.

Numerous firms located in Michigan and out-of-state afford a wide range of experiences in all major areas in which student may have career aspirations. Cooperative education experience
in professional assignments permits a practical test of vocational interest, the application of classroom knowledge to practical problems, a first-hand exposure to labor-management relationships, the development of responsible work habits, and the prospects of full-time employment upon graduation.

Work assignment, salaries and employee benefits provide students with the prospect of substantial self-support during their enrollment as UM-D students.

STUDENT COUNSELING AND PLACEMENT

The cooperative education coordinator of the College counsels each co-op student with respect to career interests and aptitudes, and arranges interviews with appropriate cooperating employers. These interviews furnish the opportunity for a professional work assignment that is agreeable to the student and to the employer.

EVALUATION AND RECOGNITION OF ACHIEVEMENT

Each student is formally evaluated by the employer, and also must prepare and submit a detailed, well-written work report to the director at the end of each work assignment period. At the conclusion of each work assignment period, a grade determined mainly from the employer’s evaluation and the student’s report will be assigned by the director and recorded on the student’s transcript. The grade assigned and recorded for each work assignment period will be either S for satisfactory or NC (no credit) for unsatisfactory.

Computer Information Science students are awarded academic credit by faculty on the basis of learning achievement and requirements met. CIS student may earn a maximum of nine credits toward their degree programs by completing the equivalent of three full-time (40 hr/wk) work terms for three credits each.

The cooperative education degree option requires a minimum of two work assignments and the possibility of an optional third term of professional employment in the program during the junior and senior years. Successful participation in the required professional work assignment periods is recognized of satisfactory cooperative education performance concurrent with the baccalaureate degree (Not applicable to CIS students). Additionally, the awarding of this certificate is recorded on the student’s academic transcript upon graduation. Eligibility for receiving the satisfactory cooperative education performance certificate will be determined by the engineering cooperative education director based upon the reports submitted on and by the student over the several periods of work assignments.

PARTICIPATION IN THE COOPERATIVE EDUCATION PROGRAM

Students in the cooperative education option offered by the College of Engineering and Computer Science shall participate in four-month work periods alternating with their classroom terms. Students admitted to the CIS co-op program must fulfill the study-term requirements of the alternate, parallel, or summer only plans. Details on the study-term requirements are available through the co-op office. These alternating work periods may not be waived except as follows: 1) where academic achievement in any term is so poor as to minimize the possibility of the student successfully pursuing the academic program to the end; in such cases, the student will immediately be required to repeat a regular classroom term or be caused to withdraw from the College of Engineering and Computer Science; 2) where such illness or disability exists that, in the opinion of the employer or suitable medical counselor, industrial assignment would not be in the best interests of the employer and/or the student during a particular term.

Both the cooperating employers and the University expect that students participating in the cooperative education program will be able to demonstrate a considerable increase in academic knowledge after each term of classroom study. Therefore, participants in the CECS Cooperative Education Program must be full-time students during their alternated class terms; that is, must satisfactorily complete at least 12 credit hours of their degree program course work during each scheduled class term.

ADMISSION TO THE COOPERATIVE EDUCATION PROGRAM

The first and most important step toward admission to the CECS Cooperative Education Program is current enrollment as an undergraduate student in good academic standing in a CECS degree program. Since the first co-op work period is always scheduled within the junior academic year, sophomores enrolled in the CECS will be accepted into the CECS Cooperative Education Program for participation in career counseling and placement interviewing activities during the second term of their sophomore year. Transfer students admitted to the CECS at the junior year level may be accepted into the Cooperative Education Program after completing one semester as a full-time student (12 credit hours). In all but the most unusual circumstances, all students must apply for admission to the internship program not later than during the registration week of the class term preceding their intended first work assignment period or as advertised by the CEC Cooperative Education Director.

An application for acceptance into the CECS Cooperative Education Program may be submitted later than the first term of the junior year but will not be approved when the class level of the student is such that there will not be sufficient time prior to graduation to participate in the program for at least two-co-op periods alternated with the usual terms of class.

The basic entrance-level requirement of the CECS Cooperative Education Program, applying to all students, is satisfactory completion of the sophomore year, with a recommended GPA of at least 2.30. Student admitted to the CIS program must have completed 30 semester hours (sophomore status) and have a minimum cumulative GPA of 2.25. Transfer students must have completed 12 UM-D credit hours. The courses of this basic requirement include the calculus sequence, differential equations, linear algebra, college chemistry, the engineering physics sequence, and introductory courses in engineering that include computer-aided tools for design and analysis.

In addition to the basic entrance-level requirement there also are specific courses that must be satisfactorily completed prior to the date of beginning the first co-op work period. These specific courses, which differ according to the several degree programs, are all courses normally scheduled in the sophomore year under CECS’s basic freshman-sophomore curriculum (the equivalent course at another college may be acceptable for a transfer student).

For the mechanical engineering co-op student, the specific required courses that must be satisfactorily completed are
The specific courses required for the industrial and manufacturing systems engineering co-op student are computer programming for engineers and manufacturing processes. Thermodynamics and applied mechanics are optional courses.

For the electrical engineering co-op student, the specific required courses for those enrolled at UM-D during their sophomore year are digital systems in electrical engineering and the first courses in circuits.

The purpose of these various course requirements is to prepare the co-op student academically for professional work assignments where there will be continual association with practicing engineers in their daily work. Through fulfillment of these requirements the co-op student will have sufficient competence to function as a member of an engineering group.

REGISTRATION IN THE COOPERATIVE EDUCATION PROGRAM

Each co-op work assignment extends for one term (four months) and occupies the student full time. From a group of co-op courses available, the co-op student elects a three-credit hour course whose content is appropriate to the particular field of engineering and to the level of practice being undertaken that term. Three such registrations are recommended (two are required) for a total of nine credit hours, for satisfactory completion of the Cooperative Education Program. All credit hours earned via co-op courses are added to the academic (classroom) credit hours required in the undergraduate program of studies pursued by the student. Since the co-op work assignment occupies the student full-time, registration in courses other than the co-op course is strongly discouraged. A student on a co-op assignment cannot elect more than one course (two courses maximum other than the co-op course) during the semester. CIS students can earn up to nine pass/fail credits toward graduation. Like the engineering students, CIS students register from a group of co-op courses available (CIS 299, 399, 499). The student elects a three-credit hour course whose content is appropriate to the level of practice being undertaken that term. Three such registrations are recommended for satisfactory completion of the Cooperative Education Program.

In some instances students may be involved in a cooperative-type educational program prior to their eligibility for and/or acceptance into the Engineering Cooperative Education Program. Such cooperative-type programming might occur either while enrolled at UM-D or at another educational institution. However, no regular employment completed prior to formal enrollment in the CECS Cooperative Education Program will be considered as satisfying the requirements of the CECS Cooperative Education Program.

International Study

Student Exchange Program with the Jönköping School of Engineering in Jönköping, Sweden

The College of Engineering and Computer Science has a formal student exchange program with the Jönköping School of Engineering in Jönköping, Sweden. CECS undergraduates in good standing in any major are eligible to apply.

Students choose the classes they will take during the student exchange semester in consultation with the CECS director of academic services and with their faculty advisor. They register for their exchange classes at UM-D and pay regular UM-D tuition. The student exchange classes are listed as UM-D classes on the UM-D transcript. Students register for a full-load during their student exchange semester, consisting of three technical courses in engineering or computer science taught in English and a beginning language course in Swedish.

CECS students should make an appointment with the CECS Director of Academic Service (2000 EC) for information about the Jönköping program and how to apply.

UNDERGRADUATE PROGRAMS

Computer and Information Science

[SEE CIS, UNDER THE COLLEGE OF ENGINEERING AND COMPUTER SCIENCE, ON THE UNIVERSITY HOME PAGE ON THE INTERNET FOR ANY CHANGES AND UPDATES – http://www.engin.umd.umich.edu/CIS]

Computing professionals offer expertise in the effective and efficient use of computers for solving human problems, whether that be as a member of a project development team, as a builder of powerful and easy-to-use tools, as an individual researcher, or as an educator.

Required courses in the CIS major stress theory and application, as well as the role of other fields such as mathematics, statistics, electrical and computer engineering, business, and software engineering, among others. The curriculum is modeled on the recommendations of the two main professional computing societies, the Association of Computing Machinery (ACM) and the Institute for Electrical and Electronic Engineering (IEEE). Written and oral communications skills are emphasized throughout the program. The use of teamwork on projects is practiced in many courses. Professionalism and ethics are also stressed for future computing professionals. The CIS courses include software engineering, algorithm analysis, networking, programming languages, game design, computer architecture, data structures, operating systems, artificial intelligence, database management systems, graphics, information systems, robotics, web development and capstone design courses.

The CIS curricula prepare students to begin careers as computing professionals or to pursue graduate study in the field. The BS in Computer and Information Science program is ABET accredited. A candidate for the degree of BS in CIS is required to select one of two concentrations: Computer Science or Information Systems. A BS in Software Engineering is also offered. All three programs encourage innovation on the part of students, prepare students for graduate education, train students to communicate effectively, and provide students with the tools needed to become leaders in their profession.

The Computer Science concentration emphasizes understanding how computer systems work and prepares its graduates for positions in systems programming, scientific programming, networks, game programming, web technology, graphics and visualization, and enterprise computing among others.

The Information Systems concentration is oriented toward the
design and development of computer information systems. It includes more business-related courses than the computer science concentration, and prepares graduates for positions in applications programming, database management, information systems design, and information engineering, among others.

The Software Engineering degree program stresses the range of technical, systematic and managerial aspects of the software development process, but places primary emphasis on the technical facets of designing, building, and modifying large and complex software systems. The BS in Software Engineering program is ABET accredited.

The BS in Software Engineering (SE) prepares students to demonstrate expertise in the effective and efficient use of computers to solve problems relating to the disciplined development, instrumentation and maintenance of quality software, whether as members or leaders of product development teams. Software engineers work as project managers, game designers, applications programmers, quality assurance specialists, test engineers, and user interface designers.

CAREER OPPORTUNITIES

A wide variety of employment opportunities is available to computer and information science graduates, as mentioned above. The University’s Career Services Office assists students and graduates in planning careers in computer and information science and offers many job listings in the computer industry.

COOPERATIVE EDUCATION/INTERNSHIP PROGRAM

Work experience opportunities are available for qualified computer and information science students through the CECS Cooperative Education Office. These programs allow students to earn a salary and up to nine credit hours which can be applied toward graduation while working full-time during alternate semesters or part-time during regular semester for participating firms or governmental agencies (Accenture, Cabletron, CompuWare, DaimlerChrysler, Ford, IBM, Motorola, NOAA, Unisys, United Technologies, etc.).

CIS STUDENT ADVISORY BOARD (CISSAB)

The Department has in place a mechanism for ensuring continuous high-quality input from students at all levels, through a faculty-nominated board of students and alumni.

CIS PROFESSIONAL ADVISORY BOARD (CISPAB)

The Department continually seeks outside interactions with business, industries, and government through its Professional Advisory Board. The PAB is composed of senior computing technologists who provide input on curriculum, potential employment for students, research opportunities for faculty, and a perspective on future challenges requiring collaboration.

COMPUTING FACILITIES

Student software development is done in various campus computing laboratories, having IBM-compatible PC’s, UNIX machines, a CRAY supercomputer, and Macintosh computers as well as specialized department computing laboratories. The software available includes state-of-the-art tools for database, video conferencing, software engineering, expert systems, a large number of operating systems (e.g., LINUX, Windows [XP], Macintosh, etc.), programming languages and solid modeling tools. These labs are all staffed by student assistants under the direction of a laboratory manager.

UPSILON PI EPSILON (UPE)

UPE is the national computer science honor society. Membership is available to upper-division students maintaining a 3.0 GPA for all coursework. UPE sponsors a variety of educational and social events on campus.

ASSOCIATION FOR COMPUTING MACHINERY (ACM)

The student chapter of the Association for Computing Machinery (ACM) sponsors “chalk talks” to help familiarize students with new computing technologies, guest speakers on computer-related topics, and a variety of social events.

BS In Computer And Information Science (CIS)

Program Objectives for Computer Science Concentrators

1) Our graduates are well prepared to engage in continual lifelong learning as active computer science practitioners.
2) Our graduates are well prepared for graduate programs in computer science.
3) Our graduates are well prepared for employment in computer science.
4) Our graduates are well prepared to make effective and efficient use of computers to solve human problems.
5) Our graduates are well prepared to develop their potential for innovation, communications skills, and leadership skills necessary for a successful career.

Program Outcomes for Computer Science Concentrators

To achieve the above program objectives, the graduates of the program will have:

a. An ability to apply knowledge of math, science, and engineering
b. An ability to design and conduct experiments as well as analyze and interpret data
c. An ability to design a system, component, or process to meet desired needs
d. An ability to function on multidisciplinary teams
e. An ability to identify, formulate, and solve engineering problems
f. An ability to understand professional and ethical responsibility
g. An ability to communicate effectively
h. The broad education necessary to understand the impact of engineering solutions in a global and societal context.
i. A recognition of the need for, and an ability to engage in, lifelong learning
j. A knowledge of contemporary issues
k. An ability to use techniques, skills, and engineering tools for engineering practice
l. An ability to program

m. An ability to develop innovative solutions to real-world problems
n. An ability to analyze a computerized solution to a real-world problem
o. An ability to lead a team to achieve desired results
p. An ability to design an efficient algorithmic solution to a real-world problem

General Requirements
Selections must be from courses numbered 100-200 unless otherwise stated. Campus distribution requirements are included within these general requirements.

Composition* .......................................................... 6 hrs
COMP 105
COMP 270
English composition is required for all entering students. Students are exempt from COMP 105 if they place out of it by the UM-D Composition Placement Examination. Students placing out of COMP 105 will neither register for nor attend COMP 105. The Director of the Writing Program will send the names of these students to the Registrar's Office. In the case of CECS students alone, three hours of credit by placement exam for COMP 105 will be recorded on their transcripts. Such credit for placement for COMP 105 applies only to CECS students following a CECS degree. (Students who were originally in CECS and who transfer to another academic unit do not receive credit for placing out of COMP 105.)

Humanities* .......................................................... 6 hrs
Two 100- to 400-level courses from AAAS (239 or 275; 385, 389, 469, 470); ARTH, COML, COMM (220 to 250; 300 or 400 level), ENGL, FILM, Foreign Language, HUM, MHIS, PHIL, STS (300; 307, 312, 403, 410, 485, 488); WGST

Behavioral Science .................................................. 6 hrs
Two 100- to 400-level courses from AAAS (106 or 275; 320, 322, 325, 349, 369, 403), ANTH, ECON (202; 300-level only), GEOG (201 or 205; 300-level only), HIST, POL, PSYC, SOC, STS (300; 308, 309, 321, 325, 340, 345, 349, 365, 374, 383, 386, 409, 421, 430, 441, 442, 464), WGST (275; 325, 326, 338, 362, 370, 405, 406, 407, 420)

Mathematics and Statistics ....................................... 13 hrs
MATH 115, 116
MATH 217 or 227
IMSE 317 or MATH 425

Laboratory Science Sequence* ..................................... 8 hrs
BIOL 130 and BIOL 140 OR
CHEM 134 and CHEM 136 OR
CHEM 144 and CHEM 146 OR
PHYS 125 and PHYS 126 OR
PHYS 150 and PHYS 151

CONCENTRATION REQUIREMENTS

for Computer Science Concentrators

Natural Science ....................................................... 4 hrs
Four additional science credits from BIOL 130, BIOL 140, CHEM 134, CHEM 136, CHEM 144, CHEM 146, CHEM 225, CHEM 226, CHEM 227, GEOL 118, GEOL 218, PHYS 125, PHYS 126, PHYS 130/131, PHYS 150, PHYS 151

Mathematics ......................................................... 3-4 hrs
MATH 205 or 215

Business Course ..................................................... 3 hrs
ENGR 400 Applied Business Techniques for Engineers

CIS Core .................................................................... 32 hrs
Eight computer and information science courses are required of Computer Science concentrators:
CIS 150 Computer Science I
CIS 200 Computer Science II
CIS 275 Discrete Structures
CIS 310 Computer Organization and Assembly Language
CIS 350 Data Structures and Algorithm Analysis
CIS 375 Introduction to Software Engineering
CIS 427 Computer Networking and Distributed Processing
CIS 450 Operating Systems

CISC required ......................................................... 10 hrs
Four computer and information science courses are required of Computer Science concentrators:
CIS 294 Visual Basic
OR
CIS 296 Java Programming
CIS 400 Programming Languages
CIS 4951 Design Seminar I
CIS 4952 Design Seminar II

Technical Electives .................................................... 14 hrs
Fourteen credits from the following:
CIS 285 Software Engineering Tools.......................... 2 hrs
CIS 376 Software Engineering.................................. 4 hrs
CIS 381 Robotics....................................................... 3 hrs
CIS 421 Database Management Systems.................... 4 hrs
CIS 4261 Information Systems Design I.................... 4 hrs
CIS 4262 Information Systems Design II.................. 4 hrs
CIS 435 Web Technology ........................................... 3 hrs
CIS 451 Computer Graphics..................................... 3 hrs
CIS 474 Compiler Design.......................................... 3 hrs
CIS 476 Software Architecture and Design Patterns.... 3 hrs
CIS 479 Artificial Intelligence................................... 3 hrs
CIS 487 Computer Game Design and Implementation I 3 hrs
CIS 488 Computer Game Design and Implementation II 3 hrs
CIS 489 Computer Architecture................................. 3 hrs
CMC 404 Dynamical Systems .................................. 3 hrs
CMC 472 Numerical Analysis .................................. 3 hrs
CMC 473 Math Modeling.......................................... 3 hrs
ECE 372 Introduction to Microprocessors.................. 3 hrs

General Electives ...................................................... 9 hrs
Any for-credit courses; that is, courses not on the No Credit list, which is found at the end of the CECS Student Handbook.
www.engin.umd.umich.edu/Publications/student_handbook.php, and is also posted outside 2000 EC. No Credit courses do not count toward the degree. No Credit courses include PSYC 381, SOC 383, and many other courses.

Note: At least six of the 12 credits must be taken outside computer science, mathematics, natural science and engineering courses.

CONCENTRATION REQUIREMENTS for Information Systems Concentrators

Program Objectives for Information Systems Concentrators

1) Our graduates are well prepared to engage in continual lifelong learning as active information systems practitioners.
2) Our graduates are well prepared for graduate programs in information systems.
3) Our graduates are well prepared for employment in information systems.
4) Our graduates have expertise in the human-centered use of computers to solve problems relating to information and society.
5) Our graduates are well prepared to develop their potential for innovation, communications skills, and leadership skills necessary for a successful career.

Program Outcomes for Information Systems Concentrators

To achieve the above program objectives, the graduates of the program will have:

a. An ability to apply knowledge of math, science, and engineering
b. An ability to design and conduct experiments as well as analyze and interpret data
c. An ability to design a system, component, or process to meet desired needs
d. An ability to function on multidisciplinary teams
e. An ability to identify, formulate, and solve engineering problems
f. An ability to understand professional and ethical responsibility
g. An ability to communicate effectively
h. The broad education necessary to understand the impact of engineering solutions in a global and societal context.
i. A recognition of the need for, and an ability to engage in, lifelong learning
j. A knowledge of contemporary issues
k. An ability to use techniques, skills, and engineering tools for engineering practice
l. An ability to program
m. An ability to develop innovative solutions to real-world problems
n. An ability to analyze a computerized solution to a real-world problem
o. An ability to lead a team to achieve desired results
p. An ability to design an information system using component-based design.

Additional Program requirements

Business and Operations Research ...........................................13 hrs
The following four courses

ACC 297 Financial Accounting Concepts

OR

ACC 298 Financial Accounting

OB 354 Behavior in Organization
IMSE 3005 Introduction to Operations Research
ENGR 400 Applied Business Techniques for Engineers

CIS Core ..................................................................................32 hrs
Eight computer and information science courses are required of Information Science concentrators:

CIS 150 Computer Science I
CIS 200 Computer Science II
CIS 275 Discrete Structures
CIS 310 Computer Organization and Assembly Language
CIS 350 Data Structures and Algorithm Analysis
CIS 375 Introduction to Software Engineering
CIS 427 Computer Networks and Distributed Process
CIS 450 Operating Systems

CISI Required .........................................................................18 hrs
Five computer and information science courses are required of Information Systems Concentrators

CIS 294 Visual Basic
OR
CIS 296 Java Programming

CIS 421 Database Systems
CIS 4261 Information Systems Design I
CIS 4262 Information Systems Design II
CIS 4951 Design Seminar I
CIS 4952 Design Seminar II

Technical Electives...............................................................6 hrs

CIS 285 Software Engineering Tools.................................2hrs
CIS 376 Software Engineering II ..................................4 hrs
CIS 381 Robotics .........................................................3 hrs
CIS 400 Programming Languages ...........................4 hrs
CIS 435 Web Technology .............................................3 hrs
CIS 451 Computer Graphics .....................................3 hrs
CIS 474 Compiler Design .........................................3 hrs
CIS 476 Software Architecture and Design Pattern ...3 hrs
CIS 479 Artificial Intelligence .................................3 hrs
CIS 487 Computer Game Design and Implementation I ........................................3 hrs
CIS 488 Computer Game Design and Implementation II ........................................3 hrs

General Electives .....................................................................7 hrs

Any for-credit courses; that is, courses not on the No Credit list, which is found at the end of the CECS Student Handbook, www.engin.umd.umich.edu/Publications/student_handbook.php, and is also posted outside 2000 EC. No Credit courses do not count toward the degree. No Credit courses include PSYC 381, SOC 383, and many other courses.

MINOR IN COMPUTER AND INFORMATION SCIENCE

The minor in CIS requires a minimum of 24 credit hours, which must include CIS 150, CIS 175, CIS 200, CIS 350 and eight additional credit hours at the 300 or 400 level approved by the student’s faculty advisor in CIS. An introduction to calculus (MATH 115) is required and does not count toward the 24 hours.
Completion of MATH 116 is strongly recommended.

**BS in Software Engineering**

Software Engineering is the computer discipline that is concerned with the theoretical and practical aspects of building high quality software systems, on time, and within budget. Software engineers are tasked with the detailed analysis, design, implementation, testing, maintenance and management of software product development projects for a broad range of computing applications across society.

The increasing pressure to deliver high-quality, reliable software products in less time is rapidly fueling the demand for computer professionals with specific preparation in software engineering and experience in working on teams. These pressures stem from such widespread development as

- The use of software for demanding and safety-critical applications that make it imperative to avoid the serious, indeed sometimes fatal, consequences of poorly understood design.
- The need to create consumer and entertainment applications like computer games, in the face of a highly competitive global market place.
- The increasing need to develop useful, easy-to-use software tools that reliably meet customer needs and whose features and documentation can be used and understood by their intended user with a high degree of consistency and confidence.
- The need to re-engineer or replace aging legacy software systems to take advantage of modern computer hardware capabilities.

Recent advances in the practice and technology of software engineering have made it possible to offer undergraduate and graduate degree programs in software engineering itself. Notable among these advances are:

- The availability of proven computer tools (such as CASE tools) and processes (such as the Personal Software Process) to standardize and automate software development.
- The increasing importance of formal methods and software quality measurement techniques to ensure more thorough testing of software.
- The success of the agile and object-oriented software engineering methods, as well as the move toward technical and managerial practices that cover the full software development cycle.

Software engineers must know the subset of computer science that is relevant to software development. They must also have knowledge of the principles of effective and reliable design, of mathematics and other sciences that are traditionally known by engineers, and of the skills and applications of project management.

Software engineering includes:

- Software design and development; that is, building commercial, industrial-strength software by the application of validated knowledge and experience that have been codified into formal methods of best practices.
- Software process and quality assurance; that is, the systematic discipline of consciously improving the quality, cost and timeliness of the process itself by which large software systems are designed and developed.
- Software development project management; that is, how to manage large software design projects and bring development to a timely and efficient completion.

The software engineering degree program offered by the Department of Computer and Information Science stresses the range of technical, systematic, and managerial aspects of the software engineering process but places primary emphasis on the technical facets of designing, building, and modifying large and complex software systems. This program concentrates on all software development lifecycle phases, including: program management, requirements engineering, software architecture design, software implementation, software configuration management, software quality assurance, and software process maturity measurements and improvements. It balances both theoretical and practical aspects by covering fundamentals in the classroom and evaluating student knowledge by implementing team-based work projects. Students complete a minimum of 120 credits and receive a BS degree in Software Engineering. The degree prepares graduates for immediate employment in the software engineering field and for graduate study.

The BS degree in Software Engineering is ABET accredited.

**PROGRAM OBJECTIVES**

- Our graduates are well prepared to engage in continual lifelong learning as active software engineering practitioners.
- Our graduates are well prepared for graduate programs in software engineering.
- Our graduates are well prepared for employment in software engineering.
- Our graduates are well prepared to make effective and efficient use of computers to solve problems related to the disciplined development, implementation and maintenance of quality software.
- Our graduates are well prepared to manage software engineering projects.
- Our graduates are well prepared to develop their potential for innovation, communications skills, and leadership skills necessary for a successful career.

**PROGRAM OUTCOMES**

To achieve the above program objectives, the graduates of the program will have:

- An ability to apply knowledge of math, science, and engineering
- An ability to design and conduct experiments as well as analyze and interpret data
- An ability to design a system, component, or process to meet desired needs
- An ability to function on multidisciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An ability to understand professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global and societal context
- A recognition of the need for, and an ability to engage in, lifelong learning
- A knowledge of contemporary issues
- An ability to use techniques, skills, and engineering tools for engineering practice
l. An ability to program
m. An ability to develop innovative solutions to real-world problems
n. An ability to analyze a computerized solution to a real-world problem
o. An ability to lead a team to achieve desired results
p. An ability to design a computerized solution to a real-world problem
q. An ability to manage a project

CONCENTRATION REQUIREMENTS

General Requirements .................................................. 55-56 hrs

English Composition .................................................... 6 hrs
COMP 105 Composition I
COMP 270 Technical Writing for Engineers

Economics
ECON 201 Principles of Macroeconomics ......................... 3 hrs

Humanities ........................................................................ 6 hrs
Two 100- to 400-level courses from AAAS (239 or 275; 385, 389, 469, 470); ARTH, COML, COMM (220 to 250; 300 or 400 level), ENGL, FILM, Foreign Language, HUM, MHIS, PHIL, STS (300, 307, 312, 403, 410, 485, 488); WGST

Behavioral/Social Science .................................................. 6 hrs
Two 100- to 400-level courses from AAAS (106 or 275; 320, 322, 325, 349, 369, 403), ANTH, ECON (202; 300-level only), GEOG (201 or 205; 300-level only), HIST, POL, PSYC, SOC, STS (300: 308, 309, 321, 325, 340, 345, 349, 365, 374, 383, 386, 409, 421, 430, 441, 442, 464); WGST (275; 325, 326, 338, 362, 370, 405, 406, 407, 420)

Business courses .................................................................. 6 hrs
ENGR 400 Applied Business Techniques for Engineers
OB 354 Behavior in Organization

Mathematics
MATH 115 Calculus I ....................................................... 4 hrs
MATH 116 Calculus II ....................................................... 4 hrs
MATH 205 Calculus III for Engineering Students ............... 3 hrs
OR
MATH 215 Calculus III ..................................................... 3 hrs
MATH 217 Matrix Algebra ................................................ 2 hrs
OR
MATH 227 Linear Algebra ................................................ 3 hrs
IMSE 317 Probability and Statistics .................................. 3 hrs
OR
MATH 425 Mathematical Statistics II ................................ 3 hrs

Laboratory Science Sequence ............................................. 8 hrs
Two courses, 8 credits, in one sequence from:
Biol 130 and Biol 140
OR
Chem 134 and Chem 136
OR
Chem 144 and Chem 146
OR

GEOL 118 and GEOL 218
OR
Phys 125 and Phys 126
OR
Phys 150 and Phys 151

Natural Science .................................................................... 4 hrs

CIS Core ............................................................................. 32 hrs
Eight computer and information science courses are required of
Computer Science concentrators
CIS 150 Computer Science I .............................................. 4 hrs
CIS 200 Computer Science II ............................................ 4 hrs
CIS 275 Discrete Structures .............................................. 4 hrs
CIS 310 Computer Organization and Assembly Language ................................................. 4 hrs
CIS 3501 Data Structures and Algorithm Analysis for Software Engineers ......................... 4 hrs
CIS 375 Software Engineering I ....................................... 4 hrs
CIS 427 Computer Networks and Distributed Process ............................................... 4 hrs
CIS 450 Operating Systems .............................................. 4 hrs

Software Engineering Requirements .................................... 17 hrs
CIS 285 Software Engineering Tools ................................ 2 hrs
CIS 376 Software Engineering II ....................................... 4 hrs
CIS 421 Database Systems .............................................. 4 hrs
CIS 476 Software Architecture and Design Patterns ........ 3 hrs
CIS 4961 Design Seminar for Software Engineers I ........ 2 hrs
CIS 4962 Design Seminar for Software Engineers II ..... 2 hrs

One Application Sequence ............................................... 6 to 8 hrs
Information Systems Sequence
CIS 4261 Information Systems Analysis & Design I ........... 4 hrs
CIS 4262 Information Systems Analysis & Design II .......... 4 hrs

Computer Game Design Sequence
CIS 487 Computer Game Design and Implementation I ..................... 3 hrs
CIS 488 Computer Game Design and Implementation II ................. 3 hrs

Web Engineering Sequence
CIS 421 Database Systems .............................................. 4 hrs
CIS 435 Web Technology ................................................ 3 hrs

Technical Electives ........................................................... 6-8 hrs
Six to eight credits from the following:
CIS 381 Industrial Robots ................................................ 3 hrs
CIS 400 Programming Languages .................................. 4 hrs
CIS 421 Database Systems .............................................. 4 hrs
CIS 4261 Information Systems Analysis & Design I ....... 4 hrs
CIS 4262 Information Systems Analysis & Design II ....... 4 hrs
CIS 435 Web Technology ................................................ 3 hrs
CIS 451 Computer Graphics ........................................... 3 hrs
CIS 474 Compiler Design ............................................... 3 hrs
CIS 479 Artificial Intelligence ......................................... 3 hrs
CIS 487 Computer Game Design and Implementation I


principles and methods of electrical engineering, including a
good knowledge of circuits, communications, computers and
control systems, and the ability to apply these in systems
products, and applications.
6) Graduate computer engineers with a strong background in
computer engineering with a good balance between software
and hardware skills, including software development, design of
digital systems, microprocessors, embedded systems, real-time
systems and digital communication networks.

Program Outcomes

The Computer Engineering program is designed to demonstrate
that their graduates have:
a. a strong background in mathematics and physical sciences and
a good understanding of their importance to electrical and
computer engineering disciplines
b. an ability to formulate programs, design experiments, collect,
analyze, and interpret data and use this knowledge to design a
system, component or process to meet desired needs
c. an ability to work cooperatively on multidisciplinary projects
d. an understanding of professional and ethical responsibility
e. proficiency in oral and written communications
f. the broad education necessary to understand contemporary
issues and the global impact of engineering and technological
developments in societal context
g. a clear understanding that lifelong learning is essential for
sustained professional development
h. an ability to use the techniques, skills and modern engineering
tools necessary for engineering practice
i. an ability to recognize a problem, formulate different strategies
to understand the problem and use engineering principles to
solve the problem
j. an ability to apply mathematical methods and physical
properties of components and devices to develop an in-depth
understanding of circuits, electronics, computers, communications and control systems (for students in the CE
program).

CONCENTRATION REQUIREMENTS
for Computer Engineering Programs

Computer Engineering Program for Students Admitted as
Freshmen (124 hours minimum)

Humanities and Behavioral Sciences .......................... 24 hrs

Basic Preparation for Engineering .......................... 40 hrs
Chemistry I ............................................. 4 hrs
Calculus I, II, III .................................... 11 hrs
Differential Equations .................................. 3 hrs
Linear Algebra ....................................... 2 hrs
Discrete Mathematics .................................. 4 hrs
General Physics I, II .................................. 8 hrs
Upper-level non-ECE Engineering Elective ............... 3 hrs
ENGR 100 Introduction to Engineering and Computers 2 hrs
IMSE 317 Engineering Probability and Statistics ....... 3 hrs

Core Courses .................................................. 53 hrs
ECE 210 Circuits ........................................... 4 hrs
ECE 270 Computer Fundamentals ......................... 4 hrs
ECE 273 Digital Systems .................................. 4 hrs
ECE 311  Electronics I...........................................4 hrs  
ECE 370  Software Methods in CE..........................4 hrs  
ECE 372  Introduction to Microprocessors..................4 hrs  
ECE 375  Computer Architecture.............................4 hrs  
ECE 471  Computer Networks..................................4 hrs  
ECE 473  Embedded System Design...........................4 hrs  
ECE 475  Computer Hardware..................................4 hrs  
ECE 478  Operating Systems..................................3 hrs  
ECE 498  Senior Engineering Design........................6 hrs  
CIS 375  Software Engineering I.............................4 hrs  

Approved Professional/Science Electives......................7 hrs
Please contact the ECE Department for more information on approved electives.

### Electrical Engineering

Electrical engineering is a dynamic and progressive branch of the engineering profession that has pioneered the development of the modern science-oriented engineering curriculum. Today’s electrical engineer is a leader among those who work toward making our world better. The electrical engineering program prepares a student to select from a broad range of career possibilities in design, development, manufacturing, sales, administration, and research.

Fundamentally, electrical engineering deals with the controlled application of electricity to the solution of real problems. This includes motors, transistors, integrated circuits, and lasers as well as larger physical systems for which these are components: electrical power generation and distribution systems, communication networks, and computers. It is also concerned with the flow of electricity in the human body and with the transmission of signals between planets.

Whether in the design and construction of systems to televise pictures from the planets or to insure the reliable completion of a phone call to a next-door neighbor, whether to map the geography and the resources of the earth from a satellite or to display harmlessly the internal anatomy of a living being for medical diagnosis, electrical engineering is intimately involved with almost every realm of human endeavor.

Measurement, control, computation, communication, energy conversion in these and other technical areas, provide students an excellent preparation for positions of leadership in a world where science, engineering, and human relations are of basic importance in improving the quality of life.

The Electrical Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

### Professional Educational Objectives

1. Graduate engineers who have good design skills, including the ability to formulate problems, design experiments, collect, analyze and interpret data; evaluate material, computational and personnel resources needed to solve typical problems, work in multidisciplinary teams, and communicate effectively.
2. Graduate engineers with the ability to pursue higher education as well as a research career in industry and academia.
3. Graduate engineers who have a good awareness of professional responsibility, ethics, and the need to engage in lifelong learning.
4. Graduate engineers who are well prepared to meet the needs of the region, including automotive, construction, power, and defense-related industries, consistent with the institution’s mission.
5. Graduate electrical engineers that are well grounded in the principles and methods of Electrical Engineering, including a good knowledge of Circuits, Communications, Computers, and Control Systems, and the ability to apply these in systems products and applications.

### Program Outcomes

The Electrical Engineering program is designed to demonstrate that their graduates have:

a. a strong background in mathematics and physical sciences and a good understanding of their importance to electrical and computer engineering disciplines
b. an ability to formulate programs, design experiments, collect, analyze, and interpret data and use this knowledge to design a system, component or process to meet desired needs
c. an ability to work cooperatively on multidisciplinary projects
d. an understanding of professional and ethical responsibility
e. proficiency in oral and written communications
f. the broad education necessary to understand contemporary issues and the global impact of engineering and technological developments in societal context
g. a clear understanding that lifelong learning is essential for sustained professional development
h. an ability to use the techniques, skills and modern engineering tools necessary for engineering practice
i. an ability to recognize a problem, formulate different strategies to understand the problem and use engineering principles to solve the problem
j. an ability to apply mathematical methods and physical properties of components and devices to develop an in-depth understanding of circuits, electronics, computers, communications and control systems (for students in the EE program).
k. an ability to participate in and contribute to Engineering projects both individually and as a part of a team.

### CONCENTRATION REQUIREMENTS

**for Electrical Engineering Programs**

**Electrical Engineering Program for Students Admitted as Freshmen (124 hours minimum)**

**Humanities and Behavioral Sciences**..........................24 hrs

**Basic Preparation for Engineering**..........................40 hrs
Chemistry ..................................................................4 hrs
Calculus I, II, III....................................................11 hrs
Differential Equations..............................................3 hrs
Linear Algebra........................................................2 hrs
General Physics I, II.............................................8 hrs
Upper-Level Physics Elective.................................3 hrs
ENGR 100  Introduction to Engineering and Computers ......................................................2 hrs
ME 265  Applied Mechanics.................................4 hrs
IMSE 317  Engineering Probability and Statistics......3 hrs

**Core Courses** ......................................................49 hrs
ECE 210  Circuits .............................................4 hrs
ECE 270  Computer Methods in ECE I.....................4 hrs
ECE 273  Digital Systems.................................4 hrs
Industrial and Systems Engineering

Industrial and systems engineering is concerned with the study and design of integrated systems of people, materials, equipment and their interaction with the surrounding environment. Historically, this field developed in the manufacturing industries where industrial engineers applied their engineering knowledge and management techniques to design and efficiently operate industrial and business systems. But the advent of the modern digital computer enabled industrial engineers to apply their quantitative methods and organizational skills to a multitude of large-scale systems in addition to industrial systems. Today, industrial and systems engineers are being called upon, with increasing frequency, to design and improve the performance of systems in a wide spectrum of fields such as the judicial, transportation, environmental controls, and health care. Thus, their scope is not limited to tackling industrial problems alone, but extends to finding solutions for the endless variety of problems of modern industrial society.

The field of study bridges engineering knowledge, management principles, physical and social sciences, and the life sciences. Simply put, it stresses the scientific and technological approach to the design, development, and the optimal operation of both large-scale and small-scale systems. The industrial and systems engineer is a versatile expert whose talents are vigorously sought, and will be for a long time to come, by various sectors of society.

UNDERGRADUATE DEGREE PROGRAM

The undergraduate program in industrial and systems engineering provides first a strong basis in the foundations of engineering: natural and physical sciences, mathematics, socioeconomic-cultural background, the behavioral sciences and the basic engineering sciences which begin the emphasis on problem solving. Then, the program develops the intermediate bases on which industrial systems and other systems engineering work is founded. This includes studies in computer organization and data handling systems, production and manufacturing systems, system modeling and optimization, organization and decision theory, and human factors engineering. Contemporary operations research methods are progressively developed and applied through systems-design case studies ending with a capstone design experience.

The undergraduate degree program in Industrial and Systems Engineering is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

An unusual opportunity is available to obtain considerable practical expertise in the student’s specialty for those who elect the internship option.

Students who do well in their undergraduate program are encouraged to consider graduate work and may take some of their electives in preparation for graduate study. Information and assistance regarding fellowships and assistantships for graduate study may be obtained from the Dean, College of Engineering and Computer Science, or from the department chairperson.

PROGRAM EDUCATIONAL OBJECTIVES

The objective of the program is to provide high quality education in the field of Industrial and Systems Engineering so that its graduates will be well prepared to deal with current and future changing needs of manufacturing and service industry. The graduate is to be not only well prepared to immediately enter the field, but also to pursue graduate studies for added preparation if he/she qualifies and desires. Furthermore, students are trained to develop their potential for innovation, communication skills, and leadership skills necessary for a successful career.

PROGRAM OUTCOMES

To achieve the educational objectives, the graduates of the program will have:

a. an ability to apply knowledge of mathematics, sciences and engineering
b. an ability to design and conduct experiments, as well as to analyze and interpret data
c. an ability to design a system, component or process to meet desired needs
d. an ability to function on multidisciplinary teams
e. an ability to identify, formulate and solve engineering problems
f. an understanding of professional and ethical responsibility
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solutions in a global and society context
i. a recognition of the need for, and an ability to, engage in lifelong learning and graduate studies
j. a knowledge of contemporary issues
k. an ability to use the techniques, skills and modern engineering tools necessary for engineering practice
l. an ability to develop innovative solutions to engineering problems
m. an ability to lead a team to achieve desired results

CONCENTRATION REQUIREMENTS

A candidate for the degree Bachelor of Science in Engineering (Industrial and Systems Engineering) is required to pursue...
scholastic quality and to complete satisfactorily the following program of study:

**Industrial and Systems Engineering Program for Students Admitted as Freshmen (128 hours minimum)**

*Information for students planning to transfer to UM-D from community, colleges or from four-year colleges and universities is given under Admission Information in the General Information section and under Undergraduate Requirements in the Engineering section of this Catalog.

**Humanities and Behavioral and Social Sciences**
Courses that satisfy the UM-D Campus Distribution Requirement and ABET requirements for engineering students, additional electives in the humanities, behavioral sciences, and social sciences, including composition courses ............... 24 hrs

<table>
<thead>
<tr>
<th>Basic Requirements</th>
<th>50 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 100 Introduction to Engineering and Computers</td>
<td>2 hrs</td>
</tr>
<tr>
<td>ENGR 126 Engineering Computer Graphics</td>
<td>2 hrs</td>
</tr>
<tr>
<td>MATH 115 Calculus I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>MATH 116 Calculus II</td>
<td>4 hrs</td>
</tr>
<tr>
<td>MATH 205 Calculus III for Engineers</td>
<td>3 hrs</td>
</tr>
<tr>
<td>MATH 216 Differential Equations</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHEM 144 General Chemistry I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>CHEM 146 General Chemistry IIB</td>
<td>4 hrs</td>
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<tr>
<td>OR BIOL 103 Anatomy and Physiology I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>PHYS 150 General Physics I</td>
<td>4 hrs</td>
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<tr>
<td>PHYS 151 General Physics II</td>
<td>4 hrs</td>
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</tbody>
</table>

**Programming and Core Engineering**
14 hrs

<table>
<thead>
<tr>
<th>Programming and Core Engineering</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>IMSE 255 Computer Programming for Engineers</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ENGR 250 Principles of Engineering of Materials</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ECE 305 Introduction to Electrical Engineering</td>
<td>4 hrs</td>
</tr>
<tr>
<td>ME 265 Applied Mechanics</td>
<td>4 hrs</td>
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</tbody>
</table>

**Professional Requirements**
41 hrs

<table>
<thead>
<tr>
<th>Professional Requirements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSE 3005 Introduction to Operations Research</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 317 Engineering Probability and Statistics</td>
<td>3 hrs</td>
</tr>
<tr>
<td>IMSE 382 Manufacturing Processes</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 421 Engineering Economy and Decision Analysis</td>
<td>3 hrs</td>
</tr>
<tr>
<td>IMSE 4425 Human Factors and Ergonomics</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4545 Information Systems Design</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4585 Simulation in Systems Design</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4675 Six Sigma and Statistical Process Improvement</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4795 Production, Inventory Control, and Lean Mfg</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4951 Design Project I</td>
<td>2 hrs</td>
</tr>
<tr>
<td>IMSE 4952 Design Project II</td>
<td>2 hrs</td>
</tr>
<tr>
<td>ENGR 400 Business Methods for Engineers</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

**Electives**
10-11 hrs

Choose 3 to 4 courses from the following

<table>
<thead>
<tr>
<th>Electives</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSE 351 Data Structures and File Processing</td>
<td>3 hrs</td>
</tr>
<tr>
<td>IMSE 381 Industrial Robots</td>
<td>3 hrs</td>
</tr>
<tr>
<td>IMSE 453 Data Communications/Distributed Processing</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 456 Introduction to Data Base Systems</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4745 Facilities Design</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4815 Manufacturing Processes II</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4825 Control, Instrumentation, and Metrology</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 4835 Computer-Aided Process Design and Mfg</td>
<td>4 hrs</td>
</tr>
<tr>
<td>IMSE 486 Design for Manufacturing and Assembly</td>
<td>3 hrs</td>
</tr>
<tr>
<td>OB 354 Behavior in Organization</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ACC 297 Financial Accounting Concepts</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ACC 298 Financial Accounting</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ACC 299 Managerial Accounting</td>
<td>3 hrs</td>
</tr>
<tr>
<td>OB 401 Managerial Skills Development</td>
<td>3 hrs</td>
</tr>
<tr>
<td>OB 402 Organizational Change and Development</td>
<td>3 hrs</td>
</tr>
<tr>
<td>LE 452 The Legal Environment for Business</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ENT 400 Introduction to Entrepreneurship</td>
<td>3 hrs</td>
</tr>
<tr>
<td>HRM 405 Human Resource Policy/Administration</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

**Manamfacturing Engineering**

Manufacturing Engineering is concerned with designing, building, planning, operating, and managing economical production systems for discrete manufacturing. Manufacturing engineers need to have a thorough knowledge of materials and manufacturing processes. They should also be able to design, operate and manage integrated systems that include people, materials, machine tools, material handling equipment, robots, quality measuring equipment, controls and computers.

Traditionally, there has been a strong division between manufacturing engineering and design engineering. Today, however, the boundary between these two functions is narrowing. Both groups work together in teams to assure soundness of design and manufacturability of the product. Manufacturing engineers must understand engineering materials and design besides having expertise in manufacturing tools and processes, systems and technology. They design and evaluate the capabilities of manufacturing tools and processes, and interact with design engineers during the development of product specifications and tolerances.

Today’s manufacturing equipment is becoming increasingly computer-based. Manufacturing engineers must have a working knowledge of programmable equipment, as well as its interfaces with control hardware. They must understand the multi-layered control architecture of the integrated factory, and the computer-based technologies that enable it.

**UNDERGRADUATE DEGREE PROGRAM**

The undergraduate program in manufacturing engineering provides first a strong foundation in all of the basic ingredients of engineering; the natural and physical sciences, mathematics, socioeconomic-cultural background, the behavioral sciences and finally the basic engineering sciences that begin the development of problem-solving skills. Then, the program develops intermediate bases on which manufacturing engineering and systems are founded. This includes studies in engineering materials, manufacturing processes, probability and statistics, electronics, computers, human factors/ergonomics and operations research. The program then provides for the detailed study of several advanced topics related to process, assembly, and product
engineering; manufacturing productivity and quality; and manufacturing integration methods and system design. Excellent laboratory facilities are available for students to conduct experiments and measure process variables.

