

# **GRADUATE CATALOG 2013-2015**

**Published by**



**UNIVERSITY OF MICHIGAN-DEARBORN**



Daniel E. Little, Ph.D.  
Chancellor  
University of Michigan-Dearborn

University of Michigan-Dearborn  
Dearborn, Michigan 48128-2406  
Telephone: (313) 593-5000  
Web: [umd.umich.edu](http://umd.umich.edu)

The University of Michigan, as an equal opportunity/affirmative action employer, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action. The University of Michigan is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status in employment, educational programs and activities, and admissions. Inquiries or complaints may be addressed to the Senior Director for Institutional Equity, and Title IX/Section 504/ADA Coordinator, Office for Institutional Equity, 2072 Administrative Services Building, Ann Arbor, Michigan 48109-1432, 734-763-0235, TTY 734-647-1388. For other University of Michigan information call 734-764-1817. University of Michigan-Dearborn inquiries or complaints may be addressed to the Dearborn Institutional Equity Officer, Office of Human Resources, 1020 Administration Building, 4901 Evergreen Road, Dearborn, MI 48128-2406, 313-593-5320 or 593-5190, TTY 313-593-5430, Fax 313-593-3568.

This *Catalog* of UM-Dearborn 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 *Graduate Catalog* is as of June 2013. 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.

# GRADUATE INFORMATION

Graduate Studies Office (General Information)\* ..... (313) 593-1494  
[www.umd.umich.edu/graduatestudies/](http://www.umd.umich.edu/graduatestudies/) ..... umdgrad@umd.umich.edu

**College of Arts, Sciences, and Letters** ..... (313) 593-1183  
[www.casl.umd.umich.edu/gradprograms](http://www.casl.umd.umich.edu/gradprograms) ..... caslgrad@umd.umich.edu

Master of Arts in Liberal Studies  
 Master of Public Administration  
 Master of Public Policy  
 Master of Science in Applied and Computational Mathematics  
 Master of Science in Environmental Science  
 Master of Science in Psychology with Specializations in Health Psychology and Clinical Health Psychology

**College of Business** ..... (313) 593-5460  
[www.cob.umd.umich.edu/grad](http://www.cob.umd.umich.edu/grad) ..... umd-gradbusiness@umich.edu

Master of Science in Accounting  
 Master of Business Administration  
 Master of Science in Business Analytics  
 Master of Science in Finance  
 Master of Science in Information Systems  
 Master of Science in Supply Chain Management

**College of Education, Health and Human Services** ..... (313) 593-5090  
[www.soe.umd.umich.edu/soe\\_programs/](http://www.soe.umd.umich.edu/soe_programs/) ..... SOEGrad@umd.umich.edu

Doctorate of Education  
 Education Specialist  
 Master of Arts in Early Childhood Education  
 Master of Arts in Education  
 Master of Arts in Educational Leadership  
 Master of Arts in Educational Technology  
 Master of Arts in Teaching  
 Master of Education in Special Education  
 Master of Science in Science Education

**College of Engineering and Computer Science** ..... gradprog@engin.umd.umich.edu  
[www.engin.umd.umich.edu](http://www.engin.umd.umich.edu) .....

Ph.D., Automotive Systems Engineering ..... (313) 593-5582  
 Ph.D., Information Systems Engineering ..... (313) 593-5582  
 Master of Science in Engineering, Automotive Systems Engineering ..... (313) 593-5582  
 Master of Science in Engineering, Computer Engineering ..... (313) 593-5420  
 Master of Science in Engineering, Electrical Engineering ..... (313) 593-5420  
 Master of Science in Engineering, Energy Systems Engineering ..... (313) 593-5582  
 Master of Science in Engineering, Industrial and Systems Engineering ..... (313) 593-5361  
 Master of Science in Engineering, Manufacturing Systems Engineering ..... (313) 593-5582  
 Master of Science in Engineering, Mechanical Engineering ..... (313) 593-5241  
 Master of Science, Computer and Information Science ..... (313) 436-9145  
 Master of Science, Engineering Management ..... (313) 593-5361  
 Master of Science, Information Systems and Technology ..... (313) 593-5361  
 Master of Science, Program and Project Management ..... (313) 593-5361  
 Master of Science, Software Engineering ..... (313) 436-9145

## Dual Degree Programs

Accounting (MS) and Finance (MS) ..... (313) 593-5460  
 Business Administration (MBA) and Finance (MS) ..... (313) 593-5460  
 Business Administration (MBA) and Health Services Administration (MHSA from Ann Arbor) ..... (313) 593-5460  
 Business Administration (MBA) and Information Systems (MS) ..... (313) 593-5460  
 Business Administration (MBA) ..... (313) 593-5460  
 and Industrial & Systems Engineering (MSE) ..... (313) 593-5361

\*Please contact the office of the program(s) of interest for advising or admission requirements.

# TABLE OF CONTENTS

ACADEMIC CALENDAR .....	VI	Reporting of Grades .....	24
CAMPUS MAP .....	VII	<b>CAMPUS SERVICES .....</b>	<b>24</b>
ORGANIZATIONAL CHART .....	VIII	Athletics and Recreation .....	24
HOW TO USE THE GRADUATE CATALOG .....	X	Bookstore .....	25
<b>GENERAL INFORMATION .....</b>	<b>1</b>	Career Services .....	25
<b>THE UNIVERSITY OF MICHIGAN-DEARBORN .....</b>	<b>2</b>	Counseling and Disability Services .....	25
Mission and Values .....	2	Food Service .....	26
The Campus .....	2	Housing .....	26
Accreditation .....	2	Information Technology Services .....	26
Graduate Programs Offered .....	3	Institutional Equity Officer .....	27
Capsule History of the University of Michigan-DeARBORN .....	4	Office of International Affairs .....	28
<b>ADMISSION .....</b>	<b>5</b>	Ombuds Services .....	28
General Admission and Readmission Information .....	6	Parking and Transportation .....	28
English Language Requirements for Admission .....	6	Public Safety .....	29
Testing Information .....	6	Office for Student Engagement .....	29
Types of Admission .....	7	Student Success Center .....	29
Non-Candidate for Degree .....	7	Women's Resource Center .....	30
Graduate Program Admission Requirements .....	7	<b>GENERAL POLICIES .....</b>	<b>30</b>
<b>SPECIAL PROGRAM ADMISSION .....</b>	<b>8</b>	Alcohol at Campus Events .....	30
Concurrent Undergraduate/Graduate Study .....	8	Alcohol and Drug Prevention Program and Policy .....	30
Michigan Intercollegiate Graduate Study .....	8	Code of Conduct for Student Loans .....	32
Visiting Scholar .....	8	Electronic Communication .....	33
<b>SPECIAL CASES .....</b>	<b>8</b>	Institutional Equity .....	34
Second Master's Degree .....	8	Posting and Handbill Distribution .....	34
Change of Program .....	8	Privacy and Access to Information .....	35
Change of Degree Level within a Field .....	9	Rights and Obligations of Speakers, Audience Members and Protesters at Public Presentations of the University of Michigan-DeARBORN .....	35
Readmission .....	9	Sexual Harassment by Faculty and Staff .....	35
Post-Degree Program Admission .....	9	Smoke-Free Policy .....	38
<b>FINANCIAL AID .....</b>	<b>9</b>	Statement on Academic Integrity .....	39
Financial Assistance Available .....	9	<b>STUDENT RIGHTS AND RESPONSIBILITIES .....</b>	<b>39</b>
Determining Eligibility .....	9	Student Records and Student Rights .....	39
UM-DeARBORN Current Student Scholarship Program (for Graduate Students) .....	10	Statement of Student Rights and Code of Student Conduct .....	40
Satisfactory Academic Progress .....	13	<b>COLLEGE OF ARTS, SCIENCES, &amp; LETTERS .....</b>	<b>45</b>
Return of Title IV Funds .....	13	Administration .....	45
<b>ENROLLMENT SERVICES/REGISTRATION AND RECORDS .....</b>	<b>14</b>	Chairs and Directors .....	45
Attendance Policy .....	14	Faculty (Full-Time) .....	45
Attendance (Instructor-Initiated Drops) .....	14	Professors Emeriti .....	48
Auditing .....	14	College of Arts, Sciences, and Letters Mission Statement ..	48
Change in Course Elections: Add, Drop, Withdrawal .....	14	College of Arts, Sciences, and Letters Graduate Programs ..	49
Grades and Grading .....	15	Master of Science in Applied and Computational Mathematics .....	49
Residency Classification Guidelines .....	16	Master of Science in Environmental Science .....	51
How to File a Residency Application .....	17	Master of Arts in Liberal Studies .....	52
The University of Michigan's Authority to Establish Residency Guidelines for Its Students .....	17	Master of Science in Psychology .....	53
Cost of Attendance .....	20	Master of Public Administration .....	56
Tuition Assessments and Fee Regulation .....	20	Master of Public Policy .....	57
Policies Governing Student Tuition and Fees .....	20	University of Michigan-DeARBORN, University of Windsor Master of Public Policy/Master of Political Science Joint Degree Program .....	59
Payment of Tuition and Fees .....	20	Course Descriptions .....	59
Change of Fees and Refunds .....	21	<b>COLLEGE OF BUSINESS .....</b>	<b>110</b>
Transcripts .....	22	Administration .....	110
Graduation/Application for Diploma .....	22	Faculty (Full-time) .....	110
Veterans Affairs .....	22	College of Business Accreditation .....	110
Academic Standing .....	23	Master of Business Administration .....	111
Modification of the Conditions of Academic Standing or Discipline .....	23	Master of Science in Accounting .....	113
Satisfactory Academic Progress .....	23	Master of Science in Business Analytics .....	114
Maintaining Good Standing .....	23	Master of Science in Finance .....	116
Registration Information .....	24	Master of Science in Information Systems .....	117
		Master of Science in Supply Chain Management .....	118
		Student-Initiated Dual Degree Program: MBA and MS-Finance .....	119

Dual Degree Program: Master of Science in Accounting and Master of Science in Finance.....	120	Engineering Professional Development (EPD) .....	211
Student-Initiated Dual Degree Program: MBA and MSE in Industrial and Systems Engineering.....	121	Additional Academic Information.....	212
Student-Initiated Dual Degree Program: MBA and Master of Health Services Administration.....	123	Academic Advising.....	212
Application and Admission.....	126	Admission to the Programs at UM-Dearborn.....	212
Guest Students and Post-Graduate Students .....	129	Grading .....	212
Course Descriptions .....	132	Tentative Admission .....	212
		Course Descriptions .....	213

**COLLEGE OF EDUCATION, HEALTH AND HUMAN****SERVICES.....145**

Administration .....	145
Faculty (Full-Time).....	145
Cooperating Faculty.....	145
Professors Emeriti .....	145
History of the School .....	146
U.S. Department of Education .....	146
Title II Reports .....	146
Accreditation.....	147
Post-Degree Programs.....	147
Doctorate in Education .....	148
Education Specialist.....	150
Master of Arts in Early Childhood Education.....	152
Master of Arts in Education.....	155
Master of Arts in Teaching (MAT) .....	158
(Secondary School Certification) .....	158
Master of Arts in Educational Leadership (MAEL) .....	159
Central Office Administration Certificate Program .....	160
School Principal Certificate Program.....	161
Master of Arts in Educational Technology (EDET).....	162
Online Teaching Certificate Program.....	163
Master of Education in Special Education .....	164
Master of Science in Science Education (MSSE) .....	166
Center for Mathematics Education .....	167
Master of Arts in Education: Mathematics Education Enhancement and Leadership .....	168
Course Descriptions .....	169

**COLLEGE OF ENGINEERING AND COMPUTER SCIENCE****.....192**

Administration .....	192
Faculty (Full-Time).....	192
Professors Emeriti .....	193
Post-Baccalaureate Programs.....	193
Rules and Procedures .....	194
PhD in Automotive Systems Engineering and Information Systems Engineering .....	194
Master of Science in Engineering (MSE) and Master of Science (MS) Programs .....	195
Requirements for the MSE in Automotive Systems Engineering .....	196
Requirements for the MS in Computer and Information Science .....	197
Requirements for the MSE in Computer Engineering.....	199
Requirements for the MSE in Electrical Engineering .....	200
Requirements for the MSE in Energy Systems Engineering	201
Requirements for the MS in Engineering Management .....	202
Requirements for the MSE in Industrial and Systems Engineering .....	202
Requirements for the Dual Program for the MSE in Industrial and Systems Engineering and the Master of Business Administration.....	203
Requirements for the MSE in Information Systems and Technology .....	205
Requirements for the MSE in Manufacturing Systems Engineering .....	207
Requirements for the MSE in Mechanical Engineering....	208
Requirements for the MS in Program and Project Management .....	209
Requirements for the MS in Software Engineering.....	210

# ACADEMIC CALENDAR\*\*

## 2013-2015

### FALL TERM 2013

Regular Registration Begins*	Monday, April 22
Labor Day (Holiday)	Monday, September 2
Classes begin	Wednesday, September 4
Thanksgiving recess	Thursday-Sunday, November 28- December 1
Classes resume	Monday, December 2
Classes end	Tuesday, December 10
Study Day	Wednesday, December 11
Examinations	Thursday-Friday, December 12-13
	Monday-Wednesday, December 16-18
Commencement	Saturday, December 14

### WINTER TERM 2014

Regular Registration Begins*	Monday, December 9
Classes begin	Monday, January 6
Martin Luther King, Jr. Birthday-	
No Regular Classes	Monday, January 20
Spring recess	Sunday-Sunday, February 23-March 2
Classes resume	Monday, March 3
Dearborn Honors Convocation	Tuesday, March 25
Classes end	Friday, April 18
Study day	Saturday, April 19
Examinations	Monday-Saturday, April 21-26
Commencement	Sunday, April 27

### SUMMER TERM 2014

Regular Registration Begins*	Monday, April 21
Classes begin	Monday, May 5
Memorial Day (Holiday)	Monday, May 26
Classes end (7-week classes)	Monday, June 23
Study Day	Tuesday, June 24
Examinations (7-week classes)	Wednesday-Friday, June 25-27
Summer Recess	Tuesday-Sunday, June 24-29
Classes resume (7-week and 14-week classes)	Monday, June 30
Independence Day (celebrated)	Friday, July 4
Classes end (7-week and 14-week classes)	Friday, August 15
Study Day	Saturday, August 16
Examinations	Monday-Friday, August 18-22

### FALL TERM 2014

Regular Registration Begins*	Monday, April 21
Labor Day (Holiday)	Monday, September 1
Classes begin	Wednesday, September 3
Thanksgiving recess	Thursday-Sunday, November 27-30
Classes resume	Monday, December 1
Classes end	Tuesday, December 9
Study Day	Wednesday, December 10
Examinations	Thursday-Friday, December 11-12
	Monday-Wednesday, December 15-17
Commencement	Saturday, December 13

### WINTER TERM 2015

Regular Registration Begins*	Monday, December 8
Classes begin	Monday, January 5
Martin Luther King, Jr. Birthday-	
No Regular Classes	Monday, January 19
Spring recess	Sunday-Sunday, February 22-March 1
Classes resume	Monday, March 2
Honors Scholars	Tuesday, March 31
Classes end	Friday, April 17
Study day	Saturday, April 18
Examinations	Monday-Friday, April 20-24
Commencement	Sunday, April 26

### SUMMER TERM 2015

Regular Registration Begins*	Monday, April 20
Classes begin	Monday, May 4
Memorial Day (Holiday)	Monday, May 25
Classes end (7-week classes)	Monday, June 22
Study Day	Tuesday, June 23
Examinations (7-week classes)	Wednesday-Friday, June 24-26
Summer Recess	Tuesday-Sunday, June 23-June 28
Classes resume (7-week and 14-week classes)	Monday, June 29
Independence Day (celebrated)	Friday, July 3
Classes end (7-week and 14-week classes)	Friday, August 14
Study Day	Saturday, August 15
Examinations	Monday-Friday, August 17-21

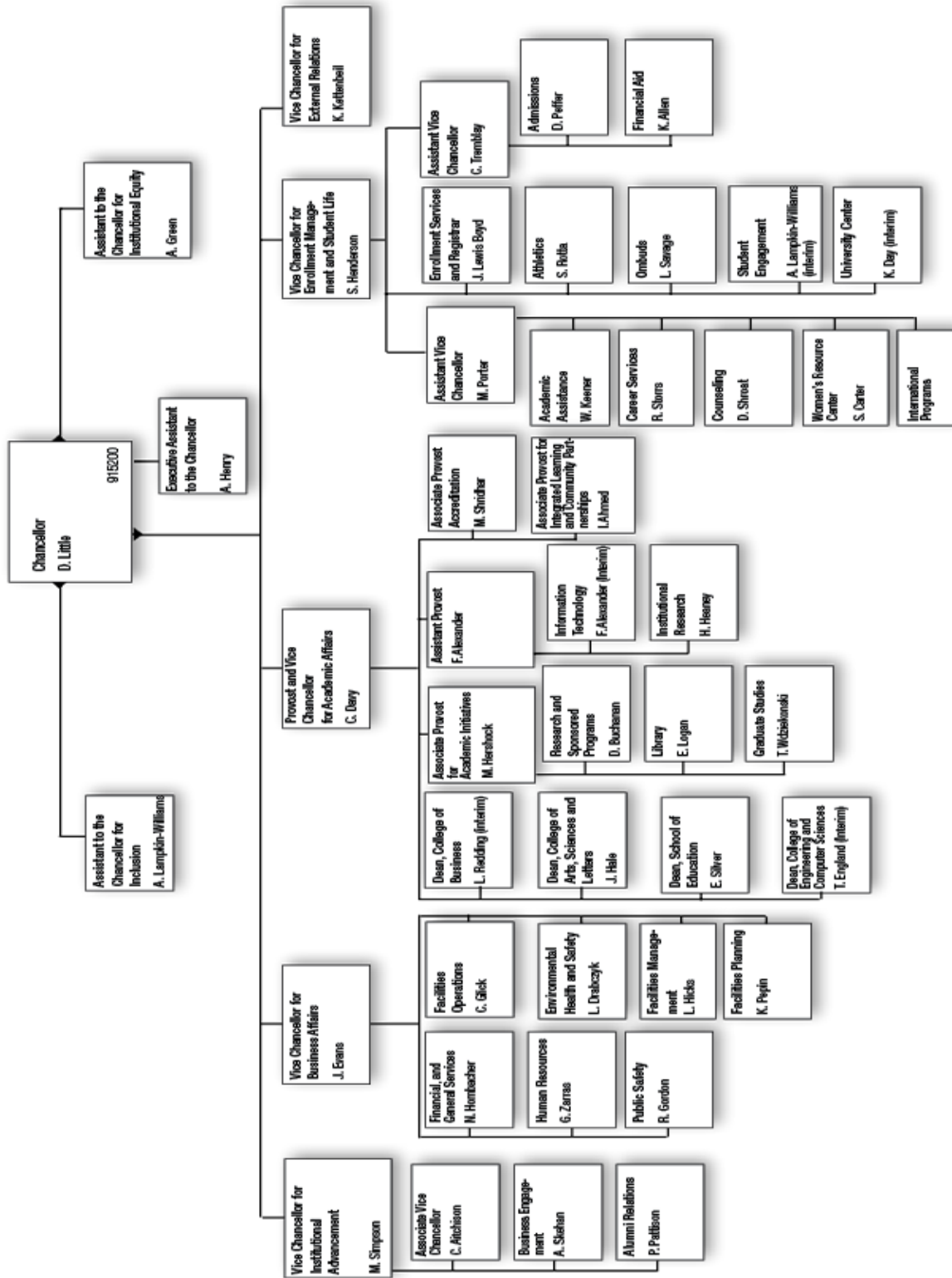
\*Check <http://www.umd.umich.edu/registration> for preselect and early registration dates.