Finally, students are required to complete a project dealing with the design of a production system to manufacture a product. The student has to address issues related to technological cost, aesthetics, feasibility, reliability, safety and ethics wherever applicable.

The degree program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

This program is offered in late-afternoon and evening classes on campus. It will also be available in a “distance learning” mode whenever sufficient demand exists.

An unusual opportunity is available to obtain considerable practical experience in manufacturing industries for those who elect the internship option.

Students who do well in their undergraduate program are encouraged to consider graduate work. Information and assistance regarding fellowships and assistantships for graduate studies may be obtained from the Dean, College of Engineering and Computer Science, or from the department chairperson.

PROGRAM EDUCATIONAL OBJECTIVES

The objective of the program is to provide high-quality education in the field of Manufacturing Engineering so that its graduates will be well prepared to deal with current and future needs of the manufacturing industries. The graduate is to be well prepared for immediate entry into the field, and prepared to pursue graduate studies if he/she qualifies and desires. Students are also trained to develop their potential for innovation, communication skills, and leadership skills necessary for a successful career.

PROGRAM OUTCOMES

To achieve the educational objectives, the graduates of the program will have:

a. an ability to apply knowledge of mathematics, sciences and engineering
b. an ability to design and conduct experiments, as well as to analyze and interpret data
c. an ability to design a system, component, or process to meet desired needs
d. an ability to function on multidisciplinary teams
e. an ability to identify, formulate and solve engineering problems
f. an understanding of professional and ethical responsibility
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solutions in a global and society context
i. a recognition of the need for, and an ability to, engage in lifelong learning and graduate studies
j. a knowledge of contemporary issues
k. an ability to use the techniques, skills and modern engineering tools necessary for engineering practice
l. an ability to develop innovative solutions to engineering problems
m. an ability to lead a team to achieve desired results

CONCENTRATION REQUIREMENTS

A candidate for the degree Bachelor of Science in Engineering (Manufacturing Engineering) is required to pursue scholastic quality and to complete satisfactorily the following program of study:

Manufacturing Engineering Program for Students Admitted as Freshmen (128 hours minimum)*

*Information for students planning to transfer to UM-D from community, colleges or from four-year colleges and universities is given under Admission Information in the General Information section and under Undergraduate Requirements in the Engineering section of this Catalog.

Humanities and Behavioral and Social Sciences
Courses that satisfy the UM-D Campus Distribution Requirement and ABET requirements for engineering students, additional electives in the humanities, behavioral sciences, and social sciences, including composition courses ........24 hrs

Program Requirements

Basic Requirements for Engineering ..................................36 hrs
MATH 215 Calculus I .................................................4 hrs
MATH 216 Calculus II ..............................................4 hrs
MATH 217 Linear Algebra .........................................2 hrs
MATH 218 Differential Equations .................................3 hrs
MATH 219 Matrix Algebra .......................................2 hrs
CHEM 144 General Chemistry I ....................................4 hrs
CHEM 145 General Chemistry II ..................................4 hrs
PHYS 141 General Physics I .....................................4 hrs
PHYS 142 General Physics II ....................................4 hrs
ENGR 100 Introduction to Engineering and Computers .......2 hrs
ENGR 126 Introduction to Engineering and Computers .......2 hrs
MATH 115 Calculus I .................................................4 hrs
MATH 116 Calculus II ..............................................4 hrs

Programming and Core Engineering ................................18 hrs
IMSE 255 Computer Programming for Engineers ............3 hrs
IMSE 265 Applied Mechanics ....................................4 hrs
ME 230 Thermodynamics .......................................4 hrs
ME 265 Applied Mechanics ....................................4 hrs
ECE 305 Introduction to Electrical Engineering ............4 hrs

Professional Requirements .........................................45 hrs
IMSE 3005 Introduction to Operations Research .............4 hrs
IMSE 317 Engineering Probability and Statistics ...........3 hrs
IMSE 318 Manufacturing Processes ............................4 hrs
IMSE 421 Engineering Economy and Decision Analysis .......3 hrs
IMSE 4425 Human Factors and Ergonomics .................4 hrs
IMSE 4675 Six Sigma and Statistical Process Improvement ......4 hrs
IMSE 4795 Production, Inventory Control, and Lean Mfg ......4 hrs
IMSE 4815 Manufacturing Processes II .........................4 hrs
IMSE 4825 Control, Instrumentation, and Metrology .......4 hrs
IMSE 4835 Computer-Aided Process Design and Mfg ........4 hrs
IMSE 4951 Design Project I .....................................2 hrs
ENGR 400 Introduction to Mechanical Engineering ...........3 hrs

Technical Electives from the following ..........................3 hrs
IMSE 351 Data Structures and File Processing ...............3 hrs
IMSE 381 Industrial Robots .....................................3 hrs
IMSE 454 Information Systems Design .........................3 hrs
IMSE 4545 Information Systems Design .......................4 hrs
IMSE 4585  Simulation in System Design  ...............  4 hrs
IMSE 4745  Facilities Design .................................  4 hrs
IMSE 486  Design for Assembly and Manufacturing  ...  3 hrs
IMSE 488  Metal Forming Processes ..........................  3 hrs
ME 484  Manufacturing Polymeric Composite
        Materials ..............................................  3 hrs

Dual Degree in Industrial and Systems Engineering

Students must take at least 15 hours beyond the 128 hours needed for the Manufacturing Engineering degree including IMSE 4545 and IMSE 4585 from the courses listed in the I&SE curriculum.

Mechanical Engineering

The mechanical engineering field is one of the oldest of the several engineering fields. It is also one of the broadest in scope, for it is not identified with nor restricted to any particular technology (like nuclear engineering), nor to any particular vehicle (like land-based automobiles), nor to any particular device or particular system. It is, in fact, concerned with so many areas of modern technology that the tasks and challenges of the mechanical engineer are most interesting and varied.

The field is logically associated with mechanical things, but this can lead to a restrictive image. For example, one often associates mechanical engineers with automobiles and, thus, with engines. To the non-engineer this is an acceptable association that implies a knowledge of pistons and carburetors. As engineers know, this picture is very shallow; the breadth of understanding implied when one thinks of designing an engine challenges the imagination. Automobile engines are just one of many devices that convert energy into useful work. To understand this conversion process is also to understand the basic principles of energy conversion applicable to solar engines, jet engines, gas turbines, fuel cells, ship-propulsion systems, rocket engines, hydro-electric power plants, and new kinds of converters not yet developed. The mechanical engineer possesses this universally applicable background in thermodynamics, heat transfer, fluid mechanics, aerodynamics, and combustion theory that is basic to all such systems. The mechanical engineer also has a similar understanding of materials from steels to textiles to biological materials to the latest plastics and the most exotic high temperature composites. The point is that everything that is built is achieved by applying these same principles and using these same materials.

To understand the dynamic nature of most mechanical devices and systems requires a thorough mastery of forces and stresses, of vibrations and acoustics, of shock and impact, of deformation and fracture. Yet, these are basic to virtually every product devised by people or found in nature. Automobiles are just one small example of where they are important.

Thus, the mechanical engineer is a designer who creates physical things of all sorts because the mechanical engineer’s breadth of background is everywhere applicable. The mechanical engineer produces machines to build other machines, and thus is in the forefront of new manufacturing technology. In this role the engineer is faced with the task of building new things created by all kinds of engineers. This exposes the engineer to other technologies, and the mechanical engineer must be able to grasp their essence easily. For example, as the builder of energy devices to tap the oceans’ resources, the mechanical engineer is simultaneously one of the oceanographers, one of the chemists, one of the environmentalists, as well as the master designer.

The mechanical engineer is comfortable working with people as well as with machines. For example, the role in vehicle design is that of making technical advances in performance, efficiency, and cost while simultaneously meeting the life and comfort requirements of operators and passengers. Logically, then, the mechanical engineer is active in the new fields of biomechanics, biomaterials, biomedical fluid mechanics and heat transfer, air and water pollution, water desalination, sensory aids, and prostheses.

UNDERGRADUATE DEGREE PROGRAM

The undergraduate program in mechanical engineering provides first a strong foundation in all of the basic ingredients of engineering: the natural and physical sciences, mathematics, a comprehensive socio-economic-cultural background, the behavioral sciences, and finally the basic engineering sciences that begin the development of problem-solving skills.

The program provides for the detailed study of several advanced topics, including fluid machinery, heat transfer, manufacturing processes, vibration theory, stress analysis, metallurgy, electrical science, and control systems.

The greatest strength of the undergraduate program is the project-oriented design work that requires the student to organize thinking of the multitude of factors on which every design is based – performance, efficiency, esthetics, cost, reliability, safety, reparability, etc.– and to reach sound conclusions that the student must be prepared to defend and implement. This is the art of engineering, and its study permeates the courses and laboratories of the upper-level instruction in this field.

For those who choose the cooperative education option, it is possible to develop a more thorough understanding of how design factors are considered and how decisions are implemented in industrial organizations.

The undergraduate degree program in Mechanical Engineering is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

Students who do well in their undergraduate program are encouraged to consider graduate work and may take some of their electives in preparation for graduate study. Information and assistance regarding fellowships and assistantships for graduate study may be obtained from the Dean, College of Engineering and Computer Science, or from the department chairperson.

PROGRAM EDUCATIONAL OBJECTIVES

The broad objective of the program is to provide an educational curriculum whose graduates will be technically skilled and socially responsible mechanical engineers. Necessary to this broad objective is that the graduates possess strong skills in analysis, computation, and experimentation, particularly as these skills impact mechanical engineering systems, design, and application. Complementary to these skills are respect for engineering ethical behavior and understanding of the natural interaction of the profession with society. The graduates must also be adept communicators and team members and be prepared for work in the field or graduate studies.

a. an ability to apply knowledge of mathematics, sciences and engineering
b. an ability to design and conduct experiments, as well as to analyze and interpret data
c. an ability to specify, model, and design a system, component or
process to meet desired needs
d. an ability to function on multidisciplinary teams
e. an ability to identify, formulate and solve engineering problems
f. an understanding of professional and ethical responsibility
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solutions in a global and society context, including environmental and economical impacts
i. a recognition of the need for, and an ability to, engage in lifelong learning
j. a knowledge of contemporary issues
k. an ability to use the techniques, skills and modern engineering tools, such as information technology, necessary for engineering practice

CONCENTRATION REQUIREMENTS

A candidate for the degree BSE in Mechanical Engineering is required to pursue scholastic quality and to complete satisfactorily the following program of study.

Mechanical Engineering Program for Students Admitted as Freshmen (128 hours)*

*Information for students planning to transfer to UM-D from community colleges or from four-year colleges and universities is given under Admission Information in the General Information section and under Undergraduate Requirements in the Engineering section of this Catalog.

Humanities and Behavioral and Social Sciences

Courses that satisfy the UM-D Campus Distribution and ABET requirements for Engineering students, additional electives in the humanities, behavioral sciences, and social sciences, including composition* ................................................................. 24 hrs

*Specific information can be obtained from the program advisor.

Basic Preparation for Engineering ........................................ 50 hrs
Chemistry 144, 146 .................................................. 8 hrs
Calculus I, II, III .................................................. 11 hrs
Differential Equations ............................................. 3 hrs
Linear Algebra & Matrices .......................................... 2 hrs
General Physics I, II .............................................. 8 hrs
ENGR 100 Introduction to Engineering ......................... 2 hrs
ENGR 126 Engineering Computer Graphics .................. 2 hrs
ENGR 216 Computer Methods for Engineers ................. 2 hrs
ENGR 250 Principles of Engineering Material ................ 3 hrs
ME 230 Thermodynamics ......................................... 4 hrs
ME 260 Design Stress Analysis ................................... 4 hrs

Professional Subjects and Program Electives ..................... 38 hrs
ME 325 Thermal Fluid Sciences I .............................. 4 hrs
ME 345 Engineering Dynamics .................................. 4 hrs
ME 349 Instrumentation Measurement Systems ............. 3 hrs
ME 3601 Design and Analysis of Machine Elements ........ 4 hrs
ME 364 Probability, Statistics and Reliability in Machine Design .............................................. 3 hrs
ME 375 Thermal Fluid Sciences II ............................. 4 hrs
ME 379 Thermal Fluid Laboratory ................................ 3 hrs
ME 381 Manufacturing Processes I .............................. 4 hrs
ME 442 Control Systems Analysis and Design ................ 4 hrs

ECE 305 Introduction Electrical Engineering .............. 4 hrs
IMSE 421 Engineering Economics ............................. 3 hrs

Senior Design Project ........................................... 8 hrs
ME 4671 Senior Design Project ................................. 4 hrs
ME Design Electives .......................................... 4 hrs
Senior Additional Electives .................................... 3 hrs

Additional Electives ............................................. 5 hrs

Total ........................................................................ 128 hrs

Engineering Mathematics
(Concurrent Degree)

The program in engineering mathematics at UM-D provides the student with an opportunity to extend his/her knowledge of the language of the scientist to become more proficient in the application of mathematical reasoning to the formulation and solution of scientific problems in engineering. This program recognizes the ever-increasing demand that the changing physical and economic world imposes on the engineering profession. This program seeks to make available to the students the knowledge with which they will be better able to understand and to create the complex mathematical models that represent the world.

A current CECS undergraduate student majoring in Computer Engineering, Electrical Engineering, Industrial and Systems Engineering, Manufacturing Engineering, or Mechanical Engineering may pursue a concurrent Bachelor of Science in Engineering (BSE) degree in Engineering Mathematics. This makes it possible for an engineering student to earn two degrees at the same time: a BSE degree in Engineering Mathematics and a BSE degree in their principal engineering major. Both degrees must be earned at the same time.

The Engineering Mathematics degree requires a minimum of 14 credit hours of coursework in advanced mathematics beyond the 16 credits of mathematics already required in the degree program of the student’s principal engineering major. Approved courses for the BSE in Engineering Mathematics concurrent degree include:

MATH 404 Dynamical Systems ..................................... 3 hrs
MATH 405 Integral Equations ..................................... 3 hrs
MATH 412 First Course in Modern Algebra .................... 3 hrs
MATH 413 Linear Algebra* ....................................... 3 hrs
MATH 420 Stochastic Processes** ................................ 3 hrs
MATH 425 Mathematical Statistics II .......................... 3 hrs
MATH 451 Advanced Calculus I .................................. 3 hrs
MATH 452 Advanced Calculus II .................................. 3 hrs
MATH 454 Fourier Series and Boundary Value Problems ....... 3 hrs
MATH 462 Mathematical Modeling ................................ 3 hrs
MATH 472 Introduction to Numerical Analysis .............. 3 hrs
MATH 473 Matrix Computation ................................... 3 hrs
MATH 513 Linear Algebra with Applications .................. 3 hrs
MATH 555 Functions of a Complex Variable with Applications .................................................. 3 hrs

*Note: Credit for only one from MATH 413 and MATH 513.
** Note: Credit for only one from MATH 420 and IMSE 506.

The following CECS graduate courses may also be used towards the Engineering Mathematics degree: ECE 555, 560, 567,
CIS Mathematics (Concurrent Degree)

Current CECS undergraduate students majoring in Computer and Information Science (CIS) or in Software Engineering (SE) may pursue a concurrent Bachelor of Science (BS) degree in CIS Mathematics. This makes it possible for CECS students to earn two degrees at the same time: a principal BS degree in CIS or in SE and a separate concurrent BS degree in CIS Mathematics. Both degrees must be earned at the same time. The courses for the concurrent BS degree in CIS cannot be used as elective credits for the principal degree, but must be taken in addition to the 120 credits required for the BS degree in CIS or the BS degree in SE.

The BS in CIS Mathematics degree requires a minimum of thirty credits in mathematics courses, as follows:

<table>
<thead>
<tr>
<th>Fourteen credits of mathematics courses required for the BS degree in CIS or in SE*:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 115  Calculus I  ...........................................  4 hrs</td>
</tr>
<tr>
<td>MATH 116  Calculus II  ...........................................  4 hrs</td>
</tr>
<tr>
<td>MATH 217  Introduction to Matrix Algebra ..................................  2 hrs</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>MATH 227  Introduction to Linear Algebra ..................................  3 hrs</td>
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<tr>
<td>AND</td>
</tr>
<tr>
<td>CIS 275  Discrete Structures ...........................................  4 hrs</td>
</tr>
</tbody>
</table>

*Note: Students may elect MATH 227 instead of MATH 217 but only 14 credits from the courses above will count toward the degree.

<table>
<thead>
<tr>
<th>Six credits from the following two courses*:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 205  Calculus III for Engineering Students ..................................  3 hrs</td>
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<tr>
<td>OR</td>
</tr>
<tr>
<td>MATH 215  Calculus III* ...........................................  4 hrs</td>
</tr>
<tr>
<td>MATH 216  Differential Equations ...........................................  3 hrs</td>
</tr>
</tbody>
</table>

*Note: Students may elect MATH 215 instead of MATH 205 but only 6 credits from the courses above will count toward the degree.

**Note: Calculus III is required for the SE degree and for the CIS-CS option degree; it must also be taken by CIS-IS option students as part of the requirements for the concurrent BS degree in CIS Mathematics.

A minimum of ten credits from the following courses:

| MATH 315  Applied Combinatorics ...........................................  3 hrs |
| MATH 372  Computing with Mathematica ...........................................  3 hrs |
| MATH 390  "Topics in Mathematics" ...........................................  1-3 hrs |
| MATH 395  Elementary Number Theory ...........................................  3 hrs |
| MATH 404  Dynamical Systems ...........................................  3 hrs |
| MATH 405  Integral Equations ...........................................  3 hrs |
| MATH 412  First Course in Modern Algebra ...........................................  3 hrs |
| MATH 413  Linear Algebra* ...........................................  3 hrs |
| MATH 420  Stochastic Processes** ...........................................  3 hrs |
| MATH 425  Mathematical Statistics II ...........................................  3 hrs |
| MATH 451  Advanced Calculus I ...........................................  3 hrs |
| MATH 452  Advanced Calculus II ...........................................  3 hrs |
| MATH 454  Fourier Series and Boundary Value Problems ...........................................  3 hrs |
| MATH 455  Functions of a Complex Variable with Applications*** ...........................................  3 hrs |
| MATH 462  Mathematical Modeling ...........................................  3 hrs |
| MATH 472  Introduction to Numerical Analysis ...........................................  3 hrs |
| MATH 473  Matrix Computation ...........................................  3 hrs |

*Prior approval needed
**Credit for only one course from MATH 413, MATH 513, MATH 523
***Credit for only one course from MATH 420, IMSE 506.
****Credit for only one course from MATH 455, MATH 555.

The following CECS graduate courses may also be used toward the CIS Mathematics degree: CIS 451, 532, 551, 552; ECE 555, 560, 567, 580; IMSE 505, 506, 510, 511; ME 518, 519, provided that:

a. A minimum of nine hours is taken from the Mathematics department (MATH) courses in list C above, and
b. Permission to take a graduate course is granted.

Other Programs

Graduate Programs

A Master of Science in Engineering (MSE) degree is offered in automotive systems, computer engineering, engineering management, electrical, industrial and systems, manufacturing systems, and mechanical engineering. A Master of Science (MS) degree is offered in computer and information science. Also, a MSE/MBA offered jointly with Industrial and Manufacturing Systems and the School of Management. See the UM-D Graduate Catalog for admission requirements and complete program and course descriptions. A graduate course listing is included in this publication.

Changes in Policies and Rules

The College of Engineering and Computer Science reserves the right to effect changes in curricula, policies, and rules. Students should consult with the CECS Records and Advising Office (2000 Engineering Complex) for the applicable rules at the time of admission.

Undergraduate Course Offerings

A brief description of each course offered by the College of Engineering and Computer Science may be found in the following list. Other courses are described in the School of Management and in the College of Arts, Sciences, and Letters sections of this Catalog.
## Computer and Information Science (CIS)

### COURSE OFFERINGS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 125</td>
<td>Survey of Computer Science</td>
<td>3.000</td>
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<tr>
<td></td>
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<td></td>
<td>A survey of computer science topics, including: history of computing, office productivity software, the internet, HTML, JavaScript, web design, algorithms, assembler and compilers, gates and logic design, models of computation, artificial intelligence and expert systems, computing ethics, privacy issues, intellectual property. No credit for CIS majors. (F,W,S).</td>
</tr>
<tr>
<td>CIS 150</td>
<td>Computer Science I</td>
<td>4.000</td>
<td>MATH 115*</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>An introduction to structured computer programming covering problem formulation, algorithm development, the C++ programming language, program testing and debugging, capabilities and elements of computer organization, and object-oriented software methodologies. (F,W,S).</td>
</tr>
<tr>
<td>CIS 200</td>
<td>Computer Science II</td>
<td>4.000</td>
<td>(CIS 150 or IMSE 150 or CCM 150) and MATH 115 and CIS 175*</td>
</tr>
<tr>
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<td>Techniques for the design, writing, testing, and debugging of larger programs, and an introduction to data structures. Topics include pointers, templates, inheritance, files, streams, data abstraction, testing and verification, recursion, stacks, queues, linked lists, sorting, searching, and professional ethics. (F,W,S).</td>
</tr>
<tr>
<td>CIS 205</td>
<td>C Programming</td>
<td>3.000</td>
<td>ENGR 100 or (MATH 105 or MPLS 113)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>A study of the C programming language. Students write several programs illustrating the use of C in science, engineering, and business. No credit for CIS Majors.</td>
</tr>
<tr>
<td>CIS 290</td>
<td>Topics in Programming Languages</td>
<td>2.000</td>
<td>CIS 200</td>
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<tr>
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<td>One significant programming language is covered in depth. The particular language changes from term to term. The language chosen might be Ada, C, MODULA 2, USP, PROLOG, or SMALLTALK.</td>
</tr>
<tr>
<td>CIS 294</td>
<td>Programming with Visual Basic</td>
<td>2.000</td>
<td>CIS 200 or IMSE 200</td>
</tr>
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<td>An introduction to create professional-looking applications using the graphical user interface of Windows. Students learn how to create graphical objects and controls, write event driven code that responds to clicking on buttons, work with multiple forms and executable files. (F,S).</td>
</tr>
<tr>
<td>CIS 296</td>
<td>Java Programming</td>
<td>2.000</td>
<td>CIS 200 or IMSE 200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Course covers Java Programming language, focusing on GUI development, distributed computing, and network applications.</td>
</tr>
<tr>
<td>CIS 299</td>
<td>Internship</td>
<td>1.000 TO 3.000</td>
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<td>Student works with an industrial sponsor in the area of CIS. Approval of Internship Coordinator required. (F,W,S).</td>
</tr>
<tr>
<td>CIS 310</td>
<td>Computer Organization and Assembly Language</td>
<td>4.000</td>
<td>CIS 200 or IMSE 200</td>
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<td></td>
<td>The architecture of computer systems and associated software. Topics include digital logic circuits, computer interfacing, interrupt systems, input/output systems, memory systems, assemblers, assembly language programming, and computer networks. (F,W,S).</td>
</tr>
<tr>
<td>CIS 350</td>
<td>Data Structures and Algorithm Analysis</td>
<td>4.000</td>
<td>MATH 115 and (CIS 200 or IMSE 200)</td>
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<td>Representation and transformation of information, interrelation between data structures and program structures. Topics include abstract data types, Standard Template Library, hashing, trees, file processing, indexing, graphs, greedy algorithms, divide and conquer, dynamic programming, backtracking, branch and bound, and P and NP problems. (F,W,S).</td>
</tr>
<tr>
<td>CIS 375</td>
<td>Introduction to Software Engineering</td>
<td>4.000</td>
<td>(CIS 350 or IMSE 350 or CCM 350) and (ECE 370 and MATH 276) and COMP 270</td>
</tr>
<tr>
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<td>This course presents an in-depth treatment of many software engineering topics including: software engineering paradigms, requirement specification, functional design, object-oriented design, software verification, maintenance, human-computer interaction, user interface design, software ownership issues, and intellectual property. (F,W).</td>
</tr>
<tr>
<td>CIS 376</td>
<td>Software Engineering II</td>
<td>4.000</td>
<td>CIS 375</td>
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<tr>
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<td>This course is a continuation of CIS 375. Topics covered include: personal software process, team software process, formal methods, human computer interaction, security, software architecture, software quality assurance, software measurement, software reliability, and web engineering. (F).</td>
</tr>
<tr>
<td>CIS 381</td>
<td>Industrial Robots</td>
<td>3.000</td>
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</tbody>
</table>
The course introduces students in engineering, management, and computer science to modern robot technology and the application of this technology to improve productivity in manufacturing and assembly operations. The emphasis will be on applications of robot technology to production problems rather than on the extensive theory of robotics. Knowledge of programming and junior standing. (F,W,S).

**CIS 390 Topics in Computer Science**
1.000 TO 3.000 Credits
Prerequisite(s): CIS 350

A course designed to offer selected topics in an area of computer science. The specific topics will be announced (together with special prerequisites) each time offered. (OC).

**CIS 399 Internship**
1.000 TO 3.000 Credits

Student works with industrial sponsor in the area of CIS. Permission of Internship Coordinator required. (F,W,S).

**CIS 400 Programming Languages**
4.000 Credits
Prerequisite(s): CIS 350 or IMSE 350 or CCM 350 or (ECE 370 and MATH 276)

Systemic study of programming languages with regard to their implementation, structures, and use. Languages are compared with regard to their various data types, data structures, operations, control structures, programming environments, and ease of use in solving various programming problems. (F,W).

**CIS 421 Database Management Systems**
4.000 Credits
Prerequisite(s): (CIS 350 or IMSE 350 or CCM 350) or (ECE 370 and MATH 276)

An introduction to database system concepts and techniques. Topics covered include: database environment, ER model, relational data model, object-oriented databases, object-relational databases, database design theory and methodology, database languages, query processing and optimization, concurrency control, database recovery, and database security.

**CIS 4261 Information Systems Analysis and Design I**
4.000 Credits
Prerequisite(s): CIS 375 and CIS 421

An introduction to the principles of information systems analysis and design and their role in business organizations. Topics include information systems strategy and planning, ethical issues in information systems, system modeling, clean-room system engineering, domain ontologies, UML, Enterprise Unified Process, e-business, and supply-chain management, deployment and support. Participation in a major design project is a requirement for this course. (F).

**CIS 4262 Information Systems Analysis and Design II**
4.000 Credits
Prerequisite(s): CIS 4261

This course is a continuation of CIS 4261 and provides students with breadth and depth in the information systems area. Topics include web-based information systems, e-commerce, computer-supported collaborative work, workflow systems, data mining, and data warehousing. Participation in a major design project is a requirement of this course. (W).

**CIS 427 Computer Networks and Distributed Process**
4.000 Credits
Prerequisite(s): (CIS 350 or IMSE 350 or CCM 350) or (ECE 370 and MATH 276) and IMSE 317

Study of the management aspects of computing networks and distributed systems. Topics include network architectures (ISO/OSI, TCP/IP, ATM), communication hardware (transmission media, network adaptors, switches), encoding, framing, error detection and correction, reliable transmission, data link control, and LAN technology, internetworking, routing/congestion control, network design/management.

**CIS 435 Web Technology**
3.000 Credits
Prerequisite(s): CIS 375

This course deals with the study of technologies used to design and implement multimedia web sites. Topics include web servers, HTML, CGI, scripting languages, Java applets, back-end database connectivity, web security, multimedia, XML. (F,W).

**CIS 450 Operating Systems**
3.000 OR 4.000 Credits
Prerequisite(s): (CIS 350 or IMSE 350 or CCM 350) or (ECE 370 and MATH 276) and IMSE 317

Introduction to computer operating systems. Process control, threads, concurrency, memory management, virtual memory, uniprocessor, multiprocessor, and real-time scheduling, I/O management, disk scheduling, file management, distributed processing, client/server, clusters, distributed process management, security. (F,W).

**CIS 451 Computer Graphics**
3.000 Credits
Prerequisite(s): (CCM 350 or IMSE 350 or CIS 350) or (ECE 370 and MATH 276) and (MATH 215 or MATH 225) or (MATH 217 or MATH 227)

Basic geometrical concepts: graphics output primitives, two-dimensional transformations, windowing and clipping, three-dimensional viewing, visible surface detection methods, and graphical user interfaces. (F).

**CIS 474 Compiler Design**
3.000 Credits
Prerequisite(s): (CIS 350 or IMSE 350 or CCM 350) or (ECE 370 and MATH 276)

Principles of language compilation. Introduction to formal languages. Lexical analysis, top-down and bottom-up parsing, code generation and optimization. Error handling and symbol
table management. Run-time storage management. Programming language design. Introduction to compiler-writing tools such as LEX and YACC. (F,W).

CIS 479   Artificial Intelligence  
3.000 Credits  
Prerequisite(s): (CIS 350 or IMSE 350 or CCM 250) or (ECE 370 and MATH 276)

This course introduces students to basic concepts and methods of artificial intelligence from a computer science perspective. Emphasis of the course will be on the selection of data representations and algorithms useful in the design and implementation of intelligent systems. The course will contain an overview of one AI language and some discussion of important applications of artificial intelligence methodology. (YR).

CIS 487   Computer Game Design  
3.000 Credits  
Prerequisite(s): CIS 375

This course deals with the study of the technology, science, and art in the creation of computer games. The focus of the course will be hands-on development of computer games. Students will study a variety of software technologies relevant to computer game design, including programming languages, scripting languages, operating systems, file systems, networks, simulation engines, and multi-media design systems. Lecture topics will be taken from several areas of computer science: simulation and modeling, computer graphics, artificial intelligence, real-time processing, game theory, software engineering, human computer interaction, graphic design, and game aesthetics. (F).

CIS 490   Advanced Topics  
1.000 TO 3.000 Credits  
Prerequisite(s): CIS 350

This course is intended for seniors and graduate-level students in CIS. For specific topic, consult current semester’s Schedule of Classes. (OC).

CIS 491   Research Project I  
1.000 TO 3.000 Credits

Provides the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the semester when such a course is to be elected, an interested student must submit to the CIS chair and one CIS faculty member a written request for permission to elect a research course on the appropriate form available in the CIS Office. The request will include a description of the proposed research project. The CIS chair will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit. Grades will be granted on a Pass/Fail (S/E) basis exclusively. (F,W,S).

CIS 492   Research Project II  
1.000 TO 3.000 Credits

Course is a second registration for a research project in CIS. (F,W,S).

CIS 493   Independent Study I  
1.000 TO 3.000 Credits

Readings or analytical assignments in accordance with the needs and interests of those enrolled and agreed upon by the student and an instructor, which shall not duplicate a formal course offering. Permission of instructor required. (F,W,S).

CIS 494   Independent Study II  
1.000 TO 3.000 Credits

Course is a second registration for an independent study in CIS. Permission of instructor required. (F,W,S).

CIS 495   Design Seminar  
4.000 Credits  
Prerequisite(s): CIS 375

Students participate in the design and implementation of a major software project. Seminar topics discussed include: computing ethics and professional practice in computer science. (F,W,S).

CIS 499   Internship  
1.000 TO 3.000 Credits

Student works with industrial sponsor in area of CIS. Approval of Internship Coordinator required. (F,W,S).

Engineering (ENGR)

COURSE OFFERINGS

ENGR 100   Introduction to Engineering and Computers  
2.000 Credits

This course gives students a general introduction to the engineering profession and covers some of the elementary skills that students need in order to be successful in their engineering studies. The course covers topics and problems pertaining to mechanical, industrial/manufacturing, and electrical/computer engineering. Aspects of engineering analysis and design are highlighted. Computer skills and communication skills (both oral and written) are emphasized throughout the semester. Two-hour lecture/two-hour laboratory.

ENGR 126   Engineering Computer Graphics  
2.000 Credits


ENGR 215   Computer Methods for Engineers  
2.000 Credits  
Prerequisite(s): ENGR 100 and MATH 116 and (MATH 217* or MATH 227*)
Computer programming in C (or one of its derivatives) and application to basic numerical techniques. Numerical integration, solution of systems of linear equations, root finding, curve fitting, error properties, numerical precision. (F,W,S).

ENGR 250  Principles of Engineering Materials  3.000 Credits  Prerequisite(s): (CHEM 114 or CHEM 124 or CHEM 144) and (MATH 115 * or MPLS 116)

An introductory course in engineering materials. Particular emphasis is given to the correlation of material properties and internal structures; structure of materials; stress-strain curves; temperature effects; phase diagrams; ferrous and non-ferrous alloys; ceramics; polymers; composites; electrical, magnetic, and optical properties; corrosion and failure. Two-hour lectures and two one-hour recitations.

ENGR 300  Creative Problem Solving  1.000 Credits

Principles of creative thinking, innovation, and group dynamics will be examined. The steps of creative problem solving will be presented and used in a practice problem: 1) problem definition, 2) verbal brainstorming and other idea-generating methods, 3) creative idea evaluation, 4) idea judgment and decision making, and 5) implementation. Finally, the two phases of the Pugh method (creative design evaluation) will be studied in a practical application.

ENGR 332  Speech for Professionals  3.000 Credits

Professionals must effectively communicate in the technical and business environment of a company organization. The course pays particular attention to verbal communications within and between organizations, focusing on multiple audiences and their varying needs for information. Stressing audience awareness, organization, clarity and efficiency in speaking, it will improve speaking skills necessary for confident verbal presentations such as professional briefings and conferences.

Electrical and Computer Engineering (ECE)

COURSE OFFERINGS

ECE 210  Circuits  4.000 Credits  Prerequisite(s): (MATH 116 or MPLS 215) and PHYS 151*

Fundamental laws, electrical elements and sources, energy and power. Transient analysis of linear circuits. Node and mesh analysis, Thevenin and Norton theorems. Sinusoidal steady-state response and the phasor concept, magnetically coupled elements. Introductory concepts on complex frequency, Laplace transform techniques. Design projects. Three lecture hours per week and one three-hour laboratory per week.

ECE 211  Circuits

3.000 Credits  Prerequisite(s): PHYS 151* and MATH 216*


ECE 212  Circuits Laboratory  2.000 Credits  Prerequisite(s): ECE 211*


ECE 270  Computer Methods in Electrical Engineering  2.000 Credits  Prerequisite(s): ENGR 100

Examine structured computer programming concepts in the context of the C programming language and engineering applications. Representative illustrations from Electrical Engineering practice. Two lecture hours per week.

ECE 273  Digital Systems  4.000 Credits  Prerequisite(s): ENGR 100

Introduction to digital logic. Topics include numbers and coding systems; Boolean algebra with applications to logic systems; Karnaugh and Quine-McCluskey, minimization; combinatorial logic design; flip-flop; sequential network design; and design of digital logic circuits. Three lecture hours and one three-hour laboratory per week.

ECE 274  Computer Methods in Electrical Engineering II  3.000 Credits  Prerequisite(s): ECE 270

Advanced concepts and techniques of modular structured programming; representative real-world electrical and computer engineering applications. A term project is required. Three lecture hours per week.

ECE 276  Discrete Mathematical Models in Computer Engineering  4.000 Credits  Prerequisite(s): MATH 116

An introduction to fundamental concepts of discrete mathematics for computer engineering. Topics will be chosen from: set theory, partially ordered sets, lattices, Boolean algebra, semi-groups, rings, graphical representation of algebraic systems, graphs, and directed graphs. Applications in various areas of computer engineering will be discussed. (YR).
ECE 299  Internship  
3.000 Credits  
This is a Cooperative Education course. Students wishing to experience a work experience before graduation may elect to participate in the Cooperative Education Program (minimum of two terms). (F,W,S).

ECE 300  Signals and Systems  
4.000 Credits  
Prerequisite(s): ECE 210 and (MATH 217* or MATH 227*) and MATH 216  
Signals and systems representation and classification. Impulse response and convolution integral. Fourier analysis of continuous time signals and systems. Laplace transforms with applications to linear system analysis. Introduction to computer software for solving problems involving signals and systems. Three lecture hours and three recitation hours per week.

ECE 301  Signals and Systems  
3.000 Credits  
Prerequisite(s): ECE 211 and MATH 216  
Signals and systems representation and classification. Impulse response convolution integral. Fourier analysis of continuous and discrete-time signals; DFT, Laplace transform with applications to linear system analysis: FFT algorithms. Three lecture hours per week.

ECE 305  Introduction to Electrical Engineering  
4.000 Credits  
Prerequisite(s): PHYS 151 and MATH 216 and (MATH 217 or MATH 227)  
Introduction to electrical and electronic circuits, machinery, and instrumentation. Topics include Kirchoff’s Laws, Thévenin and Norton theorems, sinusoidal and transient circuit analysis, numerical methods, solid state electronics, motors and generators, measuring instruments. Three lecture hours and one three-hour laboratory analysis. Not open to ECE students.

ECE 311  Electronic Circuits I  
4.000 Credits  
Prerequisite(s): ECE 210 and COMP 270* and CHEM 124  
Terminal characteristics of semiconductor diodes, bipolar and field-effect transistors, operational amplifiers. Rectifiers, power supplies, amplifiers, oscillators. Design projects. Three lecture hours and one three-hour laboratory per week.

ECE 314  Filter Design  
3.000 Credits  
Prerequisite(s): ECE 317 and ECE 311  
Review of filter descriptions, transfer functions, and frequency response characteristics; first and second order passive and active filters; biquad circuits; filter transformations. Butterworth, Chebyshev, and Elliptic filters; OPAMP realization of active filters; sensitivity analysis of active circuits. Three lecture hours per week.

ECE 316  Computer Electronics  
3.000 Credits  
Prerequisite(s) ECE 210, ECE 273, and COMP 270*  
Design of selected electronic circuits such as signal conditioning amplifiers. Switching and digital logic circuits, using FET and BJT devices, A/D and D/A converters. Two-hour lecture and one three-hour lab per week. (YR).

ECE 317  Signals and Electronic Systems  
4.000 Credits  
Prerequisite(s): ECE 311 and (MATH 216 and 217*)  

ECE 319  Electromagnetic Compatibility: An Introduction  
3.000 Credits  
Prerequisite(s): ECE 311  

ECE 321  Electromagnetic Fields/Waves  
3.000 Credits  
Prerequisite(s): ECE 311*  
Vector analysis; static electric field; steady electric currents; static magnetic fields; time-varying fields and Maxwell’s equations; plane electromagnetic waves. Three lecture hours per week.

ECE 365  Control Systems Analysis and Design  
4.000 Credits  
Prerequisite(s): ECE 305 or ME 345  
System and signal representation, elementary modeling of physical systems. Laplace transform, transfer functions and block diagrams representation. State variable representation. Concept of feedback, and transient and frequency response methods. System stability criteria. Control system design. Three lecture hours and one three-hour laboratory per week. (Not open to ECE students.)

ECE 370  Advanced Software Techniques in Computer Engineering  
3.000 or 4.000 Credits  
Prerequisite(s): ECE 270 and ECE 273  
Modern languages and programming techniques in computer engineering. Topics include objects, object classes and properties; object-oriented programming; related data structures; hardware languages such as VHDL and Verilog, applications to computer engineering. Three lecture hours per week. (F,W,S).
ECE 371  Information Structures  
3.000 Credits  
Prerequisite(s): ECE 370 or ECE 274

Fundamentals of computer data structures. Introduction to abstract data types. Characteristics and implementation of structured data types including arrays, stacks, queues, linked lists, generalized lists, trees, and graphs. Algorithms and applications of data structures in sorting and searching. Considerations of algorithm efficiency and complexity. Engineering applications and design. Three lecture hours per week.

ECE 372  Introduction to Microprocessors  
4.000 Credits  
Prerequisite(s): ECE 273 and ECE 270 or (CIS 310 and COMP 270*) or CPAS 40

Introduction to operation, interfacing, and applications of microcomputers and microprocessor-based systems. Assembly language programming. Three lecture hours and one three-hour laboratory per week.

ECE 373  Introduction to Microprocessors  
3.000 Credits  
Prerequisite(s): ECE 273 and ECE 270 and (COMP 270* or COMP 106* or COMP 220* or CPAS 40)

Introduction to operation, interfacing and applications of microcomputers and microprocessor-based systems. Assembly language programming. Two lecture hours and one laboratory per week. Three-hour laboratory per week.

ECE 375  Introduction to Computer Architecture  
3.000 Credits  
Prerequisite(s): ECE 270 and ECE 372* and MATH 276*

Introduction to architecture of mini- and mainframe computers. CPU, memory, and I/O characteristics. Introduction to parallel architectures and hardware design languages. Case studies of popular computer systems and design considerations. A design project is required. Three lecture hours per week.

ECE 385  Electrical Materials and Devices  
3.000 Credits  
Prerequisite(s): ECE 311*

Introduction to properties of conductors, semi-conductors, and insulators. Characterization of selected materials; circuit models for resistors, capacitors, inductors, junction and field-effect transistors, etc. Three lecture hours per week.

ECE 390  Selected Topics in ECE  
3.000 Credits

Special topics in ECE according to student’s interest and availability of instructors and equipment.

ECE 399  Internship/Co-op  
3.000 Credits

A four-month professional work experience period of the Engineering Internship Program, integrated and alternated with the classroom terms.

ECE 411  Electronics II  
4.000 Credits  
Prerequisite(s): ECE 301 and ECE 311

Review of solid state devices and their physical properties, introduction to the state of art devices, design of operational amplifiers, oscillators, switching and digital circuits. A project will be required. Three lecture hours per week and one three-hour laboratory per week.

ECE 413  Introduction to VLSI Circuits  
3.000 Credits  
Prerequisite(s): ECE 311 and ECE 317

Basic electrical properties of MOS circuits, circuit design processes, basic circuit concepts, subsystem design and layout, and selected topics. Laboratory consists of a series of design projects. Two lecture hours and one three-hour laboratory per week.

ECE 414  Electronics II  
4.000 Credits  
Prerequisite(s): ECE 311 and ECE 317

Review of solid state device characteristics and circuit analysis. Design of selected electronic circuits such as operational amplifiers, power amplifiers, power supplies, oscillators, switching and digital circuits. Two lecture hours and one three-hour laboratory per week.

ECE 415  Power Electronics  
4.000 Credits  
Prerequisite(s): ECE 311

Introduction to power electronic circuit analysis and design. Power electronic circuits, power converters, power semiconductors. Time domain analysis emphasized. A design project is required. Three lecture hours per week.

ECE 420  EMC Measurement and Testing  
3.000 Credit Hours  
Prerequisite(s): ECE 319

Introduction to EMC measurements, RF measurement fundamentals, EM waves, radiation mechanisms, measurement and measurement systems, screened rooms, open field test sites, practical measurements, conducted emission measurements, radiated emission measurements, radiated immunity, conducted immunity, and electrostatic discharge. Projects will be assigned. (YR).

ECE 431  Electrical Engineering Design  
4.000 Credits  
Prerequisite(s): ECE 311 and ECE 373 and ECE 493*

The course is conducted as a guided project design course with the class divided into teams and assigned a specific design project. Periodic progress reports are submitted during the term. A final written report and an oral presentation including
demonstration are required at the end of the term. Cost analysis, evaluation of design alternatives and application of engineering principles are emphasized. Two scheduled contact hours and six hours open laboratories per week.

ECE 432  Electrical Engineering Design  
6.000 Credits  
Prerequisite(s): ECE 311 and ECE 372 and ECE 493*

The course is conducted as a guided project design course over a two-semester period with the class divided into teams and assigned a specific design project. Periodic progress reports are submitted during the term. A final written report and an oral presentation including demonstration are required at the end of the term. Cost analysis, evaluation of design alternatives and application of engineering principles are emphasized. Two scheduled contact hours and six hours open laboratories per week.

ECE 433  Multimedia Technologies  
4.000 Credits  
Prerequisite(s): ECE 311 and ECE 370

Data formats, web technologies, digital audio, digital images ad video, compression strategies, realtime audio and video, hardware and software considerations. Three lecture hours and three laboratory hours per week. (F,W).

ECE 434  Machine Learning in Engineering  
4.000 Credits  
Prerequisite(s): ECE 370

Introduce fundamental theories and basic techniques in machine learning with an emphasis on engineering applications. Topics include learning concepts, search algorithms, neural networks, fuzzy learning, paradigms for problem solving using machine learning. (F,W).

ECE 443  Introduction to Electric Power Engineering  
3.000 Credits  
Prerequisite(s): ECE 317

Power system reliability, power system modeling, power system stability, load flow analysis, short circuit analysis, power system operation; philosophy of power system protection. Three lecture hours.

ECE 446  Electromechanical Energy Conversion  
4.000 Credits  
Prerequisite(s): ECE 311


ECE 450  Analog and Digital Communication Systems  
3.000 Credits  
Prerequisite(s): ECE 317 and IMSE 317

Topics include baseband communications, linear and exponential modulation, amplitude and frequency modulation system design, phase-lock loops, statistical analysis of error and performance, sampling theorem, digital communications, and noise analysis. Three lecture hours per week.

ECE 451  Signal Detection  
3.000 Credits  
Prerequisite(s): ECE 450

Introduction to signal detection, parameter estimation and information extraction theory and its application to communication systems. Subject areas covered within the context of a digital environment are decision theory, detection and estimation of known and random signals in noise, adaptive recursive digital filtering, optimal linear filtering and pattern recognition. Three lecture hours.

ECE 452  Probabilistic Methods/Signal Analysis  
3.000 Credits  
Prerequisite(s): ECE 300

Introduction to probability, random processes, correlation functions, and spectral density. Response of linear systems to random inputs. Applications in the field of communications.

ECE 456  Introduction to Electro-optics  
3.000 Credits  
Prerequisite(s): ECE 311 and ECE 321

Laser sources, detectors, imaging systems, optical signal processing, illumination and image acquisition, triangulation, and fiber optics. Three one-hour lecture periods.

ECE 460  Automatic Control Systems  
4.000 Credits  
Prerequisite(s): ECE 317

Modeling response of dynamic systems. Design of feedback control systems by root locus techniques and by frequency domain methods. State space description. Laboratory projects include modeling, controller design, controller realization, system performance evaluation, and simulation studies. Three lecture hours and once three hour laboratory per week.

ECE 464  Robotics  
4.000 Credits  
Prerequisite(s): (ECE 300 or ECE 365) and ME 265


ECE 465  Digital Control, Design, and Implementation  
3.000 Credits  
Prerequisite(s): ECE 460*

Discrete model of a continuous-time system. Differential equations and Z-transforms. Similarities and differences between discrete-time and continuous-time models. Translation
of analog designs to digital designs. State-space methods including state feedback and observers. Hardware limitations and implementation issues. Two lecture hours per week and an open project laboratory.

ECE 470 Computer Interfacing and Data Communication
4.000 Credits
Prerequisite(s): ECE 372

Hardware and software techniques used in interfacing between computers and other computers or devices. Analog and digital techniques. Parallel and serial communications. Popular communication protocols. Error detection and correction. Lab project involves interfacing and communicating with a microprocessor.

ECE 471 Computer Networks/Data Communication
3.000 Credits
Prerequisite(s): IMSE 317 and ECE 372

Hardware and software techniques used in transmitting data and networking computers. ISO/OSI models, communication protocols, transmission media, error detection and correction, bit and frame error analysis using probability theory, and data compression techniques. A project is required.

ECE 473 Embedded System Design
3.000 or 4.000 Credits
Prerequisite(s): ECE 372

This course deals with real-time embedded system design. Topics include microprocessor architecture, assembly language, real-time programming. Space and time limitations, relations between ANSI-C compiler output and assembly language, compiler linkers, and using a system development package for C programming. A design project is required. (F,W,S).

ECE 474 Compiler Design
3.000 Credits
Prerequisite(s): ECE 370

Principles of language compilation. Introduction to formal languages. Lexical analysis, top-down and bottom-up parsing, code generation and optimization. Error handling and symbol table management. Run-time storage management. Programming language design. Introduction to compiler-writing tools. A software design project is required. Three lecture hours per week.

ECE 475 Computer Hardware Organization and Design
4.000 Credits
Prerequisite(s): ECE 375

Design methodology, performance analysis using probability and statistic methods, hardwired and microprogramming in CPU design, hardware design languages and memory design. Advanced concepts in computer architecture. A design project is required. Three lecture hours per week and an open laboratory.

ECE 476 Introduction to Parallel Processing
3.000 Credits
Prerequisite(s): ECE 375

Advances in computer architecture, parallel structures, performance evaluation, memory bandwidth considerations, processing bandwidth, communication and synchronization. A design project is required. Three lecture hours per week.

ECE 478 Operating Systems
3.000 Credits
Prerequisite(s): ECE 370 and IMSE 317

Introduction to computer operating systems. Process management, CPU scheduling, memory management, file systems and I/O devices. Advanced topics, e.g., multiprogramming and multitasking, virtual memory, deadlock, I/O, job scheduling, and performance analysis using queuing models, will be introduced. Case studies of modern operating systems. A design project is required.

ECE 479 Artificial Intelligence
3.000 Credits
Prerequisite(s): ECE 371

Basic concepts and methodology of artificial intelligence from a computer engineering perspective. Emphasis is placed on the knowledge representations, reasoning and algorithms for the design and implementation of intelligent systems. Introduction to an AI Language and representative intelligence systems. A design project is required. Three lecture hours per week.

ECE 480 Introduction to Digital Signal Processing
4.000 Credits
Prerequisite(s): ECE 317


ECE 488 Introduction to Machine Vision
3.000 Credits
Prerequisite(s): ECE 270 and ECE 450

Applications to machine vision. Representative topics are: Optics and lighting, sensor characteristics, image acquisition, image analysis, segmentation, connectivity, shape description, hardware for vision applications, software considerations, applications including automatic inspection and metrology.

ECE 490 Selected Topics in Electrical Engineering
1.000 TO 3.000 Credits

Advanced or applied topics in electrical engineering offered according to student’s interest and availability of instructors and equipment. Lecture hours, laboratory, and/or computation period to be arranged.

ECE 491 Directed Studies
1.000 TO 4.000 Credits

Student in consultation with a faculty advisor will prepare a proposal in sufficient detail describing a subject topic to be
studied. The proposal will be subject to approval by the department. A formal written and oral evaluation of the work performed are required for successful completion. Lecture hours, laboratory, and/or computation periods to be arranged.

ECE 492  Directed Research  
1.000 TO 4.000 Credits

Student, in consultation with a faculty advisor will prepare a proposal in sufficient detail describing a research problem to be studied. The proposal will be subject to approval by the department. A formal written and oral evaluation of the research performed are required for successful completion. Lecture hours, laboratory, and/or computation period to be arranged.

ECE 493  Design Factors in Engineering  
2.000 Credits

This course is comprised of a series of lectures on the subject of design. It will promote awareness for such factors as literature review, performance specifications, design considerations, product liability, standards and ethics, professional registration codes, patents and copyrights, packaging, documentation and report preparation. Two lecture hours.

ECE 495  Micro Systems Design  
4.000 Credits  
Prerequisite(s): ECE 373 and (ECE 311 or ECE 316)

Course content includes discussion and laboratory experience on a number of interfacing topics (timing, serial and parallel communication, ADC/DAC, control loop) and the preparation of a major report on a design topic approved by the course instructor. Team design projects may involve either software or hardware, or both. Two lecture hours and two three hour laboratories per week.

ECE 498  Senior Engineering Design  
3.000 Credits  
Prerequisite(s): (ECE 311 or ECE 316) and ECE 373

This course is conducted as a guided project design course over a two-semester period, with the class divided into teams, each assigned a specific design project. Periodic progress reports, a final written report, an oral presentation, and application of engineering principles will be emphasized. A series of lectures on design issues will be presented in the first semester.

ECE 499  Internship/Co-op  
3.000 Credits

A four-month professional work experience period of the Engineering Internship Program, integrated and alternated with the classroom terms.

Industrial and Manufacturing Systems Engineering (IMSE)

COURSE OFFERINGS

IMSE 150  Computer Science I  
4.000 Credits  
Prerequisite(s): MATH 115*

An introduction to structured computer programming covering problem formulation, algorithm development, the C++ programming language, program testing and debugging, and capabilities and elements of computer organizations.

IMSE 200  Computer Science II  
4.000 Credits  
Prerequisite(s): (IMSE 150 or CIS 150 or CCM 150) and MATH 115 and CIS 175*

Techniques for the design, writing, testing, and debugging of larger programs, and an introduction to data structures (stacks, queues, linked list) using the C++ programming language.

IMSE 255  Computer Programming for Engineers  
3.000 Credits  
Prerequisite(s): ENGR 100 or MATH 105 or MPLS 113

Intermediate topics in computer programming: arrays, files, structured data types, pointers, functions. Overview of digital computer hardware and system software components: machine architecture, operating systems, computer networks, data security, and performance evaluation.

IMSE 299  Internship (Co-op)  
3.000 Credits

This is a Cooperative Education course. Students wishing to
experience a work experience before graduation may elect to participate in the Cooperative Education Program (minimum of two terms). (F,W,S).

**IMSE 300 Introduction to Operations Research**  
3.000 Credits  
Prerequisite(s): (MATH 217 or MATH 227) and IMSE 317*  

This course introduces some basic techniques of operations research used in decision making and system performance evaluation in both deterministic and probabilistic environments. Topics in linear programming, especially the simplex method with duality theory and sensitivity analysis, will be included. Other topics include deterministic dynamic programming, queuing theory, and applications.

**IMSE 317 Engineering Probability and Statistics**  
3.000 Credits  
Prerequisite(s): MATH 116 or MPLS 215 or MATH 114  

Set theory, combinatorial analysis, probability and axioms, random variables, continuous and discrete distribution functions, expectations, Chebychev’s inequality, weak law of large numbers, central limit theorem, sampling statistics and distributions, point and interval estimation, and linear regression. Three lectures.

**IMSE 320 Fundamentals of Computer Systems**  
3.000 Credits  

This course provides an introduction to computer systems with a balanced coverage of both hardware and software concepts. Topics include data representation, data manipulation and storage technologies, data communications technology, operating systems, mass storage access and management, and advanced topics in computer systems.

**IMSE 334 Organization of Hospital Systems**  
3.000 Credits  

The fundamental concepts of organizational behavior are explored. The interrelationships among personnel in an organization, and the functions and responsibilities of individuals are discussed. Topics studied include decision-making theory, organizational authority and adjunct responsibility, leadership and supervision. Particular emphasis is placed upon hospitals and the health care industry. Lectures are supplemented with actual case studies from the health care industry in which the student has the opportunity to apply problem-solving techniques to true-to-life situations. Three lectures.

**IMSE 350 Data Structures**  
4.000 Credits  
Prerequisite(s): MATH 115 and (CIS 200 or IMSE 200)  

Techniques for representing and operating on structured data. Topics include lists, stacks, trees and graphs and their uses. Students will write programs where applications of structures will be made. Three lectures.

**IMSE 351 Data Structures and Algorithm Analysis**  
3.000 Credits  
Prerequisite(s): IMSE 255 or CIS 150 or IMSE 150 or CCM 150  

Object-oriented design, programming, and analysis techniques review; structured programming concepts; data structures; algorithm design and analysis; lists, stacks, and queues; heaps, sorting, trees, graphs, and algorithm development utilizing modern languages, such as C++, Java.

**IMSE 352 Introduction to File Processing**  
3.000 Credits  
Prerequisite(s): IMSE 200 and CIS 175  

File processing environment, storage media, sequential, random and indexed sequential files, inverted lists, multilists, tree structures, file control systems. Three one-hour lectures.

**IMSE 356 Real Time Computing**  
3.000 Credits  
Prerequisite(s): IMSE 150 or IMSE 255  

Introduction to real time computing concepts applicable to discrete systems. Fundamentals of real time hardware, operating systems and C programming language. Selected coverage of instrumentation, input/output modes, data conversion, single task and multitask programming. Two hours of lecture and three hours of laboratory per week.

**IMSE 381 Industrial Robots**  
3.000 Credits  

The course introduces students in engineering, management, and computer science to modern robot technology and the application of this technology to improve productivity in manufacturing and assembly operations. The emphasis will be on applications of robot technology to production problems rather than on the extensive theory of robotics.

**IMSE 382 Manufacturing Processes**  
4.000 Credits  
Prerequisite(s): ENGR 250 and ME 265  

This course introduces the students to the fundamentals and principles of manufacturing processes for engineering materials; heat treatment of metals, casting processes, bulk metal deformation processes, sheet metal fabrication, joining processes, overview of machining processes, and numerical control applications to manufacturing processes; principles and fundamentals of the processing and production of ceramics, powder metals and polymers. Aspects of design for manufacturing and measurement of product quality; economical aspects and cost considerations in manufacturing systems. Three lecture hours and three laboratory hours.

**IMSE 383 Instrumentation and Measurement Systems**  
2.000 Credits  
Prerequisite(s): ME 265 and ECE 305  

This course introduces students in engineering to the fundamentals and applications of modern instrumentation systems, transducers, and elementary signal processing techniques. Topics such as system specifications and calibration,
interfacing techniques, computer-based data acquisition are addressed. Laboratory and hands-on experiments are included. One lecture hour and three laboratory hours.

**IMSE 390 Selected Topics I**
3.000 Credits

Study of topics selected from any of the areas of Industrial and Systems Engineering. May include design or laboratory research.

**IMSE 391 Selected Topics II**
3.000 Credits

Study of advanced topics selected from any of the areas of Industrial and Systems Engineering. May include design or laboratory research.

**IMSE 398 Independent Study in IMSE**
1.000 TO 3.000 Credits

Individual study design or laboratory in an area of interest to the student. Contents may be chosen from any of the areas of Industrial and Manufacturing Engineering. The student will submit a report on his or her project at the end of the term. Written permission of the instructor required. (F,W,S).

**IMSE 399 Internship**
3.000 Credits

A four-month professional work experience period of the Engineering Internship Program, integrated and alternated with the classroom terms.

**IMSE 400 Programming Languages**
4.000 Credits
Prerequisite(s): IMSE 350 or CIS 350 or CCM 350

Systematic study of programming languages with regard to their implementation, structures, and use. Languages are compared with regard to their various data types, data structures, operations, control structures, programming environments, and ease of use in solving various programming problems.

**IMSE 421 Engineering Economy and Decision Analysis**
3.000 Credits

Study of the concepts involved in the analysis of engineering management decisions, both short and long term. Time valued investments and the effects of depreciation and taxes in comparing alternatives are discussed. Specific attention is devoted to deterministic and probabilistic replacement policies for single and chain replacements of equipment. Basic elements of utility theory are introduced. Applications of decisions under risk, uncertainty, and of game theory to capital investment, bidding, and to competitive decisions are included.

**IMSE 437 Health Care Management**
3.000 Credits

This course is intended for those who have to deal with the administrative aspects of health care systems and not only the technical. The goal of the course is to provide the hospital staff member with an understanding of operations of the total hospital system. Topics covered include functions, problems, and organization of the medical agencies and their effect upon hospitals; methods of nursing staff organization; techniques of determining nursing staff levels; development of staff schedules; financial reimbursement and governmental regulations.

**IMSE 442 Human Factors and Ergonomics**
3.000 Credits
Prerequisite(s): IMSE 317*

The analysis and prediction of human performance in industrial and other man-machine systems using work sampling, time-motion analysis, synthetic and standard time study, and learning curves, in the design of such systems. Also the design of individual workstations and tasks addressing biomechanics and work physiology, hand tool design, noise, lighting, occupational health, and information processing. Lectures and laboratory.

**IMSE 450 Operating Systems**
4.000 Credits
Prerequisite(s): (CIS 350 or IMSE 350 or CCM 350 or ECE 371) and IMSE 317

Introduction to computer operating systems. Process management, CPU scheduling, memory management, file systems and I/O devices. Advanced topics, e.g., multiprogramming and multitasking, virtual memory, deadlock, I/O, job scheduling, and performance analysis using queuing models, will be introduced. Case studies of modern operating systems. A design project is required.

**IMSE 451 Computer Graphics**
3.000 Credits
Prerequisite(s): IMSE 351 or CIS 351 or CIS 350 or IMSE 350 or CCM 350

The mathematics, algorithms and data structures of computer graphics programming in 2 or 3 dimensions. Applications of computer graphics in Engineering Science and Data Processing.

**IMSE 453 Data Communications/Distributed Processing**
4.000 Credits
Prerequisite(s): CIS 350 or CIS 420 or CIS 351 or IMSE 350 or IMSE 351

Study of the technical and management aspects of computing networks and distributed systems. Topics include network architectures (ISO/OSI, TCP/IP, ATM), communication hardware (transmission media, network adapters, switches), encoding, framing, error detection and correction, reliable transmission, data link control and LAN technology, internetworking, routing/congestion control, network design/management.

**IMSE 454 Information Systems Design**
3.000 Credits
Prerequisite(s): IMSE 255

Role of information systems in organizations. Economic factors and social impact of information systems. Phases to design an information system: Systems objectives and criteria establishment, fact investigation and analysis, feasibility study, output-input design, processing design, file and database design,
safety and reliability considerations, detailed systems
description, programming specifications, testing, performance
measurement, and evaluation. Projects will integrate the systems
analysis and design skills will be assigned. Two lecture hours
and one three-hour laboratory.

IMSE 456  Introduction to Data Base Systems
4.000 Credits
Prerequisite(s): IMSE 351 or CIS 351

An introduction to database system concepts and techniques.
Topics covered include database environments, ER modeling,
relational data model, object-oriented database, object-relational
database, database design theory and methodologies, database
languages, query processing and optimization, concurrency
control, database recovery, and database security.

IMSE 457  Compiler Design
3.000 Credits
Prerequisite(s): IMSE 350 or CIS 350 or CCM
350

The design and construction of compilers and programming
systems. Lexical scan; parsing techniques; code generation and
optimization. Run-time organization; storage allocation.
Applications of formal language theory in compiler design.
Translator writing systems; XPL. Three one-hour lectures.

IMSE 458  Simulation in Systems Design
3.000 Credits
Prerequisite(s): IMSE 300 and IMSE 317

This course introduces digital simulation as a design and
modeling tool. The fundamental techniques of constructing a
simulation model and evaluating the results are studied.
Primarily, the ARENA/SIMAN/CINEMA language is used and
several other computer simulation methods are examined.
Statistical techniques are used to evaluate system output.
Students are asked to select problems of interest and present
final project reports. Three lectures and three-hour laboratory.

IMSE 467  Statistical Methods for Process Improvement
3.000 Credits
Prerequisite(s): IMSE 317

Hypothesis testing, analysis of variance, and statistical design of
experiments. Introduction to Deming’s principles and the seven
QC tools. Applications of these techniques for process
improvement and quality assurance. Three lecture hours.

IMSE 474  Facilities Design
3.000 Credits
Prerequisite(s): COMP 270 and IMSE 300 and
IMSE 317 and IMSE 421*

Analysis, planning and design of physical facilities utilizing
operations research, engineering and economic principles.
Synthesis of physical plant equipment and man into an
integrated system for either service or manufacturing activities.
Design of material handling systems. Students are required to
select problems of interest and present design project reports.

IMSE 479  Product and Inventory System Design
3.000 Credits

Prerequisite(s): (COMP 270 or COMP 106 or
COMP 220 or CPAS 40) and IMSE 300 and
IMSE 317

Study of concepts involved in forecasting demand, planning,
scheduling and controlling production. The application of
mathematical programming techniques, stochastic processes,
quality assurance and line balancing to the analysis and design
of the production systems. Use of the computer programs in the
design of production and inventory control systems. Students
are asked to select problems of interest and present final project
reports.

IMSE 481  Manufacturing Processes II
3.000 Credits
Prerequisite(s): (COMP 270 or COMP 106 or
COMP 220 or CPAS 40) and IMSE 467 and
(IMSE 382 or ME 381)

This course introduces the students to machining processes,
molding and forming of plastics and the fundamentals of
metrology and its application to assess produce quality. Metal
cutting theory is emphasized including the mechanics of metal
cutting, cutting tools, measure of tool life, selection of cutting
conditions, and chip control; theory and applications of non-
traditional manufacturing processes. Basic principles of plastics
molding and forming processes of plastics, ceramics, and
composites. Fundamentals of metrology include linear and
angular measurements, standards, gauges, machine tool
accuracy, and automation of inspection processes. Laboratory
exercises, experiments and projects are required. Two lecture
hours and three laboratory hours.

IMSE 482  Industrial Controls
3.000 Credits
Prerequisite(s): ECE 305

This course introduces the principle aspects of computers and
their applications in systems control, principal of automation,
with emphasis on manufacturing industries. Discussion on the
hardware and software associated with this task and other topics
such as integrated systems modeling, sensor technologies,
digital and analog signal processing and control, and
information communication are also included. Laboratory
exercises and projects are required.

IMSE 483  Computer-Integrated Manufacturing
3.000 Credits

This course provides basic knowledge of elements in Computer-
Integrated Manufacturing Systems, with particular emphasis on
Computer-Aided Design (CAD), Computer-Aided
Manufacturing (CAM), Computer-Aided Process Planning
(CAPP), materials handling, and information flow in
manufacturing systems. Hands-on experiments and course
projects are required. Two lecture hours and three laboratory
hours.

IMSE 484  Computer-Aided Machine and Tool Design
3.000 Credits
Prerequisite(s): IMSE 382 or ME 381

Study of the fundamentals of machine tool design, cutting tools,
machine forming dies, and jig fixtures for practical applications in
machining and assembly. Principles of design for manufacture and assembly as applied to tool and machine design. Laboratory exercises and projects are required using computer-aided design software. Two lecture hours and three laboratory hours.

**IMSE 486  Design for Assembly and Manufacturing**  
3.000 Credits  
Prerequisite(s): IMSE 382

This course will cover topics in manufacturing with emphasis on the parallel product design and selection of specifications for processes. Topics included are the principles of concurrent engineering, geometric dimensioning and tolerancing (GD&T), process engineering, process planning, cost estimating, and design for manufacturing. Projects using computer tools are required on a team-oriented basis. (YR).

**IMSE 488  Metal Forming Processes**  
3.000 Credits  
Prerequisite(s): IMSE 382

This course focus is on fundamentals of metal forming processes; mechanics of metal forming; formability of materials; tool and die design; design for manufacture; and economic aspect of the process. Emphasis is placed on analysis of bulk and sheet metal forming processes as applied to practical cases such as automobile manufacturing. Laboratory and course project are required. (YR).

**IMSE 489  Robotics Systems Simulation**  
3.000 Credits

The course emphasizes the fundamentals of the design of robotics systems with the aids of robot simulation technology; structure and basic components of robots and robotics manufacturing workcells; control, kinematics, and dynamics of robots and manufacturing devices; robot accuracy and calibration of robot motion; applications of robots in manufacturing such as spot welding, arc welding, machining, assembly and CMM; Robot simulation software such as or IGRIP. Course project is required. (YR).

**IMSE 490  Selected Topics**  
3.000 Credits

Individual or group study, design or laboratory research in a field of interest to the student. Topics may be chosen from any of the areas on industrial and manufacturing engineering. If preliminary arrangements are made, the work internship periods can be used to formulate the problem and gather data. Completion of the analysis and submission of a report shall be done during the academic periods under the supervision of a faculty member or members. The student should be prepared for both a written and oral presentation of the report. This course is highly recommended as a technical elective. Permission of department.

**IMSE 491  Contemporary Topics**  
1.000 TO 3.000 Credits

Group study of contemporary topics in industrial and systems engineering and general systems design. Course may be elected for credit more than once under different instructors. Permission of department.

**IMSE 495  Design Project**  
3.000 Credits  
Prerequisite(s): IMSE 382* and IMSE 454* and IMSE 458* and IMSE 474* and IMSE 479*

Design of a system to produce a product or service including the design of its information, inventory control, and handling systems, using the knowledge gained in previous courses in the program. The project assignment will be dependent upon the concentration selected by the student. Two three-hour lecture/lab/computer periods.

**IMSE 496  Design Project in Manufacturing**  
3.000 Credits

Each student is required to complete a project dealing with the design of a manufacturing system to manufacture a product. The student has to address issues related to cost, ethics, feasibility and safety, wherever applicable. A formal written report and oral presentation is required. The course commonly extends over two semesters.

**IMSE 498  Guided Study in IMSE**  
1.000 to 3.000 Credits

Individual study, design, or laboratory research in a field of interest to the student. Content may be chosen from any of the areas on industrial and manufacturing engineering. The student will submit a report on his or her project at the close of the term. Permission of department. (F,W,S).

**IMSE 499  Internship**  
3.000 Credits

A four-month professional work experience period of the Engineering Internship Program, integrated and alternated with classroom terms.

### Mechanical Engineering (ME)

#### COURSE OFFERINGS

**ME 230  Thermodynamics**  
4.000 Credits  
Prerequisite(s): PHYS 150 and MATH 116 and (CHEM 116 or CHEM 124 or CHEM 134)

The course is a general introduction to thermodynamics with emphasis on engineering applications. Properties of pure substances. Work and heat. The first and second laws of thermodynamics. Entropy and efficiency. Applications to systems and control volumes. Mixtures of gases and vapors, air conditioning. Introduction to cycles. This course will become the first in a two-course series for mechanical engineering students, and will also be elected as a terminal course by IMSE students. Four lectures.

**ME 260  Design Stress Analyses**  
4.000 Credits  
Prerequisite(s): PHYS 150 and ENGR 250* and
An introduction to statics and stress analyses with emphasis on both mechanics fundamentals and design applications. (F,W,S).

ME 265 Applied Mechanics  
4.000 Credits  
Prerequisite(s): PHYS 150 and (MATH 205* or MPLS 215 or MATH 215*)

A comprehensive introduction to the science of applied mechanics, encompassing a study of forces and the stresses, deflections, and motions which they produce. Topics include the concept of equilibrium and static force analysis; the mechanics of deformable bodies (internal stresses, constitutive relationships, strains, deflections, flow, failure); statics of indeterminate systems; kinematics; kinetics of particles, systems of particles, and rigid bodies. Four lectures. (F,W,S).

ME 290 Special Topics in Mechanical Engineering  
1.000 TO 3.000 Credits  

Special topics in mechanical engineering selected according to students interest and availability of instructors and equipment.

ME 299 Internship (Co-op)  
3.000 Credits  

This is a Cooperative Education course. Students wishing to experience a work experience before graduation may elect to participate in the Cooperative Education Program (minimum of two terms). (F,W,S).

ME 325 Thermal Fluid Sciences I  
4.000 Credits  
Prerequisite(s): (ENGR 216 or ME 215) and ME 230 and ME 345*


ME 345 Engineering Dynamics  
4.000 Credits  
Prerequisite(s): (ME 215 or ENGR 216) and ME 260

A comprehensive treatment of statics and the kinematics and kinetics of particles, systems of particles, and rigid bodies from a Newtonian viewpoint utilizing rigorous vector techniques. The time-dependent description of kinematical quantities and of dynamic forces and moments. Matrix methods and digital computer techniques.

ME 349 Instrumentation and Measurement Systems  
3.000 Credits  
Prerequisite(s): (ME 265 or ME 345) and ECE 305

Modern instrumentation systems are considered beginning with generic issues such as calibration, error analysis, and dynamic response characteristics of instrumentation. Specific transducer systems (temperature, force and pressure, etc.) are presented, as well as interfacing techniques and elementary signal processing. Microprocessors are introduced for use in measurement and control applications. (F,W,S).

ME 3601 Design and Analysis of Machine Elements  
4.000 Credits  
Prerequisite(s): (ENGR 216 or ME 215) and ME 260

Application of fundamental mechanics to analysis and design of elementary mechanical components and systems. Topics include: stress and strain analysis; experimental measurement; stress concentration; failure theories; safety factor; fatigue; fracture; combined loading; impact; buckling; energy methods. Components considered: fasteners; springs; bearings; gears; beams; shafts and other power transmission components. Numerical techniques. (F,W,S).

ME 364 Probability, Statistics, and Reliability in Machine Design  
3.000 Credits  
Prerequisite(s): (MATH 217 or MATH 227) and ME 260

Introduction to planned experiments in machine design and mechanical metallurgy with emphasis on orthogonal test programs with small blocks. Classical statistical analyses (e.g., analysis of variance for randomized complete block and split-plot designs) as well as computer intensive analyses (e.g., permutation and randomization tests). Maximum likelihood analysis for censored and uncensored life data and for strength (quantal response) data. Systems reliability in machine design.

ME 375 Thermal Fluid Sciences II  
4.000 Credits  
Prerequisite(s): (ME 325 or ME 320) and ECE 305*


ME 379 Thermal-Fluids Laboratory  
3.000 Credits  
Prerequisite(s): (ME 325 or ME 320) and (ME 349 or ME 348) and ME 375*

An experimental investigation of thermodynamic, fluid mechanic, and heat transfer principles. Students will learn about thermal-fluids instrumentation and conduct experiments. In addition, they will design their own experiments to demonstrate their understanding of the principles.

ME 381 Manufacturing Processes I  
4.000 Credits  
Prerequisite(s): ENGR 250 and ME 260 and ME 230

Principles of physical metallurgy and application to

ME 399  Internship (Co-op)
3.000 Credits

A four-month professional work experience period of the Engineering Internship Program, integrated and alternated with the classroom terms.

ME 4101  Finite Element Method with Applications
4.000 Credits
Prerequisite(s): ME 345 and (ME 360 or ME 3601) and ME 375*

A presentation of the basic concepts and fundamentals of the finite element method in general, with applications to both continuum and field problems. Applications may include: dynamics and vibration including wave propagation; acoustics; fluid mechanics including film lubrication and ground water flow; heat transfer; elasticity and stress/strain analysis including structures; electrical field problems including electrostatics and electromagnetics. Two two-hour lectures per week. (F,W,S).

ME 4191  Structural Mechanics and Design
4.000 Credits
Prerequisite(s): ME 345 and (ME 3601 or ME 360)

A presentation of the methods of plane elasticity to solve a variety of problems arising in the analysis and design of structures. Review of the concepts of plane stress and strain, basic equations of plane elasticity and problems, energy methods approximate/numerical techniques, elastic-plastic bending and torsion, instability of columns and frames.

ME 4201  Design of Turbomachinery
4.000 Credits
Prerequisite(s): ME 325 or ME 320

Principles of turbomachinery design and practices. Euler’s equation for energy transfer calculations. Two- and three-dimensional velocity diagrams. Characteristic curves of axial and radial flow compressors. Design procedures of fans and blowers. Basic design and selection of pumps. Student is required to conduct a turbomachinery design project by applying the theory learned from the course. (W).

ME 430  Computational Fluid Dynamics and Heat Transfer
4.000 Credits
Prerequisite(s): ME 375 or ME 371


ME 4361  Design of Heating, Ventilation, and Air Conditioning Systems
4.000 Credits
Prerequisite(s): (ME 325 or ME 320) and ME 375*

A comprehensive treatment of the design principles and practices in heating, ventilating, and air conditioning. Psychrometrics, design loads, distribution systems, equipment selection.

ME 442  Control Systems Analysis and Design
4.000 Credits
Prerequisite(s): ECE 305 and ME 345


ME 4461  Mechanical Vibration and Noise Control
4.000 Credits
Prerequisite(s): ME 345 and (ME 349* or ME 348*)

Fundamentals of mechanical vibration and principles of noise control. Use of transducers and instruments to conduct sound and vibration measurements. Free and forced vibration in single and multiple degrees-of-freedom systems, damping, eigenvalues, eigenvectors, frequency response function, modal analysis, description of sound fields, acoustical materials and material testing, acoustics of rooms and enclosures, sound quality and principles of noise control. Student will be required to conduct either a vibration or a noise control project. Two one-and-one-half-hour lectures and one three-hour laboratory. (F).

ME 4471  Solar Energy Systems Analysis and Design
4.000 Credits
Prerequisite(s): ME 345 and (ME 3601 or ME 360)

Utilization and analysis of alternative energy resources, such as passive and active solar systems, photovoltaic, wind energy, tidal waves, geothermal energy and bio-mass systems. Different types of systems include residential, commercial, and industrial applications of alternative energy will be covered. Space heating/cooling and hot water systems. Design of solar collectors and determination of incident solar energy on a tilted surface. Computation of system performance using both analytical and numerical methods. Economic analysis of alternative system to determine the pay-back years. Student will be required to design an alternative energy system for a specific application.

ME 460  Design for Manufacturing
3.000 Credits
Prerequisite(s): (ME 360 or ME 3601) and ME 381

Design decisions based on manufacturability and process-property relationships. Design for assembly. Manufacturing tolerances and quality control methods including NDT. Design
methodology used for product development.

**ME 4671  Senior Design I**  
4.000 Credits  
Prerequisite(s): ME 345 and (ME 360 or ME 3601) and ME 375 and ME 379*  
A guided design project with emphasis on the decision-making process associated with establishing alternatives and evaluation procedures to synthesize designs. Students propose design projects and work in teams to produce analytical designs, conduct evaluative experiments, and construct a physical design prototype. Engineering ethics and responsibility, Written and oral presentations are required at the close of the term. (F.W.S).

**ME 481  Manufacturing Processes II**  
3.000 Credits  
Prerequisite(s): ME 381  
A study of casting, welding, plastic forming, and machining of materials: analysis of forces, energy requirements, and temperature effects; design specifications economically obtainable in terms of dimensional accuracy, surface finish, and material properties, functional characteristics of equipment. Two lectures and a laboratory.

**ME 483  Design Considerations in Polymeric and Composite Materials**  
3.000 Credits  
Prerequisite(s): ME 360 or ME 3601  
Physical and mechanical behavior of unreinforced and reinforced (composite) polymeric materials in relation to their applications in modern technology. Emphasis is given to the design considerations with these materials in contrast to those with metallic materials. Time-dependent properties, such as creep and stress relaxation, are considered. Manufacturing methods are covered. Three lectures/recitation.

**ME 484  Manufacturing Polymeric Composite Materials**  
3.000 Credits  
Prerequisite(s): ME 381 or IMSE 382  
This course will consider the manufacturing processes for production of plastics and composite parts. The emphasis will be on manufacturing principles that are based on rheology, polymer flow and transport phenomena. Design considerations and quality control techniques for manufacturing plastic and composite parts will also be covered.

**ME 490  Directed Design Project**  
1.000 TO 3.000 Credits  
Prerequisite(s): ME 360 or ME 381 or ME 425 or ME 464  
Design project involving not only design but also analysis, fabrication and/or testing. Topics may be chosen from any of the areas of mechanical engineering. Students who have taken ME 425 and ME 464 will be encouraged to take this course. The student will submit a report on his or her project and give an oral presentation at the close of the term. (F,W,S).

**ME 491  Directed Research Problems**  
1.000 TO 3.000 Credits  
Special problems selected for laboratory or library investigation with intent of developing initiative and resourcefulness. (F,W,S).

**ME 492  Guided Study in Mechanical Engineering**  
1.000 TO 3.000 Credits  
Individual study, design or laboratory research in a field of interest to the student. Topics may be chosen from any of the areas of mechanical engineering. The student will submit a report on his or her project at the close of the term. (F,W,S).

**ME 496  Internal Combustion Engines I**  
2.000 TO 3.000 Credits  
Prerequisite(s): ME 320 and (ME 330 or ME 325)  
Comparison of characteristics and performance of several forms of internal combustion engines including the Otto and diesel types of piston engines and the several types of gas turbines; thermodynamics of cycles, combustion, ignition, fuel metering and injection, pollution from engines and modeling techniques. Lectures, theory demonstrations, and experiments.

**ME 4981  Automotive Engineering**  
4.000 Credits  
Prerequisite(s): ME 345 and (ME 360 or ME 3601)  
Analysis of vehicle performance in terms of acceleration, gradability, speed, fuel economy, ride comfort, stability and safety. Engine-transmission compatibility and matching. Fundamental vehicle dynamics. Computer modeling and simulation of vehicle systems by numerical techniques. Transmission ratio and torque analysis. Design of vehicle systems such as brakes, suspensions, drive line components, steering mechanisms and other subsystems. Four lectures. (F,W).

**ME 499  Internship**  
3.000 Credits  
A four-month professional work experience period of the Engineering Internship Program, integrated and alternated with the classroom terms.
School of Education

Administration and Staff

Paul Zionts, PhD, Dean
Gail R. Luera, PhD, Associate Dean
Mary Trepanier-Street, EdD, Associate Dean
Yvonne DeCarlo, Budget Analyst
Mary Fulmer, Administrative Specialist
James Hinga, Project Manager
Joann Otlewski, Regional School Registrar (Teacher Certification)
Robert Simpson, III, Systems Administrator Intermediate
Shirley Solomon, Administrative Assistant

Academic Program Coordinators

Kettel, Ray., EdD, Coordinator MA in Education Program
Fossum, Paul, PhD, Coordinator MA in Teaching Program
Hirshorn, Seth, PhD, Coordinator, MPA Program
Lazarus, Belinda, PhD, Coordinator, MEd Special Ed/LD/EI Programs
Moyer, Richard, EdD, Coordinator, MS in Science Education
Hong, Seong Bock, EdD, Coordinator, Early Childhood Program

Professors Emeriti

Collin, Claudia, PhD, Assistant Professor Emerita of Education
Foss, Peggy, PhD, Emerita Assistant Professor of Education
Kachaturoff, Grace, EdD, Professor Emerita of Education
Lipson, Greta B., EdD, Associate Professor Emerita of Education
Ratomatioso, Jane A., EdD, Professor Emerita of Education
Saltz, Rosalyn, PhD, Professor Emerita of Education
Sayles, Daniel G., PhD, Associate Professor Emeritus of Education
Van Tiem, Darlene, PhD, Wayne State University, Associate Professor Emerita of Education

Faculty

Adler, Martha, PhD, University of Michigan, Assistant Professor of Education
Beyer, Bonnie M., EdD, Vanderbilt University, Associate Professor of Education and Educational Administration
Brunvand, Stein, PhD, University of Michigan, Assistant Professor of Educational Technology
Burke, Christopher, PhD, University of Illinois, Assistant Professor of Science Education
Cepuran, Joseph, PhD, University of Iowa, Associate Professor of Public Administration
Douglas, Nancy, PhD, Southern Illinois University, Associate Professor of Education
Duran, Mesut, PhD, Ohio University, Assistant Professor of Education
Everett, Susan, PhD, University of Iowa, Assistant Professor Education
Fossum, Paul, PhD, University of Minnesota, Associate Professor of Education
Hirshorn, Seth I., PhD, Syracuse University, Associate Professor of Public Administration
Hong, Seong Bock, EdD, University of Massachusetts, Amherst, Associate Professor of Education
Kettel, Raymond P., EdD, Wayne State University, Associate Professor of Education
Kilu, Kim, PhD, Ohio State University, Associate Professor of Education
Lazarus, Belinda, PhD, Ohio State University, Associate Professor of Education
Luera, Gail, PhD, University of Michigan, Associate Professor of Science Education
Moyer, Richard, EdD, University of Northern Colorado, Professor of Science Education
Poster, John B., PhD, University of Chicago, Professor of Education
Reynolds-Keefer, Laura, MA, University of South Carolina, Instructor in Educational Psychology
Silverman, Kathleen, PhD, Northwestern University, Assistant Professor of Early Childhood Education
Taylor, Julie, PhD, University of Cambridge, Assistant Professor of Education
Thomas-Brown, Karen, PhD, University of the West Indies, Assistant Professor of Education
Thomson, Dale, PhD, University of Maryland, Assistant Professor of Public Administration
Thornton, Leslie, II, PhD, University of Michigan, Associate Professor of Education
Trepanier-Street, Mary, EdD, University of Rochester, Professor of Education
Zionts, Paul, PhD, University of Connecticut, Professor of Special Education

Cooperating Faculty

Devlin, John, PhD, Associate Professor of Physics
Gelderloos, Orin G., PhD, Professor of Biology
Kaller, Eileen, MA, Lecturer in Mathematics
Krebs, Angela, PhD, Associate Professor of Mathematics
Murray, Kent, PhD, Professor of Geology
Nesmith, Judith, MS, Lecturer in Natural Sciences
Otto, Charlotte A., PhD, Professor of Chemistry
Rubenstein, Rheta, PhD, Professor of Mathematics
Swift, Carrie, PhD, Assistant Professor of Physics
Verhey, Roger, PhD, Professor of Mathematics
Zitzewitz, Paul, PhD, Professor of Physics

Child Development Center Staff

Trepanier-Street, Mary, EdD, Director
Bauer, Jennifer, MA, Child Development Center Education Coordinator
Daigneau, Tammy, AB, Early Childhood Professional
Filipiak, Kathy, AB, Early Childhood Professional
Finkelstein, Caryn, MA, Early Childhood Professional
Geary, Judith, PhD, Cooperating Faculty
Hong, Seong Bock, PhD, Cooperating Faculty
School of Education

Lapansee, Linda, MA, Administrative Assistant
Saltz, Rosalyn, PhD, Faculty Consultant
Silverman, Katie, PhD Cooperating Faculty
Simpson, Lia, Secretary Intermediate
Windle, Susan, BS, Early Childhood Professional

Education at UM-D

Education is not one career; it is many. Individuals specializing in education are qualified to pursue a wide variety of attractive and rewarding professions including teaching, corporate training, recreation, social service, and childcare. Wherever there is a need for people specifically prepared to teach others, there is a need for individuals with a background in education.

Still, most college graduates seeking a career in education elect to become classroom teachers. Teaching offers a wide choice of opportunities to work with persons of different age levels in a variety of specialized fields. It is a satisfying career for those who like to inspire growth in others and continue their own development.

Students admitted to any of the education programs offered at the UM-D are provided with an academic and professional background suited to the challenges of education in a multicultural society. For further information, please visit the School of Education website at www.soe.umd.umich.edu.

Education Our Mission

The mission of the School of Education is to prepare and sustain exemplary teachers, trainers, and administrators through emphasis on scholarship, diverse clinical experiences, and practice in effective service delivery.

To achieve its mission, the School of Education draws upon a broad assortment of institutional resources, including staff and programs in other schools and colleges of the University. Additionally, the facilities of local school districts, other public agencies, and private corporations are regularly utilized to provide students with a rich spectrum of laboratory experiences.

Students participate in the affairs of the School in a variety of ways. There are programmatic advisory committees as well as the student representative group, the Association of Educators. Students also evaluate courses and participate in exit interviews at the end of their graduate degree programs.

History of the School

Shortly after the UM-D opened in 1959, a small teacher certification program was added to UM-D's liberal arts division. By 1969, under the leadership of its first faculty chairman, Paul D. Carter, the teacher certification program had grown into one of the largest academic departments on the campus. With the academic reorganization of the campus in the spring of 1973, the department became the Division of Urban Education with its own regentally appointed associate dean, Richard W. Morshead. By 1987, the Division of Urban Education had become the School of Education led by Dean Morshead. The School was granted authority to offer graduate programs. These programs now include an MA in Education, an MA in Teaching, an MS in Science Education, a Master of Public Administration, and an MEd in Special Education: Learning Disabilities/Emotional Impairments.

Accreditation

The School of Education is a fully accredited professional unit of the UM-D. Along with the rest of UM-D, it carries the approval of The Higher Learning Commission and is a member of the North Central Association of Colleges and Secondary Schools. As a teacher preparation institution, it is a member of the American Association of Colleges for Teacher Education, the Michigan Association of Colleges for Teacher Education, and the Teacher Education Council of State Colleges and Universities. In 2001 its certification programs were approved through the periodic review of the Michigan Department of Education.

Title II Annual Report: 2004-2005

Michigan Test for Teacher Certification

Institution: 292 – University of Michigan-Dearborn
Number of Program Completers: 204

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Other Content Areas
In addition to campus-wide facilities and services described elsewhere in the Catalog, the following special facilities and services are of particular interest to education students.

**CHILD DEVELOPMENT CENTER**

The Child Development Center (CDC), an auxiliary unit of the School of Education, serves student, faculty, staff, and community children, ages one to six. Located on campus in the cottages along Fair Lane Drive, it enrolls over 140 children per term. The CDC facilities also include a full day kindergarten. The CDC serves as a teacher preparation facility for students enrolled in a variety of courses offered by the School of Education and related departments in the College of Arts, Sciences, and Letters. The CDC Advisory Board cooperates in making policy and administrative decisions related to the center. The center is staffed with teachers having special training in early childhood education and is under the overall direction of the faculty director of the Early Childhood Education Program in the School of Education.

**EDUCATION LABORATORIES**

Curriculum Laboratories are available to offer educational support to students in the areas of English/Language Arts (258 FCS), Science Education (270A FCS), Social Studies (268 FCS), and materials preparation (267 FCS). There is also a Mathematics Education Laboratory located in 2083 CB. These laboratories are designed to meet the needs of students and faculty in the School of Education. These laboratories house an array of textbooks for elementary and secondary students, resource materials, and audiovisual equipment. Computers and other materials helpful in developing lessons with hands-on exploration of the subject matter are also available.

Students are encouraged to use the materials, equipment, and services the facilities provide when preparing for class preparations, practicum assignments, and student teaching. Students who have paid a laboratory fee for a specific course may use the laboratory without any additional charge. Students who have not paid a course fee must pay for the materials they use. Current prices are posted in the Materials Preparation Center. All fees are solely for the support of the Education Laboratories. Two microcomputer labs with the latest educational software are located in Rooms 190 and 194, FCS.

**DEAN'S OFFICE**

Paul Zionts is Dean of the School of Education. Gail R. Luera and Mary Trepanier-Street are Associate Deans. The Office of the Dean and Associate Deans is located in 253 Fairlane Center South Building (FCS), telephone (313) 593-5435.

### Student Services Office

The Student Services Office for The School of Education is located in 262 FCS. All School matters relating to student records and teacher certification are handled in this office. Certification applications and advising appointments can be secured here, telephone (313) 593-5090.

### Field Placement Office

All matters related to pre-student teaching practica as well as student teaching are handled by the Field Placement Office (261 FCS), telephone (313) 593-5094.

### Academic and Professional Standards

All matters in the School of Education having to do with maintaining academic and professional standards are handled by the Professional Standards Committee or by the School's Executive Committee. The Executive Committee is responsible for acting in the place of the Governing Faculty on matters related to any of the School's instructional programs.

The Professional Standards Committee is responsible for acting on student petitions and other similar academic requests. Students may initiate petitions to the committee by securing appropriate forms in the Student Services Office. Such petitions must be signed by the student's education advisor before submission to the Professional Standards Committee. Both committees meet regularly throughout the academic year.

### Policy Changes

School of Education policies change periodically. This occurs when teacher certification and/or graduation requirements are changed by the Michigan Department of Education, by the wider campus community, or by the School of Education itself. The primary responsibility for being aware of program requirements and for meeting appropriate standards rests with the student. Students are encouraged to review current policies, graduation, and certification requirements with their advisors through required annual advising. For information regarding academic advising see the General Information section of this Undergraduate Catalog.

### Statement of Student Rights and Code of Student Conduct

Refer to this topic in the General Information section of this Undergraduate Catalog for further information.

### Bachelor's Degree Programs

The School of Education provides undergraduate students with a number of different program options through bachelor's degrees.
These degrees are intended for those wishing to acquire a teaching certificate at the elementary and secondary school levels or for those planning on working with children and families.

Individuals who successfully complete undergraduate degree programs in Elementary Education, Early Childhood Education, and Children and Families will receive their bachelor's degree directly through the School of Education. Students completing Secondary Education programs receive a recommendation for their teacher's certificate through the School of Education. Their degrees will be recommended by the College of Arts, Sciences, and Letters.

Undergraduate Degree Program Requirements

The School of Education offers three different baccalaureate degrees: the Bachelor of Arts degree, the Bachelor of Science degree, and the Bachelor of General Studies degree. Where appropriate, these degrees have been combined with programs leading to the Michigan Provisional Teacher's Certificate.

BACHELOR OF ARTS (AB)

Ordinarily, this degree is available through the School of Education only to those individuals seeking a teaching certificate. To be recommended for the degree by the Education faculty, students must satisfy all appropriate residence requirements, distribution requirements, and program requirements.