\*\*Dates are subject to change at any time by the Board of Regents





# ORGANIZATIONAL CHART





# UNIVERSITY OF MICHIGAN-DEARBORN

## REGENTS OF THE UNIVERSITY

Mark J. Bernstein, Ann Arbor  
 Julia Donovan Darlow, Ann Arbor  
 Laurence B. Deitch, Bloomfield Hills  
 Shauna Ryder Diggs, Grosse Pointe  
 Denise Ilitch, Bingham Farms  
 Andrea Fischer Newman, Ann Arbor  
 Andrew C. Richner, Grosse Pointe Park  
 Katherine E. White, Ann Arbor  
 Mary Sue Coleman (*ex officio*)

## EXECUTIVE OFFICERS OF THE UNIVERSITY

Mary Sue Coleman, President  
 Sally J. Churchill, Vice President and Secretary  
 of the University  
 Stephen R. Forrest, Vice President for Research  
 E. Royster Harper, Vice President for Student Affairs  
 Daniel Little, Chancellor, University of Michigan-Dearborn  
 Timothy Lynch, Vice President and General Counsel  
 Jerry A. May, Vice President for Development  
 Ruth Person, Chancellor, University of Michigan-Flint  
 Ora Hirsch Pescovitz, Executive Vice President for  
 Medical Affairs  
 Martha E. Pollack, Provost and Executive Vice President for  
 Academic Affairs  
 Lisa Rudgers, Vice President for Global Communications  
 and Strategic Initiatives  
 Timothy P. Slottow, Executive Vice President and  
 Chief Financial Officer  
 Cynthia H. Wilbanks, Vice President for Government Relations

## UNIVERSITY OF MICHIGAN- DEARBORN ADMINISTRATIVE OFFICERS

Daniel Little, PhD, Chancellor  
 Catherine A. Davy, PhD, Provost and Vice Chancellor  
 for Academic Affairs  
 Jeffrey Evans, MBA, Vice Chancellor for Business Affairs  
 Stanley E. Henderson, MA, Vice Chancellor for Enrollment  
 Management and Student Life  
 Kenneth C. Kettenbeil, Vice Chancellor for External  
 Relations  
 Ray Metz, MLS, Chief of Staff  
 Mallory M. Simpson, MEd, Vice Chancellor for Institutional  
 Advancement

## DEANS OF ACADEMIC UNITS

Raju Balakrishnan, PhD, College of Business  
 Tony W. England, PhD, interim, College of Engineering and  
 Computer Science  
 Martin Hershock, PhD, College of Arts, Sciences, and Letters  
 Edward A. Silver, EdD, College of Education, Health and  
 Human Services

## DIRECTORS

Katherine Allen, Director, Financial Aid and Scholarships  
 Drew Buchanan, Director, Research & Sponsored  
 Programs  
 Shareia Carter, Director, Women's Resource Center  
 Kris Day, Director, University Center Operations  
 Robert Goffeney, Director, IT Strategy & Operations  
 Richard F. Gordon, Director, Public Safety  
 Roma Heaney, Director, Institutional Research  
 Larry G. Hicks, Director, Facilities Management  
 Noel Hornbacher, Director of Financial and General Services  
 William Keener, Director, Academic Assistance  
 Ann Lampkin-Williams, Interim Director for Athletics  
 Janice Lewis-Boyd, Registrar and Director, Enrollment  
 Services  
 Elaine Logan, Director, Mardigian Library  
 Reetha Perananamgam, Director for Student  
 Engagement  
 Peggy Pattison, Director, Alumni Relations  
 Deb Pepper, Director, Admissions and Orientation  
 Kathleen Pepin, Director, Facilities Planning  
 Monica Porter, Assistant Vice Chancellor for Student Success  
 and Director, International Affairs  
 David A. Schroat, Director, Counseling & Support  
 Services  
 Regina M. Storrs, Director, Career Services  
 David Susko, Director, Environmental Interpretive Center  
 Trista L. Wdziekonski, Director, Graduate Studies  
 Ginny Zarras, Director, Human Resources

## CITIZENS ADVISORY COMMITTEE

Brian Connolly  
 Steve Economy  
 Mark Gaffney  
 Paul Hillegonds  
 Rich Homberg  
 Arthur Horwitz  
 Hassan Jaber  
 Gail Mee  
 Patricia Mooradian  
 Shirley Stancato

# How to use the *Graduate Catalog*

This *Catalog* is divided into five sections:

- General Information
- College of Arts, Sciences, and Letters
- College of Business
- College of Education, Health and Human Services
- College of Engineering and Computer Science

This *Catalog* of UM-Dearborn 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 College of Arts, Sciences, and Letters; College of Business; College of Engineering and Computer Science; and College of Education, Health and Human Services 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 graduate degree requirements.

## KEY TO COURSE LISTINGS

The heading for each course listing contains the following information.

### Discipline and Course Number

The discipline is indicated by a three or four letter abbreviation. Courses are numbered in accordance with a University-wide numbering system: courses numbered 500 and above are graduate level courses.

### Course Title

The bold face course title follows the course number.

### Credit Hours

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

### Prerequisite(s)

Prerequisites to the courses 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.

## Frequency of Offering

The following abbreviations are used to denote the frequency of offering: (F) fall term; (W) winter term; (S) summer term; (F, W) fall and winter terms; (YR) once a year; (AY) alternating years; (OC) offered occasionally.

# **GENERAL INFORMATION**



**THE UNIVERSITY OF MICHIGAN - DEARBORN**

# The University Of Michigan-Dearborn

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

The campus, located in 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-Dearborn 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 9,100 highly selective students, representing a wide range of academic interests and diverse backgrounds, are currently enrolled at UM-Dearborn.

As part of the University of Michigan, UM-Dearborn enjoys the 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-Dearborn continues to respond to the educational needs of commuting students from the Detroit metropolitan community.

## Mission and Values

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

We offer undergraduate, graduate, and professional education to a diverse, highly motivated, and talented student body. Our programs are responsive to the changing 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;
- 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.

## The Campus

The UM-Dearborn campus was established in 1959 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 54 years and now includes the following facilities:

<b>Building Name</b>	<b>Function</b>
Administration Building	Offices, classrooms
Academic Support Center	
Campus Support Services	Offices, support services
College of Arts, Sciences, & Letters	Offices, classrooms
Computer & Information Science	Offices, classrooms
Engineering Laboratory Building	Offices, classrooms and labs
Environmental Interpretive Center	
Fairlane Center North and South	Offices, classrooms and food service
Fair Lane Cottages	
Fair Lane Greenhouse	
Fair Lane Pony Barn	
Fair Lane Powerhouse/ Visitor's Center	
Fieldhouse/Ice Arena / Wellness Center	Ice rink, recreation
Gabriel Richard Center	
Grounds Building	Vehicle storage, offices
Heinz Prechter Engineering Complex	Offices, labs
Henry Ford Estate	National historic landmark
Institute for Advanced Vehicle Systems	Offices, labs
Manufacturing Systems Engineering Laboratory	Labs, offices
Mardigian Library	Library, offices, classrooms, Alfred Berkowitz Gallery
Monteith Parking Structure	Parking, storage
Professional Education Center	Offices, classrooms and computer labs
Recreational & Organization Center	
Science Building/ Computer Wing	Classrooms, labs, offices
Science Learning and Research Center	Classrooms, labs, offices
Social Sciences Building	Classrooms, labs, offices
University Center	Classrooms, offices, food service, bookstore

## Accreditation

The UM-Dearborn is fully accredited by the Higher Learning Commission, a member of the North Central Association of Colleges and Schools. Additional accreditation has also been awarded to various UM-Dearborn programs and is noted within each school's section.

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  
230 South LaSalle Street, Suite 7-500  
Chicago, IL 60604-1413  
(800) 621-7440

<http://www.ncahlc.org/>

or

University of Michigan-Dearborn  
Office of the Provost  
1080 Administration Building  
Dearborn, MI 48128-2406  
(313) 593-5030

## Graduate Programs Offered

The UM-Dearborn offers three doctoral degree programs, one specialist program and 36 master's degree programs that are professional in their orientation. Many programs are traditional programs that require students to attend classes on campus. To support the learning opportunities for students who cannot regularly attend classes on-campus due to family or job-related needs, UM-Dearborn offers a growing number of online or web-based degree programs.

Each graduate program of study provides further educational opportunities, especially for those who have already made a start in their respective careers. Graduate classes are offered in the late afternoon and evenings for the convenience of those who wish to pursue graduate work on a part-time basis while employed. These programs embody the academic standards of The University of Michigan. Many of our Master's programs are affiliated with the Horace H. Rackham School of Graduate Studies in Ann Arbor.

The Graduate Studies Office provides general information on UM-Dearborn graduate programs, and can be reached at (313) 593-1494 or [www.umd.umich.edu/graduatestudies/](http://www.umd.umich.edu/graduatestudies/). Please contact the office of the program(s) of interest for advising or admission information.

Programs indicated with an \* are also offered online.

## College of Arts, Sciences, and Letters

[www.casl.umd.umich.edu/gradprograms](http://www.casl.umd.umich.edu/gradprograms)

[caslgrad@umd.umich.edu](mailto:caslgrad@umd.umich.edu)

(313) 593-1183

Applied and Computational Mathematics (MS)  
Environmental Science (MS)  
Liberal Studies (MA)  
Psychology (MS) (Health and Clinical Health Psychology)  
Public Administration (MPA)  
Public Policy (MPP)

## College of Business

[www.cob.umd.umich.edu/grad](http://www.cob.umd.umich.edu/grad)

[umd-gradbusiness@umich.edu](mailto:umd-gradbusiness@umich.edu)

(313) 593-5460

Accounting (MS)  
Business Administration (MBA)\*  
Business Analytics (MS) *Blended Online and Campus*  
Finance (MS)\*  
Information Systems (MS) *Online*  
Supply Chain Management (MS) *Blended Online and Campus*

## College of Education, Health and Human Services

[www.soe.umd.umich.edu/soe\\_programs/](http://www.soe.umd.umich.edu/soe_programs/)

[SOEGrad@umd.umich.edu](mailto:SOEGrad@umd.umich.edu)

(313) 593-5090

Early Childhood Education (MA)  
Education (EdD)  
Education Specialist (EdS)  
Education (MA)  
Educational Leadership (MAEL)  
Educational Technology (MA) *Online*  
Science Education (MS)  
Special Education (MEd)  
Special Education (MEd) with Inclusion Specialist Certificate *Online*  
Teaching (MA)

## College of Engineering and Computer Science

[www.engin.umd.umich.edu](http://www.engin.umd.umich.edu)

[gradprog@engin.umd.umich.edu](mailto:gradprog@engin.umd.umich.edu)

Automotive Systems Engineering (PhD) ..... (313) 593-5582  
Automotive Systems Engineering (MSE)\* ..... (313) 593-5582  
Computer and Information Science (MS)\* ..... (313) 436-9145  
Computer Engineering (MSE)\* ..... (313) 593-5420  
Electrical Engineering (MSE)\* ..... (313) 593-5420  
Energy Systems Engineering (MSE)\* ..... (313) 593-5582  
Engineering Management (MS)\* ..... (313) 593-5361  
Industrial and Systems Engineering (MSE)\* ..... (313) 593-5361  
Information Systems Engineering (PhD) ..... (313) 593-5582  
Information Systems and Technology (MS)\* ..... (313) 593-5361  
Manufacturing Systems Engineering (MSE) ..... (313) 593-5582  
Mechanical Engineering (MSE)\* ..... (313) 593-5241  
Program and Project Management (MS)\* ..... (313) 593-5361  
Software Engineering (MS)\* ..... (313) 436-9145

## Dual Degree Programs

Accounting (MS)  
and  
Finance (MS)\* ..... (313) 593-5460  
  
Finance (MS)\*  
and  
Business Administration (MBA)\* ..... (313) 593-5460  
  
Health Services Administration (MHSA)  
and  
Business Administration (MBA)\* ..... (313) 593-5460  
  
Industrial and Systems Engineering (MSE)\* ..... (313) 593-5361  
and  
Business Administration (MBA)\* ..... (313) 593-5460  
  
Information Systems (MS)  
and  
Business Administration (MBA)\* ..... (313) 593-5460

## 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 the 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-Dearborn 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-Dearborn. 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-Dearborn, 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 abortive 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 seem to have 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-Dearborn, Dr. Leonard E. Goodall, was appointed in July, 1971.