BACHELOR OF SCIENCE (BS)

This degree is available through the School of Education only to those individuals seeking a teaching certificate with a major in one of the natural sciences or mathematics. It will be granted to those students who earn 60 or more semester credit hours in mathematics, the natural sciences, computer science, or any combination of these, with at least 20 of these hours in upper division (junior-senior level) courses.

BACHELOR OF GENERAL STUDIES (BGS)

This degree is only available through the School of Education to those individuals wishing to pursue the Children and Families program. To be recommended for a BGS degree, a student must satisfy campus distribution requirements as well.

BGS: TWO PLUS TWO OPTION

Students who have completed an associate's degree in an approved area at a community college are eligible to apply for admission to the School's Bachelor of General Studies degree. Admission, however, is not automatic. Individuals are expected to meet the specific admission requirements for the particular BGS Two Plus Two programs into which they are seeking entry. Further professional and general education studies will be added at UM-D to those studies already completed by students at the community college level. To be recommended for the BGS degree under this option, students must satisfactorily complete all degree requirements called for by their particular School of Education program.

Details regarding any of the programs cited above can be found in later sections of this Undergraduate Catalog.

Admission to the School of Education

APPLICATION PROCEDURE

Individuals seeking both a bachelor’s degree and a teaching certificate should apply through the UM-D Office of Admissions located in the University Center.

Individuals holding a bachelor’s degree from an accredited institution and seeking certification should apply through the School of Education Student Services Office, 262 FCS.

ADMISSION OF FRESHMEN

Individuals who have qualified for admission as freshmen to the UM-D and wish to specialize in an elementary school teaching major, early childhood education, or children and families will be admitted to the School of Education. Those who intend to earn a specific secondary school teaching major are to be admitted for their degree to the College of Arts, Sciences, and Letters.

ADMISSION OF TRANSFER STUDENTS

Many individuals enter the School of Education after completing a portion of college work at other two- or four-year institutions. These persons are considered transfer students. Like other students admitted to degree programs at UM-D, transfer students entering the School of Education will be expected to fulfill all degree/certification requirements. Admission to the School of Education does not necessarily insure admission to a teacher certification program.

STUDENT READMISSION

1. Any student absent from the University for a period of one calendar year (counted from the last day of the term in which the student was last enrolled) must meet the teacher education requirements in effect at the time of readmission.

2. Any student applying for readmission with coursework five years or older must have acceptance of this work approved by the School of Education at UM-D. Consult the School Student Services Office for procedures and readmission form.

Residency Requirements for Transfer Students

All individuals entering the School of Education as transfer students must complete a major part of their total college work in residence at the UM-D. This limits the number of semester hours that are transferable to UM-D from other institutions. The maximum amount of transfer credit allowed in any such program will depend on the type of institution at which the credit originally was earned. Typically, more credit can be transferred from a four-year institution and used toward a degree program than from a community college. The admission criteria are applied to all students without regard to race, color, sex, national origin, or creed. The table below details the School's transfer credit policy.

In the table below, institutions attended by students prior to their enrollment in a degree program at the UM-D are grouped
into three categories. Category A includes all two-year institutions; category B includes all four-year institutions other than the schools and colleges of the University of Michigan (UM); category C is composed of those schools and colleges of the UM which are not located on the Dearborn campus. Maximum transferable credits and minimum residence requirements (both in semester hours) are given.

<table>
<thead>
<tr>
<th>Categories of Previously Attended Institutions</th>
<th>Transferable Credits (Maximum)</th>
<th>Residence Requirement (Minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (only)</td>
<td>62</td>
<td>66</td>
</tr>
<tr>
<td>B (only)</td>
<td>75</td>
<td>53</td>
</tr>
<tr>
<td>C (only)</td>
<td>90</td>
<td>38</td>
</tr>
<tr>
<td>A and B (if attended in this sequence)</td>
<td>75 (62 from A)</td>
<td>53</td>
</tr>
<tr>
<td>A and C (if attended in this sequence)</td>
<td>90 (62 from A)</td>
<td>38</td>
</tr>
<tr>
<td>B and C</td>
<td>90 (75 from B)</td>
<td>38</td>
</tr>
<tr>
<td>A, B, and C (if attended in this sequence)</td>
<td>remaining from B &amp; C</td>
<td>38</td>
</tr>
</tbody>
</table>

Courses successfully completed prior to transfer may not correspond exactly to those offered by the UM-D or the UM. Therefore, a broad policy has been established to evaluate them. If, after such evaluation, the student believes that proper weight has not been given to the courses completed prior to transfer, the student should contact the School of Education Student Services Office for re-evaluation. No course in which a student received less than a grade of C, or has been graded on a pass/fail or satisfactory/unsatisfactory scale, will be transferred. No courses elected in the professional component (education courses) during the freshman and sophomore years are admissible to the program, except as general elective credit. Transfer students must meet all residence requirements. The exceptions to this ruling are those persons who complete the Pre-Elementary Associate Degree or the Pre-Secondary Associate Degree at Henry Ford Community College.

**Courses at Other Institutions**

Once admitted to the UM-D and to the certification program, students are expected to complete their programs of study at UM-D. When documentable, extenuating circumstances occur, students must request permission to take off-campus courses using the established petition process in the School of Education. Forms and information regarding deadlines are available in the School of Education Student Services Office.

**Class Standing and Course Elections**

The number of semester credit hours earned toward graduation at the end of any given term determines a student’s class standing. In the case of transfer hours, only the credit accepted toward a degree can be used in deriving the class standing of a student. Freshmen and sophomores are classified as lower-division students while junior and seniors are considered upper-division students.

**CLASS STANDING**

First two years of pre-professional study: Lower-division students
- Freshman: 0 to 24 credit hours
- Sophomore: 25 to 54 credit hours

Last two years of undergraduate study: Upper-division students
- Junior: 55 to 84 credit hours
- Senior: 85 to 128+ credit hours

Authorization to elect education courses in the professional sequence of courses at the University of Michigan is limited to upper-division students in good academic standing. Students must have at least junior class standing (55 semester hours), a cumulative GPA of 2.75, and have passed the MTTC Basic Skills Test.

**Academic Advising**

Upon admission to a specific program in the School of Education, each student is assigned a faculty advisor. This practice is aimed at helping the student plan a course of study that will fulfill the curriculum requirements in the most efficient manner.

Although all education students are responsible for fully understanding the requirements of the programs they elect, they also are expected to meet regularly with their advisor. Undergraduates and others seeking provisional teaching certificates are required to meet with their School advisor at least once a year. By means of this procedure the individual student can be kept abreast of periodic modifications in the curriculum and in certification regulations. Teacher certification students enrolled in other academic units at UM-D such as secondary certification candidates with a concentration in the College of Arts, Sciences, and Letters are also expected to comply with this policy. Students may request an advisor assignment, or a change in advisor, by contacting the School of Education Student Services Office.

**Academic Standards**

**SCHOLASTIC STANDING**

Students should consult the General Information section of this Undergraduate Catalog on campus-wide policies governing scholastic standing. The School of Education reviews the records of all its degree students at the end of each term. If a certification student’s grade point average for one term drops below 2.75, the student is placed on academic probation and may not register for education methods courses in the professional sequence. If the overall average remains below 2.75 for another term, the student may not be allowed to register as a student in a teacher certification program. Other undergraduate students (those not seeking a teaching certificate) must maintain a grade point average of at least 2.5.

**MAXIMUM CREDIT HOUR LOADS**

Students electing more than 18 credit hours in a full term (Fall, Winter, Summer) must have written permission from the School’s dean. If the student’s GPA is below 3.0, this practice is strongly
discouraged. Students enrolled in the student teaching term are strongly discouraged from electing any courses other than student teaching and its accompanying seminar.

GRADES OF INCOMPLETE AND ABSENCE FROM FINAL EXAMS

A student must request permission to have an "Incomplete" mark (I) or an "Absent from Final Exam" mark (X) appear on his/her transcript by obtaining a Request/Contract form from the School of Education Student Services Office. This form must be taken to the instructor for approval and signature. These marks are not automatically assigned. The instructor will determine the time limit if it is to be less or more than the four-month campus deadline for "Incompletes" and less than five weeks for the final limit if it is to be less or more than the four-month campus deadline. If the deadline date stated in the contract is not met, these marks will automatically convert to an E.

PASS/FAIL GRADING OPTIONS

The School of Education allows students enrolled in any program to use the pass/fail grading system. However, it is limited to elective credit only. Please note the following conditions for enrolling in pass/fail courses:

1. The student cannot be on probation.
2. The student may elect a total of two courses on an optional pass/fail basis toward the academic program.
3. Only one pass/fail course may be elected during a term.
4. Education courses, when used in a student's professional education sequence, may not be elected on an optional pass/fail basis.
5. Distribution requirements may not be elected on an optional pass/fail basis.
6. Courses offered only on a nongraded basis are not regulated by this policy.
7. Courses in a student's teaching major and/or minor may not be elected for optional pass/fail credit.
8. The optional pass/fail grade will count for residency, certification and degree requirements but will not enter into the computation of a student's grade point average.
9. Courses taken for optional pass/fail credit must be specified on the registration form or otherwise identified within the usual time permitted for adding classes. After the add/drop period has elapsed, the student is not permitted to change from a pass/fail to a letter grade or vice-versa. Students may drop an optional pass/fail class within the usual add/drop period. Petitions requesting a change of pass/fail to a letter grade or vice-versa will not be accepted after the first two weeks of the term.

For further information, refer to other sections in this Undergraduate Catalog.

Honors

GRADUATING WITH DISTINCTION

At the time of graduation, the School of Education honors its academically outstanding undergraduate degree candidates by recommending that they graduate with either distinction or high distinction. Those graduating seniors who have achieved an overall grade point average of at least 3.2 will be recommended for a degree with distinction. Those who have achieved an overall grade point average of at least 3.6 will be recommended for a degree with high distinction.

DEAN'S LIST

At the beginning of each term, those students enrolled in Education's undergraduate degree program who have established a noteworthy academic record during the previous term are publicly recognized. In conjunction with the Office of Academic Affairs, the Dean of the School publishes the names of those degree students who have earned a grade point average of 3.5 or better while carrying a minimum course load of 12 semester credit hours during the immediately preceding term. Again, only credit earned at the UM-D is used in determining whether or not a student meets the requirements for this honor.

Other Awards

In addition to the Dean's List, the School of Education also recommends candidates for other awards. See the General information section of this Catalog for additional awards.

Teacher Certification Programs

In recommending students for teacher's certificates, the School of Education functions, indirectly, as an arm of the Michigan Department of Education. All such certificates awarded to students at the UM are issued at the request of an appropriate faculty body by the Michigan Department of Education in Lansing irrespective of the particular campus attended (Ann Arbor, Dearborn, Flint).

Elementary Provisional Certificate

The initial teaching certificate awarded the beginning elementary school teacher is the Michigan Elementary Provisional Teacher's Certificate. This certificate is valid for teaching all subjects in kindergarten through fifth grade and in subject areas (majors and minors) in grades six through eight. One is also qualified to teach all subjects in self-contained classrooms through grade eight. The Provisional Teacher’s Certificate is valid for six years and may be renewed twice (for three years each time) provided that renewal conditions are met. Legislative or other state action may change these specifications. Therefore, each student is advised to contact the School of Education's Student Services Office, located in the Fairlane Center South (FCS), to learn of the most recent policies.

Secondary Provisional Certificate

The teaching certificate awarded to the beginning secondary school teacher is the Michigan Secondary Provisional Teacher's Certificate. This certificate is valid for teaching in grades seven through twelve in those areas where the applicant has completed a major or minor. It is valid for six years and may be renewed twice (for three years each time) provided that renewal conditions are met. Legislative or other state action may change these specifications. Therefore, each student is advised to contact the
School of Education's Student Services Office, located in the Fairlane Center South (FCS), to learn of the most recent policies.

**General Requirements for a Teacher's Certificate**

In order to be awarded an elementary or secondary provisional teacher's certificate, students at the UM-D must be recommended for the certificate by the Governing Faculty of the School of Education. The general procedure to be followed in obtaining such a recommendation is outlined below. It should be noted, however, that progression from one step to another is not automatic; students are expected to be individually responsible for understanding and meeting the requirements and provisions of the programs they pursue.

**QUALIFYING FOR A PROVISIONAL TEACHER'S CERTIFICATE**

To qualify for certificate recommendation, an individual must fulfill the following requirements:

1. Earn a bachelor's degree from the UM or another accredited institution with an overall GPA of 2.75; a minimum GPA of 2.75 in the major; a minimum GPA of 2.75 in the minor; and a minimum GPA of 2.75 in the Professional Sequence. Irrespective of where the degree is earned, each candidate shall satisfactorily complete directed teaching and all required methods courses and practica at the UM-D.
2. If acquiring both the bachelor's degree and a teacher's certificate from the UM-D, the individual shall complete the degree with the appropriate number of semester hours depending on the program selected.
3. Comply with the four-phase program described below.
4. Meet all Michigan Department of Education Teacher Certificate requirements including state mandated tests.
5. Satisfy the School faculty that the applicant possesses attributes that are necessary and desirable for successful teaching.

**School of Education Four-Phase Program**

The School of Education at the UM-D is committed to the ideal of quality in the field of teacher education. It recognizes that not everyone who wishes to be a teacher is capable of meeting program requirements that relate to teacher competency. Therefore, the School of Education is selective in admitting students into its teacher preparation programs and in making recommendations for teacher certification.

A four-phase screening procedure is employed to help identify those people most likely to perform at the level of excellence defined by the School. Further, this procedure is useful in assisting students with career decisions. The screening procedure is divided into four successive phases, each with its own set of academic and professional admission standards. Students are expected to have successfully met all of the requirements at one phase before entering the next. Each student is responsible for knowing and meeting all program requirements as listed in this *Undergraduate Catalog*. The “School of Education Four-Phase Checklist” is as follows:

**PHASE 1**

Three types of students are considered for admission to the School of Education at this entry level phase:

1. **First time in any college (FTIAC) students**
   - Campus admission standards for SAT, ACT, and high school Grade Point Average (GPA) are used in determining admission.
2. **Transfer students**
   - Campus admission standards are used for students transferring 54 or fewer semester hours. School of Education admission standards (a minimum cumulative GPA of 2.75/4.0 scale) are used for students transferring 55 or more semester hours.
3. **Degreed persons seeking certification only**
   - School of Education admission standards are used for individuals with a bachelor's degree earned at a regionally accredited institution. The individual must have a cumulative GPA of 2.75 or higher in their major, minor, and overall to be admitted to the School of Education and Teacher Certification Program.

**Important: Fingerprinting and criminal background checks are required for work in school settings. Such work is required of all certification students. All background checks must be completed in the first semester of admission to the School of Education and on file in the Field Placement Office (Room 261 FCS).**

**NOTE:** Admission to a Teacher Certification program—see Phase 2—is a separate procedure from admission to the School itself.

**PHASE 2**

Admission to a School of Education Teacher Certification program (elementary/secondary) requires all of the following:

1. meeting minimum score requirements on the Michigan Test for Teacher Certification (MTTC) Basic Skills Test (Reading, Mathematics, Writing).
2. a minimum of 55 semester credit hours or an earned degree with a cumulative GPA of 2.75/4.0 scale. Grades earned at all institutions are used in this calculation for students transferring into the School of Education with the exception of degreed persons seeking certification only (see Phase 1, number 3),
3. submission to School of Education of results from the Campus Composition Placement Exam in English (telephone 593-5550 to arrange for the exam), and
4. completion of COMP 105 and 106 (and COMP 227 when required),
5. submission of completed Application for Admission Teacher Certification Program form (available in School of Education Student Services Office, 262 FCS).

**Note:** When all Phase 2 requirements have been met, students receive a formal letter of admission to the Teacher Certification Program.

**PHASE 3**

Eligibility for directed (student) teaching (elementary or secondary) requires all of the following:

1. passing scores from pertinent MTTC Subject Area Tests. Elementary certification students must pass the “elementary
education test.” Secondary certification students must pass the
tests in their major and their minor,
2. senior student status (minimum of 85 semester hours earned),
3. completion of at least one full term (12 semester hours) of study
   at UM-D,
4. a minimum cumulative GPA of 2.75/4.0 scale as well as a
   minimum GPA of 2.75 in the major(s), minor(s), and the
   professional sequence,
5. completion of professional sequence courses,
6. submission of a signed "Evaluation of Oral Expression” form to
   the Office of Student Teaching and Field Placement (261 FCS),
7. attendance at a Student Teaching Application and Placement
   meeting and submission of all forms distributed,
8. valid TB clearance, criminal background check, CPR
   certification, and evidence of training for dealing with infectious
diseases/blood borne pathogens on file, and
9. EDF 450 is required of all Elementary Certification students.

PHASE 4

Recommendation for a degree and/or a Michigan Teaching
Certificate (elementary/secondary) requires all of the following:

1. submission of completed Degree/Diploma Application form
   (available in the School of Education Student Services Office,
   262 FCS). Note: Secondary Certification students must file
   Degree/Diploma Application form in CASL office. See
   Schedule of Classes for application deadlines, and
2. acceptable scores from all relevant Michigan Tests for Teacher
   Certification (MTTC),
   a) Elementary Certification students: Elementary Education
      Test
   b) to be recommended for any major(s), minor(s),
      endorsement(s), all relevant tests must be taken and passed.
      Results must be in by the time recommendations are
      prepared for the state by the UM-D certification officer.
   c) Secondary Certification students: Subject area tests for
      which student wishes to be recommended. (At least one
      major and one minor are required.)
3. successful completion of the chosen program, major(s),
   minor(s), professional sequence, and supplementary
   requirements,
4. a minimum cumulative GPA of 2.75/4.0 scale as well as a
   minimum GPA of 2.75 in the major(s), minor(s) and
   professional sequence.

Based on this record of achievement, a decision to recommend
or not to recommend for degree and/or certification will be made.

Professional Semester

Each student enrolled in a teacher certification program at UM-
D, whether pursuing an elementary or a secondary provisional
certificate, is expected to spend one full academic term exclusively
in professional work. This period of time is called the
"professional semester." Directed Teaching (student teaching) and
its related seminar serve as the core for this particular term. This
entails a full day's teaching load and all school-related activities at
a University-negotiated site. Most students elect their professional
semester courses during the second half of the senior year. The
professional semester for elementary and secondary certification
students is as follows:

Elementary Professional Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDD 305</td>
<td>Directed Teaching</td>
<td>12 hrs</td>
</tr>
<tr>
<td>EDD 307</td>
<td>Seminar</td>
<td>1 hr</td>
</tr>
</tbody>
</table>

Secondary Professional Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDD 301</td>
<td>Directed Teaching</td>
<td>12 hrs</td>
</tr>
<tr>
<td>EDD 304</td>
<td>Seminar</td>
<td>1 hr</td>
</tr>
</tbody>
</table>

Directed Teaching (Student Teaching)

Opportunities for directed teaching are available only in the
University's fall and winter terms. Students wishing to elect
directed teaching in the fall term are required to attend an
application meeting the preceding January and those desiring to
elect it during the winter term are required to attend an application
meeting the preceding March. Meeting dates, times, and locations
will be posted on the Field Placement Office website and in the
Fairlane Center South. Requirements for acceptance into the
professional semester are outlined in the Four-Phase program.

INCOMPLETES, UNSATISFACTORY GRADES,
AND WITHDRAWALS

No student will be assigned to, or registered for, directed
teaching with incomplete work in the Professional Sequence of
courses. Moreover, once a student has been assigned to a directed
teaching contact and then has had registration denied because of
incomplete work, the student will be prohibited from receiving any
future directed teaching assignment for that semester.

Any student, who has withdrawn from or received an
unsatisfactory grade in directed teaching, whether through the
action of a school district, the University, or by personal choice,
will have a request for future placement carefully reviewed by the
School's Executive Committee. Reassignment to directed teaching
is not guaranteed, nor is it an automatic process.

Students must file petitions for reassignment consideration.

General Field Placement Policy

Students in the teacher preparation program are assigned field
placements, either as practicum students or as student teachers, in
public or private schools. Field placement shall be made in
accordance with the policies and procedures set forth by the
School of Education and to be in compliance with accreditation
standards.

The student is expected to maintain a professional attitude in
order to conform to the expectations of the placement school and
the University. Appropriate academic preparation is required as
outlined in the elementary and secondary programs of the School.
Professional responsibilities during the Directed Teaching term are
detailed in the "UM-D Directed Teaching Handbook."

The public and private schools exercise the right to screen the
University's students. Acceptance or rejection of students is not
controlled by the University. A placement school may reject a
University student for several reasons, including a lack of
placement positions in the school or a determination that the
University student's presence in the school or classroom may
interrupt or interfere in some way with the educational process.
Currently there is no way in which the University can require the placement school to state specific reasons for rejection. If a University student is repeatedly denied placement by the field schools, the School of Education will recommend career counseling and terminate matriculation in the teacher certification program.

**Elementary School Certification Program**

This program has been specifically developed for students intending to teach in either the elementary school or the middle school. It permits them to meet the requirements for both a bachelor's degree and the Michigan Elementary Provisional Certificate. The curriculum consists of two parts, the first involving academic study, and the second consisting of professional preparation.

**ACADEMIC PROGRAM REQUIREMENTS (MAJORS AND MINORS)**

Students entering this program are required to complete all distribution requirements and all requirements for the selected major(s) and minor(s). Academic majors and/or minors can be selected from the following fields: English as a Second Language (ESL)-minor only, Language Arts, Mathematics, Science and Social Studies. (Students desiring to pursue an Early Childhood major with elementary certification should follow the program outlined under “Early Childhood Education.”) Education courses and courses in the major and minor may not be elected on a pass/fail basis. Courses that apply to the majors and minors are listed below under “Areas of Study for Majors and Minors.”

**DISTRIBUTION REQUIREMENTS**

**School of Education - Elementary Certification**

Distribution requirements are generally completed in the freshman and sophomore years. Selections must be from courses numbered 100-200 unless otherwise stated.

- **COMP 105** Composition I ........................................ 3 hrs
- **COMP 106** Composition II ....................................... 3 hrs
- **ENGL 327** Advanced Exposition .......................... 3 hrs
- **LIBR 465** Literature for Children ............................ 3 hrs
- **HUM 100** Introduction to Humanities ........................ 3 hrs
- **EDC 340** Psychology of Child Development ............ 3 hrs
- **EDC 341** Practicum in Child Development ............... 1 hr
- **EXPS 282** History and Civics in Elementary School ... 3 hrs
- **EXPS 283** Geography and Econ in Elementary School ... 3 hrs
- **EXPS 410** Multiculturalism in School and Society .... 3 hrs
- **EXPS 220** Elementary School Science .................. 3 hrs
- **NSCI 231** Learning by Inquiry: Physical Science* ...... 3 hrs
- **NSCI 232** Learning by Inquiry: Earth/Planetary Science* 3 hrs
- **NSCI 233** Learning by Inquiry: Life Science ............ 3 hrs
- **EXPS 420** Science Capstone ................................... 2 hrs
- **NSCI 331** Physical Science .................................. 3 hrs
- **NSCI 332** Earth/Planetary Science ....................... 3 hrs
- **NSCI 333** Life Science ....................................... 3 hrs
- **ED 210** Technology for Elementary Education ....... 3 hrs
- **NSCI 231** Learning by Inquiry: Physical Science ....... 3 hrs
- **NSCI 232** Learning by Inquiry: Earth/Planetary Science 3 hrs
- **NSCI 233** Learning by Inquiry: Life Science ............ 3 hrs
- **EXPS 420** Science Capstone ................................... 2 hrs
- **NSCI 331** Physical Science .................................. 3 hrs
- **NSCI 332** Earth/Planetary Science ....................... 3 hrs
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- **NSCI 233** Learning by Inquiry: Life Science ............ 3 hrs
- **EXPS 420** Science Capstone ................................... 2 hrs
- **NSCI 331** Physical Science .................................. 3 hrs
- **NSCI 332** Earth/Planetary Science ....................... 3 hrs
- **NSCI 333** Life Science ....................................... 3 hrs

For math/science or science/math (major/minor), one course from language arts, humanities, behavioral science or social science is required .......................................................... 3 hrs

*Note: Two of the three NSCI distribution courses may be transferred to UM-D. Great Experiments 240, 242, or 340, 342 and NSCI 120, 121 may not be used to satisfy Science distribution requirements. NSCI 233 and BIOL 100/101 may not both be elected for credit in the School of Education.

**OTHER REQUIREMENTS**

1. The Campus Composition Placement Exam (CCPE) is required of all students, i.e., UM-D undergraduates and transfer students. Transfer students who have been given credit for COMP 105 and 106 but receive a prescription from the CCPE for COMP 099 must enroll in an additional composition course (COMP 227).
2. Application to the School of Education Teacher Certification Program is required of all students. The timing of this application is detailed on the four-phase checklist.
3. The Michigan Basic Skills Test must be taken and scores must be at the state-approved level for admission.
4. A cumulative grade point average (GPA) of 2.75 on a 4.0 scale is required overall, in the major, in the minor(s), and in the professional sequence courses.
5. All requirements as identified in the School’s four-phase screening program must be met for a teacher certification. (See four-phase checklist.)
6. Minimum number of hours to graduate is 128 semester hours.

**AREAS OF STUDY FOR MAJORS AND MINORS**

**INTEGRATED SCIENCE**

This area of study is under review. See your advisor for program updates.

**MAJOR**

A minimum of 36 semester hours from the following:

**Required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPS 220</td>
<td>Elementary School Science</td>
<td>3 hrs</td>
</tr>
<tr>
<td>NSCI 231</td>
<td>Learning by Inquiry: Physical Science</td>
<td>3 hrs</td>
</tr>
<tr>
<td>NSCI 232</td>
<td>Learning by Inquiry: Earth/Planetary Science</td>
<td>3 hrs</td>
</tr>
<tr>
<td>NSCI 233</td>
<td>Learning by Inquiry: Life Science</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EXPS 420</td>
<td>Science Capstone</td>
<td>2 hrs</td>
</tr>
<tr>
<td>NSCI 331</td>
<td>Physical Science</td>
<td>3 hrs</td>
</tr>
<tr>
<td>NSCI 332</td>
<td>Earth/Planetary Science</td>
<td>3 hrs</td>
</tr>
<tr>
<td>NSCI 333</td>
<td>Life Science</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

*This major must include at least one course from Life Science, one from Physical Science, one from Earth/Space Science and the
remainder from Biology, Physiology, Astronomy (see Note #4 below), Chemistry, Geology, Physics. Great Experiments 240, 24, or 340, 342 and NSCI 120, 121 cannot be used for this major.

MINOR
A minimum of 24 semester hours from the following:

Required courses*
- EXPS 220 Elementary School Science......................3 hrs
- NSCI 231 Learning by Inquiry: Physical Science........3 hrs (see Note #3 below)
- NSCI 232 Learning by Inquiry: Earth/Planetary Science. (see Note #3 below)..........................3 hrs
- NSCI 233 Learning by Inquiry: Life Science................3 hrs (see Note #3 below)
- EXPS 420 Science Capstone.................................2 hrs
- NSCI 331 Physical Science ................................3 hrs
- NSCI 332 Earth/Planetary ................................3 hrs
- NSCI 333 Life Science .....................................3 hrs

*Great Experiments 240, 242 or 340, 342 and NSCI 120, 121 cannot be used for this minor.

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For a major, 6 or more semester hours must be in courses above 300 level, in addition to EXPS 420.
3. Equivalents for transfer students (NSCI 231, 232, 233): three of the three NSCI distribution courses may be transferred to UM-D.
4. Astronomy can satisfy Earth/Planetary Science requirement.
5. At least 15 semester hours in UM-D courses required for a major.

LANGUAGE ARTS

MAJOR
A minimum of 36 semester hours from the following:

Required courses.........................................................18 hrs
- COMP 105 Composition I
- COMP 106 Composition II
- ENGL 323 Advanced Creative Writing
- ENGL 327 Advanced Exposition
- LIBR 465 Literature for Children

- ENGL 3xx Literature
- OR
- ENGL 4xx Literature course

Select one of the following.............................................3 hrs
- LING 461 Modern English Grammar
- LING 482 history of English Language

Complete by electing courses in English, Linguistics, Speech, Journalism, Foreign Language and COMM 310, 330 and 340.* .........................................................6 hrs

*Note: No more than three courses in any one area for a major except English Literature.

MINOR
A minimum of 24 semester hours from the following:

Required courses.........................................................21 hrs
- COMP 105 Composition I
- COMP 106 Composition II
- LIBR 465 Literature for Children
- ENGL 233 Introduction to Creative Writing
- ENGL 327 Advanced Exposition
- ENGL 2_ or 3_ or 4_ Literature course
- LING 280 Introduction to Linguistics

Complete by electing one course from English, Linguistics, Speech, modern Foreign Language, COMM 310, 330 or 340.* .........................................................3 hrs

*Note: No more than 2 courses in any one area for a minor except English Literature.

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, at least 15 semester hours must be in courses 300 or above; 9 semester hours at 300 or above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

MATHEMATICS

MAJOR
A minimum of 30 semester hours from the following:

Required courses.........................................................18 hrs
- MATH 104 Pre-calculus (Management, Life and Social Science).................................4 hrs
- OR
- MATH 105 Pre-calculus ..............................................4 hrs
- MATH 113 Calculus I: Management, Life and Social Science.................................4 hrs
- OR
- MATH 115 Calculus I..................................................4 hrs
- OR
- MATH 449 Concepts of Calculus for Teachers.............3 hrs
- MATH 385 Math for Elementary Teachers I.........3 hrs
- MATH 386 Math for Elementary Teachers II .......3 hrs
- MATH 387 Math for Elementary Teachers III .......3 hrs
- MATH 442 Geometry for Teachers .........................3 hrs
- MATH 443 Algebra for Teachers .........................3 hrs
- MATH 444 Probability and Statistics for Teachers ......3 hrs

Recommended electives..................................................9 hrs
- MATH 200 Mathematical Proof and Structures ........2 hrs
- MATH 227 Introduction to Matrix Algebra ..............3 hrs
- MATH 363 Introduction to Statistics .....................3 hrs
- MATH 391 Topics in Mathematics Education ...........3 hrs
- MATH 445 Number and Proportional Reasoning for Teachers ...........................................3 hrs
- MATH 446 Discrete Math/Modeling for Teachers .......3 hrs
- MATH 447 Microcomputers in Math for Teachers ......2 hrs
or other courses approved by Mathematics Education Advisors
MINOR
A minimum of 20 semester hours from the following:

Required courses
MATH 104 Pre-calculus: Management, Life and Social Science........................................4 hrs
OR
MATH 105 Pre-calculus ..................................................4 hrs
MATH 385 Math for Elementary Teachers I................3 hrs
MATH 386 Math for Elementary Teachers II ...........3 hrs
MATH 387 Math for Elementary Teachers III........3 hrs
MATH 442 Geometry for Teachers..........................3 hrs
MATH 443 Algebra for Teachers.............................3 hrs

Recommended electives ................................................2-3 hrs
MATH 363 Introduction to Statistics..........................3 hrs
MATH 391 Topics in Mathematics Education.............3 hrs
MATH 444 Data Analysis, Probability, and Statistics for Teachers..............................3 hrs
MATH 445 Number and Proportional Reasoning for Teachers........................................3 hrs
MATH 446 Discrete Math/Modeling for Teachers ......3 hrs
MATH 447 Microcomputers in Math for Teachers.....2 hrs
MATH 449 Concepts of Calculus for Teachers..........3 hrs
or other courses approved by Mathematics Education Advisors

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 15 or more semester hours must be in courses 300 or above; 6 or more semester hours for a minor.
3. At least 12 semester hours in UM-D courses required for a major.
4. Pre-calculus is a prerequisite to MATH 113 and 115 and may be counted for a major.

SOCIAL STUDIES

MAJOR
A minimum of 36 semester hours from the following:

Required courses
EXPS 282 History & Civics in Elem School.........3 hrs
EXPS 283 Geography & Econ in Elem School.........3 hrs
HISTORY............................................................12 hrs
HIST 111 American Past I
OR
HIST 112 American Past II
HIST 3601 Michigan History
Non-U.S. History
Non-Western History
Political Science ..................................................6 hrs
POL 101 American Government
POL elective
Geography ..........................................................6 hrs
Economics ..........................................................6 hrs
ECON 2001 Introductory Economics
ECON elective

MINOR
A minimum of 24 semester hours from the following:

Required courses
EXPS 282 History & Civics in Elem School............3 hrs
EXPS 283 Geography & Econ in Elem School........3 hrs
HISTORY..............................................................6 hrs
HIST 111 American Past I
OR
HIST 112 American Past II
Non-U.S. History ....................................................3 hrs
POL 101 American Government ................................3 hrs
Geography ...........................................................6 hrs
ECON 2001 Introductory Economics .......................3 hrs

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major at least 12 hours must be in courses 300 or above; for a minor 6 hours must be in courses 300 or above.
3. At least 15 semester hours in UM-D courses required for a major.

ENGLISH AS A SECOND LANGUAGE
(Minor Only)

Students must demonstrate experience in learning a modern second language or coursework in a modern second language or permission of Program Director or one UM-D semester course in a modern language.

A minimum of 21 semester hours from the following:

Required courses
EDD 447 Second Language Teaching Elementary.....3 hrs
EDD 448 Practicum in Second Language
Teaching Elementary........................................1 hr
EDC 455 Assessment of Second Language
Teaching ............................................................2 hrs
ENG 482 History of English Language .....................3 hrs
LING 480 Concepts of Linguistics .........................3 hrs
LING 476 Sociolinguistics.......................................3 hrs
Select two of the following.........................................6 hrs
ENGL 461 Modern English Gramma.....................3 hrs
LING 425 Language and Society............................3 hrs
OR
ANTH 425 Language and Society............................3 hrs
ENGL 484 World Englishes .....................................3 hrs
OR
LING 484 World Englishes .....................................3 hrs
PROFESSIONAL REQUIREMENTS

The professional sequence of education courses consists of a minimum of 39 semester hours of credit. This concentration of study represents the core of your professional preparation. At least two practicums are required prior to student teaching. The semester hours are distributed as follows:

- **Foundations**
  - EDA 340 The Foundations of American Ed. ............... 3 hrs

- **Psychology**
  - EDC 300 Educational Psychology ............................ 3 hrs
  - EDC 301 Practicum in Educational Psychology........... 1 hr
  - EDC 460 Educating the Exceptional Child................. 2 hrs

- **Methodologies** (See Note #1 below)
  - EDD 452 Methods of Teaching Math in K-8............... 3 hrs
  - EDD 468 Teaching Reading and Language Arts in Elementary Grades ........................................ 3 hrs
  - EDD 467 Practicum in Reading Instruction*.............. 1 hr
  - EDD 471 Reading Instruction: Models & Methods* .... 2 hrs
  - EDD 485 Teaching Science in Elementary Grades ...... 3 hrs
  - EDD 495 Teaching Social Studies in Elem. Grades .... 3 hrs
  - EDF 450 Health, Nutrition, Physical Education for Elementary Teachers ..................................... 2 hrs

*Note: EDD 467 and 471 are to be taken concurrently. Both require EDD 468 as a prerequisite.

- **Professional Semester** (See Notes #3 & #5 below)
  - EDD 305 Directed Teaching in the Elementary School ..................................................12 hrs
  - EDD 307 Seminar: Teaching in the Elementary Grades ................................................... 1 hr

Notes
1. Enrollment in all the required EDD courses is open only to those who are officially enrolled and in good academic standing in a certification program at UM-D (junior standing required) with a cumulative GPA of 2.75 or higher.
2. A UM-D cumulative GPA of 2.75 or better is required overall for the Professional Sequence.
3. Passing the MTTC Basic Skills Test is required.
4. Eligibility for directed teaching requires passing scores from the MTTC (Michigan Tests for Teacher Certification) subject area test: Elementary certification (elementary education), Secondary certification (major and minor tests).
5. Recommendations for other certification endorsements require passing scores from relevant MTTC subject area tests.

ELEMENTARY CERTIFICATION REQUIREMENTS

The program as outlined above meets the state's teacher certification requirements at the time of this writing. However, changes by the University or the State may affect some program requirements. Therefore, the student is strongly advised to inquire about possible changes by checking with their advisor in the School of Education.

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### Early Childhood Education/Elementary Certification

The Early Childhood Education Program is designed for those intending to work with children, birth through eight years of age. Within the basic elementary education degree curriculum, it enables students to meet State requirements for a Michigan Provisional Elementary Teacher's Certificate and the Early Childhood Endorsement (ZA) as well as to gain special competencies in the area of early childhood. It prepares individuals for careers in childcare centers, working with young children and their families, birth through kindergarten, as well as in the elementary grades 1-5. The program includes a concentrated study of the young child in infant/toddler, preschool, and early school contexts with extensive opportunities for field experiences in a variety of settings.

The requirements of the Early Childhood Education Program for undergraduates are as follows:

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### DISTRIBUTION REQUIREMENTS

#### Early Childhood and Elementary Certification

- **Required courses** .................................................. 42 hrs
  - COMP 105 Composition I
  - COMP 106 Composition II
  - ENGL 327 Advanced Exposition
  - LIBR 465 Literature for Children
  - HUM 100 Introduction to Humanities
  - EXPS 220 Elementary School Science
  - EXPS 282 History & Civics in Elem Sch
  - EXPS 283 Geography & Econ in Elem Sch
  - NSCI 231 Learning by Inquiry: Physical Science
  - NSCI 232 Learning by Inquiry: Earth/Planetary Science
  - NSCI 233 Learning by Inquiry: Life Science
  - MATH 385 Math for Elementary Teachers I
  - MATH 386 Math for Elementary Teachers II
  - EDT 210 Technology for Elementary Education

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### OTHER REQUIREMENTS

1. The Campus Composition Placement Exam (CCPE) is required of all students, i.e., UM-D undergraduates and transfer students. Transfer students who have been given credit for COMP 105 and 106 but receive a prescription from the CCPE for COMP 099 must enroll in an additional composition course (COMP 227).
2. Application to the School of Education Certification Program is required of all students. The timing of this application is detailed on the four-phase checklist.
3. The MTTC (Michigan Tests for Teacher Certification) Basic Skills Test must be taken and scores must be at the state-approved level for admission.
4. A cumulative GPA of 2.75 on a 4.0 scale is required overall, in the major, in the minor(s), and in the professional sequence courses.
5. All requirements as identified in the School's four-phase screening program must be met for a teaching certificate.
recommendation. (See four-phase checklist.)

6. Minimum number of hours to graduate is 128 credit hours.

**EARLY CHILDHOOD MAJOR REQUIREMENTS**

**MAJOR**
A minimum of 36 semester hours from the following:

**Required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDB 421</td>
<td>Current Issues in Early Ed. and Child Care</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 340</td>
<td>Psychology of Child Development</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDC 341</td>
<td>Psychology of Child Dev. Practicum</td>
<td>1 hr</td>
</tr>
<tr>
<td>EDC 414</td>
<td>Early Childhood Ed. For Young Child with Special Needs</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 442</td>
<td>Early Childhood: Family, School, Community</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 445</td>
<td>Developmental Assessment of the Young Child</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 406</td>
<td>Strategies in Early Childhood Education</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDD 410</td>
<td>Practicum in Early Childhood Education</td>
<td>1 hr</td>
</tr>
<tr>
<td>EDD 411</td>
<td>Directed Teaching: Early Childhood</td>
<td>4 hrs</td>
</tr>
<tr>
<td>EDD 412</td>
<td>Seminar: Early Childhood</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDF 450</td>
<td>Health, Nutrition &amp; PE/Classroom Teachers</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EXPS 410</td>
<td>Multiculturalism in School and Society</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

**Development/Family/Multicultural**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDC 431</td>
<td>Constructivist Education</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 440</td>
<td>Child: Birth to Three</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDC 431</td>
<td>Constructivist Education</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 446</td>
<td>Cognition and Memory Development</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 419</td>
<td>Early Literacy and Language Development</td>
<td>2 hrs</td>
</tr>
<tr>
<td>ANTH 421</td>
<td>Education and Culture</td>
<td>3 hrs</td>
</tr>
<tr>
<td>ANTH 482</td>
<td>Psychological Anthropology</td>
<td>3 hrs</td>
</tr>
<tr>
<td>PSYC 300</td>
<td>Life Span</td>
<td>3 hrs</td>
</tr>
<tr>
<td>PSYC 315</td>
<td>Personality Development</td>
<td>3 hrs</td>
</tr>
<tr>
<td>SOC 443</td>
<td>Development of the Sex Roles</td>
<td>3 hrs</td>
</tr>
<tr>
<td>SOC 445</td>
<td>Family</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

**Transfer students, select one**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDC 440</td>
<td>Child: Birth to Three</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDC 431</td>
<td>Constructivist Education</td>
<td>2 hrs</td>
</tr>
</tbody>
</table>

**others as approved by E.C. Coordinator**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDB 422</td>
<td>Administering Early Childhood Centers</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 410</td>
<td>Developing Constructive Peer/Social Relationships</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 412</td>
<td>Positive Guidance Techniques</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 416</td>
<td>Creative Teaching in Early Childhood</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 419</td>
<td>Early Literacy and Language Development</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 427</td>
<td>Art in the Elementary School</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 433</td>
<td>Early Childhood Special Education Practicum</td>
<td>1 hr</td>
</tr>
<tr>
<td>EDD 446</td>
<td>Family-Centered Intervention Strategies for Early Childhood Special Education</td>
<td>2 hrs</td>
</tr>
</tbody>
</table>

somemore level transfer courses in early childhood will be considered for general credit toward the early childhood major.

2. An overall GPA of 2.75 or better is required for the major.

3. At least 15 semester hours in UM-D courses required for a major.

4. A grade of S is required in EDD 411.

The early childhood major and elementary certificate requires a major in early childhood, and two minors selected from English as a Second Language, Language Arts, Mathematics, Science or Social Studies.

**EARLY CHILDHOOD AND ELEMENTARY CERTIFICATION PROFESSIONAL SEQUENCE**

The professional sequence of early childhood elementary education courses consists of:

**Foundations**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDA 340</td>
<td>The Foundations of American Education</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

**Psychology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDC 300</td>
<td>Educational Psychology</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDC 301</td>
<td>Practicum in Ed. Psychology</td>
<td>1 hr</td>
</tr>
</tbody>
</table>

**Methodologies** (See Note #1 below)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDD 452</td>
<td>Methods of Teach. Math. in K-8</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDD 468</td>
<td>Teaching Reading/Language Arts</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDD 467</td>
<td>Practicum in Reading Instruction*</td>
<td>1 hr</td>
</tr>
<tr>
<td>EDD 471</td>
<td>Reading Instruction: Models and Methods*</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 485</td>
<td>Teaching Science in the Elementary Grades</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDD 495</td>
<td>Social Studies in the Elem. Grades</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

*EDD 468 is a prerequisite for these courses.

**Professional Semester** (See notes #3 & #5 below)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDD 305</td>
<td>Directed Teaching in the Elementary School</td>
<td>12 hrs</td>
</tr>
<tr>
<td>EDD 307</td>
<td>Seminar: Teaching in the Elementary Grades</td>
<td>1 hr</td>
</tr>
</tbody>
</table>

Notes

1. Enrollment in all the required EDD courses is open only to those who are officially enrolled and in good academic standing in a certification program at UM-D.

2. A GPA of 2.75 or better is required overall for the Professional Sequence.

3. A grade of S is required in EDD 411. Also required is one full term of study at UM-D (12 semester hours). Election of EDF 450 is required prior to directed teaching.

4. Eligibility for directed teaching requires acceptable scores from the MTTC Subject Area Test, “Elementary Education,” and one full term of study at UM-D (12 semester hours).

5. Recommendations for all other certification endorsements including major(s)/minor(s) require acceptable scores from relevant MTTC subject area tests.
Post-Degree Programs in Early Childhood

Post-degree students wishing to obtain Michigan Elementary Teaching Certification and persons with provisional certificates wishing to maintain certification validity and to qualify for the Michigan (Early Childhood Endorsement (ZA) are eligible for admission to the Early Childhood Education Program. All relevant Michigan Tests for Teacher Certification (MTTC) are required. Course requirements for these students will vary according to the individual undergraduate coursework of the student. Students working toward the M.A. degree and/or the Professional Education Certificate can qualify for the Michigan Early Childhood Endorsement (ZA) by pursuing appropriate coursework. Upon the student's successful completion of a prescribed Early Childhood sequence and a passing score on the MTTC Early Childhood test, the School of Education will recommend to the State of Michigan that the student is qualified to receive an Early Childhood Endorsement (ZA) on the student's Elementary Teaching Certificate.

Inquiries for additional information and program guides can be directed to the School of Education Graduate Student Services Office, (313) 593-5091.

Secondary School Certification Program

UM-D students may earn a bachelor's degree while securing a recommendation for a Secondary Provisional Teacher's Certificate. Programs are intended for those who wish to teach in either a junior or senior high school. Students in this program will have two advisors, one in the College of Arts, Sciences, and Letters (CASL) to help plan the degree program and another, in the School of Education, to assist in planning the certification program.

Note: Education courses, or courses in the major or minor, may not be elected for pass/fail credit.

Campus Degree/Certification Program

Students, upon the successful completion of certification requirements, will receive their certification recommendation through the School of Education and their degree recommendation from CASL. Therefore, they should be properly enrolled in the School of Education and CASL. Students are responsible for meeting all of the appropriate degree requirements legislated by the particular unit that is to recommend their degree. The School of Education and its faculty, therefore, can accept no responsibility for seeing that students are properly acquainted with their various degree requirements. Instead, students are to seek such information from the advisors available in their own particular degree recommending unit.

Certification Advising

All secondary certification students must have an advisor in the School of Education. Usually the education advisor will be assigned at the time the student first enrolls in the certification program. It is the policy of the School of Education that all undergraduates and others seeking provisional teaching certificates are to meet with their certification advisors once a year, during either the fall or winter terms. By means of this practice, the individual secondary certification student can be kept abreast of periodic modifications in the curriculum and in certification regulations.

Certification Requirements

A person desiring to earn a secondary teacher's certificate must meet all of the conditions listed below.

1. The satisfactory completion of a degree program with an overall GPA of 2.75 or higher.
2. The satisfactory completion of a teaching major and a teaching minor, each with a GPA of 2.75 or higher.
3. The successful completion of the courses below is required of everyone desiring to qualify for a secondary certification recommendation:
   a. Multiculturalism in School and Society (EXPS 410 or equivalent)
   b. Technology in Secondary Education (EDT 211).
4. All requirements as identified in the School's four-phase program listed below must be met for a teaching certificate recommendation.

School of Education Four-Phase Program

Phase 1

Three types of students are considered for admission to the School of Education at this entry level phase:

1. First time in any college (FTIAC) students
   Campus admission standards for SAT, ACT, and high school Grade Point Average (GPA) are used in determining admission.
2. Transfer students
   Campus admission standards are used for students transferring 54 or fewer semester hours. School of Education admission standards (a minimum cumulative GPA of 2.75/4.0 scale) are used for students transferring 55 or more semester hours.
3. Degreed persons seeking certification only
   School of Education admission standards are used for individuals with a bachelor's degree earned at a regionally accredited institution. The individual must have a cumulative GPA of 2.75 in their major, minor, and overall to be admitted to the School of Education and Teacher Certification Program.

Important: Fingerprinting and criminal background checks are required for work in school settings. Such work is required of all certification students. All background checks must be completed in the first semester of admission to the School of Education and on file in the Field Placement Office (Room 262 FCS).

Note: Admission to a Teacher Certification program—see Phase
2--is a separate procedure from admission to the School itself.

PHASE 2

Admission to a School of Education Teacher Certification program (elementary/secondary) requires all of the following:
1. meeting minimum score requirements on the Michigan Test for Teacher Certification (MTTC) Basic Skills Test (Reading, Mathematics, Writing),
2. a minimum of 55 semester credit hours or an earned degree with a cumulative GPA of 2.75/4.0 scale. Grades earned at all institutions are used in this calculation for students transferring into the School of Education, with the exception of degreed persons seeking certification only (see Phase 1, number 3),
3. submission to School of Education of results from the Campus Composition Placement Exam in English (telephone 593-5550 to arrange for the exam),
4. completion of COMP 105 and 106 (and COMP 227 when required),
5. Submission of completed Application for Admission Teacher Certification Program form (available in School of Education Student Services Office, 262 FCS).

Note: When all Phase 2 requirements have been met, students receive a formal letter of admission to the Teacher Certification Program.

PHASE 3

Eligibility for directed (student) teaching (elementary/secondary) requires all of the following:
1. passing scores from pertinent MTTC Subject Area Tests. Elementary certification students must pass the “elementary education test.” Secondary certification students must pass the tests in their major and their minor,
2. senior student status (minimum of 85 semester hours earned),
3. completion of at least one full term (12 semester hours) of study at UM-D,
4. a minimum cumulative GPA of 2.75/4.0 scale as well as a minimum GPA of 2.75 in the major(s), minor(s) and the professional sequence,
5. completion of Professional Sequence courses
6. submission of a signed “Evaluation of Oral Expression” form to the Office of Student Teaching and Field Placement (261 FCS),
7. attendance at a Student Teaching Application and Placement meeting and submission of all forms distributed,
8. valid TB clearance, criminal background check, CPR certification and evidence of training for dealing with infectious diseases/blood borne pathogens on file.
9. EDF 450 is required for all Elementary Certification students.

PHASE 4

Recommendation for a degree and/or a Michigan Teaching Certificate (elementary/secondary) requires all of the following:
1. submission of completed Degree/Diploma Application form (available in the School of Education Student Services Office, 262 FCS). Note: Secondary Certification students must file Degree/Diploma Application form in CASL office. See Schedule of Classes for application deadlines,
2. acceptable scores from all relevant Michigan Tests for Teacher Certification (MTTC),
   a) Elementary Certification students: Elementary Education Test
   b) to be recommended for any major(s), minor(s) or endorsement(s), all relevant tests must be taken and passed. Results must be in by the time recommendations are prepared for the state by the UM-D certification officer.
   c) Secondary Certification students: Subject area tests for which student wishes to be recommended. (At least one major and one minor are required.)
3. successful completion of the chosen program, major(s), minor(s), professional sequence, and supplementary requirements,
4. a minimum cumulative GPA of 2.75/4.0 scale as well as a minimum GPA of 2.75 in the major(s), minor(s), and professional sequence.

Based on this record of achievement, a decision to recommend or not to recommend for degree and/or certification will be made.

Secondary Teaching Major and Minor Requirements

Secondary education students pursuing a bachelor's degree in the College of Arts, Sciences, and Letters should not confuse the requirements for their teaching major with those for their academic concentration in CASL. The courses required to complete a teaching major are determined by the School of Education in compliance with the state certification code. The courses required for a degree concentration are prescribed by the CASL and are a part of the student's degree program. Often the two sets of requirements overlap so that by fulfilling concentration requirements, the student also, in most cases, completes most of the requirements for a teaching major. Occasionally, however, students must exercise caution when electing individual courses so that one set of requirements is not ignored while fulfilling the other. The student's faculty advisor in the School of Education will be able to assist in planning an overall certification program that simultaneously meets both sets of requirements in an expeditious manner.

AREAS OF STUDY FOR MAJORS AND MINORS

The teaching majors and minors currently available for secondary certification students are listed below:

- Biology
- Chemistry
- Computer Science (minor only)
- Earth Science
- Economics
- English
- English as a Second Language (minor only)
- Environmental Studies
- French
- German (minor only)
- History
- Integrated Science (major only)
- Mathematics
- Physics
- Political Science
- Psychology (minor only)
- Social Studies
Sociology (minor only)
Spanish
Speech (minor only)

**BIOLOGY**

**MAJOR**
A minimum of 32 semester hours is required.

**Required courses**
- BIOL 130 Introduction to Organismal and Environmental Biology 4 hrs
- BIOL 140 Introduction to Molecular and Cellular Biology 4 hrs

Cellular and Molecular Biology 6-8 hrs
Select two courses from below. One must be a laboratory course.
- BIOL 301 Cell Biology 4 hrs
- *BIOL 306 General Genetics 3 hrs
- BIOL 335 Plant Physiology 4 hrs
- BIOL 380 Epidemiology 2 hrs
- BIOL 385 Microbiology 4 hrs
- BIOL 405 Applied Microbiology 4 hrs
- *BIOL 406 Microbial Genetics 4 hrs
- BIOL 450 Virology 4 hrs
- BIOL 455 Immunology 4 hrs
- BIOL 470 Biochemistry I 3 hrs
- BIOL 471 Biochemistry II 3 hrs
- BIOL 474 Molecular Biology 4 hrs
- BIOL 485 Physiology of Microorganisms 4 hrs

Organismal Biology 7-9 hrs
Select two courses from below. One must be a laboratory course.
- BIOL 303 Comparative Animal Physiology 4 hrs
- BIOL 310 Histology 4 hrs
- BIOL 311 Embryology 4 hrs
- BIOL 312 Comparative Anatomy of Vertebrates 5 hrs
- BIOL 333 Plant Biology 4 hrs
- BIOL 350 Introduction to Neurobiology 3 hrs

Population and Environmental Biology 7-8 hrs
Select two courses from below. One must be a laboratory course.
- BIOL 304 Ecology 4 hrs
- BIOL 315 Aquatic Ecosystems 4 hrs
- BIOL 320 Field Biology 4 hrs
- *BIOL 360 Population Genetics and Evolution 3 hrs
- BIOL 420 Advanced Field Ecology 4 hrs

**Electives**
Select from above 0-4 hrs

*One course in genetics: either BIOL 306, 360 or 406, must be selected.

**MINOR**
A minimum of 20 semester hours is required.

**Required courses** 20 hrs
- BIOL 130 Introduction to Organismal and Environmental Biology
- BIOL 140 Introduction to Molecular and Cellular Biology

**CHEMISTRY**

**MAJOR**
A minimum of 32 semester hours is required.

**Required courses**
- CHEM 134 General Chemistry IA 4 hrs
- CHEM 144 General Chemistry IB 4 hrs
- CHEM 136 General Chemistry II A 4 hrs
- CHEM 146 General Chemistry II B 4 hrs
- CHEM 225 Organic Chemistry I 3 hrs
- CHEM 226 Organic Chemistry II 3 hrs
- CHEM 227 Organic Lab 2 hrs
- CHEM 303 Inorganic Chemistry I 3 hrs
- CHEM 344 Quantitative Analysis 4 hrs
- CHEM 368 Physical Chemistry I 3 hrs
- CHEM 403 Inorganic Chemistry II 3 hrs

Advanced chemistry course 3-4 hrs
Select at least one from the following:
- CHEM 348 Environmental Chemistry 3 hrs
- CHEM 447 Instrumental Methods of Analysis 4 hrs
- CHEM 469 Physical Chemistry II 3 hrs
- CHEM 470 Biochemistry I 3 hrs

Additional Chemistry Lab courses 1-2 hrs
Select one from the following:
- CHEM 450 Advanced Organic Synthesis and Characterization Laboratory 1 hr
- CHEM 452 Advanced Inorganic Synthesis and Characterization Laboratory 1 hr
- CHEM 481 Physicochemical Measurements 2 hrs

**MINOR**
A minimum of 20 semester hours is required.

**Required courses**
- CHEM 134 General Chemistry IA 4 hrs
- CHEM 144 General Chemistry IB 4 hrs
- CHEM 136 General Chemistry II A 4 hrs
- CHEM 146 General Chemistry II B 4 hrs
CHEM 225 Organic Chemistry I .....................3 hrs
CHEM 226 Organic Chemistry II ..................3 hrs
CHEM 303 Inorganic Chemistry I ...............3 hrs
CHEM 344 Quantitative Analysis ..................4 hrs

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 16 semester hours must be in courses 300 or above; for the minor, 7 semester hours in courses numbered 300 or above.
3. At least 15 semester hours in UM-D courses required for the major.

Chemistry/Instructional Track

The Chemistry/Instructional Track concentration is an interdisciplinary program leading to a BS degree in Chemistry, and to a Michigan Provisional Secondary Teaching Certificate. It is a collaboration between the Department of Natural Sciences and the School of Education. For further information, contact Dr. Richard Moyer, advisor, at the School of Education, (313) 593-3099.

COMPUTER SCIENCE

MINOR ONLY
A minimum of 20 semester hours is required.

Prerequisites: One year of calculus, either MATH 115 and MATH 116 or MATH 113 and MATH 114. (Not included in the 20 hours.)

Required courses
Computer and Information Sciences....................12 hrs
CIS 150 Computer Science I
CIS 200 Computer Science II
CIS 275 Discrete Structures

Computer Literacy and Basic Programming.................6 hrs
CIS 350 Data Structures & Algorithm Analysis ..........4 hrs
OR
CIS 381 Industrial Robots ..................................3 hrs

EDT 211 Technology for Secondary Education ............3 hrs

Recommended Electives ....................................6 hrs
CIS 400 Programming Languages .......................4 hrs
MATH 447 Microcomputers in Math for Teachers ..........2 hrs

CIS 29__ (A programming language) .....................2 hrs

Additional Electives
MATH 462 Math Modeling ..................................3 hrs
MATH 472 Introduction to Numerical Analysis ........3 hrs
STAT 325 Applied Statistics I ..........................3 hrs
(or other electives approved by academic advisor)

The State Certification requirements for Computer Science require three (3) programming languages. The Above program requires C++. Students must select two additional languages to meet the three language requirement. One recommended language is LOGO (MATH 447). Students with significant background in a language may petition for a waiver of the course teaching that language.

Notes
1. An overall GPA of 2.75 or better is required for a minor.
2. For the minor, 9 semester hours at 300 or above are required.

EARTH SCIENCE

MAJOR
A minimum of 32 semester hours is required.

Required courses
GEOL 118 Physical Geology ........................4 hrs
GEOG 203 Weather & Climate .........................3 hrs
GEOL 218 Historical Geology .........................4 hrs
GEOL 340 Remote Sensing ............................3 hrs
GEOL 342 Physical Oceanography ....................3 hrs
GEOL 377 Field Methods ................................1 hr
PHYS 130 Introduction to Astronomy .................3 hrs
PHYS 131 Introduction to Astronomy Laboratory ....1 hr

Electives
ESCI 330 Land Use Management .......................3 hrs
GEOG 310 Economic Geography .......................3 hrs
GEOG 332 Hazardous Waste Management .............3 hrs
GEOG 370 Environmental Geology ...................3 hrs
GEOG 372 Energy Resources ..........................3 hrs
GEOG 375 Groundwater Hydrology ....................3 hrs

MINOR
A minimum of 24 semester hours is required.

Required courses
GEOG 203 Physical Geography I .....................3 hrs
GEOL 118 Physical Geology ........................4 hrs
GEOL 218 Historical Geology .........................4 hrs
GEOL 342 Physical Oceanography ....................3 hrs
GEOL 377 Field Methods ................................1 hr
PHYS 130 Introduction to Astronomy .................3 hrs
PHYS 131 Introductory Astronomy Laboratory .......1 hr

Electives
ESCI 330 Land Use Management .......................3 hrs
GEOG 310 Economic Geography .......................3 hrs
GEOG 332 Hazardous Waste Management .............3 hrs
GEOL 340 Remote Sensing ............................3 hrs
GEOG 370 Environmental Geology ...................3 hrs
GEOG 372 Energy Resources ..........................3 hrs
GEOG 375 Groundwater Hydrology ....................3 hrs

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. At least 15 semester hours of courses at UM-D required for a major.

ECONOMICS

This area of study is under Review. See your advisor for
program updates.

MAJOR
A minimum of 30 semester hours is required.

Required courses
- ECON 201 Principles of Macroeconomics .......... 3 hrs
- ECON 202 Principles of Microeconomics .......... 3 hrs
- ECON 305 Economic Statistics ................. 3 hrs

Select one of the following:
- ECON 301 Intermediate Macroeconomics ........ 3 hrs
- ECON 302 Intermediate Microeconomics ........ 3 hrs

Select one of the following: .................................................. 3 hrs
- GEOG 310 Economic Geography
- ECON 361 U.S. Economic History
- ECON 381 urban Economics

The balance of courses to be selected with the approval of the degree and certification advisors in accordance with the Economic concentration and certification requirements .......................... 15 hrs

Supplementary requirements (not included in the 30 semester hours) At least one course in each of the following areas:
- Geography
- U.S. History
- World History
- Non-Western History (Asian, African, Middle Eastern)

MINOR
A minimum of 20 semester hours is required.

Required courses
- ECON 201 Introductory Economics .................. 3 hrs
- ECON 201 Principles of Macroeconomics .......... 3 hrs
- ECON 202 Principles of Microeconomics .......... 3 hrs

The balance of courses to be selected with the approval of the certification advisor in accordance with the certification requirements .................................. 11-12 hrs

Supplementary requirements (not included in the 20 hours). At least one course in each of the following areas:
- Geography
- U.S. History
- World History
- Non-Western History (Asian, African, Middle Eastern)

Notes
1. An overall GPA of 2.75 or better is required for a major and a minor.
2. For the major, 15 semester hours must be in courses 300 or above; 9 semester hours at 300 or above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

ENGLISH

MAJOR
A minimum of 30 semester hours is required.

Required courses
- Select one of the following.......................................................... 3 hrs
  - ENGL 461 Modern English Grammar
  - ENGL 482 History of the English Language

Select one of the following.......................................................... 3 hrs
- ENGL 323 Advanced Creative Writing
- ENGL 327 Advanced Exposition

Select one of the following.......................................................... 3 hrs
- ENGL 383 American English
- ENGL 425 Language and Society
- ENGL 461 Modern English Grammar
- LING 464 Contemporary Rhetorical Theory
- ENGL 465 Discourse Analysis
- ENGL 477 African American English
- ENGL 482 History of the English Language
- ENGL 484 World Englishes
- LING 476 Sociolinguistics

The balance of courses are to be selected with the approval of the degree and certification advisors in accordance with the English concentration requirements. Among the electives, COMM 310, 330 and 335 are allowed ............................................................... 21 hrs

Supplementary requirement (not included in the 20 semester hours):
- LIBR 470 Literature for Young People................. 3 hrs

Note: COMP 105 and 106 are required but do not count toward the English major.

MINOR
A minimum of 20 semester hours is required.

Required courses
- Select one of the following.......................................................... 3 hrs
  - ENGL 461 Modern English Grammar
  - ENGL 482 History of the English Language

Select one of the following.......................................................... 3 hrs
- ENGL 323 Creative Writing
- ENGL 327 Advanced Exposition

Select one of the following.......................................................... 3 hrs
- ENGL 383 American English
- ENGL 425 Language and Society
- ENGL 461 Modern English Grammar
- LING 464 Contemporary Rhetorical Theory
- ENGL 465 Discourse Analysis
- ENGL 477 African American English
- ENGL 482 History of the English Language
- ENGL 484 World Englishes
- LING 476 Sociolinguistics

The balance of courses is to be selected with the approval of the degree and certification advisors in accordance with the English concentration requirements. Among the electives, COMM 310, 330 and 335 are allowed ............................................................... 21 hrs

Supplementary requirement (not included in the 20 hrs):
- LIBR 470 Literature for Young People................. 3 hrs
Note: COMP 105 and 106 are required but do not count toward the English minor.

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 18 semester hours must be in courses 300 or above; 9 semester hours at 300 or above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

ENGLISH AS A SECOND LANGUAGE

MINOR ONLY
Students must demonstrate experience in learning a modern second language or coursework in a modern second language or permission of Program Director, or one UMD semester course in a modern language.

A minimum of 21 semester hours from the following:

Required courses
- EDD 496 Second Language Teaching Secondary ... 3 hrs
- EDD 497 Practicum in Second Language Teaching Secondary ........................................ 1 hr
- EDC 455 Assessment of Second Language Teaching ................................................. 2 hrs
- ENG 482 History of English Language ...................... 3 hrs
- LING 480 Concepts of Linguistics .................. 3 hrs
- LING 476 Sociolinguistics ........................................ 3 hrs

Select two of the following ................................................. 6 hrs
- ENGL 461 Modern English Grammar
- LING 425 Language and Society
- OR
- ANTH 425 Language and Society
- OR
- ENGL 484 World Englishes
- OR
- LING 484 World Englishes

Note: An overall GPA of 2.75 or better is required for a major.

ENVIRONMENTAL STUDIES

MAJOR
A minimum 36 semester hours is required.

Prerequisites (credit hours not counted toward minor)
- BIOL 130 Introduction to Organismal and Environmental Biology ................................ 4 hrs
- GEOL 118 Physical Geology ........................................ 4 hrs

Required courses
- ESCI 301 Introduction to Environmental Science .... 4 hrs
- ESCI 320 Field Biology ........................................ 4 hrs
- ENST 301 Concepts of Environmentalism .............. 3 hrs
- ENST 305 Environmental Instrumentation and Analysis ........................................ 3 hrs
- ENST 365 Environmental Psychology .................. 3 hrs
- ENST 395 Seminar on Environmental Issues ........ 1 hr
- ENST 474 Environmental Education .................. 2 hrs

Electives ................................................................. 6 hrs
- Environmental Studies and Environmental Science courses or as advised.

MINOR
A minimum of 24 semester hours is required.

Prerequisites (credit hours not counted toward minor)
- BIOL 130 Introduction to Organismal and Environmental Biology ................................ 4 hrs
- GEOL 118 Physical Geology ........................................ 4 hrs

Required courses
- ESCI 301 Introduction to Environmental Science .... 3 hrs
- ESCI 320 Field Ecology ........................................ 4 hrs
- ENST 301 Concepts of Environmentalism .............. 3 hrs
- ENST 305 Environmental Instrumentation and Analysis ........................................ 3 hrs
- ENST 395 Seminar on Environmental Issues ........ 1 hr
- ENST 474 Environmental Education .................. 2 hrs
- ENST 486 Environmental Interpretation ............ 2 hrs
- GEOG 203 Weather and Climate .......................... 3 hrs
- GEOG 204 Landforms ........................................ 3 hrs

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 15 semester hours must be in courses 300 or above; 9 semester hours at 300 or above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

FRENCH

MAJOR
A minimum of 30 semester hours in coursework beyond second-year proficiency is required.

Prerequisite: French 202 or equivalent French language proficiency (not counted toward major).

Required courses
- FREN 301 Advanced Conversation and Composition ........................................ 3 hrs
- FREN 302 Advanced Conversation and Composition ........................................ 3 hrs

One specialized language course from the following ............. 3 hrs
- FREN 305 Language of Business
- FREN 306 A Cultural Introduction to French Business
- FREN 408 Writing and Translating

Two civilization/culture courses from the following ............. 6 hrs
- FREN 335 French Civilization of the Past
- FREN 337 France in the Twentieth Century
- FREN 338 France of Today
- FREN 339 Francophone Literature and Civilization
One film course from the following ........................................ 3 hrs
   FREN 332   French Cinema
   FREN 333   From Novel to Screen

One literature course from the following .......................... 3 hrs
   FREN 330   French Literature: Middle Ages - 18th Century
   FREN 331   French Literature: 19th and 20th Century
   FREN 333   From Novel to Screen
   FREN 334   Workshop in French Theater
   FREN 339   Francophone Literature and Civilization
   FREN 433   Contemporary French Theater

Additional credit hours from other French area offerings ...... 9 hrs

MINOR
A minimum of 20 semester hours of coursework beyond second year proficiency is required.

Prerequisite
French 202 or equivalent French language proficiency (not counted toward minor).

Required courses
   .............................................................. 9 hrs
   GER 301   Advanced Conversation and Composition
   .............................................................. 3 hrs
   GER 302   Advanced Conversation and Composition
   .............................................................. 3 hrs

One specialized language course from the following .......... 3 hrs
   FREN 305   Language of Business
   FREN 306   A Cultural Introduction to French Business
   FREN 408   Writing and Translating

Two civilization/culture courses from the following .......... 6 hrs
   FREN 336   French Civilization of the Past
   FREN 337   France in the Twentieth Century
   FREN 338   France of Today
   FREN 339   Francophone Literature and Civilization

One film course from the following ................................ 3 hrs
   FREN 332   French Cinema
   FREN 333   From Novel to Screen

One literature course from the following ........................ 3 hrs
   FREN 330   French Literature: Middle Ages - 18th Century
   FREN 331   French Literature: 19th and 20th Century
   FREN 333   From Novel to Screen
   FREN 334   Workshop in French Theater
   FREN 339   Francophone Literature and Civilization
   FREN 433   Contemporary French Theater

Notes
1. FREN 333 and 339 are listed under two headings. Students may count them under one or the other of the headings as they wish, but not under both.
2. Concentrators are encouraged to strengthen their knowledge of French language and culture by participating in any of the approved study-abroad programs.
3. For the major, 30 credit hours of upper-level courses (courses numbered 300 or higher) are required; 20 credit hours of upper-level courses are required for the minor.
4. An overall GPA of 2.75 or better is required for a major or a minor.

5. At least 15 semester hours in UM-D courses required for a major.
6. Acceptable scores from the MTTC Subject Area Test in French are required for Teacher Certification.

GERMAN

MINOR ONLY
A minimum of 20 semester hours of coursework beyond second-year proficiency is required.

Prerequisite: GER 202 or equivalent German language proficiency (not counted toward minor).

Required courses .............................................................. 9 hrs
   GER 301   Advanced Conversation and Composition
   GER 302   Advanced Conversation and Composition
   GER 305   Language of Business

One culture course from the following ................................ 3 hrs
   GER 376   Contemporary German Cultures

One literature course from the following .......................... 3 hrs
   GER 371   German Literature: Classic and Romantic
   GER 372   Introduction to German Literature

One additional course from the following ........................ 3 hrs
   GER 371   German Literature: Classic and Romantic
   GER 372   Introduction to German Literature
   GER 376   Contemporary German Culture
   GER 390   Topics in German

Two additional credit hours from other upper-level German area offerings including one-hour reading courses .................... 2 hrs

Notes
1. Students minoring in German are encouraged to strengthen their knowledge of German language and culture by participating in any of the approved study-abroad programs or a total immersion summer program.
2. For the minor, 20 credit hours of upper-level courses (courses numbered 300 or higher) are required.
3. An overall GPA of 2.75 or better is required for a minor.
4. Acceptable scores from the MTTC Subject Area Test in German are required for Teacher Certification.

HISTORY

MAJOR
A minimum of 30 semester hours is required.

Required courses .............................................................. 12 hrs
   HIST 300   The Study of History
   HIST 3601  Michigan History
   HIST 111   American Past I
   HIST 112   American Past II

One course in each of the following areas .......................... 6 hrs
   Western History
   Non-Western History (Asian, African, Middle Eastern)

The balance of courses to be selected with the approval of the degree and certification advisors in accordance with the History
concentration and certification requirements ........................ 12 hrs

Supplementary requirements (not included in the 30 hours). One course in each of the following areas:
  Geography
  Economics
  U.S. Political Science

MINOR
A minimum of 20 semester hours is required.

Required courses ................................................................. 9 hrs
HIST 3601 Michigan History
HIST 111 American Past I
HIST 112 American Past II

Two courses in each of the following areas ...................... 12 hrs
  Western History ................................................................. 6 hrs
  Non-Western History (Asian, African, Middle Eastern) ....... 6 hrs

Supplementary requirements (not included in the 20 hours). One course in each of the following areas:
  Geography
  Economics
  U.S. Political Science

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 15 semester hours must be in courses 300 or above; 9 semester hours at 300 or above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

INTEGRATED SCIENCE

MAJOR
A minimum of 36 semester hours is required spread over three of the four subject areas for Integrated Science. The remaining subject area will constitute your minor. You must minor in one of these four disciplines.

Biology  ................................................................. 12 hrs

Required courses ................................................................. 8 hrs
BIOL 130 Introduction to Organismal and Environmental Biology
BIOL 140 Introduction to Molecular and Cellular Biology

Select one course from the following ................................. 4 hrs
BIOL 301 Cell Biology ......................................................... 4 hrs
BIOL 304 Ecology ................................................................. 4 hrs
BIOL 306 General Genetics ................................................... 3 hrs
BIOL 320 Field Biology ......................................................... 4 hrs
BIOL 360 Population Genetics and Evolution ....................... 3 hrs
BIOL 385 Microbiology ......................................................... 4 hrs

Chemistry  ................................................................. 12 hrs

Required courses ................................................................. 4 hrs
CHEM 134 General Chemistry IA ......................................... 4 hrs
CHEM 144 General Chemistry IB ......................................... 4 hrs
CHEM 136 General Chemistry IIA ......................................... 4 hrs
CHEM 146 General Chemistry IIB ......................................... 4 hrs
CHEM 225 Organic Chemistry I ........................................... 3 hrs

Select one course from the following
CHEM 226 Organic Chemistry II ........................................ 3 hrs
CHEM 227 Organic Chemistry Laboratory ............................. 2 hrs
CHEM 303 Inorganic Chemistry ........................................... 3 hrs
CHEM 344 Quantitative Analysis ......................................... 4 hrs

Earth Science ................................................................. 12 hrs

Required courses
GEOG 118 Physical Geology ................................................ 4 hrs
GEOG 203 Weather and Climate .......................................... 3 hrs
PHYS 130 Introduction to Astronomy .................................... 3 hrs
PHYS 131 Introduction to Astronomy Lab .............................. 1 hr

Select one course from the following ................................. 1-4 hrs
GEOG 218 Historical Geology .............................................. 4 hrs
GEOG 332 Hazardous Waste Management ............................. 3 hrs
GEOG 340 Remote Sensing ................................................... 3 hrs
GEOG 342 Oceanography ..................................................... 3 hrs
GEOG 370 Environmental Geology ....................................... 3 hrs
GEOG 377 Field Methods ..................................................... 1 hr

Physics ................................................................. 12 hrs

Required courses ................................................................. 8 hrs
PHYS 125 Introductory Physics I
PHYS 150 General Physics I

OR

PHYS 126 Introductory Physics II
PHYS 151 General Physics II

Select one course from the following ................................. 4 hrs
PHYS 305 Contemporary Physics ........................................ 3 hrs
PHYS 360 Instrumentation for Scientists .............................. 4 hrs
PHYS 401 Mechanics ............................................................ 3 hrs
PHYS 403 Electricity and Magnetism ..................................... 3 hrs
PHYS 405 Optics ................................................................. 3 hrs
PHYS 406 Thermal and Statistical Physics ............................. 4 hrs

MINOR
A minimum of 20 hours is required. See information above under Major.

Additional Notes:
1. An overall GPA of 2.75 or better is required for a major.
2. At least 15 hours of UM-D courses are required for a major.

MATHEMATICS

MAJOR
A minimum of 30 semester hours from courses numbered above
MATH 105 is required.

Required courses
MATH 115 Calculus I................................. 4 hrs
MATH 116 Calculus II................................. 4 hrs
MATH 215 Calculus III............................... 4 hrs
MATH 200 Mathematical Proof and Structures ...... 2 hrs
MATH 216 Introduction to Differential Equations .... 3 hrs
MATH 227 Intro to Linear Algebra................... 3 hrs
MATH 331 Survey of Geometry........................ 3 hrs
MATH 412 First Course in Modern Algebra.......... 3 hrs
MATH 486 Secondary School Mathematics for Teachers ................................ 3 hrs

Recommended electives ................................ 3 hrs
MATH 276 Discrete Mathematics
MATH 315 Applied Combinatorics
MATH 372 Computing with Mathematica
MATH 395 Elementary Number Theory
MATH 413 Linear Algebra
MATH 455 Complex Variables
MATH 462 Mathematical Modeling
MATH 480 History of Mathematics

Supplementary requirements (not included in the 30 hours) .......... 3 hrs
CIS 125 Survey of Computer Science
STAT 325 Applied Statistics I

MINOR
A minimum of 20 semester hours from courses numbered above MATH 105 is required.

Required courses
MATH 115 Calculus I................................. 4 hrs
MATH 116 Calculus II................................. 4 hrs
MATH 215 Calculus III............................... 4 hrs
MATH 200 Math. Proof and Structures .............. 2 hrs
MATH 227 Intro to Linear Algebra................... 3 hrs
MATH 331 Survey of Geometry........................ 3 hrs
MATH 486 Secondary School Mathematics for Teachers ................................ 3 hrs

Recommended electives ................................ 3-4 hrs
MATH 215 Calculus III............................... 4 hrs
MATH 276 Discrete Mathematics .................... 4 hrs
MATH 315 Applied Combinatorics ..................... 3 hrs
MATH 372 Computing with Mathematica .......... 3 hrs
MATH 395 Elementary Number Theory ............ 3 hrs
MATH 412 First Course in Modern Algebra.......... 3 hrs
MATH 455 Complex Variables ..................... 3 hrs
MATH 462 Mathematical Modeling .................... 3 hrs
MATH 480 History of Mathematics .................... 3 hrs

STAT 325 Applied Statistics I ......................... 3 hrs
OR
a course in data analysis and probability

Supplementary requirement (not included in the 20 hours) .... 3 hrs
CIS 125 Survey of Computer Science
OR
a programming course

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 12 semester hours must be in courses 300 or above; 6 semester hours at 300 or Above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

PHYSICS

MAJOR
A minimum of 32 semester hours is required.

Required courses
PHYS 150 General Physics I.......................... 4 hrs
PHYS 151 General Physics II........................ 4 hrs
PHYS 305 Contemporary Physics..................... 3 hrs
PHYS 401 Mechanics.................................. 3 hrs
PHYS 403 Electricity and Magnetism................ 3 hrs

Electives .............................................. 15 hrs
PHYS 305 Contemporary Physics..................... 3 hrs
PHYS 320 Environmental Physics.................... 3 hrs
PHYS 360 Instrumentation for Scientists.......... 3 hrs
PHYS 403 Optics.................................... 3 hrs
PHYS 406 Thermal and Statistical Physics........ 3 hrs
PHYS 453 Quantum Mechanics....................... 3 hrs
PHYS 457 Atomic and Nuclear Physics............. 3 hrs
PHYS 460 Advanced Physics Laboratory II........ 3 hrs
PHYS 463 Solid State Physics...................... 3 hrs

MINOR
A minimum of 20 semester hours is required.

Required courses
Select one of the following.................................. 4 hrs
PHYS 125 Introductory Physics I
PHYS 150 General Physics I

Select one of the following.................................. 3-4 hrs
PHYS 126 Introductory Physics II..................... 4 hrs
PHYS 151 General Physics II........................ 4 hrs
PHYS 305 Contemporary Physics..................... 3 hrs

Additional hours selected from the following .......... 12-13 hrs
PHYS 305 Contemporary Physics..................... 3 hrs
PHYS 320 Environmental Physics.................... 3 hrs
PHYS 360 Instrumentation for Scientists.......... 3 hrs
PHYS 401 Mechanics.................................. 3 hrs
PHYS 403 Optics.................................... 3 hrs
PHYS 453 Quantum Mechanics....................... 3 hrs
PHYS 457 Atomic and Nuclear Physics............. 3 hrs
PHYS 460 Advanced Physics Laboratory II........ 3 hrs
PHYS 463 Solid State Physics...................... 3 hrs

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 18 semester hours must be in courses 300 or above; 9 semester hours in courses 300 or Above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.
POLITICAL SCIENCE

MAJOR
A minimum of 30 semester hours is required.

Required courses................................................... 9 hrs
POL 101 Introduction to American Government
POL 201 Introduction to Comparative Government
POL 300 Political Analysis

Select three of the following...................................................... 9 hrs
POL 304 American Political Thought
POL 306 Political Ideologies
POL 312 Legislative Process
POL 313 American State Government
POL 315 American Chief Executive
POL 316 American Judicial Process
POL 322 Government of Michigan
POL 327 Political Parties and Elections
POL 340 Federalism
POL 361 American Foreign Policy
POL 385 Middle East Politics
POL 413 American Constitutional Law
POL 471 American Foreign Policy I
POL 472 American Foreign Policy II

The balance of courses to be selected with the approval of the degree and certification advisors in accordance with Political Science concentration and certification requirements. .......... 12 hrs

Supplementary requirements (not included in the 30 hrs)
Economics: Select one of the following......................... 3 hrs
ECON 201 Principals of Macroeconomics
ECON 202 Principals of Microeconomics
ECON 2001 Introductory Economics

History: Select one of the following................................. 3 hrs
HIST 111 American Past I
HIST 112 American Past II

Geography ................................................................. 3 hrs
Non-U.S. History ......................................................... 3 hrs

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. For the major, 15 semester hours must be in courses 300 or above; 9 semester hours in courses 300 or Above for a minor.
3. At least 15 semester hours in UM-D courses required for a major.

PSYCHOLOGY

MINOR ONLY
A minimum of 21 semester hours is required.

Required courses................................................... 12 hrs
PSYC 170 Psychology as a Natural Science
PSYC 171 Psychology as a Social Science
PSYC 300 Life-Span Developmental Psychology
PSYC 320 Social Psychology

Select one of the following..................................................... 3 hrs
PSYC 315 Personality Development
PSYC 445 Personality Assessment
PSYC 450 Personality Theory

Select two of the following..................................................... 6 hrs
PSYC 321 Attitudes and Social Behavior
PSYC 322 Psychology of Prejudice
PSYC 363 Cognitive Psychology
PSYC 365 Environmental Psychology
PSYC 418 Cognitive Development
PSYC 421 Group Processes
PSYC 461 Learning & Memory

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. Eighteen (18) semester hours must be in courses 300 or above for a minor.
3. PSYC 407 satisfies the EDC 302 (Adolescent Development) requirement for secondary certification students if taken prior to Fall 1996.

SOCIAL STUDIES

MAJOR ONLY
A minimum of 36 semester hours is required.
Required courses
History .......................................................... 15 hrs
HIST 111 American Past I
HIST 112 American Past II
HIST 3601 Michigan History
Non-U.S. History
Non-Western History (Asian, African, Middle Eastern)
Political Science .................................................. 6 hrs
POL 101 Introduction to American Government
POL elective
HIST 300 The Study of History
OR
POL 300P Political Analysis .................................. 3 hrs
(credits counted in either History or Political Science requirement above).
Geography ......................................................... 6 hrs
Economics ......................................................... 6 hrs
ECON 201 Principles of Macroeconomics
OR
ECON 202 Principles of Microeconomics
ECON 2001 Introductory Economics

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. Fifteen semester hours must be in courses 300 or above for a minor.

SOCIOLGY

MINOR ONLY
A minimum of 21 semester hours is required.

Required courses .................................................. 9 hrs
SOC 200 Principles of Sociology
SOC 201 Contemporary Social Problems
SOC 382 Social Psychology
Select one of the following ....................................... 3 hrs
SOC 422 Structure of American Society
SOC 423 American Social Classes
SOC 449 The Black Family in Contemporary America
Select one of the following ....................................... 3 hrs
SOC 445 The Family
SOC 446 Marriage and Family Problems
SOC 447 Family Violence
Select two of the following ..................................... 6 hrs
SOC 403 Minority Groups
SOC 430 Population Problems
SOC 443 Development of Sex Roles
SOC 455 Sociology of Religion
SOC 458 Sociology of Education
SOC 460 America in a Global Society

SOC 465 Deviant Behavior/Social Disorganization
SOC 469 Juvenile Delinquency

Notes
1. An overall GPA of 2.75 or better is required for a major or a minor.
2. Fifteen semester hours must be in courses 300 or above for a minor.

SPANISH

MAJOR
A minimum of 30 semester hours of coursework beyond second-year proficiency is required.

Prerequisite: SPAN 202 or equivalent Spanish language proficiency (hours do not count toward major).

Required courses .................................................. 9 hrs
SPAN 301 Advanced Conversation and Composition I
SPAN 302 Advanced Conversation and Composition II
SPAN 305 Language of Business

Two civilization/culture courses from the following ................. 6 hrs
SPAN 356 Spanish Civilization and Culture
SPAN 357 Latin American Civilization and Culture
SPAN 358 Spain in the Twentieth Century
One literature course from the following ......................... 3 hrs
SPAN 350 Masterpieces of Latin American Literature
SPAN 351 Masterpieces of Spanish Literature
Two 400-level language courses from the following .......... 4-5 hrs
SPAN 406 Advanced Written Expression .................. 2 hrs
SPAN 409 Oral Expression ................................. 2 hrs
SPAN 420 Introduction to Translation ........................ 3 hrs
Additional credit hours from other Spanish area offering .... 7-8 hrs

MINOR
A minimum of 20 semester hours of coursework beyond second-year proficiency is required.

Prerequisite: SPAN 202 or equivalent Spanish language proficiency (hours do not count toward minor).

Required courses .................................................. 9 hrs
SPAN 301 Advanced Conversation and Composition I
SPAN 302 Advanced Conversation and Composition II
SPAN 305 Language of Business

Two civilization/culture courses from the following ............. 6 hrs
SPAN 356 Spanish Civilization and Culture
SPAN 357 Latin American Civilization and Culture
SPAN 358 Spain in the Twentieth Century
One literature course from the following ......................... 3 hrs
SPAN 350 Masterpieces of Latin American Literature
SPAN 351 Masterpieces of Spanish Literature
One 400-level language course from the following ........... 2-3 hrs
SPAN 406 Advanced Written Expression .................. 2 hrs
SPAN 409 Oral Expression ................................. 2 hrs
SPAN 420 Introduction to Translation ........................ 3 hrs
Notes
1. Concentrators must take at least one course that deals specifically with Spanish (peninsular) topics such as SPAN 351, 356, or 358 and at least one course that deals with the Latin American topics such as SPAN 350 or 357.
2. Concentrators are encouraged to strengthen their knowledge of Spanish language and Hispanic culture by participating in any of the approved study-abroad programs.
3. For the major, 30 credit hours of upper-level courses (courses numbered 300 or higher) are required; 20 credit hours of upper-level courses are required for the minor.
4. An overall GPA of 2.75 or better is required for a major or a minor.
5. At least 15 semester hours in UM-D courses are required for a major.
6. Acceptable scores from the MTTC Subject Area Test in Spanish are required for teacher certification.

SPEECH

MINOR ONLY
A minimum of 21 semester hours is required.

Prerequisite: SPEE 101, Fundamentals of Public Speaking, and COMM 220, Survey of Mass Communication (hours not counted toward minor).

Required course
LIBR 470 Literature for Young People................. 1 hr

Select four courses from the following with faculty advisement
CASL and the School of Education..............................12 hrs
SPEE 310 Interpersonal Communications
SPEE 320 Public Argument and Advocacy
SPEE 330 Argumentation and Debate
SPEE 340 Theories of Persuasion
SPEE 400 Speech Skills for Professionals
SPEE 430 Small Group Communication

Select two courses from the following with faculty advisement in
CASL and the School of Education..............................3 hrs
COMM 302 Press, Law and Ethics
COMM 420 Critical Media Studies
COMM 430 International Communication

Notes
1. An overall GPA of 2.75 or better is required for a minor.
2. The 21 semester hours must be in courses 300 or above for a minor.
3. It is strongly recommended that students elect COMM 302 and COMM 420.

PROFESSIONAL REQUIREMENTS

Preparation for a teaching credential consists of required courses in education. At least two practicums and methods courses in the academic major and minor are required prior to directed teaching.

Professional Sequence
A minimum of 34 semester hours of coursework is required.

Foundations
EDA 340 The Foundations of American Education .... 3 hrs

Psychology
EDC 300 Educational Psychology .............................3 hrs
EDC 301 Practicum in Educational Psychology........ 1 hr
EDC 302 Adolescent Development ...........................3 hrs
EDC 460 Educating the Exceptional Child............... 2 hrs

Methodologies (See Note #1 below)
EDD 440 Teaching English in Second Grades .......... 3 hrs
EDD 441 Practicum: English in Second Grades........ 1 hr
EDD 450 Teaching Mathematics in Secondary Grades..................................................3 hrs
EDD 451 Practicum: Mathematics in Secondary School....................................................1 hr
EDD 480 Teaching of Science in the Secondary Grades......................................................3 hrs
EDD 481 Practicum in Science: Secondary Grades...... 1 hr
EDD 490 Teaching of Social Studies in Secondary Schools..................................................3 hrs
EDD 489 Practicum in Social Studies: Secondary Schools..................................................3 hrs
EDD 496 Second Language Teaching: Secondary Level......................................................1 hr
EDD 497 Practicum in Second Language Teaching: Secondary Level.....................................1 hr

Methods course in minor if different than major

OR
Education elective ................................................. 2-3 hrs

Note: See SOE advisor for Schedule of Classes offerings.

Professional Semester (See Notes #3, #4, & #5 below)
EDD 301 Directed Teaching in Secondary Schools .. 12 hrs
EDD 304 Seminar: Teaching in the Secondary Grades...................................................... 1 hr

Notes
1. Enrollment in all the required EDD courses is open only to those who are officially enrolled and in good academic standing in a certification program at UM-D (junior standing required), with a cumulative GPA of 2.75 or higher.
2. A GPA of 2.75 or better is required overall for the Professional Sequence.
3. Taking and passing the MTTC Basic Skills Test.
4. Eligibility for directed teaching requires acceptable scores from the MTTC (Michigan Tests for Teacher Certification) subject area tests: major and minor, and one full term of study at UM-D (12 semester hours).
5. Eligibility for other endorsements requires acceptable scores from the relevant MTTC subject area tests.

Methods courses are open only to students officially admitted into: the School's certification programs (Elementary, Secondary) or the Children and Families program. Therefore, credit for successfully completing such courses will be awarded by the School only to those students who, at the time of enrolling in such courses, are officially admitted and are in good
academic standing. These courses are: EDD 301, EDD 304, EDD 440/441, EDD 450/451, EDD 469, EDD 480/481, EDD 490/489, and EDD 496/497.

The program as outlined above meets the Michigan Department of Education teacher certification requirements at the time of this writing. However, changes by the University or the Michigan Department of Education may affect some program requirements. Therefore, the student is strongly advised to find out about possible changes by checking with the Office of Student Records in the School of Education and/or with an Education advisor.

Other Bachelor’s Degree

Programs

The School of Education awards the Bachelor of General Studies degree (BGS) in the following program.

Children and Families BGS

The Children and Families Program is a Bachelor of General Studies degree. This program is a four-year degree program without elementary teaching certification, designed for students who wish to pursue careers in child care centers, teaching and administration, social service agencies or in other work with children and families. The 2+2 Children and Families BGS Program is designed to combine selected two-year community college associate degree programs with two years of coursework at the UM-D. The associate degrees eligible for this program must be covered by articulation agreements between the community college and the UM-D, School of Education, or are accepted with permission of the Children and Families Program Advisor.

The UM-D students may be admitted to the Children and Families Program with a minimum grade point average of 2.5.

COURSEWORK AT COMMUNITY COLLEGE

Credits earned to complete designated community college associate degrees will be accepted for the UM-D BGS degree as lower-division credit (up to a maximum of 62 hours). Courses not applied toward meeting BGS degree distribution requirements or program prerequisites will be utilized as elective courses or general credit toward the Children and Families BGS degree. (Examples of the variety of community college associate degrees that could be appropriate for this 2+2 program are: Early Childhood Education and Care, and Family Support Services.) Currently, articulation agreements exist with Schoolcraft College and Macomb Community College as well as a transfer agreement with Oakland Community College.

COURSES TO BE TAKEN AT UM-D

Students must complete Composition 220 (COMP 220) at UM-D.

Students must complete at least 48 hours in courses numbered 300 or above, of which at least 21 hours must be in the School of Education. Courses must be distributed such that three areas of focus are developed, including: 1) Child Studies (Area I); 2) Behavioral Studies (Area II); and 3) an Elective area (Area III) to be chosen by the student with advisor approval. A minimum of 12 upper-level hours must be in Child Studies (Area I) and 9 upper-level hours in Behavioral Studies (Area II) must be earned at UM-D.

The remaining coursework at UM-D (to total the required 58-60) will be elected from either lower- or upper-division courses. These can be used to complete distribution requirements, to meet specific prerequisites, or to meet requirements and strengthen background in the Child Studies area.