After that watershed change in 1971, UM-Dearborn 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 faculty 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 jubilantly 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-Dearborn'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-Dearborn 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-Dearborn 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-Dearborn 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) was flowing again, resulting in one major new building (the Social Sciences Building, formerly the College of Business 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-Dearborn'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 has 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-Dearborn'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-Dearborn was officially reaccredited by the North Central Association in March 1994.

After Chancellor Wilson resigned in the summer of 1992 to assume a new post in California, Dr. James C. Renick was appointed as the fourth chancellor of UM-Dearborn 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-Dearborn more fully an "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 (WIIZARD) 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 COB courses were offered in this new location starting Winter 2004. The Computer and Information Science will occupy the space vacated by SOE and the Department of Social Sciences together with other administrative offices will move into the former College of Business 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-Dearborn was accredited for ten years in 2004 and was authorized to offer doctoral programming.

In 2006, UM-Dearborn 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 became operational.

In 2009, UM-Dearborn welcomed its fourth Provost and Vice Chancellor for Academic Affairs, Dr. Catherine Davy. Also in the fall of 2009, UM-Dearborn began offering three doctoral programs: Ph.D. in Automotive Systems Engineering, Ph.D. in Information Systems Engineering and the Doctorate in Education Ed.D. Since 2009, the university has continued to grow and to attract students from throughout the metropolitan region and, increasingly, from around the globe. In 2012, UM-Dearborn granted its first Doctoral degree. That same year, the university approved plans for a student housing initiative called the Union at UM-Dearborn, opening in the fall semester of 2013. September 2013 also marked the launch of the newly-configured College of Education, Health, and Human Services on the Dearborn campus.

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

---

## ADMISSION

---

There are three types of admission to graduate degree programs at UM-Dearborn: admission to UM-Dearborn programs, admission to Rackham-affiliated programs and admission to special, post-baccalaureate programs. Information applicable to both UM-Dearborn and Rackham-affiliated degree programs is provided first with details specific to each type of program. Information on special programs completes this section.

## General Admission and Readmission Information

Students, who have earned the bachelor's degree at an accredited college or university in the United States, or its equivalent in another country, will be considered for admission to any program without regard to race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status.

Each graduate program at the University of Michigan-Dearborn has its own policies and procedures for admission. To apply, you must submit an application (either online or with a paper application), pay the application fee, and submit all supporting materials (transcripts, letters of recommendation, etc.) required by the program to which you wish to apply by the application deadline. Please go to the appropriate graduate program section in this *Catalog* to access admission and application information for your intended program of study.

International students seeking an F-1 or J-1 visa must submit an Affidavit of Financial Support along with an original bank certification (in English) from your financial supporter or a detailed letter of sponsorship from a government, employer, or other organization indicating the exact dollar amount for expenses in U.S. funds. The bank statement must show the required available funds as specified on the affidavit. The Affidavit of Financial Support is valid for one year.

## English Language Requirements for Admission

If you are not a native speaker of English, you must prove an adequate level of English language proficiency, even if you are currently a U.S. citizen or permanent resident and regardless of how long you have resided in the U.S.

UM-Dearborn does not offer beginning or intermediate-level English language study, and we do not offer conditional or probationary admission. You must fulfill the English language proficiency requirement in one of the ways described below before admission will be granted.

- Applicants who have earned or will earn a Bachelor or Master degree from an institution where the language of instruction is English, exclusively, are exempt from submitting an Official English Proficiency Score. Verification from the school may be required.
- Applicants who have earned or will earn a Bachelor or Master degree from a country where the official language is English, (United States of America, Australia, England) are exempt from submitting an Official English Proficiency Score.

If you have not met the conditions described above, you will be required to complete an English proficiency test. Proficiency tests that are accepted are: the International English Languages Testing System (IELTS), the Michigan English Language Assessment Battery (MELAB), and the Test of English as a

Foreign Language (TOEFL). You must take one of these tests; it is not necessary to take all of them.

Proficiency Test					
	IELTS	MELAB	IBT TOEFL Internet- Based Test	CBT TOEFL Computer- Based Test	TOEFL Written Test
<b>Minimum Score</b>	Overall 6.5	Overall 80	<u>Overall</u> 84 RD 23 LIST 23 SPK 17 WR 21	Overall 220	Overall 560

Achieving the minimum score does not guarantee admission, only consideration.

### Testing Information

Both the TOEFL and the MELAB are offered throughout the world. You should take one or the other well in advance of your intended starting term. TOEFL scores arrive at UM-Dearborn 6-8 weeks after the test date. MELAB scores are available within a week if the test is taken in Ann Arbor, but if taken abroad, testing and mailing delays may prolong the process. If you are living in southeastern Michigan, we suggest you take the MELAB on the Ann Arbor campus so that we can receive the scores quickly.

Test scores more than two years old will not be accepted for consideration.

For testing information and registration materials, please contact:

### IELTS

100 East Corson Street, Suite 200  
Pasadena, CA 91103, U.S.A.  
Telephone: 626-564-2954  
[www.ielts.org](http://www.ielts.org)  
[ielts@ieltsintl.org](mailto:ielts@ieltsintl.org)

### MELAB

English Language Institute, TCD  
3020 North University Bldg.  
University of Michigan  
Ann Arbor, MI, 48109-1057, U.S.A.  
Telephone: 734-764-2413  
[www.lsa.umich.edu/eli/testing](http://www.lsa.umich.edu/eli/testing)  
[melabeliu@umich.edu](mailto:melabeliu@umich.edu)

### TOEFL

P.O. Box 6151  
Princeton, NJ, 08541, U.S.A.  
Telephone: 609-771-7600  
[www.toefl.org](http://www.toefl.org)  
[toefl@ets.org](mailto:toefl@ets.org)

## Types of Admission

Four types of admission are offered: Regular, Conditional, Probationary and Non-Candidate for Degree (NCFD). All four types apply to Rackham affiliated programs and combinations of these are offered in non-Rackham programs. Consult the specific graduate program for details.

### Regular

Applicants who satisfy all admission requirements of Rackham and the department or program of specialization to which they have applied will be granted regular admission. They must have on file an official transcript (i.e., one bearing the official seal of the school and the Registrar's signature) indicating award of the bachelor's degree or equivalent.

### Conditional

Applicants whose admission status is contingent upon satisfaction of one or more of the following requirements will be granted conditional admission.

*Undergraduate students who have not completed requirements for a bachelor's degree at the time of admission.* These students must submit an official transcript indicating satisfactory completion of all coursework and award of the bachelor's degree by completion of their first term.

*Students whose preparation is deficient.* These students must complete prescribed courses with stated minimum grades in the number of terms specified by the graduate program.

**Note: No degree milestones will be added to a student's record for graduate work completed until all conditions have been removed.**

### Probationary

Applicants whose admission status is contingent upon earning a stated minimum grade average for the number of credit hours specified by the graduate program (which may include prescribed courses) will be granted probationary admission.

### Non-Candidate for Degree (NCFD)

NCFD admission may be granted to qualified students who wish to elect courses for graduate credit but who are not candidates for a degree. Examples are: professionals who seek to continue their development, students in good standing in another graduate school, people seeking to increase their knowledge or improve their professional skills, or those who wish to test their capabilities in a graduate setting.

There are two types of NCFD admissions, Departmental NCFD and Non-Rackham Guest. Applicants with NCFD status who have identified a field of interest should contact the appropriate department or program for review. Applicants for NCFD status who have not identified a field of interest will be referred to the Non-Rackham Guest program for review.

Courses elected by students in Departmental or Non-Rackham Guest NCFD status cannot be counted toward a degree program unless the student receives regular admission and the graduate director of the degree program determines that the courses are acceptable.

*Departmental NCFD Admission.* Applicants who are interested in NCFD status and who have identified a field of interest should contact the appropriate department or program. A Rackham application must be submitted for Rackham-affiliated programs and specific program applications for non-Rackham affiliated programs. The application will be forwarded to the department for review. If admitted, program advisers must approve course elections for these students. Continuing registration as a Departmental NCFD is subject to departmental policies and approval and subsequent consideration for admission to a degree program is contingent upon departmental policies and full review of credentials in competition with other degree applicants.

*Non-Rackham Guest Admission.* Minimum requirements for admission as a Non-Rackham Guest NCFD are a bachelor's degree and an undergraduate grade point average of at least a B (3.00). An application must be submitted for review by the program director. If admitted, written approval for each course elected must be obtained from the instructor. Applicants are limited to two courses in any one field during their status as a Non-Rackham Guest NCFD. For further registration, admission by a department or program is required.

Students continuing as Non-Rackham Guest NCFD may continue to register in that status provided the following conditions are met: they obtain approval to register from the department or program each term (registration in this status is unusual after two terms); they must maintain an average grade of at least a B (5.00); they do not register for a pattern of elections that indicates a field of specialization (usually not more than two course(s) in one field); and they obtain written approval of the instructor for each course to be elected.

## Graduate Program Admission Requirements

The following list generalizes requirements for admission consideration:

- 1) A completed graduate admissions application and application fee.
- 2) **Official** transcripts showing conferral of a U.S. bachelor's degree or its equivalent from an accredited institution.
- 3) An undergraduate grade point average (GPA) of at least 3.0 (some exceptions are occasionally made on a probationary basis).
- 4) Some programs require letters of recommendation and/or official standardized test scores, such as, the GMAT or GRE. Please consult the specific graduate program section or contact the program office for complete application requirements.
- 5) Applicants whose native language is not English must provide an official score report from either the Test of

English as a Foreign Language (TOEFL), the International English Language Testing Systems (IELTS) or the Michigan English Language Battery (MELAB).

UM-Dearborn programs (non-Rackham) include:

Accounting (MS)  
 Automotive Systems Engineering (PhD)  
 Business Administration (MBA)  
 Business Analytics (MS)  
 Early Childhood Education (MA)  
 Education (EdD)  
 Education Specialist (EdS)  
 Educational Leadership (MAEL)  
 Educational Technology (MA)  
 Finance (MS)  
 Information Systems (MS)  
 Information Systems Engineering (PhD)  
 Psychology (MS) (Health and Clinical Health Psychology)  
 Public Policy (MPP)  
 Science Education (MS)  
 Special Education (MEd)  
 Supply Chain Management (MS)  
 Teaching (MA)

The UM-Dearborn programs offered under the auspices of the Horace H. Rackham School of Graduate Studies (hereafter Rackham) include:

Applied and Computational Mathematics (MS)  
 Automotive Systems Engineering (MSE)  
 Computer and Information Science (MS)  
 Computer Engineering (MSE)  
 Education (MA)  
 Electrical Engineering (MSE)  
 Energy Systems Engineering (MSE)  
 Engineering Management (MS)  
 Environmental Science (MS)  
 Industrial and Systems Engineering (MSE)  
 Information Systems and Technology (MS)  
 Liberal Studies (MA)  
 Manufacturing Systems Engineering (MSE)  
 Mechanical Engineering (MSE)  
 Program and Project Management (MS)  
 Public Administration (MPA)  
 Software Engineering (MS)

## SPECIAL PROGRAM ADMISSION

### Concurrent Undergraduate/Graduate Study (CUGS)

Students in the junior year of their undergraduate work whose academic accomplishments are exceptional may apply for admission to the Concurrent Undergraduate/Graduate Study (CUGS) program by contacting the appropriate graduate program. This program provides students with the opportunity to work toward a graduate degree while fulfilling the remainder of the requirements for a bachelor's degree. Information about the procedures to be followed for admission may be obtained from

the graduate program office of the unit concerned. *Note: not all graduate programs offer this program.*

## Michigan Intercollegiate Graduate Study

The Michigan Intercollegiate Graduate Study (MIGS) program creates exchange possibilities for graduate students currently enrolled in Michigan universities. Students in good standing at one institution (the home) may take advantage of course and research opportunities offered at another institution (the host), provided that such opportunities are not available on the home campus. Inquiries regarding appropriate faculty contacts and administrative approval should be addressed to Enrollment Services/Registration and Records, 1169 University Center, (313) 583-6500.

## Visiting Scholar

Admission as a Visiting Scholar may be granted to qualified individuals who wish to study and/or conduct research at the University of Michigan-Dearborn. The general purpose of the Exchange Visitor Program is to promote international educational and cultural exchange to develop mutual understanding between the people of the U.S. and other countries. At UM-Dearborn, there are three types of J-1 exchange visitors: students, scholars, and professors. An exchange visitor must not be a candidate for a tenure-track position. J-1 students must be admitted to a degree program for a full course of study or be engaged full time in a non-degree course of study. Visiting scholars are generally invited by a host faculty or department or supported by a program agreement. Details, including purchase of mandatory health insurance (or the granting of a health insurance waiver) are coordinated with the Office of International Affairs. They can be reached at [\(313\)583-6600](tel:3135836600) or [international@umd.umich.edu](mailto:international@umd.umich.edu).

## SPECIAL CASES

### Second Master's Degree

Admission to a master's degree program in the same field of specialization and at the same level as one previously completed is possible only if the previous degree program was of substantially different character or was not accredited.

### Change of Program

A change in program generally requires full consideration by the new program's admissions committee. The student must submit a new application and should contact the new program for information about the supporting materials that may be needed. International students must supply documentation of additional funding if a change of program will result in the issuance of new immigration documents. Students should contact the appropriate program directly for applicable policies. The deadline for submitting required materials is the same as for new program applications.

## Change of Degree Level within a Field

To change from non-degree status (NCFD) to degree status within the same field of specialization, a student must submit a regular admission application and should contact the program office directly for information regarding admission materials needed. An international student must supply documentation of additional funding if a change of degree status will result in an extension of the expected study period.

## Readmission

Most students who have not been enrolled in a master's program for one year (12 months) must apply for readmission. Readmission is dependent upon program approval and availability of space and facilities for the term in which readmission is requested. Before readmission can be finalized for international students, proof of adequate funding is required in order to obtain the appropriate visa documents.

If a student withdrew for health reasons, readmission may be subject to satisfactory evidence that the condition has been remedied. If a student was on Probationary Admission, Academic Probation, or Extended Probation, that standing will continue in effect if he or she is readmitted, unless approval to remove or modify the status is granted. If a student was Required to Withdraw, readmission may be granted only following approval by the program and/or the Rackham School of Graduate Studies for programs affiliated with Rackham.

## Post-Degree Program Admission

The College of Education, Health and Human Services and the College of Engineering and Computer Science offer post-baccalaureate programs. Please refer to the College of Education, Health and Human Services or the College of Engineering and Computer Science section of this *Catalog* for a list of available post-degree programs offered. Prospective students should contact the program office directly for information regarding admission materials needed.

# FINANCIAL AID

Office of Financial Aid  
4901 Evergreen Road  
1183 University Center  
Dearborn MI 48128  
313-593-5300  
313-593-5313 [FAX]  
ask-ofa@umd.umich.edu  
[umd.umich.edu/financialaid](http://umd.umich.edu/financialaid)

Federal Title IV School Code: 002326

The goal of the University of Michigan-Dearborn is that no qualified student be denied an education due to lack of 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 Office of Financial Aid staff.

## Financial Assistance Available

Financial aid for graduate students consists of the following types of assistance: gift aid (scholarships, fellowships and other grants-in-aid from private sources), loans, and employment. Graduate students should contact their department for possible stipends or fellowships and will need to complete the Free Application for Federal Student Aid (FAFSA) in order to be packaged for financial assistance available through the Office of Financial Aid.

## Determining Eligibility

With the exception of some scholarships, most financial assistance awarded by the Office of Financial Aid is based upon financial need as determined by a careful review of the resources of the student and of the student's family.

Need for financial aid is determined by the following calculation:

$$\begin{array}{r} \text{Cost of Attendance Budget (COA)} \\ \text{Less} \quad \text{Expected Family Contribution (EFC)} \\ \text{Equals} \quad \text{Financial Aid Eligibility (Need)} \end{array}$$

To determine the Expected Family Contribution (EFC), the calculation formula used is the Federal Methodology as mandated by the U.S. Congress. By completing the Free Application for Federal Student Aid (FAFSA), the student's family contribution is calculated and reported on the Student Aid Report (SAR) which is emailed or mailed to the student's home by the federal processor.

Note: most foreign citizens are not eligible for federal student aid from the U.S. Department of Education. There are, however, some instances in which noncitizens may be eligible for financial aid from the U.S. federal government. Visit <http://studentaid.ed.gov/eligibility/non-us-citizens> to learn more.

## Application 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. To apply:

- 1) Request a Personal Identification Number (PIN) from the U.S. Department of Education. PINs may be obtained at [www.pin.ed.gov](http://www.pin.ed.gov). This PIN will be used as the "electronic signature" when the Free Application for Federal Student Aid (FAFSA) is submitted online. The PIN may also be used to access the Student Aid Report (SAR), to make application corrections, to complete a renewal FAFSA in future years, to access Direct Loan account information online and to "electronically sign" a master promissory note.
- 2) Complete the FAFSA using the University of Michigan-Dearborn's federal school code number: 002326. Students are encouraged to submit the FAFSA online at [www.fafsa.gov](http://www.fafsa.gov) (using the PIN indicated in step 1 above). It is recommended that you print your application and Confirmation Page for your records.

To complete the FAFSA, students will need to use the appropriate Federal Income Tax Return (Form 1040, 1040A or 1040EZ). FAFSAs including authorized release to UM-Dearborn (via code 002326) and received in the office by March 1 will receive first priority consideration for funds (it is suggested that FAFSAs be filed by February 14 in order to be received in the office by March 1). Please note, applicants possessing a bachelor's degree are not eligible for Pell Grant or other need-based gift aid funds.

## Continuing Students

The FAFSA is year specific. Therefore, in order to continue to be considered by financial aid, students must reapply for financial aid each academic year. The web application ([www.fafsa.gov](http://www.fafsa.gov)) is available after January 1, preceding fall enrollment.

## Reminders

- 1) 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 priority dates 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 academic year (in order to continue to be considered).
- 4) Applications must be received prior to or while the student is enrolled at-least-half-time to allow processing time.
- 5) Students must enroll at least half time to be eligible for disbursement of financial aid funds (for the term). See below for definitions:

### Graduate Credit Hours

8 or more credit hours =	Full Time
6-7 credit hours =	$\frac{3}{4}$ Time
4-5 credit hours =	Half Time

- 6) All correspondence and documents must include the student's name and University of Michigan Identification number (UMID).

## Priority Dates for Fall/Winter

### March 1

Initial or Continuing Graduate Students and Transfer Graduate Students

### March 2

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

## Graduate Fellowship, Teaching or Research Assistantship Support

Recipients of these awards must be appointed or nominated by a member of the academic department in which the applicant is enrolled. The number of awards varies annually, as do the award amounts.

## UM-Dearborn Current Student Scholarship Program (for Graduate Students)

The scholarships in the Current Student Scholarship Program are made available through the generous gifts of private donors and alumni of UM-Dearborn. In 2012-2013, the value of these scholarships ranged from \$200 to \$5,000.

Qualified graduate students who have completed a minimum of 6 credits in residence can apply for several university scholarships at one time, using the University of Michigan-Dearborn Current Student Scholarship Program application. This application becomes available each December at the Office of Financial Aid and the deadline is February 1, for the following academic year. Currently, there are many different graduate student scholarships available through this annual process.