To complete the program, students must have a 2.5 grade point average overall, 2.5 in Child Studies (Area I) and 2.5 in Behavioral Studies (Area II), and at least a 2.0 in the Elective area (Area III). A total of 120 credit hours is necessary to graduate.

AREAS OF STUDY

The student will elect courses in three areas of study, as follows:

Area I Child Studies 21-40 hrs
Area II Behavioral Science 15+ hrs
Area III Elective Area 12+ hrs

*Elective Area selected with advisor approval from:
Anthropology
Business
Communication
Comp. Info. Science
**Education (highly recommended)
English
French
German
Health and Society
Mathematics
Natural Science
Political Science
Psychology
Sociology
Spanish
Women’s Studies

** If Education is selected as the Elective Area, the following courses may not be elected: EDD 452, EDD 467, EDD 468, EDD 471, EDD 485 and EDD 495.

ADDITIONAL DISTRIBUTION REQUIREMENTS FOR CHILDREN AND FAMILIES BGS

The following categories must be represented as part of the 58+ hours required to be taken at the UM-D. (Note that these will also satisfy requirements of one of the three BGS degree areas of study.)

Human Development to be chosen from: 2-3 hrs
EDC 302 Adolescent Development
EDC 440 The Child: Birth to Three
EDD 419 Early Literacy and Language Development(2)
ANTH 415 Nutrition and Human Development
PSYC 300 Life-Span Development Psychology
PSYC 315 Personality Development
PSYC 404 Parent-Child Relations
PSYC 405 Gender Roles
PSYC 442 Psychopathology of Childhood
PSYC 450 Personality Theory

Cultural Diversity to be chosen from: 3 hrs
EXPS 410 Multiculturalism in School and Society
ANTH 409 Human Growth and Culture
ANTH 421 Education and Culture
ANTH 425 Language and Society
ANTH 482 Psychological Anthropology
### CHILD STUDIES (Area I) ........................................ 25-40 hrs

#### Required courses

**EDC 340**  Psych. of Child Development .................... 3 hrs
*EDC 341*  Practicum in Child Development ................. 1 hr

**EDC 414**  Young Child with Special Needs
**OR**
**EDC 460**  Educating the Exceptional Child ............ 2-3 hrs

**EDD 406**  Teaching Strategies for Early Childhood

  * Education ............................................ 3 hrs
  * Seminar: E.C. Education ................................ 2 hrs

**EDD 410**  Practicum in Early Child Education .......... 1 hr

**EDD 412**  Seminar: E.C. Education ......................... 2 hrs

**EDD 418+**  Children and Families Internship ............. 4 hrs
**OR**
**EDD 411+**  Directed Teaching: Early Childhood .......... 4 hrs

**EDD 442**  Early Childhood: Family, School, Community

  * Collaboration ......................................... 2 hrs

* EDC 341 waived for those employed as Head Start Teachers.
**Students interested in teaching in preschools, Head Start or child care programs must elect EDD 411. Transcripts will read Children and Families: Early Childhood. Students interested in working with children and families in agencies must elect EDD 418. Transcripts will read Children and Families: Family Support.

*This course requires a satisfactory grade.

### Electives*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDB 421</td>
<td>Issues in Early Childhood</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDB 422</td>
<td>Administering Early Childhood Programs</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 300</td>
<td>Educational Psychology</td>
<td>3 hrs</td>
</tr>
<tr>
<td>EDC 301</td>
<td>Practicum in Educational Psychology</td>
<td>1 hr</td>
</tr>
<tr>
<td>EDC 410</td>
<td>Developing Peer/Social Relationships</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 412</td>
<td>Positive Guidance Techniques</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 431</td>
<td>Constructivist Education</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 445</td>
<td>Developmental Assessment</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDC 446</td>
<td>Cognition &amp; Memory Development</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 416</td>
<td>Workshop: Creative Teaching Early Childhood</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 419</td>
<td>Early Literacy and Language Development</td>
<td>2 hrs</td>
</tr>
<tr>
<td>EDD 427</td>
<td>Art in Elementary School</td>
<td>2 hrs</td>
</tr>
</tbody>
</table>

*Other School of Education courses may be substituted with written permission of Children and Families Program Advisor.

### BEHAVIORAL STUDIES (Area II) ..................15+ hrs

**Required course**

Transfer students must take

**EDC 440**  Child: Birth to Three ..................... 3 hrs

One of the following is required unless a lower-division transfer course is approved by advisor ..................... 3 hrs

**SOC 445**  The Family
**OR**
**SOC 446**  Marriage and Family Problems

Courses chosen from the following:

At least one course from each of the three area disciplines below must be elected:

**ANTH 275, 340, 345, 406, 409*, 415*, 420, 421*, 425*, 455, 482**

**PSYC 275, 300*, 315*, 320*, 321*, 322*, 363, 370, 375, 404*,
405*, 407, 412, 415*, 440, 442*, 444, 450*, 461, 465, 472**

**SOC 201, 275, 350*, 382*, 383, 403*, 411, 422, 423*, 426, 430,
435, 436, 443*, 445, 446, 447, 449, 454, 456, 457, 458, 460, 465,
468, 469, 477*, 478*, 482* **

Additional courses may be used with the approval of the Early Childhood Coordinator.

*Courses with an asterisk may also be used to satisfy Children and Families upper-level distribution requirement in Human Development, Cultural Diversity, or Child Welfare.

### ELECTIVES (Area III)

Select from the following list with approval of advisor:

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Business</td>
<td>Natural Science</td>
</tr>
<tr>
<td>Communication</td>
<td>Political Science</td>
</tr>
<tr>
<td>Education (highly recommended)</td>
<td>Psychology</td>
</tr>
<tr>
<td>English</td>
<td>Social Studies</td>
</tr>
<tr>
<td>French</td>
<td>Sociology</td>
</tr>
<tr>
<td>German</td>
<td>Spanish</td>
</tr>
<tr>
<td>Health and Policy Studies</td>
<td>Women’s Studies</td>
</tr>
</tbody>
</table>

*NOTE: Course numbers and offerings may have changed; please consult your faculty advisor regarding updated course numbers.*
Other Programs

Substitute Teacher Program

The Substitute Teacher Program is designed for students who wish to pursue work as a substitute classroom teacher in K-12 school settings. The program is designed to combine 60 credit hours from community college programs with 30 credit hours of coursework at the UM-D. UM-D students may also be admitted to the Substitute Teacher Program upon completion of 60 credit hours with a minimum grade point average of 2.75.

ADMISSION AND APPLICATION PROCEDURE

Individuals seeking entry into the Substitute Teacher Program and transferring credit from another institution should apply through the School of Education Student Services Office ((262 FCS)).

Many individuals enter the School of Education after completing a portion of college work at other two- and four-year institutions. These persons are considered transfer students. Admission to the School of Education Substitute Teacher Program does not constitute admission to a teacher certification program. Like other students admitted to programs at UM-D, transfer students entering the School of Education will be expected to fulfill all program requirements.

Potential candidates must observe established procedures in having their credentials evaluated for the Substitute Teacher Program. Request forms are available in the Student Services Office (262 FCS). Credentials are evaluated for acceptable courses required by the program. A maximum of 60 credit hours coursework will be accepted for the UM-D Substitute Teacher Program. An additional 30 credit hours in a planned program of study are required at UM-D to complete the program. Students may choose a program emphasis in either elementary or secondary education.

SCHOLASTIC STANDING

A GPA of 2.75/4.0 scale or better is required for admission to the Substitute Teacher Program. Once admitted to the Substitute Teacher Program, students must continue to maintain a 2.75 GPA. The School of Education reviews the records of all its students at the end of each term. If a student’s grade point average for one term drops below 2.75, the student is placed on academic probation. If the overall average remains below 2.75 for another term, the student may not be allowed to re-register as a student in the Substitute Teacher Program or any other teacher education program.

PROGRAM REQUIREMENTS

Requirement for completion: 90 credit hours
Required from UM-D: 30 credit hours

Program in Elementary Education

Required courses.............................................30 hrs
EDC 341 Practicum in Psychology of Child Dev.......1 hr
EDC 417 Management of Classroom Behavior...........2 hrs
EDC 443 Family/School/Community Collaboration...2 hrs
EDC 460 Educating the Exceptional Child..............2 hrs
EDD 408 Teaching Reading/Language Arts..............3 hrs
EDD 410 Multiculturalism in School and Society.....3 hrs
EDF 450 Health/Nutrition/PE: Elementary Schools...2 hrs
EDT 201 Technology in Elementary Education.......3 hrs
EDT 210 Literature for Children........................3 hrs
EDC 340 Practicum in Psychology of Child Dev......1 hr
EDC 302 Adolescent Development.....................3 hrs
EDC 303 Adolescent Development.....................3 hrs
EDD 408 Teaching Reading/Language Arts..............3 hrs
EDC 301 Practicum in Psychology of Child Development........3 hrs
EDC 300 Educational Psychology.......................3 hrs
EDC 443 Family/School/Community Collaboration...2 hrs
EDD 408 Teaching Reading/Language Arts..............3 hrs
EDD 410 Multiculturalism in School and Society.....3 hrs

In the event that any of the above-listed courses have been completed at a community college and are accepted by UM-D, the following electives are available:

Elementary Electives in Education ........................6 hrs
EDB 421 Current Issues in Early Childhood Education
EDC 454 Evaluation of Classroom Learning
EDD 493 Simulation and Gaming

Elementary Electives in the Content Area
Math .................................................................9 hrs
MATH 385 Math for Elementary Teachers I
MATH 386 Math for Elementary Teachers II
MATH 387 Math for Elementary Teachers III

Science .........................................................12 hrs
EXPS 220 Science in the Elementary School
NSCI 231 Learning by Inquiry: Physical Science
NSCI 232 Learning by Inquiry: Earth/Planetary Science
NSCI 233 Learning by Inquiry: Life Science

Social Studies
At least one course chosen from the following areas:...........3 hrs
Geography
History
Political Science
Economics

Humanities
HUM 100 Introduction to Humanities ..................3 hrs

Program in Secondary Education

Required courses.............................................30 hrs
EDA 340 Foundations of American Education..........3 hrs
EDC 300 Educational Psychology........................3 hrs
EDC 301 Practicum in Educational Psychology.........3 hrs
EDD 408 Teaching Reading/Language Arts..............3 hrs
EDC 417 Management of Classroom Behavior...........2 hrs
EDC 443 Family/School/Community Collaboration...2 hrs
EDC 454 Evaluation of Classroom Learning.............2 hrs
EDC 460 Educating the Exceptional Child..............2 hrs
EDD 408 Teaching Reading/Language Arts..............3 hrs
EDD 410 Multiculturalism in School and Society.....3 hrs
EDT 211 Technology in Secondary Education.........3 hrs
EDDS 410 Multiculturalism in School and Society.....3 hrs
PED 425 The Educator and the Law ..................2 hrs

In the event that any of the above-listed courses have been completed at a community college and are accepted by UM-D, the following electives are available:

Secondary Electives
Electives are chosen as needed based on subject area content.
Post-Degree Programs

Application forms for any post-degree program can be obtained from the School of Education Student Services Office (262 FCS).

Certification Only Program (Elementary - COE, Secondary - COS)

Candidates with a degree from an accredited institution and wishing to earn a Michigan Elementary or Secondary Provisional Certificate, must meet the following requirements for these programs:

1. A bachelor's degree from an accredited institution is required for admission along with acceptable scores on the MTTC Basic Skills Test for the post-degree certification only program. Students must have a 2.75 GPA overall and in their major and minor to be admitted to the School of Education teacher certification program. Once admitted to the teacher certification program, students must continue to maintain a 2.75 GPA.

2. To be eligible for directed teaching (student teaching), students must take and pass the relevant MTTC subject area test, i.e., “Elementary” test for seekers of elementary certification; the major and minor tests for seekers of secondary certification.

3. When the desired major/minor is incomplete and the GPA for the major and/or minor is between 2.50 and 2.74, a minimum of 12 semester hours for the major and nine (9) semester hours for a minor must be completed with UM-D courses and the cumulative GPA must be 2.75 or better.

4. Potential candidates must observe established procedures in having their credentials evaluated for the certification program. Request forms are available in the Student Services Office of the School of Education. Credentials are evaluated for acceptable majors, minors, and those supplementary courses, required by the program.

5. At least two practica at UM-D shall be required of all COE/COS students prior to student teaching.

6. A maximum of six semester hours (non-UM-D courses) will be accepted, if applicable, toward the professional sequence, not including directed teaching or seminar. The cumulative GPA in the professional sequence must be 2.75 or better. No community college courses can be used for credit in the professional sequence of required courses. Grades earned in professional sequence courses must observe the criteria established for directed teaching eligibility.

7. When there is evidence to warrant an adjustment in requirements for an admitted COE/COS student, the Professional Standards Committee will act accordingly. Students desiring re-evaluations may use the established petition process.

8. To be eligible for certification, students must have acceptable scores from the Michigan Tests for Teacher Certification Subject Area Tests for every major, minor and endorsement.

9. No credit toward program is allowable for ROTC and/or physical education.

10. Foreign transcripts must be evaluated by: Educational Credential Evaluators, Inc.

11. An English language proficiency test may be required for non-native English speakers.

12. For all practicums and student teaching, the following are required:
   a. TB clearance
   b. Criminal background clearance
   c. Knowledge of dealing with blood-borne pathogens and infectious diseases, and
   d. CPR Training

Individuals entering this program are required to meet the basic certification requirements at the time they are admitted, and which are appropriate for the particular certificate desired. To enroll, it is necessary to apply for admission to the UM-D as a “Certification Only Student,” through the School of Education. Forms are available in the School of Education Student Services Office.

Professional Education Certificate Program (PEC)

The Professional Education Certificate Program is for persons with a Michigan Provisional Teaching Certificate wishing to earn a Professional Education Certificate. Upon the expiration of the Michigan Provisional Teaching Certificate, teachers are required by state law to secure a Professional Education Certificate in order to retain a valid teaching credential. In recommending individuals for this certificate, the University forwards requests to the Michigan Department of Education that, in turn, issues the certificate.

CURRICULUM

Individuals already holding a valid Michigan provisional certificate can qualify for a Michigan Professional Education Certificate by completing the 18 semester hour post-degree program offered at UM-D through the School of Education. This program is ideal for the working teacher who wants to maintain a valid teaching credential but is not interested in pursuing a graduate degree.

The Professional Education certificate program is tailor-made to fit the particular professional needs and goals of the individual student. To meet residency requirements, students must satisfactorily complete at least 12 semester hours of advisor-approved courses in a planned 18-hour program. Occasionally, some post-degree credit earned at other accredited institutions may also be applied toward the student's program. Such credit, however, is allowed only when written permission is obtained prior to enrollment in any such course or credit-granting workshop. The entire course of study, however, can be completed at UM-D by attending classes during late afternoons, early evenings, and summers. Correspondence courses are not accepted.

ADMISSION

1. Admission to this post-degree program (PEC) requires formal application to the program, a Michigan Provisional Teaching Certificate, and an approved bachelor's degree. Official copies of transcripts and a copy of the teaching certificate are
required.
2. The plan of study is agreed upon with an advisor who will meet regularly with the student to advise and monitor progress of the 18 semester hour plan of work. It is the student’s responsibility to make annual appointments with the advisor.
3. When the renewal of a provisional certificate is desired, ten semester hours of approved credit will permit the student to file an application for renewal of the existing provisional certificate. Forms are available in the Student Services Office, 262 FCS. Of the ten hours required, six must be from UM-D. A minimum 2.75 GPA is required. Neither teaching experience nor the state reading requirement needs to be satisfied when seeking a renewal.
4. When applying for the Professional Education Certificate, the student must account for 18 semester hours of approved courses of which 12 must be UM-D courses; three years of teaching experience (or the equivalent in substitute teaching) at the appropriate certificate level; and the required semester hours in state-approved reading courses. Application forms are available in the Student Services Office of the School of Education.
5. To be recommended for a Professional Education Certificate, a total of 18 semester hours in approved courses is required with a minimum 2.75 GPA.
6. Correspondence courses may not be used in this program for either renewal or continuing certification.
7. Workshops, online courses, and conferences offering graduate credit must be approved by the Professional Standards Committee prior to enrollment.
8. When the Professional Education Certification Program is being used to earn an additional major or minor, all required coursework for the major or minor must be completed prior to recommendation. Such coursework may require more than the minimum of 18 hours. Also, the Michigan Tests for Teacher Certification (MTTC) Subject Area Tests must be taken and acceptable scores earned.

**Enhancement Program (EP)**

This program (EP) is for persons with a Michigan Permanent, Continuing, or Professional Education Certificate who wish to enhance their certificate with an additional major, minor, or endorsement. Individuals entering this program are required to meet all requirements leading to the desired additional endorsement on their teaching certificate. Additionally, the MTTC Subject Area Test must be taken and acceptable scores achieved before a recommendation can be made to the state. Application forms for this program are available in the School of Education Student Services Office.

**Endorsement Programs Early Childhood (ZA) English as a Second Language (NS) and Middle Level (ZL)**

These endorsements are available to certified teachers who wish to enhance their certificates with either an early childhood (ZA), English as a second language (NS), or a middle level (ZL) endorsement. This is a planned program where the selection of courses will vary depending on evaluation of the student's prior coursework. Those interested in an endorsement can enroll in one of two post-degree programs: Professional Education Certificate (PEC), or Enhancement Program (EP), as described above, or may complete these endorsement programs under a master's degree plan (some undergraduate courses may be applied toward these endorsements, but will not apply toward a master’s degree).

**Master's Degree Programs**

The School of Education also offers several master’s degree programs including a MA in Education, a MA in Teaching, a MEd in Special Education, a Master of Public Administration and a MS in Science Education. Interested students should consult the Graduate Catalog for details of admission requirements and programs.

**Education Courses For Non-Education Students**

At the UM-D, students need not be enrolled in a teacher certification program to elect certain education courses. Many courses offered by the School of Education are open to non-education students. Degree candidates enrolled in any academic unit of the campus, as long as they have earned at least 55 semester hours of credit, generally are free to elect any course in education except for specialized methods courses (those required for directed teaching), directed teaching, and the directed teaching seminar. It is expected that when making such elections, all prerequisites and other stipulations associated with specific courses will be carefully observed and followed.

Any student planning on a career in which the student might be expected as a matter of course to instruct others or to help others learn could find some study of education to be a valuable experience. This is particularly true for those intending to pursue careers in fields involving human relations and social interaction. Certainly, there can be no better preparation for assuming some of the responsibilities of parenthood than a background in education. (See the "Children and Families" degree program that appears earlier in the *Catalog*.)

Education courses are ideally suited, in many instances, to serve as electives as well as cognate studies. Students may elect them either to augment their general college work or to enrich their own cultural growth. It is always important that the student consult with the student's own academic advisor before electing any college course. Faculty in the School of Education, however, are available to help individuals identify education courses which might be of the most benefit to them. For further information, non-education students are invited to visit the School offices or contact the
School at (313) 593-5090 or the following website: www.soe.umd.umich.edu/.

Course Offerings

Courses offered by the School of Education are numbered following the general course numbering system. Courses numbered 300-499 are undergraduate upper-division courses. Courses numbered 500 and above are graduate courses.

Each education course also carries an alphabetical letter designation. This designation reflects the course’s location in the subject-matter classification system used by the School of Education.

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In designating courses on election forms, etc., students should use the word "Education" followed by the course letters, then the number of the particular course (i.e., Education, or EDA 340.)

Students must have junior standing (completion of at least 55 semester hours of credit) before they may elect courses for education credit. This regulation does not pertain to the following courses: EDA 340, EDC 340, EDC 341, LIBR 465, LIBR 470, and EXPS 410.

Education (ED)

COURSE OFFERINGS

EDA 340 Foundations of American Education
2.000 TO 3.000 Credits

A general survey of education’s theoretical and structural foundations. This course introduces students to the history and philosophy of education as well as to the organization and financing of schools in America. Particular attention will be given to the role of education in a democratic society and to the notion of teaching as a profession.

EDA 450 History/Theory of Bilingual Education
2.000 TO 3.000 Credits

The course provides an extensive background on bilingual education (programs where two languages are used as media of instruction) in the United States, and the events that led to the inception of such programs on the Federal as well as the State levels. The course provides a background on the concept itself, its rationale and implementation.

EDB 341 Current Issues in Early Education
2.000 Credits

Examines the expanding field of early childhood in order to understand major issues which are shaping the development and support of early education and child care programs. Designed for present and future teachers, administrators, and other workers in the field of early childhood, and for the general public who must participate in major pending decisions relating to such questions as proposed changes in state licensing, teacher certification, and funding sources.

EDB 422 Administration of the Early Childhood Program
2.000 Credits

Prerequisite(s): EDD 406

This course is designed to increase the student's awareness of various components of administration of a pre-school program. Topics will include the role of the administrator, staff selection/development/supervision, legal requirements, fiscal management, and record keeping.

EDC 300 Educational Psychology
2.000 TO 3.000 Credits

Co-requisite(s): EDC 301

Consideration of research findings relevant to the learner in the classroom with emphasis on factors that influence learning. Topics include: the teacher trainer's role in motivation; formulation of generalizations pertaining to the physical, mental, social, and emotional development of learners; analysis of selected aspects of the teaching-learning situation including the dynamics of interaction, classroom control, guidance, and appraisal of growth.

EDC 301 Practicum in Educational Psychology
1.000 Credits

Co-requisite(s): EDC 300

A supervised field experience related to the study of educational psychology involving a minimum of 45 clock hours of participation/observation and work spread over a semester in a school setting. TB clearance and criminal background check are required.

EDC 302 Adolescent Development
3.000 Credits

An examination of the current theories and research findings concerning the physical, social, emotional, and cognitive development during the early and late adolescent years. Theory will be related to educational and parenting practices.

EDC 340 Psychology of Child Development
3.000 Credits

Co-requisite(s): EDC 341

An introductory presentation of facts and theories concerning the development of the child from birth to adolescence. The
practical applications of present knowledge in this field will be examined. Field observations and directed interactions with children are required. Limited to undergraduates. Not open to students with credit in CS40.

EDC 341 Practicum in Child Development  
1.000 Credits

A supervised field experience related to the study of child development involving a minimum of 45 clock hours of observation and work spread over a semester in a school setting. TB clearance, FIA clearance, criminal background check, and a physician’s statement of good health are required.

EDC 390 Observation and Participation in Educational Settings  
1.000 TO 3.000 Credits

An opportunity for supervised observations of, and participation with, children and adolescents in educational settings. For students who need additional laboratory experience prior to student teaching.

EDC 401 Introduction to LD  
3.000 Credits

Introduction to LD is designed to provide students with an overview of the field of learning disabilities. Discussions will include physical, social, emotional, and cognitive comparisons of developmental differences and similarities between persons of all ages with and without LD, historical and theoretical perspectives, current trends and issues, assessment, and collaboration among educators.

EDC 410 Development of Peer/Social Relationships  
2.000 Credits  
Prerequisite(s): EDC 340

Students will examine the processes of peer relations and socio-emotional development from birth to adolescence. Topics to be covered in this course include attachment, peer popularity and intimacy. As well, students will discuss the importance of the family on social development. Classroom environment and peers as educators will also be covered.

EDC 412 Positive Guidance Techniques  
2.000 Credits

This course will describe positive strategies to guide children's behavior in both home as well as early childhood and elementary educational settings. Theoretical models including learning theory and constructivism will be analyzed to provide a framework for positive techniques. Topics such as setting up positive classroom environment, using the curriculum to develop children's social skills, and applying conflict resolution strategies will be explored. Sensitivity to multicultural diversity in the classroom and the inclusion of special needs children will be addressed.

EDC 414 Early Childhood Education Special Needs  
2.000 Credits  
Prerequisite(s): (PSYC 170 or PSYC 171) and (EDC 540 or EDC 340)

Focuses on the psychological and educational needs of the young child with special needs. Discusses identification techniques and educational strategies for teaching in a regular early childhood classroom with young children having special needs. Special emphasis will be placed on behavioral, linguistic, and intellectual areas. Suitable for classroom teachers, childcare directors, and teachers in training.

EDC 417 Management of Classroom Behavior  
2.000 TO 3.000 Credits

Provides intervention and management techniques for teachers and teacher candidates using principles of behavior modification. Includes examination of theoretical foundations, research and field reports, participation in self-management projects, and consideration of various applications in regular and special classrooms. Field experience is optional.

EDC 420 Human Sexuality: Psycho-Educational Concepts  
2.000 Credits

The course is intended to acquaint elementary and secondary teachers with the elements that comprise sexuality as it relates to their lives and those of their students. Although a basic core of information is to be covered, the content of each class will provide for the needs and interests of the teachers. Teachers will be directly involved in identifying problems and the development and collection of strategies for problem resolution.

EDC 431 Constructivist Education  
2.000 Credits  
Prerequisite(s): EDC 340 and EDC 341

An examination of constructivist theory and its application to educational practices. The nature and stages from birth through adolescence of cognitive and social development from the constructivist viewpoints of Piaget, Vygotsky, and others will be discussed. The major focus will be the application of constructivist theory to educational goals, teaching strategies and curriculum.

EDC 440 The Child: Birth to Three  
3.000 Credits

An examination of current theories and findings concerning the physical, social, emotional, and intellectual development of the young child from prenatal to three years of age. Topics include fetus maturation, capabilities of the newborn, language, cognition, and environmental influences on development. Theory will be related to infant care practices in the home and in early childhood centers.

EDC 442 Early Childhood: Family/School/Community Collaboration  
2.000 Credits  
Prerequisite(s): EDC 340 and EDC 341

Focuses on factors that influence the building of partnerships among early childhood professionals, families and communities. Includes understanding and working with culturally and linguistically diverse families. Various communication and problem-solving strategies that promote family involvement and community outreach are practiced through discussion and role
play.

EDC 443  Family/School/Community Collaboration
2.000 Credits

Characteristics, roles, and functions of contemporary families are described. Various communication and training strategies designed to promote collaboration and teamwork within and between the school staff, the families, and community are described and practiced through discussion, problem-solving activities, and role playing. Family effectiveness assessment instruments and strategies are also described and practiced.

EDC 445  Developmental Assessment of the Young Child
2.000 Credits
Preerequisite(s): EDC 340

Survey and demonstrations of formal and informal measures to assess young children's physical, social, intellectual, and emotional development. Instruction in some techniques appropriate for use by classroom teachers, childcare directors, health care professionals, and others who are interested in assessing the development of children aged birth to nine years. For graduate credit elect EDC 545.

EDC 446  Cognition and Memory Development in Children
2.000 Credits
Pre requisite(s): EDC 340

Examines the theories and recent research on the development of cognition and memory. Selected topics include: perception, language, representation, social cognition and problem solving. Educational implications and strategies for developing children's thinking and memory are explored.

EDC 454  Evaluation of Learning
2.000 TO 3.000 Credits

In this course students will develop their knowledge and skills in traditional and non-traditional methods for evaluating classroom learning, performance technology and training. Students will learn how to construct evaluations, tests, analyze evaluation results, conduct program evaluation and educational assessment in relation to performance technology, training, and teaching and learning.

EDC 455  Assessment in Second Language Learning (K-12)
2.000 Credits
Pre requisite(s): EDD 496 and EDD 497 and EDD 447 and EDD 448

In this course students will learn to identify, assess, and place second language learners for appropriate instruction and instructional programs. Students will review, evaluate, and implement a variety of assessments and strategies intended for use with limited-English-proficient students, K-12. Students will also examine the impact and issues regarding high-stakes assessments on English language learners. Official admission to and good standing in the teacher certification program are required.

EDC 460  Educating the Exceptional Child

2.000 TO 3.000 Credits

Characteristics, identification, assessment, and instruction of students with exceptionalities are addressed. Includes students with learning disabilities, behavior disorders, emotional impairment, mild mental retardation, communicative disorders, visual and hearing impairments, orthopedic impairments, giftedness, and chronic medical conditions. Service delivery models, general assessment procedures, and curricular and instructional adaptations that help integrate students with exceptionalities into the general education classroom will also be addressed.

EDD 301  Directed Teaching in Secondary Schools
6.000 TO 12.000 Credits
Pre requisite(s): EDC 300 and EDC 301 and EDC 302 and EDA 340 and EDC 460 and EDD 469
Co requisite(s): EDD 304

Directed teaching consists of a teaching internship in a selected classroom for a full term under the direction of an experienced teacher. Includes a brief period of observation followed by several weeks of responsible teaching including the writing, implementing, and evaluation of lesson plans using University-approved practices. Official admission and good standing in the certification program are required. Methods courses in the major and minor and valid TB clearance required.

EDD 304  Seminar: Teaching Secondary Grades
1.000 TO 2.000 Credits
Co requisite(s): EDD 301

Draws upon the resources found in the directed teaching environment. Considers problems and issues in four broad areas: students in the school, the teacher's professional responsibilities, curriculum understandings, and administrative/organizational problems. Open only to students enrolled in EDD 301.

EDD 305  Directed Teach in Elementary School
6.000 TO 12.000 Credits
Pre requisite(s): EDC 300 and EDC 301 and EDC 340 and EDC 460 and EDD 452 and EDD 467 and EDD 468 and EDD 471 and EDD 485 and EDD 495 and EDF 450
Co requisite(s): EDD 307

Directed teaching consists of a teaching internship in a selected classroom for a full term under the direction of an experienced teacher. Includes a period of brief observation followed by several weeks of responsible teaching including the writing, implementing, and evaluation of lesson plans using University-approved practices. Official admission to and good standing in the certification program as well as valid TB clearance are required.

EDD 307  Seminar: Teaching Elementary Grades
1.000 TO 2.000 Credits
Co requisite(s): EDD 305

Draws upon experience in elementary directed teaching. Considers pupils in the school, classroom environment, teaching competencies, professional responsibilities, school curriculum and policies, and administrative/organizational problems. Open only to students enrolled in EDD 305.

EDD 404  Workshop: DAP for Primary Grades
This workshop will focus on developing appropriate curriculum for grades K-3 within the context of educational standards. Creative strategies and activities for implementation in all content areas will be emphasized. Appropriate for undergraduate and graduate students in early childhood and elementary education. For graduate credit elect EDD 504.

**EDD 406 Teaching Strategies for Early Childhood Education**

2.000 TO 3.000 Credits

Prerequisite(s): (EDC 340 and EDC 341)

Co-requisite(s): EDD 406

Focuses on the developmentally appropriate educational practices for children from infancy through the primary grades. Introduces various procedures and strategies to stimulate inquiry in the early childhood classroom. Observation skills, planning, and implementing of lessons in the field will be emphasized. Class seminar designed to correlate theory with observation and field work. Not open to students with credit for EDD 520.

**EDD 407 Workshop: Global Education in Social Studies**

1.000 TO 3.000 Credits

A course designed to help elementary and secondary teachers develop strategies that will help them to teach About an interdependent and changing world. Concepts such as change, the culture, and interdependence will be introduced and examined in terms of implementation within the framework of the existing social studies curricula.

**EDD 410 Practicum in Early Child Education**

1.000 Credits

Co-requisite(s): EDD 406

A supervised field experience related to the study of early childhood education involving a minimum of 45 clock hours of observation and work spread over a semester in an early childhood school setting. TB clearance, FIA clearance, criminal background check, and physician's statement of good health are required.

**EDD 411 Directed Teaching: Early Childhood**

4.000 Credits

Prerequisite(s): EDD 406 and EDD 410

Co-requisite(s): EDD 412

Supervised observation and teaching in early childhood programs under the joint direction of University and school personnel. Open only to students in the Early childhood education program or Children and Families Program who have been approved by the program director. Must be elected concurrently with EDD 412. TB clearance, FIA clearance, criminal background check, and physician's statement of good health are required.

**EDD 412 Seminar in Early Childhood Education**

2.000 Credits

Prerequisite(s): (EDD 406 and EDD 410)

Focuses on developmentally appropriate educational practices for children in early childhood programs. With an emphasis on writing developmentally appropriate lesson plans, the Reggio Emilia Inspired Approach, assessment of young children, classroom and staff management, multiculturalism, family-centered approaches, children with special needs and professional development. The seminar provides a theoretical foundation for the field placement (D411, D418 and D494). Open only to students in Early Childhood or Children and Families program who have been approved by the program director. TB clearance and physician's statement of good health required. EDD 406 and 410 are required for undergraduates. EDD 520 or permission is required for graduate students. For graduate credit, elect EDD 506.

**EDD 416 Workshop: Creative Teaching in Early Childhood**

2.000 Credits

Prerequisite(s): EDC 340

Workshop designed for early childhood teachers in which there will be a chance to explore and manipulate materials. The framework will be that of the open classroom and participants will have the opportunity to take an active part in open learning situations.

**EDD 417 Workshop: Bilingual/Bicultural Pupils**

1.000 TO 4.000 Credits

The course will focus on developing a) an understanding of bilingual and bicultural pupils by examining their ethnic and racial backgrounds in terms of their values and institutions and how these affect their adjustment in the school and community environments, and b) effective learning strategies, techniques, and materials to use in various content areas.

**EDD 418 Children and Families Internship**

4.000 Credits

Prerequisite(s): EDD 406 and EDD 410

Co-requisite(s): EDD 412

Supervised observation and teaching in an Early childhood classroom setting, or parent education program in a Family Service Agency under the joint direction of University and school or Agency personnel. Open only to students in the Children and Families program who have been approved for the course by the program director. Must be elected concurrently with EDD 412. TB clearance, FIA clearance, criminal background check, and physician's statement of good health required.

**EDD 419 Early Literacy and Language Development**

2.000 Credits

Prerequisite(s): EDC 340

This course examines early language development, the factors that contribute to its growth and the role that it plays in the development of literacy. Diagnostic techniques for assessing language and literacy and teaching strategies and materials to facilitate language and literacy growth in children birth through third grade will be discussed.

**EDD 427 Workshop: Art in Elementary School**

2.000 Credits

Focuses on developmentally appropriate educational practices for students with special needs in the classroom setting, or parent education program in a Family Service Agency under the joint direction of University and school personnel. Open only to students in the Children and Families program who have been approved for the course by the program director. Must be elected concurrently with EDD 412. TB clearance, FIA clearance, criminal background check, and physician's statement of good health required.
A course which presents the rationale, trends, and principles of
art education for elementary teachers. Teachers will have ample
opportunities to experiment with various art media such as
printmaking, puppetry, paints, and clay. Different strategies that
focus on the creative growth of children will be developed.

EDD 429 Teaching Controversial Issues at the
Elementary/Secondary Level
2.000 TO 3.000 Credits

This course is designed to provide the classroom teacher with the
rationale, various approaches, and strategies and techniques
to use in teaching controversial issues at the elementary and
secondary levels.

EDD 440 Teaching English in Second Grades
2.000 TO 3.000 Credits
Co-requisite(s): EDD 441

Investigates the general and specific goals and objectives of
English education. Trends, materials, and strategies are
presented. A study of outstanding problems in the teaching of
English composition, literature, grammar, and language are
discussed. Official admission to and good standing in teacher
certification program are required. EDD 441 required
concurrently for undergraduate only.

EDD 441 Practicum: English in Second Grades
1.000 Credits
Co-requisite(s): EDD 440

A supervised field experience related to the study of English in
the secondary grades involving a minimum of 45 clock hours of
observation and work spread over a semester in a school setting.
Official admission to and good standing in teacher certification
are required. For graduate credit elect EDD 502.

EDD 442 Differentiating Instruction in the K-12
Classroom
2.000 TO 3.000 Credits

Individualized instruction combined with the latest information
on the brain and our understanding of multiple intelligences
leads us to a new method of meeting the needs of students called
differentiating instruction. This course will look at the concept
of differentiating instruction in depth.

EDD 443 Teaching Writing at the Secondary Level
2.000 TO 3.000 Credits

This course is designed to help the classroom teacher promote
functional and creative writing among students at the secondary
school level. Attention will be given to both theory and research
with emphasis on the development of instructional strategies,
teaching materials and practical resources.

EDD 445 New Methods, Strategies/Materials in Social
Studies
2.000 Credits

Examines new developments in methodology in relation to
learning theory. Investigates systems for evaluating curricular
materials. Explores experimental programs, new courses of
study, multimedia approaches, and current research in the social
studies.

EDD 446 Family-Centered Intervention Strategies for
Early Intervention and Early Childhood
Special Education
2.000 Credits
Prerequisite(s): EDC 414 and EDC 340

Strategies and methods which early educators can use when
planning and implementing interventions for infants, toddlers
and young children with disabilities and their families. Emphasis
will be on addressing family identified priorities and the goals
and objectives stated on the individual family Service Plan
(ISFP) or individual educational Plan (IEP) using activity-based
intervention, adapting materials, modifying environments and
using assistive technology.

EDD 447 Second Language: Teaching Elementary Level
3.000 Credits
Co-requisite(s): EDD 448

This course examines current methodologies and theories for
English as a second language learning and instruction. Emphasis
will be placed on a standards-based curriculum for English
language learners. The use of communicative activities and
strategies for developing English language skills in the
elementary grades will be emphasized. Official admission to and
good standing in teacher certification program are required.

EDD 448 Practicum in Second Language Teaching:
Elementary Level
1.000 Credits
Co-requisite(s): EDD 447

This course examines current methodologies and theories for
English as a second language learning and instruction. Emphasis
will be placed on a standards-based curriculum for English
language learners. The use of communicative activities and
strategies for developing English language skills in the
elementary grades will be emphasized. Official admission to and
good standing in teacher certification program are required. TB
clearance, physician's statement of good health, criminal
background clearance, and blood borne pathogens/infectious
diseases training are required.

EDD 450 Teaching Mathematics in Secondary Grades
3.000 Credits
Prerequisite(s): MATH 331
Co-requisite(s): EDD 451

This course discusses: 1) the more important parts of recent
pedagogical literature, 2) new instructional materials, methods,
and curricular trends, and 3) procedures useful in the
construction of new units and in the improvement of curricular
units. Official admission to and good standing in teacher
certification are required. EDD 451 required concurrently for
undergraduates only. For graduate credit elect EDD 565.

EDD 451 Practicum: Mathematics in Secondary School
1.000 Credits
Co-requisite(s): EDD 450

A required supervised field experience related to the teaching of
mathematics in grades 7-12. Involves 45 clock hours of work
and observation in a classroom setting. The practicum includes the construction of classroom activities and lesson plans designed to strengthen students' skills in communication, problem solving, making connections, and in the use of technology. Official admission to and good standing in teacher certification program are required. TB clearance and physician's statement of good health required. For graduate credit, elect EDD 566.

**EDD 452**  Methods of Teaching Mathematics K-8  
3.000 Credits  
Prerequisite(s): MATH 387

The course relates to the teaching of the mathematics curriculum in the elementary and middle school. The emphasis is on the development of teaching techniques that promote problem solving, reasoning, connections, communication, and concept and algorithmic development. Cooperative groups, manipulatives, technology, and alternative assessment will be explored as tools for meeting the special needs of every child in grades K-8. Required of all preservice elementary teachers. Official admission to and good standing in teacher certification program required. The course includes a field experience in an assigned school setting.

**EDD 454**  Workshop: Newspaper in Education  
2.000 Credits

A course designed to familiarize elementary and secondary teachers with the use of newspapers as a classroom resource. Workshop participants will use the daily newspaper and other resource materials to develop activities appropriate for meeting their own professional needs. Emphasis will be on the enhancement of academic skills, practical life skills and creative expression.

**EDD 463**  Teaching the Gifted Student in the Regular Classroom  
2.000 Credits

This course introduces classroom teachers to the education of gifted and talented students in the regular classroom. It is designed to help teachers understand the social, emotional, and intellectual needs of gifted students and to show them ways of effectively addressing these needs along with those of the other students present. It will offer specific proposals for structuring the learning environment as well as for selecting appropriate levels and types of subject matter.

**EDD 466**  Teaching College Science: Classroom Dynamics  
3.000 Credits  
Prerequisite(s): NSCI 390 or EDD 390

A seminar analyzing current methods of college science teaching. Students will be paired with a senior faculty mentor and participate in the planning and teaching of introductory courses. Recommended for advanced undergraduates planning to attend graduate school and/or those interested in teaching. Written permission of instructor required.

**EDD 467**  Practicum in Reading Instruction  
1.000 Credits

A required supervised field experience related to the teaching of reading in the elementary and/or middle grades. Involves a minimum of 45 clock hours of work and observation in a supervised classroom setting. Techniques learned in EDD 468 and EDD 471 will be applied to reading and language arts instruction. Official admission to and good standing in teacher certification program required. TB clearance, criminal background check, and physician's statement of good health required.

**EDD 468**  Teaching Reading/Language Arts – Elementary Grades  
3.000 Credits

Acquaints the student with theory, methods, materials, and research related to the teaching of reading and other communications skills in the elementary and/or middle grades. Includes classroom activities designed to strengthen skills in reading comprehension, word recognition, word attack, and the related language arts. Official admission to and good standing in the School of Education certification program are required.

**EDD 469**  Reading in the Content Areas  
3.000 Credits

Emphasis on developmental and remedial reading activities at the middle grades and the secondary level: diagnosis, testing, and materials; reading in the content subjects; study habits; independent reading activity; exemplary programs. Some attention will be given to related problems in the teaching of written composition. Official admission to and good standing in the School of Education certification program are required. For graduate credit, elect EDD 569.

**EDD 471**  Reading Instruction: Models and Methods  
2.000 Credits  
Prerequisite(s): EDD 468  
Co-requisite(s): EDD 467

Various approaches to reading instruction are required. The teaching of reading/study skills in content areas and an introduction to different forms of testing will be addressed. Students will be required to complete a reading tutorial in meeting the needs of an elementary student. Not open to students who have taken EDD 472, EDD 532, or EDD 570. Official admission to and good standing in SOE certification program are required.

**EDD 474**  Environment as an Educational Resource  
2.000 TO 3.000 Credits

An analysis of environmental education at both the elementary and secondary school level particularly stressing the environment as a teaching resource. Community resources as they relate to environmental education also are investigated.

**EDD 480**  Teaching of Science in the Secondary Grades  
2.000 TO 3.000 Credits  
Co-requisite(s): EDD 481

A brief survey of the place of science in the secondary school curriculum, an analysis and evaluation of objectives, and a consideration of modern practices in teaching science. Official admission to and good standing in teacher certification program
are required.

EDD 481 Practicum in Science: Secondary Grades  
1.000 Credits  
Co-requisite(s): EDD 480

A supervised field experience related to the study of science in the secondary grades involving a minimum of 45 clock hours of observation and work spread over a semester in a school setting. Official admission to and good standing in teacher certification program are required.

EDD 483 Workshop: Science Teaching in Elementary/Middle School  
1.000 TO 3.000 Credits

Deals with existing and innovative science materials. Offered at various times emphasizing one or more areas from elementary and junior high school science. Centers on a laboratory approach. May be elected twice for a total of six credits.

EDD 485 Teaching Science in the Elementary Grades  
2.000 TO 3.000 Credits

Explores the objectives, methods, and instructional emphasis of elementary school science. Stresses concept development in several areas of elementary science. Provides opportunity for preparation of materials for classroom use. Official admission to and good standing in teacher certification program are required. For graduate credit, elect EDD 585.

EDD 486 Environmental Interpretation  
2.000 TO 3.000 Credits

Course deals with the interpretation of the environment, its characteristics, and its presentation to school groups as well as to the general public. Intended to acquaint students with a variety of skills and techniques necessary for interpreting the environment to others. Extensive use is made of the UM-D Environmental Study Area.

EDD 489 Practicum in Social Studies: Secondary Schools  
1.000 Credits  
Co-requisite(s): EDD 490

A supervised field experience related to the study of social studies in the secondary grades involving a minimum of 45 clock hours of observation and work spread over a semester in a school setting. Official admission to and good standing in teacher certification program are required.

EDD 490 Teaching of Social Studies in Secondary Schools  
2.000 TO 3.000 Credits  
Co-requisite(s): EDD 489

An introduction to the problems of teaching secondary social studies. Considers objectives and techniques from both the theoretical and practical points of view. Required of all candidates for the secondary teaching certificate who are majoring in history or social studies. Official admission to and good standing in teacher certification program are required.

EDD 493 Simulation and Gaming  
1.000 TO 3.000 Credits

This course focuses on simulation and gaming as approaches to learning which are fundamentally different from methods traditionally used in education, industry, business, and psychology. Students will have the opportunity to examine many different types of simulations and games and to participate in selected ones. They will also be able to design one for use in their own area of interest.

EDD 495 Social Studies in the Elementary Grades  
2.000 TO 3.000 Credits

Examination and analysis of various programs and materials currently available for teaching social studies at the elementary level. Critical investigation of new developments and trends. Opportunity is provided to experiment with various techniques and to evaluate their effectiveness. Official admission to and good standing in teacher certification program are required.

EDD 496 Second Language Teaching: Secondary Level  
3.000 Credits  
Prerequisite(s): FREN 301 or GER 301 or SPAN 301  
Co-requisite(s): EDD 497

An examination of current methodologies and techniques for instruction in foreign languages and English as a second language in grades 7-12. Emphasis will be placed on a standards-based curriculum with special attention given to the creation of learning scenarios. The use of communicative activities and the assessment of language skill areas will also be emphasized. Official admission to and good standing in teacher certification program are required.

EDD 497 Practicum in Second Language Teaching: Secondary Level  
1.000 Credits  
Prerequisite(s): FREN 301 or GER 301 or SPAN 301  
Co-requisite(s): EDD 496

A required supervised field experience related to the teaching of a foreign language or English as a second language in grades 7-12. Involves a minimum of 45 clock hours of work and observation spread over one semester in a supervised classroom setting. Methods and techniques learned in EDD 496 will be used to increase the second language proficiency of learners in grades 7-12. Official admission to and good standing in teacher certification program are required. TB clearance, physician's statement of good health, criminal background clearance, and blood borne pathogens/infectious diseases training are required.

EDD 498 Teaching Creative Writing in Elementary School  
1.000 TO 2.000 Credits

This course is designed for those wishing to establish or improve creative writing programs in their elementary school classrooms. Theoretical models will be discussed. Strategies and materials that facilitate the writing of prose and poetry will be emphasized.