Additional opportunities for scholarship funding may be available from other sources and would require a separate application. See also the following list and/or check with your academic unit for additional scholarship information.

## City Year Detroit Alumni Scholarships

The University of Michigan-Dearborn salutes City Year Detroit Program participants for their service and metropolitan impact. The University of Michigan-Dearborn will award at least 2 two-year scholarships to students who successfully complete the City Year Detroit experience. Up to \$5,350 is available each year, up to two years (four semesters). This scholarship is a match scholarship, matching the AmeriCorps Education Award. Graduate students are eligible for consideration. To be considered for a City Year Alumni Scholarship, the student must provide City Year documentation (signed City Year Certificate of Graduation) to the Director of Admissions and Orientation (1145 University Center) after admission. The Office of Admissions and Orientation will make the scholarships offer and notify the Office of Financial Aid to place the scholarship on the student's account.

## Community Service Personnel Scholarships

Police department personnel from select communities are eligible for the Community Service Personnel Scholarship, which is valued at 20% of tuition. Officers who wish to pursue undergraduate or graduate degrees at UM-Dearborn are eligible for a special scholarship that will provide a credit for 20 percent of their tuition costs and fees each semester. This scholarship works in conjunction with the police departments' tuition reimbursement programs. Paperwork verifying police department employment is required. For more information, visit <http://www.umd.umich.edu/cpspscholarship/>.



## Center for the Education of Women Scholarships

The CEW Scholarship Program for returning women students was established in 1970 to honor the academic performance and potential of women whose education has been interrupted and to commemorate the one hundredth anniversary of the admission of women to the University of Michigan. Thanks to the generosity of individuals and foundations, CEW has awarded over 1100 scholarships since 1970. CEW Scholarship Awards are invaluable, since they often mean the difference between completing a degree or not doing so for many students at the University of Michigan. Due to the generosity of donors, CEW was able to expand the program in 2008 to include additional scholarships for male and female students on the Ann Arbor campus.

Approximately 40 Scholarships are awarded annually ranging from about \$1,000 to \$8,000, with some larger scholarship awards given. For more information, visit [www.umich.edu/~cew/students/scholar.htm](http://www.umich.edu/~cew/students/scholar.htm).

## Hartmann Family Entrepreneurship Scholarship

This renewable scholarship is available to graduate and undergraduate students with an interest in entrepreneurial studies and business ownership. Graduate applicants must be Michigan residents and in good academic standing with a GPA of 5.0 or better. Please contact the College of Business at (313) 593-5460 for additional information.

## King/Chavez/Parks Future Faculty Program

The King-Chavez-Parks Future Faculty Fellowship Program is funded by the State of Michigan and is intended to increase the pool of traditionally underrepresented candidates pursuing faculty teaching careers in postsecondary education. Preference may not be given to applicants on the basis of race, color, ethnicity, gender, or national origin. Applications are encouraged from minorities, women, people with disabilities, and individuals from cultural, linguistic, geographic, and socio-economic backgrounds who would otherwise not adequately be represented in the graduate student and faculty populations. The amount of the KCP Future Faculty Fellowship Award will depend on the student's financial needs. The maximum available award for master's students is \$20,000 and for doctoral students is \$35,000. These amounts may be distributed over a two and one half year period for Masters Fellows and over a four to six year period for Doctoral Fellows.

## TEACH Grant (Teacher Education Assistance for College and Higher Education)

Funded by the federal government, the TEACH Grant provides up to \$3,760 per year for students whose intention is to teach

in a "high need field" (subject area), in an elementary or secondary school serving students from low-income families. As a recipient, students agree (in advance of receipt) to teach a "high need field", full-time, for a minimum of four years within the eight years following program completion (or progress interruption from the program for which the grant was awarded). The FAFSA is required to be considered for a TEACH Grant. However, recipients do not have to demonstrate "need."

The TEACH Grant will remain a grant if recipients meet the specific criteria. If recipients do not meet the criteria, the TEACH Grant converts to an unsubsidized loan with interest calculated back to the initial disbursement date(s). For this reason, the University of Michigan-Dearborn has defined our eligibility criteria as cautiously as possible.

The population UM-Dearborn currently considers for the TEACH Grant are: Seniors (at the undergraduate level) and graduate level students, with a high cumulative GPA, admitted into a degree-granting program of the College of Education, Health and Human Services and pursuing majors that align with the "high need fields."

The cumulative GPA requirements for the TEACH Grant is 3.25 for graduates. The graduate degree programs currently considered are: Master of Arts, Master of Arts in Teaching, Master of Education and Master of Science. The majors currently considered are: Education, General Science, Mathematics Studies, Science Education, Science Studies, Special Education and Teaching. The programs listed are subject to change by Congress.

## Federal Loans

The following are programs offering loan assistance. Recipients of the loans must maintain at-least-half-time enrollment and make satisfactory academic progress toward their degree. An "Entrance Interview" may be required prior to disbursement of funds. An "Exit Interview" is required prior to leaving school.

## William D. Ford Federal Direct Loan Program

There are two types of Federal Direct Loans available to graduate students: the Unsubsidized Federal Direct Loan and the Federal Direct PLUS Loan for Graduate and Professional Degree Students. Federal Direct loans are available to graduate and professional students who meet federal eligibility criteria. Borrowers must maintain at least half-time enrollment throughout the loan period.

The annual maximum amount a graduate student may borrow in Unsubsidized Federal Direct Loan funding is \$20,500 per academic year. The program aggregate allowed for graduate or professional study is \$138,500 (which includes any Federal Direct loans at the undergraduate level). The interest rate is set at a fixed rate determined by the date of first disbursement\*. In addition, there is a small Origination Fee, which is deducted from the gross proceeds of the loan. Interested borrowers may apply by submitting a FAFSA. The Office of Financial Aid will process the request. (A separate application is not required.)

\*Borrowers are assessed a fixed interest rate:

First disbursement between 7/1/10—7/1/11, 4.5%;

First disbursement between 7/1/11—7/1/12, 3.4%;

First disbursement between 7/1/12—7/1/13, 3.4%;

First disbursement after 7/1/13, 6.8%.

For additional information, contact the Office of Financial Aid or visit the following website: <http://studentaid.ed.gov/types/loans>.

## Federal Direct PLUS Loan for Graduate and Professional Degree Students

The second type of Federal Direct Loan available to graduate and professional students is the Graduate PLUS Loan. The terms and conditions of the Graduate/Professional PLUS Loan are similar to those of a Parent PLUS Loan, (including the requirement that the applicant does not have an adverse credit history). Applicants are required to complete the FAFSA.

The amount an applicant may borrow is determined by calculating their cost of attendance minus other financial aid. They also must have applied for their annual loan maximum eligibility under the Unsubsidized Loan Program before applying for a Graduate/Professional PLUS loan. Like the Parent PLUS, there is a 7.9% interest rate and applicants may arrange for current or deferred repayment. For additional information, contact the Office of Financial Aid or visit the following website: <http://studentaid.ed.gov/types/loans/plus>.

## Alternative Loans

Alternative loans are non-federal educational loans normally provided by private lenders who require a credit evaluation before approval. Alternative loans are funded strictly through private sources and receive no funding from the Federal government.

While alternative loans are considered educational loans, they are not eligible for loan consolidation with Federal Direct or Federal Perkins Loans. The student who borrows from both the Federal and alternative loans sources will have at least two monthly payments upon entering repayment. It is the policy of the Office of Financial Aid to require that students complete the FAFSA (Free Application for Federal Student Aid) before applying for an alternative or private loan. By completing the FAFSA, students are able to be considered for Federal Direct Loans.

There are exceptions for students who are ineligible for federal student aid. These students are exempt from this process:

- International students
- Students who have lost financial aid eligibility because of failure to meet OFA standards of academic progress
- Students who are not enrolled in a degree granting program (except teacher certification and approved prospective-degree programs)

- Students who have reached the maximum loan aggregate in federal student loan programs
- Students who borrow to pay a past due balance with the University of Michigan-Dearborn
- Students who are enrolled less than half-time (minimum four credits hours for graduate students)

Alternative loans can provide important supplemental or even primary funding for students. However, it is also important to remember that an informed consumer may be able to reduce the amount of interest and fees paid through a careful matching of loan product and student needs.

## Federal Work-Study Program

Eligibility for Federal Work-Study is determined according to demonstration of need (based on the outcome of the FAFSA), and availability of funds. Adherence to Federal fund criteria, enrollment on an at-least-half-time basis and maintenance of the University's Satisfactory Academic Progress (SAP) guidelines are required.

Funded by the federal government, the Federal 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 wage and the employing department pays the remaining percentage. Students may work a maximum of 25 hours a week while in school. 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. The Office of Career Services, 2149 University Center, facilitates the job placement effort.

## On-Campus Employment

On-campus employment is funded by UM-Dearborn. There are many part-time and temporary jobs available in the academic departments and in the support offices. Eligibility for Federal financial aid funds is not a factor for University employment. Students may contact the Office of Career Services to inquire about job availability. The departments pay 100 percent of these wages. To locate an on-campus job, visit <http://www.umd.umich.edu/693914/>.

## Other Sources of Financial Aid

Other sources of financial assistance are available through governmental agencies such as Vocational Rehabilitation, Veterans Assistance, and Social Security. Students needing information on these programs should contact the nearest appropriate agency.

Assistance for educational expenses may also come in the form of tax allowances. The Internal Revenue Service publishes Publication 970. Publication 970 provides information on educational benefits allowed within the tax code. Publication 970 may be obtained from the Internal Revenue Service or viewed online at [www.irs.gov/publications/p970](http://www.irs.gov/publications/p970).

## Satisfactory Academic Progress

Federal regulation requires educational institutions that participate in federal financial aid programs to define and enforce Satisfactory Academic Progress (SAP) standards for students receiving financial aid. UM-Dearborn'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 imposed on all federal and state programs, as well as programs supported by UM-Dearborn's General Fund and awarded through the OFA.

The standards of academic progress measure a student's academic program *both* qualitatively and quantitatively. These measurements include a Cumulative Grade Point Average (CGPA) requirement, a Cumulative Completion Rate requirement and a Maximum Timeframe requirement. In addition, certain types of courses are limited or excluded from eligibility. The standards apply to all federal financial aid programs and programs funded and administered by the University of Michigan-Dearborn Office of Financial Aid and include degree, (teaching) certificate and consortium guest students who receive financial aid.

SAP is evaluated at the end of each term (Fall, Winter, and Summer). Federal regulations require the University of Michigan-Dearborn to evaluate all students for SAP regardless of whether or not they receive financial aid. SAP is evaluated based on the student's cumulative academic record, from the date of entry to the university. Students at UM-Dearborn are *not* required to attend full time in order to receive financial aid or achieve satisfactory academic progress. The complete policy may be found at [www.umd.umich.edu/sap](http://www.umd.umich.edu/sap)

## Return of Title IV Funds

Students receiving financial aid have the responsibility to follow the college's withdrawal procedures as outlined in the University of Michigan-Dearborn catalog. The Higher Education Act requires the college to calculate a Return to Title IV funds on all federal financial aid students who withdraw (officially or unofficially) from all classes. A schedule is used to determine the percentage of the semester the student attended based on the withdrawal date/last date of attendance. The percentage of the semester the student attended is calculated as follows:

$$\frac{\text{Number of days in attendance}}{\text{Number of days in semester}}$$

The number of days counted includes all calendar days in the semester including weekends and holidays, but excludes college breaks of five or more days. The percentage of the semester the student attended is used to calculate the amount of the student's earned versus unearned federal aid funds. The unearned portion of federal aid funds received must be returned to the appropriate aid program in accordance with the order of return as mandated by law. The order of return is: Federal Direct Unsubsidized Stafford Student Loan, Federal Direct Subsidized Stafford Student Loan, Federal Direct PLUS Loan, Federal Pell Grant, Federal SEOG Grant, other Title IV

aid. The college is responsible for returning the lesser of unearned Title IV aid or unearned institutional charges. Unearned institutional charges are based on the percentage of the semester the student **did not** attend. The college is responsible for its return of funds first, followed by the student's return of funds. The student is responsible for returning:

$$\begin{array}{r} \text{Amount of unearned Title IV Aid} \\ - \text{Amount of aid school returns} \\ \hline \text{Amount Student Returns} \end{array}$$

The University must return its portion of unearned Title IV aid (loan and grant) to the appropriate federal program within 45 days of the student's withdrawal date as determined by the Office of Financial Aid. If the amount the student returns includes a federal loan program, the student is responsible for repayment of the loan in accordance with the terms of the loan program. If the amount the student returns includes grant aid, the student must repay 50% of the grant money received, rather than 100%. The student must return unearned grant aid to the college within 45 days from the date of notification. Failure by the student to return or make arrangements to return unearned grant aid to the college within 45 days will result in the student being reported to the U.S. Department of Education (ED). The student will be considered in an overpayment status, and will not be eligible for additional aid at any post-secondary institution participating in Title IV Aid programs. Students who are reported to ED in an Overpayment Status should contact the ED to make payment arrangements to repay the necessary grant funds.

### Non-Attendance in Courses

Students who stop attending the University of Michigan-Dearborn may not receive further financial aid disbursements, may lose some or all of the aid that has already been disbursed to their account, may be responsible for repayment of unpaid charges, and may be considered in overpayment status with ED. Students who stop attending all classes without officially withdrawing from the college will be subject to a Return to Title IV Funds calculation at the end of the semester, based on their last date of attendance as determined by faculty.

If it is determined that a student has never attended a course(s), a reduction of some or all financial aid may be necessary. At the time the Office determines a non-successful grade, faculty will be contacted to confirm a last date of educational activity. A non-response from faculty requires the Office of Financial Aid to assume the student has never attended course(s).

### Student Consumer Rights and Responsibilities

Section 493.A of the Higher Education Act requires post-secondary educational institutions to disseminate relevant, candid information on student financial aid programs available at the college. These rights and responsibilities may be found in the U.S. Department of Education (ED) publication entitled *Funding Your Education: The Guide to Federal Student Aid*. This guide is available online at [www.edpubs.gov](http://www.edpubs.gov). Any change in a student's financial situation, address, or school enrollment must be reported to the Office of Financial Aid. Students have the right to request a review of their financial aid package when a change in family or personal circumstances occurs. Students also have a right to review their financial aid records and may do so during counseling hours.

**Information Dissemination and Report Disclosure**

The U.S. Department of Education requires UM-Dearborn to disseminate information and disclose certain information to students. This information includes, but is not limited to: Voter Registration, Equity in Athletics, Campus Crime and Security, Completion and Transfer-Out Rates, and Drug and Alcohol-Free Campus policies. For further information on the listed topics, please refer to the University website at [www.umd.umich.edu/fa\\_consumerinformationpolicy/](http://www.umd.umich.edu/fa_consumerinformationpolicy/).

## Enrollment Services/ Registration and Records

Office of Enrollment Services/Registration and Records  
4901 Evergreen Road  
1169 University Center  
Dearborn MI 48128  
313-583-6500  
313-593-4896 [FAX]  
registrars@umd.umich.edu  
[umd.umich.edu/registration](http://umd.umich.edu/registration)

The Office of Enrollment Services/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, Enrollment Services/Registration and Records is responsible for Veteran Affairs and other on-campus and off-campus programs.

For current registration information, students should consult the Enrollment Services/Registration and Records website: <http://www.umd.umich.edu/registration>.

### Attendance Policy

A student is expected to attend every class and laboratory for which he or she has registered. Each instructor may make known to the student his or her policy with respect to absences in the course. It is the student's responsibility to be aware of this policy. The instructor makes the final decision to excuse or not to excuse an absence. An instructor is entitled to give a failing grade (E) for excessive absences or an Unofficial Drop (UE) for a student who stops attending class at some point during the semester.

### Attendance (Instructor-Initiated Drops)

A student who is absent from 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 receive a request, 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 Enrollment Services/Registration and Records web site or 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 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 online or at the Enrollment Services Counter (1169 UC) with signatures when appropriate.

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. Any exceptions for adding courses must be approved by the student's academic unit.

### 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 College of Business 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 or courses.

## 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. (Prospective Degree Student (PDS)/ Personal Enrichment (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-Dearborn 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.

## Grades and Grading

### Grading System

The method of grading graduate students is the letter grade system (*A, B, C, D, E*). Courses in which grades of *D* or *E* are earned cannot be used in fulfillment of degree requirements.

Grades of + and - may be given to graduate students whenever such fineness of discrimination is possible. These letter grades are translated into honor points for each hour of credit in a course as follows:

A+ = 9	B+ = 6	C+ = 3	D and E = 0
A = 8	B = 5	C = 2	(failure)
A- = 7	B- = 4	C- = 1	

The honor points earned for a course are calculated by multiplying the number of credit hours for which the course was elected by the number of honor points earned on the above grading scale (e.g., if a grade of *B+* is earned for a 3 credit hour course, the total number of honor points for the course is 3 credit hours times 6, or 18 honor points).

Beginning in the Fall 2013 term, the system for converting letter grades to GPA will be changing from a 9.0 grade point system to a 4.3 system, with a maximum term and cumulative GPA of 4.0.

The letter grades will be translated into honor points for each hour of credit in a course as follows:

A+ = 4.3	B+ = 3.3	C+ = 2.3	D+ = 1.3
A = 4.0	B = 3.0	C = 2.0	D = 1.0
A- = 3.7	B- = 2.7	C- = 1.7	D- = 0.7

Persons whose degrees have been conferred before the 2013 Fall Term will not have their GPA converted to the new system unless they return to pursue a new degree. Students who have withdrawn and are returning to their program, or to a new program, will have their GPA calculated under the new system when they are admitted, readmitted, or reinstated.

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.

For more information, refer to the individual unit section in this *Catalog*.

## Repeating Courses

Courses in which a grade of *C+*, *C* or *C-* has been received may be repeated by students in the graduate programs. Grades and honor points for the original course and the repeated course will both appear on the student's transcript and be used in computing the student's grade point average; however, additional credit toward program will not be awarded for the repeated course. Courses in which grades of *B-* or above have

been received may not be repeated by students enrolled in the graduate programs.

## 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-Dearborn 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, a student may initiate a request for a review only through the petition process involving the student's School or College Academic Standards Committee (or comparable group), whose decision shall be final. 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*. For programs offered through the Rackham School of Graduate Studies, grade change petitions are subject to approval by the chair of the Dearborn Graduate Board, who also serves on the Rackham Executive Board.

## Incomplete Coursework

Please refer to the individual unit sections in this *Catalog* for specific unit incomplete coursework policies.

A student whose coursework for the term (other than final examination) is incomplete in a minor way may, upon completion and approval of the I Contract Form, be granted the privilege of completing the work. 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. 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* will remain on the transcript even after the official final grade is assigned.

## Absence from Final Examination

A student who is unavoidably absent from a final examination may, upon timely completion and approval, 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 mark 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.

## Course Extends Beyond Term

A mark of *Y* indicates that a course extends beyond the end of one term. This mark is only used 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.

## Proficiency Examination

UM-Dearborn will acknowledge proficiencies gained by students outside the bounds of traditional courses if such proficiency is certified by recognized examinations. The College of Business provides an opportunity for its graduate students to demonstrate proficiency by examination. For information and instructions, contact the College of Business, 19000 Hubbard Drive, Fairlane Center South, Dearborn, MI 48126-2638, telephone (313) 593-5460.

## Enrollment Certification

The following scale is used when verifying graduate enrollment status at UM-Dearborn:

Full-Time Student	8 or more hours
Three-Quarter Time	6 to 7 hours
Half-Time Student	4 to 5 hours
Part-Time Student	3 or fewer hours

## 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, 1210 LSA Building, 500 S. State St., Ann Arbor, MI 48109-1382, phone (734) 764-1400 or at the Enrollment Services Counter, University of Michigan-Dearborn, 1169 University Center, 4901 Evergreen Rd., Dearborn, MI 48128-2406, phone (313) 583-6500. Business hours are 8 am-5 pm weekdays. Applications can also be downloaded from <http://ro.umich.edu/residency-application.pdf>. 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 section B-2):** 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.

### The University of Michigan's Authority to Establish Residency Guidelines for Its Students

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.

## A. General Residency 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 all other applicable Guidelines are met:

- both parents/parents-in-law (in the case of divorce, one parent/parent-in-law) permanently domiciled in Michigan as demonstrated by permanent employment in the state, establishment of a primary household in Michigan, and severance of out-of-state ties. Applicant must also show 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. Individuals whose presence in Michigan and claim to Michigan resident status are based solely on one or more of the following are not eligible for resident classification:

- 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 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 or voter's registration.
- possession of a Permanent Resident Alien visa.
- continuous physical presence for one year or more.
- statement of intent to be domiciled in Michigan.