EDF 121 Volleyball I
1.000 Credit

Instruction and participation in beginning volleyball skills.

EDF 125 Ice Skating I
1.000 Credit

Instruction and participation in beginning ice skating skills.

EDF 126 Physical Fitness and Conditioning
1.000 Credit

Instruction and participation in a variety of training techniques to enhance fitness. Included are circuit training, interval training, weight training, calisthenics, running, and other activities which improve the cardiorespiratory system. Individual programs are developed.

EDF 127 Slimnastics
1.000 Credit

Instruction and participation in calisthenics and floor exercises designed to develop muscle tone and flexibility.

EDF 130 Fencing I
1.000 Credit

Instruction and participation in beginning fencing skills.

EDF 131 Fencing II
1.000 Credit

Instruction and participation in intermediate and advanced fencing skills.

EDF 133 Dance Exercise I
1.000 Credit

Instruction and participation in cardiorespiratory conditioning through the use of movement and dance routines. Aerobics.

EDF 134 Weight Reduction
1.000 Credit

Instruction and guidance in sensible, safe methods of weight loss and maintenance through lectures, exercise sessions and behavior modification.

EDF 135 Racquet Sports
1.000 Credit

Instruction and participation in badminton, paddleball, racquetball and table tennis.

EDF 140 Swimming I
1.000 Credit

Instruction and participation in beginning swimming skills including front and back crawl, side stroke, floating and drowproofing.

EDF 160 Team Sports
1.000 Credit

Instruction and participation in touch football, floor hockey, indoor soccer and basketball.

EDF 214 Tennis I
1.000 Credit

Instruction and participation in beginning tennis skills including serve, backhand and forehand strokes and beginning game strategies.

EDF 221 Volleyball II
1.000 Credit
Prerequisite(s): EDF 121

Instruction and participation in intermediate and advanced volleyball skills.

EDF 222 Volleyball III
1.000 Credit

Instruction and participation in advanced volleyball skills and strategies including coaching techniques and officiating skills.

EDF 224 Tennis II
1.000 Credit

Instruction and participation in intermediate tennis skills.

EDF 225 Ice Skating II
1.000 Credits

Instruction and participation in intermediate ice skating skills.

EDF 226 Weight Training
1.000 Credit

Instruction and participation in weight training techniques to develop muscle strength and endurance through use of plate-loaded and selectorized equipment, and free weights. Individual programs developed.

EDF 227 Tai Chi I
1.000 Credit

Instruction and participation in the use of set movement patterns for relaxation and stress management.

EDF 228 Tai Chi II
1.000 Credit

Instruction and participation in the use of deliberate movement patterns for relaxation and stress management. Tai Chi I or permission of instructor.

EDF 229 Tae Kwon Do I
1.000 Credit

Instruction and participation in beginning skills of Tae Kwon Do.

EDF 230 Tae Kwon Do II
1.000 Credit

Instruction and participation in intermediate/advanced skills of
Tae Kwon Do.

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDF 233</td>
<td>Dance Exercise II</td>
<td>1.000</td>
<td>Instruction and participation in advanced cardiorespiratory conditioning through use of movement and dance routines. Advanced aerobics.</td>
</tr>
<tr>
<td>EDF 234</td>
<td>Tennis III</td>
<td>1.000</td>
<td>Instruction and participation in advanced tennis skills with emphasis on game strategies.</td>
</tr>
<tr>
<td>EDF 235</td>
<td>Ice Skating III</td>
<td>1.000</td>
<td>Instruction and participation in advanced ice skating skills.</td>
</tr>
<tr>
<td>EDF 240</td>
<td>Swimming II</td>
<td>1.000</td>
<td>Instruction and participation in intermediate swimming skills including breast stroke, crawl, sidestroke and conditioning. Prerequisite(s): EDF 140</td>
</tr>
<tr>
<td>EDF 241</td>
<td>Aquatic Fitness</td>
<td>1.000</td>
<td>Instruction and participation in aerobics and calisthenics using water as resistance. Basic swimming skills desired.</td>
</tr>
<tr>
<td>EDF 245</td>
<td>Basketball</td>
<td>1.000</td>
<td>Instruction and participation in beginning and intermediate basketball skills. Basic styles of team play will be practiced.</td>
</tr>
<tr>
<td>EDF 247</td>
<td>Social Dance</td>
<td>1.000</td>
<td>Instruction and participation in social dance skills including ballroom and contemporary dances.</td>
</tr>
<tr>
<td>EDF 249</td>
<td>Lifetime Sports</td>
<td>1.000</td>
<td>Instruction and participation in a variety of recreational activities such as cycling, hiking, orienteering, golf and other outdoor games.</td>
</tr>
<tr>
<td>EDF 251</td>
<td>Folk Dance</td>
<td>1.000</td>
<td>Instruction and participation in folk, social and square dances.</td>
</tr>
<tr>
<td>EDF 252</td>
<td>Modern Dance I</td>
<td>1.000</td>
<td>Instruction and participation in principles of movement and basic skills which are the fundamentals of dance composition.</td>
</tr>
<tr>
<td>EDF 255</td>
<td>Techniques: Officiating Sports</td>
<td></td>
<td>Instruction and participation in officiating basketball, volleyball, baseball and softball. Certification available.</td>
</tr>
</tbody>
</table>

EDF 261 | Jazz Dance I                     | 1.000   | Instruction and participation in the basic elements of jazz dance to enhance creative expression. |

EDF 262 | Modern Dance II                  | 1.000   | Instruction and participation in the elements of choreography and dance skills to enhance creativity. |

EDF 263 | Jazz Dance II                    | 1.000   | Instruction and participation in isolations and polyrhythms performed to music. |

EDF 265 | Country/Western Line Dance       | 1.000   | Beginning instruction and participation in popular country and western dancing including line and two-step. |

EDF 270 | Physical Activity and Health     | 2.000 TO 3.000 | Discussion of topics related to attaining a healthy lifestyle including nutrition, stress management techniques, physical training programs, cardiovascular disease, risk factors and other health-related topics. |

EDF 302 | Yoga                            | 1.000   | Instruction and participation in techniques of Yoga. |

EDF 303 | Self-Defense                    | 1.000   | Instruction and participation in the art of self-defense with emphasis on prevention and awareness. |

EDF 316 | Standard First Aid and CPR       | 2.000   | First aid and safety education in relation to home, school and community. American Red Cross certification available. |

EDF 326 | Weight Training II              | 1.000   | Instruction and participation in intermediate and advanced weight training techniques including specificity of training and the physiological adaptations to training. |

EDF 336 | Stress Management               | 2.000   | |
Instruction and participation in the scientific foundations of stress management. Attention given to relaxation techniques, behavior modification and physiological interventions.

EDF 340  Lifesaving  
1.000 Credit

Instruction and participation in senior life saving skills. American Red Cross certification available. CPR required.

EDF 390  Adventure Education  
1.000 Credit

Theory and practice in the development of problem solving and leadership skills.

EDF 401  Rock Climbing  
1.000 Credit

Instruction in the use of the wall and associated safety requirements, which are necessary prior to recreational use.

EDF 450  Health, Nutrition, & PE/Classroom Teachers  
2.000 Credits

Instruction and participation in health, nutrition and physical education concepts and principles as they relate to elementary school curriculum. The six-dimensional model of wellness will be applied to meet legislative goals and objectives for the various grade levels. Required for elementary education majors.

EDF 455  Principles of Coaching  
2.000 Credits

Instruction in the basic principles and psychology of coaching all age groups, skill levels and genders. Emphasis will be placed on many factors which relate to success in athletic/sports, the qualities and qualifications of coaches, and the administration of programs and organized practices. For graduate credit, elect EDF 555.

EDF 460  Creative Dance  
1.000 Credit

This course is designed to provide the classroom teacher with the rationale, teaching strategies and skills essential to incorporate creative dance in the school curriculum.

EDK 380  Undergraduate Reading Research  
1.000 TO 2.000 Credits

Permits qualified students to pursue a program of reading under the direction of a staff member selected by the student. The faculty member must agree to serve prior to the course election. May be elected twice for total of two hours credit.

EDK 480  Independent Action Research  
1.000 TO 2.000 Credits

Requires the student to initiate and pursue to completion an informal field-based research study under faculty supervision. The faculty member must agree to supervise prior to course election. May be elected twice for a total of two hours credit.

EDK 490  Education Internship  
2.000 TO 10.000 Credits

This internship provides the student with opportunity for supervised, non-classroom experience in a school, college, or other educational setting. Between eight and forty clock hours of unpaid work per week, in conjunction with an arranged seminar, are required. The course may be elected twice for a total of four to ten semester credit hours.

EDM 405  English as a Second Language (ESL) Strategies for the Classroom  
2.000 Credits

This course examines a variety of instructional approaches to teaching English as a Second Language (ESL) which are being used throughout the United States. These approaches will be discussed in light of underlying language learning theories. Instructional materials representing various approaches to teaching ESL will be examined. Students will also have the opportunity to construct instructional material for use in teaching ESL.

EDMA 411  Learning & Teaching Middle Grade Math  
3.000 Credits  
Prerequisite(s): EDD 452 * or MATH 486

This course addresses issues central to teaching and learning mathematics in middle grades: building learning communities, how students learn mathematics, worthwhile mathematical tasks, instructional modes, technology options, assessment to inform instruction, and professional perspectives. For graduate credit, elect EDMA 511.

EDN 227  Inclusion: Multisensory/Direct Instruction  
2.000 TO 3.000 Credits

Course addresses developing, implementing, and evaluating teaching strategies and materials that incorporate principles of direct instruction and multi-sensory activities that promote inclusion of students with special needs in general education settings, increase all students’ academic achievement, and improve social interaction among students from a wide variety of social, economic, and cultural backgrounds.

EDN 401  Strategies for Learning Disabled  
3.000 Credits  
Prerequisite(s): EDC 401

Content includes strategies for teaching K-12 students with learning disabilities in special and regular education classes. Course addresses diagnostic-prescriptive teaching, direct instruction, and specific strategies and materials addressing each academic area. The Individualized Education Program (IEP), development of goals and objectives, linking assessment with instruction, inclusion, and generality of behavior change will also be included.

EDN 402  Socio-vocational Transitions  
3.000 Credits

This course includes strategies that teach age-appropriate social skills to students with disabilities in a variety of social settings.
found in the school, home and community. This course will also focus on issues relevant to vocational and community transitions for students with disabilities. As opposed to rote learning of material the course intends to provide students with a conceptual understanding of issues related to social and vocational transitions.

EDN 403 Assessment of the Learner
3.000 Credits
Prerequisite(s): EDC 401
Co-requisite(s): EDN 404

Formal and informal assessment strategies used in the identification and service of students with handicaps are described. Technical and operational aspects of standardized testing, curriculum based assessment, and informal strategies are described.

EDN 404 Assessment Practicum
3.000 Credits
Prerequisite(s): EDC 401
Co-requisite(s): EDN 403

Clinical experiences with formal and informal assessment strategies currently used by special educators to identify and program for students with handicaps. Activities include administration, scoring and interpretation of norm- and criterion-referenced tests, Curriculum Based Assessments and informal assessment strategies. Deriving goals, objectives, activities and strategies from assessment data are also included. Must be taken with EDN 403 for the LD endorsement.

EDN 406 Collaboration in the Classroom
3.000 Credits

Techniques for enhancing collaboration between special and regular classroom teachers of mainstreamed exceptional and low-achieving learners at all levels. Included are essential skills for managing and monitoring the learning process and maintaining collaborative partnerships. As opposed to rote learning of material, the course will provide students with a conceptual and practical understanding of issues relevant to collaboration.

EDN 423 Strategy: Emotional Impairments
3.000 Credits
Prerequisite(s): EDN 320

Course content includes strategies for teaching students with emotional impairments, including instruction on reading and mathematics. Course also includes strategies to deal with hyperactive behavior, aggressive behavior, socially withdrawn behavior, and delinquency. Strategies for effective teaching and the development of instructional materials and learning environments for students with emotional impairments are included. The Individualized Education Program (IEP), development of goals and objectives, linking assessment with instruction, and integrating students with emotional impairments into the regular classroom will also be covered.

EDN 425 Economic-Behavioral Assessment
3.000 Credits
Prerequisite(s): EDN 320
Co-requisite(s): EDN 426

Formal and informal assessment strategies used in identifying and serving students with emotional impairments are described. Assessment strategies include eco-behavioral assessment, functional analyses, naturalistic observation techniques, norm-referenced and criterion-referenced tests, interviewing, achievement test, and curriculum based assessment. Technical aspects of assessment, interpretation of data, and diagnostic strategies are also addressed, as well as using adaptive technology and assessment instruments to facilitate more effective individualized instruction for students with emotional impairments. Finally, integrating assessment results from other disciplines will also be addressed.

EDN 426 Economic-Behavioral Assessment Practices
1.000 Credits
Prerequisite(s): EDN 320
Co-requisite(s): EDN 425

Clinical experiences with formal and informal assessment strategies currently used by special educators to identify and program for students with emotional impairments. Activities include practicing observation techniques, and completing and analyzing eco-behavioral assessments and functional analyses. Also included are administration, scoring, and interpretation of norm-referenced and criterion-referenced tests, curriculum based assessments, achievement tests, rating scales and checklists, and informal assessment strategies. Practicum activities will also focus on using assessment results in curriculum design and instructional strategies to meet the individualized instructional needs of EI students.

EDT 210 Technology in Elementary Education
3.000 Credits

Introduces students to the application of technology in elementary education. Students experience and become familiar with advance learning technology tools; learn to use telecommunication tools for emailing, participating in educational listserv and online discussion groups, and accessing electronic resources on the WWW; learn to use productivity tools for word processing, drawing, painting and digital editing, spreadsheet application, database management, and multimedia presentation; learn to use educational multimedia for visual thinking, creativity, and multimedia authoring, learn to practice ethical and legal use of technology resources, and explore the use of such technology tools in the elementary classroom.

EDT 211 Technology in Secondary Education
3.000 Credits

Introduces students to the application of technology in secondary education. Students experience and become familiar with advance learning technology tools; learn to use telecommunication tools for emailing, participating in educational listserv and online discussion groups, and accessing electronic resources on the WWW; learn to use productivity tools for word processing, drawing, painting and digital editing, spreadsheet applications, database management, and multimedia presentation; learn to use educational multimedia for visual thinking, creativity, and multimedia authoring, learn to practice ethical and legal use of technology resources; and explore the use of such technology tools in the secondary classroom.
EDT 410 Teaching with Technology
2.000 Credits
Prerequisite(s): EDT 210 or EDT 211

Provide student teachers/interns with improved knowledge, skills, and confidence integrating advanced technology tools into the teaching and learning process in meaningful ways. Student teachers/interns design and teach multi-week units of instruction where student learning is enhanced with advanced technology tools. Student teachers/interns create electronic portfolios to present their achievement in teaching with technology demonstrating a superior level of achievement on the Proposed Standard with Related indicators for the Achievement of Entry-Level Skills in Information Technology for all Michigan Teachers.

Exploratory Studies (EXPS)

COURSE OFFERINGS

EXPS 102 Career Planning
1.000 Credit

A ten-week seminar exploring strengths, values, and motivations in the context of developing career planning and decision-making skills. Career interest assessment and individualized assistance is incorporated in the course. This is especially helpful to students who are deciding on their major.

EXPS 218 Topics in Exploratory Studies
1.000 TO 3.000 Credits

An examination, at the freshman and sophomore level, in the selected areas of general study. The title as listed in the Schedule of Classes may change according to content. Course may be repeated for credit when specific topics differ.

EXPS 220 Science in the Elementary School
2.000 TO 3.000 Credits

This course is designed for people intending to become elementary school teachers and who have had little or no previous experience in science. The course utilizes a laboratory approach to the study of the concepts, processes, and value of elementary and middle school science.

EXPS 282 History & Civics in the Elementary Schools
3.000 Credits

A survey of the history and civics taught in grades K-6. Topics such as neighborhoods, communities, and regions will be explored. The histories and political systems of Michigan, Early America, and the Western Hemisphere will be emphasized. The course will cover the democratic principles behind and structures of our state and federal governments. (F,W,S)

EXPS 283 Geography & Economics in the Elementary Schools
3.000 Credits

A survey of the geography and economics taught in grades K-6. Particular attention will be paid to the geography of Michigan and the Great Lakes region. Market and other types of economics will be examined in the light of core economic principles. (F,W,S)

EXPS 410 Multiculturalism in School and Society
3.000 Credits

Examines various means of using educational forces for constructive social change in urban communities. Emphasizes the educational role of various community institutions in a democratic society. Primary consideration will be given to the study of racial polarization in modern urban America.

EXPS 420 Science Capstone
3.000 Credits
Prerequisite(s): NSCI 231 and NSCI 232 and NSCI 233 and EDD 485 *

A capstone course for pre-service elementary teachers with a laboratory component designed to assist students in achieving deep understanding of a broad scientific concept and a discussion component designed to introduce and provide practice in classroom research. Students will use the classroom research to prove misconceptions about the scientific concept explored in the laboratory.

EXPS 443 Family/School/Community Collaboration
2.000 Credits

Characteristics, roles, and functions of contemporary families are described. Various communication and training strategies designed to promote collaboration and teamwork within and between the school staff, the families, and community are described and practiced through discussion, problem-solving activities, and role playing. Family effectiveness assessment instruments and strategies are also described and practiced.

EXPS 493 Simulation and Gaming
1.000 TO 3.000 Credits

This course focuses on simulation and gaming as approaches to learning which are fundamentally different from methods traditionally used in education, industry, business, and psychology. Students will have the opportunity to examine many different types of simulations and games and to participate in selected ones. They will also be able to design one to use in their own area of interest.

EXPS 499 Individual Research in Literature in Education
1.000 TO 3.000 Credits

Requires the student to initiate and carry to completion a literature in education-based research project under the supervision of a faculty member. May be elected more than once for a total of not more than 3 credits as approved by advisor. Written permission of instructor.

Library Science (LIBR)

COURSE OFFERINGS

LIBR 465 Literature for Children
3.000 Credits
The evaluation of books for children aged three to twelve. Fiction, folklore, poetry, illustration, and informational books are considered with emphasis on the development of standards for selecting materials with reference to the interests, needs, and abilities of children and the enrichment of the school curriculum. Designed for librarians, supervisors, and teachers in the elementary school.

**LIBR 470 Literature for Young People**
3.000 Credits

Surveys and develops criteria for appropriate literature for young people in junior high school. Fiction, non-fiction, folklore, poetry, and fantasy are considered with reference to the interests, needs, and abilities of adolescents. Designed for librarians, supervisors, and teachers in the secondary school.

**LIBR 475 Issues Literature for Children and Young People**
2.000 TO 3.000 Credits

This course is designed to heighten the awareness and sensitivity of teachers to the treatment of issues in modern and traditional literature for elementary and middle school children. Among these issues will be justice, ethics, abuse, conformity, aging, death, sibling problems, alienation, friendship, prejudice, gender, and other areas of concern. Techniques and activities for fostering discourse and open inquiry in the classroom, relative to the literature, will be explored and presented.

### Military Science (MILS)

#### COURSE OFFERINGS

**MILS 101 Foundations of Officership**
1.000 Credit

An overview of the United States Army and its organization, customs and traditions, ranking structure, and the roles of the officer and noncommissioned officer. Students will conduct hands-on training in land navigation, rappelling, marksmanship, drill and ceremony, and small unit tactics.

**MILS 102 Basic Leadership**
1.000 Credit

This course expands upon the fundamentals introduced in the previous term by focusing on communications, leadership and problem solving. It is designed to build on the experience of the first term and further broaden the introduction to the Army as well as to the leadership skills and "life skills" needed by an Army officer. Learning objectives focus on the following: introduction to communication principles of military briefings and effective writing; the Army Problem Solving Process; goal setting; and communication skills as they relate to listening, speaking and the counseling process; as well as several lessons that provide an overview of Army life.

**MILS 201 ILS: Leadership & Teamwork**
1.000 Credit

This course takes the unique approach of placing students in a wide variety of group exercises designed to emphasize various professional leadership competencies and insights. These events are held both inside the classroom and in outdoor settings. The instructor acts as a facilitator, helps guide student processing, or after action reviews of the events to derive the leadership group dynamics, and problem solving lessons that the exercise offer. In addition to military skills, practical 'life skills' are emphasized. The lessons are designed to maximize student participation, inspire intellectual curiosity, stimulate self-study and encourage cadets to interact.

**MILS 202 Leadership and Teamwork**
1.000 Credit

This course places students in an experiential learning environment which provides participants the opportunity to 'experience' their learning, rather than simply being told what they are to learn. Students participate in a wide variety of group exercises designed to emphasize various professional leadership competencies and insights. These events, which range from physically challenging to mentally stimulating, are held both inside the classroom and in outdoor settings. The instructor acts as a facilitator, helps guide student processing through after action reviews of the events to facilitate student understanding of leadership principles, group dynamics, and problem solving methods. In addition to military skills, practical 'life skills' are emphasized. Lessons are designed to maximize student participation, inspire intellectual curiosity and introspection, as well as group interaction.

### Professional Education (PDED)

#### COURSE OFFERINGS

**PDED 318 Topics in Education**
1.000 TO 3.000 Credits

An examination, at the undergraduate level, of selected problems, practices, or issues in education. The title as listed in the Schedule of Classes may change according to content. Course may be repeated for credit when specific topics differ.

**PDED 405 Special Education, Legislation and Litigation**
3.000 Credits

Content traces the historical development of special education through landmark legislation and litigation, parent advocacy, and national economic and social needs. The provisions of federal and state special education mandates, judicial interpretations, and Michigan state guidelines regulating the delivery of educational and vocational services to persons with handicaps will also be addressed.

**PDED 415 Museum Resources for Teaching**
2.000 Credits

Explores the use of museums as educational resources by elementary and secondary teachers. Various museums in the greater Detroit metropolitan area will be visited and studied. Students will review how to plan educational trips and how to use museum resources in meeting their own particular individual needs.
needs.

**PDED 425   Educator and the Law**

1.000 TO 2.000 Credits

Designed to familiarize classroom teachers with school law and its implications for educators, pupils, and parents. Consideration will be given to the legal aspects of such matters as physical threats, teacher liability, codes of conduct, discipline, and student rights.
School of Management

Administration

Bruce Bublitz, Dean
Kim Schatzel, Senior Associate Dean of Business Development
Karen Strandholm, Associate Dean of Academic Affairs

Academic Program Directors

Susan J. Wells, Undergraduate Programs
Timothy E. Landon, Graduate Programs

Internship Program

Michael Callahan, Program Director
Fabia Snage, Program Coordinator

International Program Directors

Ahuvia, Aaron, Europe
Lee, Hei-Wai, Asia

Professors Emeriti

Chou, Yu-Min, PhD, Professor Emeritus of Business Economics and Finance
Cowan, D. Ross, MF, Associate Professor Emeritus of Operations Management
Culp, William H., PhD, CPA, Professor Emeritus of Business Administration
Czarnecki, Richard E., PhD, CPA, Professor Emeritus of Business Administration
Fricke, Cedric V., PhD, Professor Emeritus of Business Administration
Lyons, Thomas F., PhD, Professor Emeritus of Business Administration
Martin, William R. D., MBA, Professor Emeritus of Business Administration
Streeter, Victor J., PhD, Associate Professor Emeritus of Management Information Systems
Waissi, Gary, PhD, Professor Emeritus of Operations Research

Faculty

Adams, Jon, MA, Lawrence Technological University, Lecturer
Ahuvia, Aaron, PhD, Northwestern University, Associate Professor
Baker, Susan, MBA, University of Michigan, Lecturer
Bayou, Mohamed E., PhD, University of Cincinnati, Professor
Beatty, Joy, PhD, Boston College, Assistant Professor
Blatz Jr., Robert, JD, LLM, New York University School of Law, Associate Professor
Bublitz, Bruce, PhD, CPA, University of Illinois, Professor
Cai, Kelly, PhD, University of Houston, Assistant Professor
Callahan, Thomas J., PhD, Michigan State University, Associate Professor
Dziekan, Julie, MBA, Wayne State University, Assistant Professor
Foran, Michael, PhD, University of Washington, Professor
Freeman, Lee A., PhD, Indiana University, Associate Professor
Green, Brian P., PhD, CPA, Kent State University, Professor
Guo, Yi, PhD, Texas A & M, Assistant Professor
Harkness, Michael D., PhD, CPA, University of South Florida, Associate Professor
He, Jun, PhD, University of Pittsburgh
Izberk-Bilgin, Elif, PhD, University of Illinois at Chicago
Klein, Barbara D., PhD, University of Minnesota, Associate Professor
Kocher, Claudia, PhD, Michigan State University, Associate Professor
Kumar, Kamaleesh, PhD, University of North Texas, Professor
Landon, Timothy E., PhD, University of Minnesota, Assistant Professor
Lee, Hei Wai, PhD, University of Illinois at Urbana-Champaign, Associate Professor
Lev, Benjamin, PhD, Case Western Reserve University, Professor
McCracken, Gail K., JD, CPA, Wayne State University, Lecturer
Padmanabhan, K.H., PhD, Michigan State University, Associate Professor
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Redding, Lee, PhD, Princeton University, Assistant Professor
Ro, Young, PhD, University of Michigan, Assistant Professor
Rossin, Donald F., PhD, University of California at Los Angeles, Associate Professor
Samfilippo, Chris, MBA, Wayne State University, Lecturer
Schatzel, Kim E., PhD, Michigan State University, Associate Professor
Scott, Crystal, PhD, Pennsylvania State University
Sharma, Vivek, PhD, Virginia Technological University, Assistant Professor
Steel, Robert P., PhD, University of Tennessee-Knoxville, Professor
Strandholm, Karen S., JD, PhD, Indiana University, Associate Professor
Urbaczewski, Andrew, PhD, Indiana University, Associate Professor
Valero-Tonone, Magali, PhD, Arizona State University, Assistant Professor
Wang, Amanda, PhD, Duke University
Xie, Yan, PhD, Syracuse University, Assistant Professor
General Information

Mission

The School of Management provides high quality, practice-oriented business programs to well-qualified students on a regional campus of the University of Michigan. While the School primarily maintains a regional student focus, it provides a quality educational experience preparing them for national placement. Our primary mission is to meet the business-related educational needs of our undergraduate and graduate students, supported by new technologies and a variety of teaching methodologies. By providing regional organizations with professionally competent interns and graduates, we strive to meet both the community's human resource needs and our students' employment and education needs. The mission is enhanced by the School’s location in a major metropolitan and industrial area. The environment is strongly influenced by the automobile manufacturing industry and its increasingly global outreach.

Our undergraduate and graduate programs are designed to supply students with professional and technical skills essential to being successful in an evolving business environment. Each program is characterized by limited class size. We also offer students outstanding professional internship opportunities.

Our primary mission is complemented by our faculty's commitment to making intellectual contributions. The main focus of this intellectual process is refereed publications in nationally recognized journals that lead to contributions beneficial to academic and business professionals.

The School of Management’s tradition of exemplifying high standards for both faculty and students is acknowledged by AACSB International, The Association to Advance Collegiate Schools of Business, which has awarded fully accredited status for both the undergraduate and graduate programs.

Bachelor of Business Administration Program

The Bachelor of Business Administration (BBA) program is a professionally oriented program that builds upon a strong liberal arts foundation and develops the diversified competencies called for in the management of a modern business enterprise. The program also is designed to impart knowledge of the fundamental administrative skills demanded of the leaders in modern public and private organizations. It also can provide a rigorous preparation for graduate study in management science, business administration, law, and related areas.

Approximately one-half of the course requirements of the degree program are in non-business disciplines and provide the foundation for the professional offerings. These requirements are designed to give the student a more profound understanding of the student's own heritage, and of the physical and social universes within which the student lives. They develop the principles and standards of analysis, expression, and conduct.

BBA Program Planning for UM-D Pre-business Students

Programs of undergraduate study in business administration leading to a bachelor's degree involve approximately four years of college study, the first two years of which can be considered pre-professional preparation in foundation courses covering fundamental subject matter. The third and fourth years constitute the more specialized professional phase of the degree program. It is in the offering of this professional phase that the faculty of the School of Management has principal responsibility.

Students seeking the BBA degree who are admitted to UM-D as freshmen or sophomores enter the pre-business administration program of the School of Management. The pre-business program is designed to provide students with a strong liberal arts foundation. Pre-business students apply for admission to the BBA program during the term in which they complete their sophomore year and the specific courses required for admission. Students not enrolled in the BBA program cannot elect more than 30 credit hours in courses offered by the School of Management.

ADMISSION

Admission to the BBA program is competitive and requires that the student has high promise as evidenced by the record compiled in the first two years of study. A student must have completed at least 55 credit hours to be considered for admission to the B.B.A. program. These credit hours must include necessary prerequisites for admission to the B.B.A. program (COMP 105, 106; ECON 201, 202; MATH 113 or 115; MIS 120; ACC 298, 299.) Courses required for admission to the B.B.A. program, including those courses that are prerequisite to the required courses, in which a grade of C- or below has been received, must be repeated during the student's next academic term. Prerequisite courses are COMP 105 and 106, ECON 201 and 202, MATH 113 or 115, MIS 120 or equivalent, and ACC 298 and 299. In addition, students admitted to the B.B.A. program must satisfy the School of Management’s writing requirement.

Appropriate and timely sequencing of the required math courses is critical for the successful admission to the B.B.A. program. Students are required to have completed math through calculus (MATH 113 or 115) by their junior year. Pre-business students are required to take the math placement exam and/or begin their math courses in their first term of enrollment. Freshmen are strongly encouraged to take the exam prior to orientation and register for the recommended math course their first term as a pre-business student. Students who have not taken the exam prior to their first term of enrollment will be required to complete the exam their first semester and register for math the following term.

BBA Program Planning for Transfer Students

Programs of undergraduate study in business administration leading to a bachelor's degree involve approximately four years of college study, the first two years of which can be considered pre-professional preparation in foundation courses covering
fundamental subject matter. The third and fourth years constitute
the more specialized professional phase of the degree program.
It is in the offering of this professional phase that the faculty of
the School of Management has principal responsibility.

Students are admitted to the business administration program
as junior transfer students from other colleges.

ADMISSION

A transfer student seeking the BBA degree may be granted regular
admission to the BBA program if the student has completed at least
55 semester credit hours at an accredited university or college and if
the student has satisfactorily completed prerequisites for the
program. Required prerequisites include the equivalent courses to
UM-D’s ACC 298 and 299; MATH 113 or 115; COMP 105 and
106; and ECON 201 and 202; and MIS 120. The UM-D
Undergraduate Admissions Office provides local community
colleges with equivalency tables. These tables should be consulted
when planning course scheduling. If a student who is otherwise
admissible has not satisfied both of these conditions, the student may
be admitted to the pre-business program until the conditions are met.
Courses required for admission to the BBA program, including those
courses that are prerequisite to the required courses, in which a grade
of C- or below has been received, must be repeated during the
student’s next academic term. Prerequisite courses are COMP 105
and 106, ECON 201 and 202, MATH 113 or 115, MIS 120 or
equivalent, and ACC 298 and 299. in addition, students admitted to
the BBA program must satisfy the School of Management’s writing
requirement.

Admission is based on the quality and content of both the high
school and the college academic records, and standards of evaluation
are designed to ensure that each student who is admitted has the
intellectual capacity and the preparation to pursue advanced
undergraduate work successfully. Admission criteria are applied to
all students without regard to race, color, sex, creed or national
origin.

Students who plan to transfer to the BBA program at UM-D after
completing two academic years of course work should plan to
complete most of the distribution requirements prior to transfer. It is
especially important to have completed the requirements in English
composition, natural science, foreign language, principles of
economics, principles of accounting, mathematics, and management
information systems.

Appropriate and timely sequencing of the required math courses is
critical for the successful admission to the BBA program. Students are
required to have completed math through calculus (MATH 113
or 115) by their junior year. Pre-business students are required to
take the math placement exam and/or begin their math courses in
their first term of enrollment. Freshmen are strongly encouraged to
take the exam prior to orientation and register for the recommended
math course their first term as a pre-business student. Students who
have not taken the exam prior to their first term of enrollment will be
required to complete the exam their first semester and register for
math the following term.

TRANSFER OF CREDIT

Full credit will be given for all acceptable courses in which a
student has earned at least a C grade at an accredited college. A
maximum of 62 credits from a community college and a
maximum of 75 credits from a non-UM university or college are
accepted for transfer; the total maximum number of non-UM
credits not to exceed 75. A maximum of 90 credits from another
UM unit are accepted for transfer. The minimum number of
hours at UM and in the School of Management as stated in the
section on BBA Degree Requirements must also be earned.

BBA Degree Requirements

The BBA degree will be granted to those students who meet the
following requirements:

Satisfactory completion of at least 123 hours of college-level
work distributed as follows:

BBA program prerequisite requirements .................. 25 hrs
Non-business distribution requirements .................. 41 hrs
BBA core requirements .................................... 27 hrs
Concentration requirements ............................... 21-27 hrs
General elective requirements ............................ 3-9 hrs

Satisfactory completion of 48-61 hours at UM-D, the final 33
hours of which are taken while in the BBA program. A
minimum of 21 credits of the 33 hours must be in courses taught
in the School of Management.

Achievement of a minimum concentration grade point
average of 2.0, as well as at least a 2.0 grade point average in all
UM-D coursework and in all courses offered by the School of
Management.

BBA Program Prerequisites ............................. 25 hrs

COMP 105 Composition I
COMP 106 Composition II
ECON 201 Principles of Macroeconomics
ECON 202 Principles of Microeconomics
MATH 113 Calculus I: Management, Life and Social
Science
OR
MATH 115 Calculus I

MIS 120 Fundamentals of Information Systems
ACC 298 Financial Accounting
ACC 299 Managerial Accounting

Note: Each incoming student will take the UM-D
Composition Placement Examination. Freshman must take the
exam and enroll in the appropriate level of English
Composition in their first term of enrollment. This exam must be
taken by the sixth week of the first semester in the School of
Management for students transferring Composition 105 and
106 from off-campus. Excellent performance on the examination
may result in the requirement for Composition 105 and/or 106
being waived. Students must demonstrate a minimum writing
proficiency for admission to the BBA program. Specific
requirements are available in the School of Management
Student Services Office. Note that demonstrating proficiency
does not grant credit for courses not taken. Students exempt
from the English Composition requirement must fulfill the 3-6
credit hours in non-professional electives.
General Non-Business Distribution Requirements

A student seeking a degree from the School of Management must fulfill the coursework specified below. All of these courses, except as noted, are at the 100 and 200 level. These courses should generally be completed in the first two years. All students must complete a minimum of 57 credit hours of non-business coursework.

Foreign Language

A two-course sequence from:
- Arabic 101 & 102
- French 101 & 102
- German 101 & 102
- Latin 101 & 102
- Modern & Classical Language 105 & 106, or 111 & 112
- Spanish 101 & 102

A student with prior knowledge of a language should take a placement examination before registering for a course in that language. For further information, consult the appropriate foreign language discipline representative via the Humanities Department office, 3011 CB.

A student may be exempted from the foreign language requirement by demonstrating college-level proficiency in an approved foreign language. Such proficiency may be shown in one of three ways:

1. by presenting three years of high school work in a foreign language with a grade of C or better in the last semester.
2. by passing a written and oral proficiency examination.
3. by completing a one-semester language course at the 102 level or higher in the chosen language with a passing grade.

Note that demonstrating proficiency does not grant credit for courses not taken. Students exempt from the foreign language requirement must fulfill the 4-8 credit hours in non-professional electives.

Humanities

Arts.................................................................6hrs
- ARTH 101, 102, 103, 104, 106
- MHIS 100, 120, 130

Letters.................................................................3 hrs
- COML/HUM 221, 222, 223
- ENGL 230, 231, 232, 233, 235, 236, 237, 239
- HUM 171, 201
- LIBS 112, 114, 115, 122, 123
- PHIL 100, 120, 200, 240

Behavioral and Social Sciences ........................................9 hrs

A student must elect at least one course from Group A.

Group A
- ANTH 101, 202
- LIBS 112, 116, 117, 118, 123
- PSYC 170, 171
- SOC 200, 201

Group B
- LIBS 112, 114, 116
- POL 101, 201, 205, 250, 260

History.................................................................3 hrs

Any history course excluding HIST 398, 399, 485, 497, 498 and 499.
- LIBS, 112, 113, 116, 119, 120, 121

Biological and Physical Sciences..................................7-8 hrs

One course must be a laboratory course.
- BIOL 100 or 100 & 101
- BIOL 103 and 105, 130, 140, 240
- CHEM 100, 124, 134, 136, 144, 146
- ESCI 275
- GEOL 118, 218
- LIBS 117, 123
- NSCI 120, 121
- PHYS 100, 125, 126, 130 or 130 & 131, 150, 151

Both Biology 103 and 105 must be taken to meet the requirement; if only one is taken, two other courses must be used to fulfill the requirement. Natural Science 120 and Biology 100 or 100 & 101 may not be used together to meet the requirement.

Non-Professional Electives..........................................7-8 hrs

From courses in disciplines other than economics and business administration. Additive credit courses do not carry college-level credit toward program. Courses below the 100 level and most EDF courses are additive credit. Non-Management co-ops and their related seminars do not carry credit toward a BBA degree. Up to three credit hours of non-paid, non-business internship or related seminars will satisfy Group 2 elective credit.

Business Administration Core Requirements.............27 hrs

BE 401 Managerial Economics
BPS 451 Strategic Management
DS 300 Quantitative Modeling and Analysis I
FIN 401 Corporate Finance
LE 452 The Legal Environment of Business
MIS 310 Information Systems in Management
OR
- ACC 380* Accounting Information Systems
- MKT 352 Marketing Principles and Policies
- OB 354 Behavior in Organizations
- OM 300 Introduction to Operations Management

*Note: ACC 380 is a requirement for students pursuing an Accounting concentration.

Concentration Requirements..........................21-27 hrs

All BBA students must declare and fulfill the requirements
for a concentration in Accounting (with a track in Financial Accounting and Reporting, Accounting Information Systems, or Controllership); Finance; General Business; Management; Management Information Systems; Marketing; Supply Chain Management; or Human Resource Management.

**Accounting Concentration** .......................... 21-27 hrs

All students pursuing a concentration in Accounting must also choose a track in Financial Accounting and Reporting, Accounting Information Systems, or Controllership.

**Financial Accounting and Reporting Track** ............... 21 hrs

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<td>ACC 355</td>
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<td>ACC 439</td>
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<td>ACC 457</td>
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The Financial Accounting and Reporting track provides the necessary foundation for students preparing to take the Certified Public Accounting (CPA) examination.

**Accounting Information Systems Track** .................. 24 hrs

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<td>ACC 355</td>
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<td>MIS 301</td>
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<td>MIS 321</td>
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<td>MIS 331</td>
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The Accounting Information Systems track provides the student with a foundation to pursue a career in accounting and information systems through a balanced education in the study of Accounting and Management Information Systems. Accounting majors who pursue this course of study will be well prepared for a career in a dynamic, ever-changing environment where knowledge of accounting and information systems is becoming mandatory.

**Controllership Track** ..................................... 27 hrs

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<td>FIN 402</td>
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<td>OB 402</td>
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Plus one course from the following

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<td>ACC 416</td>
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<td>BE 403</td>
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<td>FIN 407</td>
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<tr>
<td>FIN 443</td>
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<td>BI 350</td>
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*Note: approval of internship director*

A controller’s primary responsibility is to assist management in delivering and improving a company’s overall performance through the development and presentation of timely, accurate financial information. To satisfy this responsibility, students need to develop a theoretical understanding and practical skills in advanced management accounting, process and structure cost control, and revenue stream management. The controllership track emphasizes the five essential elements of controllership. These elements include: **Production process; Manufacturing cost standards and objectives for operations (including purchased raw materials and component parts); Development and maintenance of information and reporting processes to ensure that corporate objectives are achieved; Revenue analysis** to improve both aggregate revenue sources and per unit revenue; **Budgeting processes and objectives** including tracking structure costs, costs behaviors, and revenue streams. These elements ensure that management receives accurate information on issues in a timely manner to take appropriate action. The track emphasizes the integration of advanced managerial and financial accounting tools, organization behavior and leadership skills, business cycle economics, and managerial finance.

**Finance Concentration** .................................... 21 hrs

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<td>ACC 355</td>
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<td>ACC 360</td>
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Plus three courses from the following

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<td>FIN 443</td>
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<td>MGT 321</td>
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And one course from the following

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<td>FIN 494</td>
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<td>IB 441</td>
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<td>MGT 321</td>
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</table>

The Finance concentration offers flexibility for developing careers in investments, financial institutions and corporate finance. The program offers analytical rigor, theoretical knowledge and teaching methods that stress hands-on applications. Finance internships historically have proven to be among the most numerous and challenging available. The Finance Club interacts with the finance community and offers
student membership in the national Financial Management Association.

General Business Concentration ........................................ 21 hrs

The concentration in general business has been designed for students seeking a broad business background rather than a specialization in any one functional area of business. The General Business concentration requires the completion of 21 School of Management upper division credits beyond the BBA core. General Business students will not be permitted to combine this concentration with any other School of Management concentration.

Management Concentration ........................................... 21 hrs

Required
- BA 330 Managerial Communications
- HRM 405 Human Resource Policy and Administration
- MIS 321 Database Systems I
- MKT 402 Marketing Management
- OB 401 Management Skills Development
- OM 460 Supply Chain Management

Plus one course from the following
- ACC 358 Financial Reporting
- FIN 402 Advanced Corporate Finance
- IB 441 International Financial Management

These required courses are designed to provide each student with the fundamentals necessary to enter and develop a career in administration. A student may supplement these foundation courses with elective courses from several disciplines or extend and deepen career preparation with more advanced work in a particular area of administration or analysis.

Management Information Systems Concentration ........... 24 hrs

Required
- MIS 301 Business Application Programming
- MIS 302 Object-Oriented Programming
- MIS 321 Database Systems I
- MIS 322 Database Systems II
- MIS 331 Information Systems Development
- MIS 351 Networking and Collaborative Computing
- MIS 371 Managing Electronic Commerce Systems
- MIS 481 Information Systems Implementation and Management

The Management Information Systems concentration is designed to prepare students for positions in system development, system analysis, database administration, networking, and as MIS specialists in user departments such as finance, human resource management, marketing and operations management. The concentration is also designed to prepare students to assume increasing levels of managerial responsibility as their career progresses.

Marketing Concentration ............................................. 21 hrs

Required
- MKT 402 Marketing Management
- MKT 454 Marketing Research

Plus five courses from the following
- MKT 360 Marketing and Society
- MKT 382 Consumer Behavior
- MKT 434 Sales Management
- MKT 436 Business to Business Marketing
- MKT 455 Distribution/Retailing Management
- MKT 456 Advertising and Sales Promotion
- MKT 457 International Marketing
- MKT 498 Marketing Independent Research
- ENT 400 Introduction to Entrepreneurship

Marketing covers the creation of new products and services, the distribution of products from suppliers and manufacturers down to the final consumers, the pricing of products, as well as advertising, sales, and other promotional initiatives. The marketing concentration provides students an opportunity to develop skills for careers in marketing management, advertising, sales, marketing research, new product development, retailing, international business, purchasing, management of nonprofit organizations, and general business management. Their functional visibility enables high-achieving marketing persons to be aptly recognized, promoted, and compensated. Marketing is also an excellent concentration for students who are considering starting their own business.

Supply Chain Management ........................................... 21 hrs

Required
- OM 460 Supply Chain Management
- OM 470 Analysis and Design of Supply Chains
- OM 475 Supply Chain Logistics Management
- HRM 405 Human Resource Policy and Administration
- MKT 455 Distribution/Retailing Management
- MIS 321 Database Systems I
- MIS 351 Networking and Collaborative Computing

The concentration in Supply Chain Management (SCM) provides students with opportunities for careers in e-business, startups, manufacturing, high tech, service and consulting companies. Supply Chain Management encompasses a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system-wide costs while satisfying service level requirements. SCM is an interdisciplinary field that emphasizes cross-functional links and seeks to manage those links to enhance a company’s competitive advantage.

Human Resource Management Concentration ............. 21 hrs

Required
- HRM 405 Human Resource Policy and Administration

Plus three courses from the following
- HRM 406 Staffing, Training & Development
- HRM 407 Compensation & Performance Management
- HRM 408 Management-Union Relations
- OB 402 Organizational Change & Development

And three courses from the following
- ECON 321 Labor in the American Economy
- ECON 421 Economics of the Labor Sector
- HRM 406 Staffing, Training & Development
- HRM 407 Compensation & Performance Management
- HRM 408 Management-Union Relations
The Human Resources Management concentration courses are designed as fundamental preparation for positions in human resource management, industrial relations, or general management. A Human Resources Management concentration would also be valuable to students who are not contemplating a career in human resources, as these courses provide knowledge and skills for selecting, developing, motivating, retaining, evaluating, and directing employees - skills needed by managers in any technical or business domain.

### General Elective Courses

3-9 hrs

College-level courses in any discipline which bear UM-D or transferable academic credit. Additive credit courses do not carry college-level credit toward program. Courses below the 100 level and most EDF courses are additive credit. Non-Management co-ops and their related seminars do not carry credit toward a BBA degree. Non-Management internships and their related seminars cannot be used for general elective credit (see non-professional elective credit). School of Management business internships (BI 350 and 450) will satisfy general elective credit.

### Concentration

**Accounting**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Financial Accounting &amp; Reporting Tr</td>
<td>9 hrs</td>
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<tr>
<td>Accounting Information Systems Tr</td>
<td>6 hrs</td>
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<tr>
<td>Controllership Track</td>
<td>3 hrs</td>
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<tr>
<td>General Business</td>
<td>9 hrs</td>
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<tr>
<td>Finance</td>
<td>9 hrs</td>
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<tr>
<td>Management</td>
<td>9 hrs</td>
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<tr>
<td>Management Information Systems</td>
<td>6 hrs</td>
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<tr>
<td>Marketing</td>
<td>9 hrs</td>
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<tr>
<td>Supply Chain Management</td>
<td>9 hrs</td>
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<tr>
<td>Human Resource Management</td>
<td>9 hrs</td>
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</tbody>
</table>

### Management Minors

Students pursuing any degree may wish to complement their academic program with a minor from the School of Management. As additional minors become available they will be posted on the Undergraduate website at www.som.umd.umich.edu.

#### Accounting Minor

15 hrs

- ACC 355 Cost Accounting and Analysis
- ACC 356 Asset Accounting
- OR
  - ACC 358 Financial Reporting
  - ACC 360 Federal Income Taxation

Plus two of the following courses:

- ACC 357 Equity Accounting
- ACC 380 Accounting Information Systems
- ACC 403 Controllership
- ACC 439 Not-for-Profit Accounting
- ACC 457 Auditing

#### Finance Minor

15 hrs

- FIN 401 Corporate Finance
- FIN 402 Advanced Corporate Finance
- FIN 407 Investment Fundamentals

Plus two of the following courses:

- ACC 358 Financial Reporting
- FIN 443 Commercial Banking: Function and Operations
- FIN 445 Corporate Finance Models and Applications
- FIN 447 Derivative Markets
- FIN 484 Seminar: Financial Management
- IB 441 International Financial Management

### Management Information Systems Minor

15 hrs

- MIS 120 and MATH 113 or 115, and DS 300

Plus two of the following courses:

- COMP 106 and MIS 120 OR CIS 123
- MIS 301 Business Applications Programming
- MIS 310 Information Systems in Management
- MIS 321 Database Systems I
- MIS 331 Information Systems Development
- MIS 351 Networking and Collaborative Computing

#### Management Minor

18 hrs

- MIS 120 or MIS 310; ECON 201 and ECON 202; and MATH 104 or 105 or 113 or 115

Plus three courses from at least two disciplines from ACC 299 and/or any 300-400 level courses offered in the School of Management.

- ACC 298 Financial Accounting
- MKT 352 Marketing Principles and Policies
- OB 354 Behavior in Organization

### Internship Certificate Program

The Internship Certificate program is a coordinated integration of classroom work and practical experience and has been an integral part of the School of Management’s offerings.
since the campus was founded in 1959. An internship provides the student with experiential training and development in business administration environments. Internship opportunities have been developed for their educational value, but also provide remuneration at a level commensurate with that of a college graduate training program. In addition, the internship provides other benefits: a practical test of vocational interests, immediate application of scholastic knowledge, development of responsible work habits, and the prospect of more rapid assumption of professional leadership upon graduation.

For the internships listed below, the following applies:

- Student must sign and comply with an Internship Contract.
- Attendance is required at placement seminars.
- A minimum cumulative GPA of 2.7 is required to participate.
- A report and other evaluative material will be required.
- A grade of Satisfactory or E will be recorded on your transcript.
- Good academic standing is required.
- Some positions are a commitment for two semesters.
- Internship Certificates will be awarded to students completing six hours of SOM internship credit.

Students enrolled in BI 350, BI 450, or BI 470 are considered to be full-time by the School of Management. Students must get permission from the Internship office to elect one course along with the first internship and two courses with a second internship.

Management Information System students must complete three of the following four courses with a minimum GPA of 2.7 and be enrolled in the fourth course before interviewing for an MIS internship: MIS 301, MIS 310, MIS 321, and MIS 351.

For the BBA degree, up to six internship credit hours can be applied to Group 5: General Elective Courses. Additional information regarding the Internship Program, please visit their website at: www.som.umd.umich.edu/internship.

Additional Academic Information

OFFICE OF STUDENT SERVICES

The Office of Student Services helps students make informed decisions about their course of study. To provide this help, the Office offers students current and accurate information on School of Management academic policies and procedures, coordinates academic advising, provides necessary School forms and materials, and reviews students’ academic progress and performance at specified intervals.

The Office offers a systematic program of guidance and advising that attempts to guide and involve students from registration through graduation. Advising occurs in many forms and at various levels. All newly admitted students are required to attend an orientation advising session prior to their registration in the School. Pre-business students with 60 credits will be required to meet with their advisor each subsequent term until admitted to the BBA degree program. In addition, BBA students, upon reaching senior class standing (85 credit hours), are required to schedule a senior audit advising appointment.

CHANGES IN COURSE ELECTIONS: ADD, DROP, WITHDRAWAL

Add

A student may add courses during the first two weeks of a full term or the first week of a half term or mini-term. Refer to the narrative of the Schedule of Classes for procedures and dates. Any exceptions for adding courses must be approved by the Academic Standards Committee of the unit in which the student is enrolled.

Drop

A student may drop courses during the first two weeks of a full term or the first week of a half term or mini-term. Courses may be dropped during the third through the ninth week of a full term, and through the fourth week of a half term. Refer to the narrative of the Schedule of Classes for procedures and dates. Students enrolled in BI 350 or 450 are not allowed to drop or withdraw from the course without approval from the Internship Director. Approval to drop courses under circumstances other than stated above will require the approval of the Academic Standards Committee of the School of Management. Petitions to drop a class after the ninth week of a full term or the fourth week of a half term will be considered only under extreme circumstances beyond a student's control, such as illness under the care of a physician which precludes class attendance for periods in excess of a week. Documentation will be required. Failure to receive approval will result in a grade(s) of E for the course or courses.

Withdrawal

Refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

COURSE PREREQUISITES

The faculty has determined the appropriate prerequisites for each course. These prerequisites exist to make sure the student has the specific background necessary not only to minimally complete the course, but also to assure a broad enough background so the student fully benefits from the course. Students must observe all prerequisites in course planning.

GRADING SYSTEM

Refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

PASS/FAIL GRADING OPTION

Students enrolled in the School of Management may elect courses with the pass/fail grading option subject to the following conditions:

This option may not be elected by students on academic probation.

Courses to be taken under this option must be specified on the appropriate form at the time of registration or within the regular period for adding courses. The form must be presented to the designated representative of the Office of Registration and Records at the time of course election.

No course specifically required in the degree program of a student may be elected under this option. For example, the following courses cannot be elected on a pass/fail basis:
Composition requirements, Calculus I, Economics 201 and 202; and all School of Management courses. Otherwise, any course which is offered by a unit of UM-D and which permits enrollment on a pass/fail basis may be elected under this option.

In a course offered exclusively on a pass/fail basis, a passing grade will be recorded as S (and not used in computing a student's grade point average), and a failing grade will be recorded as F (and used in computing grade point average). In a course offered with a pass/fail option, a reported grade of C- or above will be recorded as P, and a reported grade of below C- will be recorded as F. (Whether a P or F is recorded, the grade is not used in computing a student's grade point average.) A student may elect at most two courses on a pass/fail basis, whether at the student's option or not (excluding internship courses). Courses which are elected on a pass/fail basis in a manner that does not conform to these guidelines will not accrue toward the degree requirements of the student.

Changing from the pass/fail option to a letter grade or vice versa is not permitted after the first two weeks of a full term or after the first week of a half term.

**ABSENCE FROM FINAL EXAMINATIONS**

It is the School of Management students’ responsibility to obtain a contract for any absence from final exams, regardless of which academic unit the courses is in. Refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

**INCOMPLETE COURSEWORK**

It is the School of Management students’ responsibility to obtain a contract for any incomplete coursework request, regardless of which academic unit the courses is in. Refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

**ACADEMIC STANDING**

Refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

**Good Scholastic Standing**

To be in good scholastic standing, a student must have a 2.0 cumulative grade point average in all UM-D coursework, a 2.0 grade point average in their concentration, and in all courses offered by the School of Management.

**Unsatisfactory Performance**

The records of students enrolled in the School of Management are reviewed at the end of each term by the Academic Standards Committee. Two degrees of scholastic deficiency will be used by the committee to identify a student's unsatisfactory performance resulting from D and E grades:

- probation
- withdrawal

Probationary status will be assigned to students who are not in good scholastic standing (cumulative, School of Management, and/or concentration grade point average below 2.0) but whose records indicate a possibility for removal of deficiencies by continued enrollment. Letters will be sent to these students informing them of their academic status and requiring them to schedule an advising appointment.

Students whose academic records are so poor as to indicate little possibility of successful completion of their program will be required to withdraw from the School of Management. If the student is enrolled in coursework at the time the withdrawal decision is made, the withdrawal is effective immediately. The student will be informed, in writing, and that term's tuition assessment will be adjusted to zero.

**D Grades**

While any D grade (D, D-, D+) is passing, it is not considered satisfactory performance. Any deficiency of grade points (below 2.0 overall average) resulting from one or more D grades must be made up while enrolled in this school before the student is restored to good standing. If the student receives a D grade in a course that is an important prerequisite for other courses, it is recommended that the course be repeated.

Credit is not transferable for courses in which D grades were earned in another college.

**E Grades**

Neither credit nor honor points are granted for a course in which a student receives a grade of E. Required courses in which a grade of E has been received must be repeated during the student's next academic term.

**Repeating Courses**

Students may repeat a course up to two times for a total of three attempts. Regardless of whether it is higher or lower than the previous grade(s), the last grade assigned in a course will be used in computing the student’s cumulative grade point average and credits earned toward degree. Please refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

**STATEMENT ON ACADEMIC INTEGRITY**

The School of Management holds in high value integrity in all relationships and activities. As the School develops students for professional business careers, it must demand not only academic excellence, but academic honesty as well. Students engaged in academic misconduct hurt themselves, their fellow students, the reputation of the School and society as a whole. As such, a culture of zero tolerance for academic misconduct has evolved. Certainly, building a classroom environment that discourages academic misconduct before it surfaces is the ideal. While this can eliminate much of the opportunity for academic misconduct, it is not always sufficient. Consequently, policies that address academic misconduct must be developed. The School’s policy is as follows:

- All cases of academic misconduct in which a faculty member deems is serious enough to penalize must be reported in writing to the Senior Associate Dean. The report should include the student’s name, course, date, brief description of the offense, and the grade sanction. As has historically been the case, the faculty member has the right to decide what the appropriate grade sanction is.
- The faculty member must inform the student of the decision, and provide him/her with a signed copy of the report.
The student has the right to appeal the decision through existing School and University channels. The Senior Associate Dean will retain all reports of academic misconduct that have been upheld. Decisions are upheld in two ways: when they are not challenged by the student or when the faculty case has been supported through an appeals process.

All cases are strictly confidential. With the exception noted below, SOM faculty, staff and/or the Hearing Board will not have access to this information.

The Senior Associate Dean will remand any case of repeat academic misconduct by a School of Management student to the School’s Academic Standards Committee for formal action. Except in the rarest of circumstances, two violations will result in expulsion from the School of Management.

PETITIONS FOR ACADEMIC ACTION

Each request to the faculty of the School of Management for special academic action relative to credits, requirements, standing, etc., should be entered on the appropriate petition form (available in the School Office) and forwarded, with appropriate documentation, to the School Office for review by the Academic Standards Committee.

STUDENT ACADEMIC CONDUCT

A student in the School of Management or any student enrolled in a School of Management course will not engage in academic misconduct, including, but not limited to, plagiarism, cheating, fabrication, aiding and abetting dishonesty or falsification of records and official documents as defined in the Statement of Student Rights and Code of Student Conduct. Definitions of prohibited conduct, sanctions, procedures for applying sanctions, and appellate procedures are specifically set out in the Statement.

STUDENT PERSONAL CONDUCT

Any conduct which can be the grounds for civil or criminal lawsuit shall be subject to sanctions by the School of Management.

RIGHT OF APPEAL

Refer to this topic in the General Information section of this Catalog.

CHANGE OF DEGREE PROGRAM BETWEEN SCHOOLS

See Admission under Program Planning for UM-D Students. Information is available at the School Office.

CLASS STANDING

Refer to this topic under Campus Policies and Procedures in the General Information section of this Catalog.

GRADE REPORTS

Refer to this topic under Reporting of Grades in the General Information section of this Catalog.

REQUESTS FOR TRANSCRIPTS

Refer to this topic under Transcripts in the General Information section of this Catalog.

SECOND BACCALAUREATE DEGREE FROM THE SCHOOL OF MANAGEMENT

A second baccalaureate degree will be granted to those students who meet the following minimum requirements:

1. Satisfactory completion of the non-professional distribution coursework required, the professional core coursework, and the concentration coursework required for the degree sought.
2. Satisfactory completion of at least 33 semester hours of coursework while enrolled in the School of Management as a post-baccalaureate student; at least 21 hours of this coursework must be in courses offered by the School of Management.
3. Achievement of at least a 2.0 grade point average in all post-baccalaureate coursework and in courses offered by the School of Management.

INACTIVE STUDENT STATUS

A student may be inactive for a maximum of two consecutive terms and maintain eligibility to register. A student who is declared inactive as a result of not being enrolled for any coursework during a 12-month period must apply for readmission to the School. A decision on readmission will be based upon the past performance of the student and enrollment space available in the School at that time. Upon readmission, a student who has been inactive will be required to satisfy any program requirements that have been added in his/her absence.

ACADEMIC HONORS

Dean's List

A student is honored by inclusion in the Dean's List if he or she meets two conditions:
1. has completed at least 12 credit hours toward a degree during the term, and
2. has achieved a 3.50 or better term GPA. The Dean's List is compiled after the fall, winter, and summer terms.

BBA Honors Program

The School of Management BBA Honors Program is designed to provide intellectual and academic challenges to students who have distinguished themselves from their peers. Enrollment in this Program is by invitation only and is contingent upon admission to the BBA program and a grade point average of 3.50 or higher.

Beta Gamma Sigma

Beta Gamma Sigma is the national honor society for business schools accredited by AACSB-The International Association for Management Education. Membership in Beta Gamma Sigma is one of the highest scholastic honors that a student in the BBA program can achieve. It is based on outstanding scholastic achievement as measured by overall grade point average. Invitation for membership to Beta Gamma Sigma is extended to seniors in the top 10 percent of their class and juniors in the top seven percent of their class.
Honor Scholars

Every year, one honor scholar from each concentration is selected and recognized at the Annual Honors Convocation. Selection is made by the School of Management’s Scholarship Committee based on the students’ GPA and achievement of 90 credit hours or more toward degree.

Chancellor’s Medallion

The Chancellor’s Medallion is awarded at each Commencement Exercise to UM-D graduates including one from the School of Management. The student is selected by the Management Curriculum Committee based on his/her quality of character, vitality, intellect, integrity and academic record. The December awardee is selected from students who were graduated in August and those who are to be graduated in December. The April/May awardee is selected from students who are to be graduated in April/May.

Graduation with Distinction

Students who are degree candidates in Management and have obtained a cumulative GPA of at least 3.20 but less than 3.60 are recommended for graduation "With Distinction." Such distinctions are noted on transcripts and diplomas.

Graduation with High Distinction

Students who are degree candidates in Management and have obtained a cumulative GPA of at least 3.60 are recommended for graduation "With High Distinction." Such distinctions are noted on transcripts and diplomas.

Undergraduate Course Offerings

Prerequisite courses indicated with an asterisk * may be taken concurrently.

Students not enrolled in the BBA degree program of the School of Management cannot elect more than 30 credit hours in courses offered by the School of Management.

Accounting (ACC)

COURSE OFFERINGS

ACC 298  Financial Accounting
3.000 Credits
Prerequisite(s): (MATH 104* or MATH 105* or MPLS 113 or MATH 113 or MATH 115* or MPLS 116)

The first course, of a two-course sequence, to introduce accounting concepts, principles, financial statement preparation, and the uses of accounting information. Topics include fundamental concepts and procedures of financial accounting including income measurement, asset valuation, financial statement preparation and analysis, and uses of accounting information for decision making.

ACC 299  Managerial Accounting
3.000 Credits
Prerequisite(s): ACC 298 and MIS 120

To introduce managerial accounting concepts and applications. Specific topics include: Cost terminology, cost behavior, product costing systems, budgeting, standard costing systems and variance analysis, and cost allocation methods. To connect the materials in this course to concepts covered in the prerequisite course, ACC 299 begins with financial statement analysis. Discussion of ethics and globalization issues will be interwoven into the presentation of course materials.

ACC 355  Cost Accounting and Analysis
3.000 Credits
Prerequisite(s): ACC 299

To study the development, analysis and interpretation of accounting information for planning and controlling costs and revenues. Topics include: cost concepts, cost behavior, product costing systems, cost allocation systems, budgeting, standard costs and variance analysis and performance evaluation techniques.

ACC 356  Asset Accounting
3.000 Credits
Prerequisite(s): ACC 299

To study accounting theory and financial statement presentation underlying assets and income determination. Topics include: cash, marketable securities, receivables, inventories, plant assets, natural resources, intangibles and long-term investments.

ACC 357  Equity Accounting
3.000 Credits
Prerequisite(s): ACC 356

To study accounting theory and financial statement presentation underlying equities and income determination. Topics include: non-current liabilities, bonds, stockholders’ equity, revenue recognition, accounting changes, dilutive securities and earnings per share, income tax allocation, pensions, leases and the statement of cash flows.

ACC 358  Financial Reporting
3.000 Credits
Prerequisite(s): ACC 298 or (ACC 296 and ACC 297)

This course provides an intermediate level analysis of financial accounting focusing on recognition, measurement, and reporting issues associated with assets, liabilities and owner equity in conjunction with related income determination questions. The course is designed for financial statement information users who need a level of sophistication beyond an introductory level, yet not the complete technical expertise of a financial accountant. (YR).
ACC 360  Federal Income Taxation  
3.000 Credits  
Prerequisite(s): ACC 299

To acquaint the student with the federal income tax, tax research, tax planning, and application of tax laws to taxable entities. The course will introduce the student to a broad range of tax concepts within a framework of financial accounting principles. Emphasis will be placed on the taxation of business entities, individual taxpayers, and the differences between financial and tax accounting. The use of technology to research problem assignments will be used to develop students' business communication and problem solving skills.

ACC 380  Accounting Information Systems  
3.000 Credits  
Prerequisite(s): ACC 299

To study the concepts, theory, organization and application of accounting information systems and the flow of accounting data through transaction cycles. Topics include: the principles of accounting systems design, internal control analysis and development and the overall evaluation of networked computer-based accounting systems. Emphasis is placed on transaction processing systems, internal control systems, and computer-assisted decision making for unstructured problems by employing accounting databases.

ACC 403  Controllership  
3.000 Credits  
Prerequisite(s): ACC 355 and (ACC 356 or ACC 358)

Controllership is intended to equip students with both theoretical and practical tools to manage all significant facets of production process costs, revenue streams, budgeting, and the related reporting system. The course focuses on topics such as managing "upstream" cost, cost structures, control tools, establishing standards, reporting processes, analysis to improve per unit profitability, and budgeting. The above topics will be used to develop resource plans to achieve management's objectives. (YR).

ACC 416  Advanced Accounting  
3.000 Credits  
Prerequisite(s): ACC 357

To study selected advanced accounting topics which may include partnerships, business combinations, consolidated financial statements, multinational accounting and reporting, accounting for financial distress situations and regulation of accounting by the SEC.

ACC 438  Advanced Federal Income Tax  
3.000 Credits  
Prerequisite(s): ACC 360

To study the basic Federal income tax provisions relating partnerships, estates and trusts and corporations. Topics include: formation of the partnership, partnership distributions, tax-free incorporation, their incorporations, corporate distributions, redemptions, liquidations, reorganizations, accumulated earnings tax, net operating losses and S corporations.

ACC 439  Not-for-Profit Accounting  
3.000 Credits  
Prerequisite(s): ACC 356

To study the principles and procedures of accounting for not-for-profit entities. Topics may include: state and local government financial accounting, financial accounting for selected other entities, managerial concepts and current issues.

ACC 457  Auditing  
3.000 Credits  
Prerequisite(s): ACC 380 and (ACC 356 or ACC 358)

To study generally accepted auditing standards, internal control, principal audit objectives, the structure of audit programs, audit procedures, professional legal liability, ethical standards, statistical sampling techniques, the audit of EDP systems, auditor's report and management letters. Senior standing and 12 hours of Accounting coursework, exclusive of taxation, which includes at least 6 hours beyond ACC 299 taken in the School of Management.

ACC 480  Information Tech Eval& Control  
3.000 Credits  
Prerequisite(s): (ACC 380 or MIS 310) and ACC 457*

The course emphasizes the control and evaluation of information systems to ensure accounting and management financial reporting and information processing objectives are accomplished. The course covers the theory of control evaluation, design of internal control, and the evaluation of internal controls in traditional and emerging information technology environments. Emphasis will be placed on current technologies in use by business organizations, emerging technologies, and the application of current profession guidance to evaluate existing and proposed information systems information systems. (YR)

ACC 482  Seminar: Accounting  
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.

ACC 492  Research: Accounting  
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit. Permission of School of
Business Administration (BA)

COURSE OFFERINGS

BA 100  Introduction to Business
3.000 Credits

To study the role of the system of business firms in modern society, in terms of its economic, historical, and philosophical development; to study the operation of business firms in terms of their organization and their financial, production, marketing, and supporting functions.

BA 330  Managerial Communication
3.000 Credits
Prerequisite(s): COMP 106

This course is designed to improve the student's ability to communicate effectively within an organizational setting. Communication theory, strategies, techniques and skills that are essential for success in the business environment will be examined. Specific objectives during the semester will be to examine and improve managerial writing ability and to enhance interpersonal communication skills.

BA 480  Seminar: Bus Administration
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members.

BA 490  Research: Bus Administration
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit.

Aviation Management

COURSE OFFERINGS

400  Aviation Grd Op/Qual Assurance
3.000 Credits

This course will study the processing and management of passengers, cargo, aircraft, equipment, and facilities at airports; and the current and future trends for using a quality management system such as ISO 9000 in the aviation industry. Registration per approval of CEBI. (F,W).

410  Aviation Bus, Fin & Law
3.000 Credits

This course will discuss and examine airports as a business, the source of capital funds, revenues, legal requirements and issues that impact airports and airlines. Credit cannot be applied to School of Management degree programs. (W, S).

Business Economics (BE)

COURSE OFFERINGS

BE 401  Managerial Economics
3.000 Credits
Prerequisite(s): ECON 202 and ECON 201 and (MATH 104 or MATH 105)

This intermediate level course presents price theory with business applications. Topics include consumption utility theory, production and cost theory, market structures and pricing strategies. Statistical estimation techniques of economic models are presented as well as modern elaborations of price theory. (YR).

BE 403  Business Conditions Analysis
3.000 Credits
Prerequisite(s): ECON 201 and ECON 202

To study the basics and recent developments in aggregate economic theories and their applications from business perspectives. Topics include various sectors of aggregate demand and supply and related variables affecting economic performance and conditions.

BE 487  Seminar: Business Economics
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.

BE 497  Research: Business Economics
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit. Permission of School of Management.
Business Internship (BI)

COURSE OFFERINGS

BI 350 Business Internship
3.000 Credits

The internship provides full-time, paid business experience for students in a formal, monitored program. Participating employers hire students within parameters set by the internship program. Students are required to submit a report and other paperwork at the end of each work assignment and participate in an evaluative session with the internship staff.

BI 450 Business Internship II
3.000 Credits
Prerequisite(s): BI 350

The internship provides full-time, paid business experience for students in a formal, monitored program. Participating employers hire students within parameters set by the internship program. Students are required to submit a report and other paperwork at the end of each work assignment and participate in an evaluative session with the internship staff.

BI 460 International Business Intern
1.000 TO 3.000 Credits

The internship allows flexibility to engage in applied practical work experience outside of the United States, through paid or unpaid and full or part time work experiences. Participating organizations hire students within parameters set by the Internship office throughout their experience. Students are required to submit reports, evaluation documents and participate in an assessment session with the internship staff. Students are responsible for their own legal, housing and transportation issues. This course will satisfy general elective credit.

BI 470 Business Internship III
3.000 Credits
Prerequisite(s): BI 450

The internship provides full-time paid business experience for students in a formal, monitored program. Participating employers hire students within parameters set by the internship program. Students will have an increasing level of responsibility and application of academic knowledge, or students will be involved with application of new academic knowledge. Students are required to submit a report and other paperwork at the end of the work assignment and participate in an evaluative session with the internship staff.

Business Policy and Strategy (BPS)

COURSE OFFERINGS

BPS 451 Strategic Management
3.000 Credits
Prerequisite(s): FIN 401 and ( MIS 310 or ACC 380 ) and OB 354 and MKT 352 and OM 400

This course is intended to be a comprehensive and integrative capstone course for the undergraduate business student. The central focus of this course is strategic management as opposed to the functional orientation that the student has experienced in most of his/her previous courses. Emphasis is on strategy formulation and implementation. Topics covered include the analysis of a company's external and internal environment; the development of a strategic vision and organizational objectives; the design of strategy at the functional, business, corporate, and international levels; and the creation of the organizational structure, operational policies and procedures, and reward systems.

Decision Sciences (DS)

COURSE OFFERINGS

DS 300 Quantitative Model and Analy I
3.000 Credits
Prerequisite(s): (MATH 113 or MPLS 116 or MATH 115) and (MIS 120 or CIS 123)

To introduce fundamental concepts and methods in data analysis, probability, estimation, and statistical inference for application in management and management science. Topics include: basic probability theory, discrete and continuous random variables and distributions, sampling and data analysis, sampling distributions, estimation, confidence intervals and hypothesis testing, introductory regression analysis and utilization of statistical software packages.

DS 350 Quantitative Model and Analy II
3.000 Credits
Prerequisite(s): DS 300

To continue from DS 300, during the first half of the course, the study of the concepts and methods in data analysis and statistical inference, as well as to introduce, in the second half of the course, basic linear optimization methods and models applied in the formulation, quantification, analysis, and solution of management decision problems. Topics include: simple and multiple linear regression, analysis of variance, sampling, correlation, formulation and solution of linear programming problems, transportation and transshipment models, utilization of software packages for statistical analysis and optimization.

DS 425 Optimization Modeling and Analy
3.000 Credits
Prerequisite(s): DS 350

To continue, from DS 350, the study of optimization methods and models applied in the formulation, quantification, analysis and solution of management decision problems. Topics include: network analysis (including PERT-CPM), goal and multi-objective linear programming, integer programming, dynamic programming, Markovian decision processes, nonlinear programming.

DS 426 Introduction to Simulation
3.000 Credits
Prerequisite(s): DS 350

To introduce the concepts and methods of discrete-event
Simulation for the modeling and analysis of complex systems. Topics include: basic simulation modeling, modeling complex systems, simulation languages, selection of input probability distributions, random-number generators, generating random variable values, output data analysis for a single system, statistical techniques for comparing alternative systems, validation of simulation models, variance-reduction techniques, experimental design and optimization.

**DS 489 Seminar: Decision Sciences**
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.

**DS 499 Research: Decision Sciences**
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available from the school office. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit.

**Entrepreneurship (ENT)**

**COURSE OFFERINGS**

**ENT 400 Intro to Entrepreneurship**
3.000 Credits

This course describes the entrepreneurial process and explores, issues, concepts, and procedures involved in conceiving of, planning for, and creating a new business. It emphasizes the need for careful identification of products or services to be offered, specification of the target market(s), and the benefits the enterprise will provide to prospective customers, determining resource requirements, locating resource providers, and developing essential operating and administrative systems. Students will identify an actual business venture they are considering, develop a business plan, and present that plan at the end of the term. (YR).

**Finance (FIN)**

**COURSE OFFERINGS**

**FIN 200 Personal Finance**
3.000 Credits

To survey financial planning for the individual. Topics include: bank relations, credit, borrowing money, savings, budgeting, investments, stocks and bonds, mutual funds, insurance, real estate, annuities, social security, income taxes, wills, trusts and estate planning.

**FIN 401 Corporate Finance**
3.000 Credits
Prerequisite(s): (ACC 297 or ACC 298) and DS 300 and ECON 201 and ECON 202

Introduces the financial goals of a corporation with particular attention to the creation of value. The time value of money and the valuation of financial and real assets receive particular attention. Additional topics include risk and return, market efficiency, short-term financial management, and the domestic and international economic environments.

**FIN 402 Advanced Corporate Finance**
3.000 Credits
Prerequisite(s): FIN 401

To provide the study of advanced topics, with particular attention to capital structure and dividend policy. Additional topics such as hedging, option pricing, agency theory, methods of financing, and corporate control will be presented. Global aspects of these topics will be addressed where appropriate. (YR).

**FIN 407 Investment Fundamentals**
3.000 Credits
Prerequisite(s): FIN 401

To study the current investment scene and analyze the characteristics of securities and the role in investment strategies. Topics include: securities markets, bonds, stocks, options, investment strategies, portfolio theories and management.

**FIN 443 Com Bank: Functn and Operatns**
3.000 Credits
Prerequisite(s): FIN 401

The topics to be included in the course are: commercial bank management, loan portfolio management and international banking. Specific aspects of the commercial banking environment, such as legislation and regulation, are also covered.

**FIN 445 Corporate Fin Models and Appls**
3.000 Credits
Prerequisite(s): FIN 402

This course focuses on the analysis of financial decisions by applying theories and models to practical problems and cases. The subject coverage includes capital budgeting and financing (cost of capital, capital structure, dividend policy, etc.), working capital management (credit, inventory, bank relations, etc.), and other special topics (e.g., mergers and acquisitions). The coursework is appropriate for students seeking careers in corporate financial management, commercial lending, and investment banking.

**FIN 447 Derivative Markets**
3.000 Credits
Prerequisite(s): FIN 401 and (FIN 402 or FIN 407 or FIN 443 or IB 441)

Going beyond investment fundamentals, the focus of this course is on the more speculative aspects of investment. Speculative
securities (such as options, warrants, and convertibles) and commodity futures (including financial and currency futures) are covered. The structure of the speculative markets and the role of speculation, such as hedging, risk-shifting, and the establishment of future-spot price relationship are analyzed in the context of a competitive market environment.

FIN 448 Real Estate Financing
3.000 Credits
Prerequisite(s): FIN 401

The purpose of this course is to introduce the student to the different types of mortgages, the sources of real estate loans and the workings of the secondary mortgage markets. It will also cover the application, loan processing, underwriting, and closing processes as well as closely related topics such as property appraisal and insurance, title insurance, and foreclosures.

FIN 484 Seminar: Financial Management
1.000 TO 3.000 Credits
Prerequisite(s): FIN 401

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.

FIN 494 Research: Financial Mgt
1.000 TO 3.000 Credits
Prerequisite(s): FIN 401

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit. Permission of School of Management.

Human Resource Management (HRM)

COURSE OFFERINGS

HRM 405 Human Resource Policy/Adm
3.000 Credits
Prerequisite(s): OB 354

To examine personnel policy making and administration relative to the achievement of the objectives of the firm through the eyes of general management. Topics include: recruitment and selection, wage and salary administration training, evaluation, discipline and industrial relation activities. Cases are analyzed.

HRM 406 Staffing, Training & Develop
3.000 Credits
Prerequisite(s): HRM 405

The course examines how to design, administer, and evaluate employee staffing, selection, training, and development activities that support organizational strategies. The course is geared both toward those who are or will be (a) HR managers who will develop and administer staffing and training programs and (b) managers in other functional areas who want to improve their personal effectiveness in selecting and developing employees. Key topics to be covered include: staffing strategy and planning; job design and analysis; external and internal recruiting; employee testing and assessment methods; interviewing; measurement, validation, and decision-making. Methods for developing employees and managers; career management; laws and regulations affecting staffing and training; evaluation methods for staffing and training activities; and issues in staffing and training for an international workforce.

HRM 407 Compensation & Performance Mgt
3.000 Credits
Prerequisite(s): HRM 405

The course examines how to design, administer, and evaluate compensation and performance appraisal programs that support organizational strategies. The course is geared both toward those who are or will be (a) HR managers who will develop and administer pay and appraisal programs and (b) managers in other functional areas who want to improve their personal effectiveness in administering pay performance appraisals. Key topics to be covered include: merit and incentive pay, methods for internally valuing jobs, external labor markets and job pricing, design and administration of pay structures, employee benefits, compensating executives and expatriates, purposes and measurement methods for performance appraisals, performance criteria, rater processes and biases, performance reviews, and team-based pay and performance.

HRM 408 Management-Union Relations
3.000 Credits
Prerequisite(s): HRM 405 and OB 354

To provide interpretation, insight, and understanding of the impact of management and union institutions on employee relations. Topics include labor union structure, aims, and operations, management objectives and functions, collective bargaining agreements, wage bargaining, industrial conflict and dispute settlements, labor relations legislation, and public intervention in management-union activities. A major portion of the course is devoted to a bargaining simulation exercise.

HRM 485 Seminar: Human Resource Mgmt
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.

HRM 495 Research: Human Rsrch Mgmt
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term
when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit.

**Law and Environment (LE)**

**COURSE OFFERINGS**

<table>
<thead>
<tr>
<th>LE 252</th>
<th>Personal Business Law</th>
<th>3.000 Credits</th>
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</table>

This course is designed for the non-business student and includes business law topics of direct interest in the management of personal business affairs. Topics covered are: product safety regulation, contracts, personal property, real estate, mortgages, landlord-tenant, wills and estates, insurance, employer-employee relation, unfair business practices, and an introduction to the lawmaking and enforcement processes.

<table>
<thead>
<tr>
<th>LE 452</th>
<th>The Legal Environment of Bus</th>
<th>3.000 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite(s): COMP 106</td>
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</table>

To introduce the management student to the functioning of legal systems and the effect of regulation on the business environment. Topics covered include an exploration of legal and ethical forces that impact the policy and practice of business in dealing with customers, employers, owners, and competitors.

<table>
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<tr>
<th>LE 453</th>
<th>Commercial Trans: Adv Topics</th>
<th>3.000 Credits</th>
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<tbody>
<tr>
<td>Prerequisite(s): LE 452</td>
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To study additional topics and complete the survey of basic business law. Topics covered are the sales, commercial paper, and secured transactions sections of the Uniform Commercial Code, and the study of property, estate planning, insurance, and liability of professionals.

**Management Information Systems (MIS)**

**COURSE OFFERINGS**

<table>
<thead>
<tr>
<th>MIS 120</th>
<th>Fundamentals of Info Systems</th>
<th>3.000 Credits</th>
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This course introduces the fundamental concepts of computer and information systems, and provides exposure to basic microcomputer application software. Topics include the function and architecture of computer hardware and software technologies, business application of computer and information technologies, and their organizational implications. Microcomputer applications include basics of operating systems, spreadsheet packages, graphics packages, and database management systems. Credit cannot be given for MIS 120 and any of CIS 121, 122, 123. (F,W,S)

<table>
<thead>
<tr>
<th>MIS 301</th>
<th>Bus Application Programming</th>
<th>3.000 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite(s): MIS 120</td>
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</tbody>
</table>

This course is an introduction to computer programming with an emphasis on business applications. Students are introduced to
transaction processing systems and management support systems. The course covers principles of program design, programming structures, data structures, program testing, and debugging. Emphasis is placed on the implementation of programs with graphical user interfaces and event driven code. Students will write a number of programs using languages such as Visual Basic and Java to develop business applications. (YR)

MIS 302  Object-Oriented Programming
3.000 Credits
Prerequisite(s): MIS 301 or MIS 210

This course introduces the C++ language and its available development environments. Both procedural and object-oriented programming will be covered utilizing the C family of languages. Topics include: the history of C and C++, the fundamentals of C++, a survey of the principal development environments, practitioner experience with C++, and a discussion of the strengths and weaknesses of software development with C++ compared with other languages. (YR).

MIS 310  Info Systems in Management
3.000 Credits
Prerequisite(s): (MIS 120 or CIS 123) and COMP 106

This course provides an overview of information systems in the business world. It presents an organizational view of how to use information technology to create competitive firms, manage global organizations, and provide useful products and services to customers. Topics include hardware, software, databases, telecommunications systems, the strategic use of information systems, the development of information systems, and social and ethical issues involved with information systems.

MIS 321  Database Systems I
3.000 Credits
Prerequisite(s): MIS 310 or ACC 380

This course examines the processes and tools used to design and implement database systems in business. The goal of this course is to provide adequate technical detail while emphasizing the organizational and implementation issues relevant to the management of computerized data in an organizational environment. A class project involving the design and implementation of a database using a microcomputer database management system is performed. Topics include concepts of database systems, conceptual database design, logical database design, physical database design, database implementation, and data retrieval. Credit cannot be given for both MIS 321 and CIS 421.

MIS 322  Database Systems II
3.000 Credits
Prerequisite(s): MIS 321

This course examines the processes and tools used to develop and administer database systems in business. Database systems used to support both transaction processing and decision making in organizations are studied. The conceptual, logical, and physical designs studied in Database Systems I serve as the blueprints for the database systems developed in Database Systems II. A class project involving the development of a database using a client/server database management system is performed. Topics include database development, client/server databases, concurrency control, database security, administration of database privileges, complex data retrieval commands, and database programming. Students will be prepared to pass professional database certification exams. Students are strongly encouraged to enroll in this course the semester after Database Systems I is completed. Students who do not immediately enroll in Database Systems II should review the material on conceptual database design, logical database design, and physical database design from Database Systems I before the first day of class. All students should plan to spend a minimum of three hours per week working in on-campus computer labs. (YR).

MIS 331  Info Systems Development
3.000 Credits
Prerequisite(s): (MIS 210 or MIS 301) and MIS 321

This course provides a foundation in systems analysis and design concepts, methodologies, techniques, and tools. Students will learn to analyze an organizational problem, define user requirements, design and information system, and plan an implementation. Methodologies covered will include the traditional life cycle approach as well as newer methodologies such as object-oriented approach, joint application development (JAD), and prototyping. A semester-long project gives students the opportunity to apply these techniques to a business problem. This project will use technologies such as a computer-aided software engineering (CASE) tool, a database management system (DBMS), or a fourth-generation language. (F,W,S).

MIS 351  Networking and Collab Comp
3.000 Credits
Prerequisite(s): MIS 310 or ACC 380

This course provides an introduction to data communications, networks, distributed processing, and collaborative computing. The course will study the technical and management aspects of computing networks and distributed systems supporting a wide range of organizational functions from organizational process to strategic decision making; from personal to group to organizational computing. The social and organizational complications of telecommunications technology are also examined. Credit cannot be given for both MIS 351 and CIS 427. (YR).

MIS 371  Managing Elec Commerce Syst
3.000 Credits
Prerequisite(s): MIS 351 and MIS 321 and MIS 301

This course focuses on managerial issues that must be addressed for the successful deployment of information systems that use the infrastructure of the Internet to support electronic commerce. The course assumes an understanding of computer networks and data transmission. Topics include business models for electronic commerce; standards, protocols, and technical architecture of the Internet; wireless Internet; Internet security and cryptography; online payment systems; intelligent agents; legal, ethical, social, and political issues in electronic commerce; globalization and electronic commerce; and electronic commerce applications. A class project involving analysis for an
This capstone course will provide a summative experience for the student from both managerial and technical perspectives, incorporating a range of activities that they have prepared for in their prior coursework. As potential managers and information technology users, students will look at decisions concerning the use of, request for design or modification of, and development and installation of information systems. This course will require students to participate in a team activity producing a working system from real world specifications. The emphasis is on the complex systems development project and the interaction between analysts, clients, developers, managers, and users across the various stages of development. Additional topics will include managing is professionals, managing IS projects, IS as a strategic enabler, ethical and multinational issues, controlling IS operations, and managing relationships with other functional units in the organization.

MIS 491  Seminar: Manag Info Systems  
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.

MIS 492  Research: Manag Info Systems  
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit. Permission of School of Management.

Marketing (MKT)

COURSE OFFERINGS

MKT 352  Mktg Principles and Policies  
3.000 Credits  
Prerequisite(s): ECON 201 and ECON 202

An introductory course in the marketing activities associated with the free market system. The various components and functions of the marketing activities will be discussed in an integrated framework to provide insight into the role and scope of marketing in the business environment. The components and functions include: product development, pricing, promotion, distribution, consumer behavior and target market analysis.

MKT 360  Marketing and Society  
3.000 Credits

This course explores the social scientific theories on consumption and consumer culture as well as ethical/public policy issues related to consumption and marketing. Topics will include: economic and sociological perspectives on consumer culture; the origins of consumer tastes, trends, and fashions; the psychology of happiness and how personal well-being is evidenced by wealth, consumption, and materialism; and public policy concerns related to marketing and advertising. (YR).

MKT 382  Consumer Behavior  
3.000 Credits  
Prerequisite(s): MKT 352

To study the basic factors influencing consumer behavior, the models used to explain this behavior and the implications of these concepts for marketing and public policy issues. The course focuses on economic, psychological, sociological and anthropological variables. Topics include: the effects of motivational learning, perception, cognition, attitude, belief, personality, reference group, social class, demographic, life style and cultural factors on consumer behavior.

MKT 402  Marketing Management  
3.000 Credits  
Prerequisite(s): MKT 352

A case-oriented course in which the understanding and insights of the various components and functions of marketing learned in MKT 352 are applied to practical situations. Marketing decisions will be evaluated and decided for a series of real-life cases in a number of areas including: general marketing, pricing, promotion, distribution and market research.

MKT 434  Sales Management  
3.000 Credits  
Prerequisite(s): MKT 352

The purpose of this course is to provide a general understanding of the practice of sales management. The course is designed to provide a basic framework of what sales managers actually do and how they solve problems they may encounter. Team presentations, class analyses and case discussion are used throughout the course to describe and explain the skills required of sales managers to achieve their objectives.

MKT 436  Business to Business Mktg  
3.000 Credits  
Prerequisite(s): MKT 352

To develop an understanding of that area of marketing that addresses the needs of the organizational customer in industry, government and institutions. The special challenges of the industrial market that confront the marketing manager and sales personnel are discussed in the course. Topics include: assessing industrial marketing opportunities, the organizational buying process, formulating industrial marketing strategy and evaluating industrial marketing strategy and performance.

MKT 454  Marketing Research  
3.000 Credits
To introduce marketing research concepts and techniques for collection, analysis and interpretation of data for marketing decisions. Topics include: problem definition, research design, questionnaire construction, sampling, attitude scaling, statistical analysis, presentation and evaluation of research findings. A field research project may be included.

**MKT 455  Distribution/Retailing Mgt**  
3.000 Credits  
Prerequisite(s): MKT 352

To study the development and management of significant institutions which facilitate the flow of goods and services from producers to consumers, namely, distribution channels; particular emphasis will be placed on retailing institutions within the channels. Both functional and behavior dimensions of distribution channels will be examined. The role of environmental forces, power, cooperation, conflict, and communications in the channel will also be studied. Other topics include: effectiveness, evaluation, processes, techniques, critical issues and trends in the management of distribution channels.

**MKT 456  Advgy and Sales Promotion**  
3.000 Credits  
Prerequisite(s): MKT 352

A survey of the principles of advertising and sales promotion, which examines problems related to advertising management. Topics include: the scope of the advertising business, determination of objectives, strategy formulation, creating effective advertising programs, media planning, role dealer promotion, establishing the advertising budget, advertising research and the social and legal aspects of advertising in society.

**MKT 457  International Marketing**  
3.000 Credits  
Prerequisite(s): MKT 352

To provide students with an understanding of the components of marketing in the international environment. A working knowledge of the environment and the complex inter-relationship between different components of marketing will be developed. The focus is on evolving a logical and integrated framework for international marketing decisions.

**OM 300  Intro to Operations Management**  
3.000 Credits  
Prerequisite(s): MATH 104 or MATH 105 or MPLS 113 and MIS 120

Concerned with the strategic, tactical and short-term managerial issues relating to the efficient production of services and products. Examples of such issues are: manufacturing technology selection, facility location, strategic, tactical and operational planning and control and quality. (F.W.S)

**OM 460  Supply Chain Management**  
3.000 Credits  
Prerequisite(s): OM 300

This course explores the basic concepts of managing flow of materials in a typical enterprise supply chain. Students will examine a complete overview of material flow, for internal and external suppliers, to and from the enterprise.

**OM 470  Analyis & Desgn of Supply Chain**  
3.000 Credits  
Prerequisite(s): OM 300

The purpose of this course is to equip the student with the ability and the tools necessary to recognize, analyze, and resolve significant problems in the operation of a supply chain system through the application of quantitative techniques. This course focuses on the strategic role of the supply chain, key strategic drivers of supply chain performance, and the tools and techniques for supply chain analysis.

**OM 483  Seminar: Operations Management**  
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or
professional activities of faculty members. Permission of School of Management.

OB 495 Research: Organizational Behvr
1.000 TO 3.000 Credits

To provide the advanced student with the opportunity to undertake a research project under the supervision of a faculty member. At least two weeks prior to registration in the term when such a course is to be elected, an interested student must submit to the dean of the school a written request for permission to elect a research course, on a form available in the school office. The request will include a description of the proposed research project. The dean will review the proposal with faculty members to ascertain availability of relevant faculty supervision and to establish appropriate credit. Permission of School of Management.

Organization Behavior (OB)

COURSE OFFERINGS

OB 354 Behavior in Organization
3.000 Credits

To study the nature and dynamics of behavior within organizations from an open system theory viewpoint, emphasizing determinants and consequences of individual, interpersonal, small group and intergroup behavior. Group discussions and role-playing techniques will be used to develop leadership skills and methods and to foster understanding of applied problems in organizational behavior.

OB 401 Management Skills Development
3.000 Credits

This course provides an opportunity to study the concepts, problems and techniques of managing the human resources of an organization with emphasis on application and skill building. Topics include: skills development for interviewing, counseling and appraising employees; work team leadership and development; group problem solving and decision making; management of intergroup relationship and conflict resolution.

OB 402 Organizational Change & Devlp
3.000 Credits

Prerequisite(s): OB 354

The purpose of this course is to introduce the theories, methods and practice of organizational change and development and to provide a conceptual framework for examples of planned change. Topics will include: processes of organizational change, intervention methods, sequencing and integration of change processes, change roles and role relations, change objectives and criteria for change.

OB 485 Seminar: Organizational Behavr
1.000 TO 3.000 Credits

To provide students with an opportunity for intensive study in current selected areas related to the research activities and/or professional activities of faculty members. Permission of School of Management.
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