## B. Additional Requirements, Definitions, and 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, L, 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 and 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 provided: (1) you are coming to the University of Michigan directly from high school or have been continuously enrolled in college since graduating from high school, and (2) you have not claimed residency for tuition purposes elsewhere.

**b. Absence Due to Temporary Foreign Assignment**

If you are a dependent student domiciled in Michigan with your parents immediately preceding an absence for a temporary foreign assignment with a parent's Michigan employer, you may retain your eligibility for resident classification provided (1) your family members hold temporary visas in the foreign country, and (2) you return directly to Michigan and remain in the state for educational purposes after leaving the foreign country.

**c. Temporary Absence of Less Than One Year**

If you are independently domiciled in Michigan immediately preceding a temporary absence of less than one year, you are presumed to retain eligibility for resident classification provided that out-of-state ties are severed upon your return to Michigan.

**C. 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 members 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 have already 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.

**D. Special Waiver of Out-of-State Tuition for Regular Active Duty Military Personnel Living or Stationed in Michigan**

Regular active duty military personnel who are living or stationed 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 waiver is available to persons in the U.S. Army, Navy, Air Force, Marines and Coast Guard, and to officers in the Public Health Service.

When the military person upon whom the waiver is based leaves the state, a child or spouse who remains in Michigan enrolled full-time in high school or an institution of higher learning will continue to be eligible to receive the waiver. Children must have completed at least the junior year of high school prior to the military person's departure. In order to request this waiver, the student must submit a residency application by the applicable filing deadline and provide documentation demonstrating eligibility.

**Warning: Misrepresentation or Falsification of Information Can be Costly**

Individuals who provide false or misleading information or omit relevant information in an application for admission or for resident classification, or any other document related to residency eligibility may be subject to legal or disciplinary measures. Students who are improperly classified as residents based on such information will have their residency classification changed and may be retroactively charged nonresident tuition for the period of time they were improperly classified.

## Cost of Attendance

Each year, the Office of Financial Aid (OFA) provides an estimated cost of attending UM-Dearborn 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.

Tuition and fees are subject to change without notice by action of the Board of Regents. For current tuition and fees, individuals should consult [www.umd.umich.edu/rr\\_tuition-fees/](http://www.umd.umich.edu/rr_tuition-fees/).

## Tuition Assessments and Fee Regulation

Students should obtain current tuition and fee information from the [Tuition & Fees webpage, http://www.umd.umich.edu/rr\\_tuition-fees/](http://www.umd.umich.edu/rr_tuition-fees/).

Tuition and fees are subject to the approval by the Regents of the University and are subject to change at any time.

## Policies Governing Student Tuition and Fees

The Board of Regents shall determine the level of tuition and fees and a schedule of such shall be published. All other student tuition and fees shall be fixed by the Campus Fee Committee.

## Payment of Tuition and Fees

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

Payment for tuition and fees may be made in full at the

Cashier's Office after registration. The laboratory and/or course fees are refundable if the course is dropped 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. The procedure for obtaining a refund is described in the section "Change of Fees and Refunds."

### Additional Assessments

Course levels 500 and above in the College of Engineering and Computer Science and College of Business are assessed an additional amount per credit hour. For current fees, students should consult the Tuition & Fees webpage.

### Technology Assessment

Students are assessed a fee for technology. This fee varies by academic unit. For current fees, students should consult the Tuition & Fees webpage, [http://www.umd.umich.edu/rr\\_tuition-fees/](http://www.umd.umich.edu/rr_tuition-fees/).

## Application Fees

A non-refundable application fee will be required of each applicant for a degree or certificate program at UM-Dearborn.

## Course Level Assessment

Undergraduate students electing Graduate course(s) will be assessed at the Graduate Tuition rate for the graduate course(s). Graduate courses are numbered 500 and above. (Effective Winter 2007)

Graduate students electing Undergraduate course(s) will be assessed at the Undergraduate Tuition rate for Undergraduate course(s). Undergraduate courses are numbered 499 and below. (Effective Fall 2006)

Please note: This tuition assessment is dependent on various factors and a change in tuition may not occur for some 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-Dearborn graduate program may, with both undergraduate and graduate advisors' approval, register simultaneously in a UM-Dearborn 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-Dearborn and at another campus of the University, by means of a Guest Admission, will pay the appropriate tuition and fees at each campus. The only exception is that the student will not be assessed tuition and fees totaling more than a full program tuition and fees at whichever campus may have the higher full program tuition and fees.

## 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 (e.g., "Lab fee \$25.00").

## Late Registration Assessment

A late registration fee of up to \$45 will be assessed for anyone registering later than two weeks after the first day of classes for a full term and one week after the first day of classes for a half term. It should be noted that students are not ordinarily permitted to register after the first two weeks of a full term and the first week of a half term.

In exceptional cases, however, 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 (PDS/PE) must have the approval of both the Program for Academic Support and the Registrar, as well as the approval of any instructors involved.

## Fees Included Within Tuition

The tuition and fees assessed by the University 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.

## Graduate Credit by Examination (CBE)

Fees for CBE are as follows:

Credit Hours per Examination\* Fee per Exam

1-3 hour credit exam(s) \$263

4-5 hour credit exam(s) \$293

6 or more hour credit exam(s) \$324

\*Subject to Change.

The examination fee, minus a \$20.00 administrative charge, will be refunded to the student who registers but does not take the examination. For information, contact your unit office.

## Exemption From Payment Of Fees

No exemption from the payment of fees shall be granted. Failure to fulfill financial obligations to the University may result in disciplinary action, including the withholding of degrees and transcripts.

## Tuition Refund Insurance Plan

The Tuition Refund Insurance Plan is an elective insurance which provides coverage for tuition and fees. If a student withdraws due to illness/injury or psychological/emotional reasons, the Tuition Refund Insurance Plan returns 85% of the insured term tuition and fees when specific insurance company criteria has been met.

For Tuition Refund Insurance Plan information or to enroll online, please refer to the Tuition Refund Insurance Plan website: [www.umd.umich.edu/rr\\_tuition-fees-refund-plan](http://www.umd.umich.edu/rr_tuition-fees-refund-plan).

## 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 Enrollment Services/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.

## Change of Fees and Refunds

When appropriate, a change of fees will be processed by the Office of Enrollment Services/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 are generated automatically. After authentication and processing, the refund is mailed to the address listed on the student account.

## Adding

A student who increases the number of hours elected will have a new fee assessment prepared by the Enrollment Services/Registration & 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 Enrollment Services/Registration & 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 (first week of a half or mini term) 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 UM-Dearborn is assessed as follows:

- 1) Students who withdraw prior to the first day of classes will not have any assessments or fees. 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 not have any assessment or fees.
- 2) Students who withdraw during the second and third week in a half term or mini-term, or in the third through sixth week of a full term, will be charged 50% of the tuition assessed, as well as the non-refundable registration assessment. In addition, there is no reduction in lab/course fees or technology assessment.
- 3) Students withdrawing after the time periods indicated in Paragraph "2" 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 not assessed any tuition or fees.
- 2) Students who withdraw from a less than one-month mini course on the first day of class will not be assessed any tuition or fees.
- 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 assessment. In addition, there will be no reduction in lab/course fees or technology assessment.
- 4) After the second class meeting of such a course, the student shall pay all fees and assessments.

## Transcripts

A transcript is a student's complete academic record at UM-Dearborn. 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 Enrollment Services/Registration and Records. UM-Dearborn transcripts will be released only upon written request of the student.

### Final Transcript

Once the degree has been posted on the transcripts, the transcript is final and the record is closed. No changes can be made to 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, COB, or CEHHS).

### Requests For Transcripts

Requests for copies of UM-Dearborn transcripts should be made online via UM-Dearborn Connect or at Enrollment Services/Registration and Records, 1169 UC, Dearborn, MI 48128-2406. 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, Enrollment Services/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-Dearborn 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 a student has any financial obligation outstanding to the University.

### Graduation/Application for Diploma

Each candidate for a degree must file a Degree/Diploma Application with Enrollment Services/Registration and Records, typically within ten days of the beginning date of classes for the term in which the student expects to complete the requirements for degree. Please consult the Applying to Graduate Webpage, [www.umd.umich.edu/rr\\_apply-graduate](http://www.umd.umich.edu/rr_apply-graduate), 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.

## Veterans Affairs

The Office of Enrollment Services/Registration and Records is primarily responsible for the administration of veteran's education benefits programs and enrollment certifications. Our goal is to effectively assist veterans, or the dependents of veterans, with the certification process. Students who are eligible for VA educational benefits are able to apply their respective benefits for their educational endeavors at UM-Dearborn with assistance from this office.

All students who are eligible for, and elect to receive, education and training benefits while attending UM-Dearborn, may address inquiries for information to the Office of Veteran Affairs, Enrollment Services/Registration and Records, 4901 Evergreen Road, 1169 UC, Dearborn, MI 48128-2406, (313) 583-6500. Additional information regarding certification, and the policies and procedures for certification of benefits can be found on our website at: [umd.umich.edu/rr\\_va](http://umd.umich.edu/rr_va). Questions regarding the eligibility of a veteran or dependent can be answered by calling the St. Louis Regional Office at 1-888-GIBILL1 (442-4551) or connecting to the Department of Veteran Affairs website at: [gibill.va.gov/](http://gibill.va.gov/).



## Academic Standing

(College of Business and non-Rackham program (see page 8) students should refer to the individual unit section in this Catalog.)

To maintain satisfactory academic standing, a student must have a minimum cumulative graduate grade point average (GPA) of *B* (5.0) for all graduate courses taken for credit and applied toward the degree program in which the student is enrolled.

A student whose cumulative grade point average falls below a *B* (5.0) in a given term or half term will be placed on probation for the following term or half term, or may be denied permission to re-register. A student whose cumulative grade point average falls below a *B* average for two successive terms or half terms may, upon the recommendation of his or her graduate chair and the consent of the Graduate School, be granted a final opportunity to correct the scholastic and/or academic deficiency. A student whose cumulative grade point average falls below a *B* average for three successive terms or half terms may not be permitted to enroll again, and may be required to withdraw from the University.

In addition to the minimum cumulative standards, degree programs may require that students achieve certain minimum grades in the overall program of study and/or in particular courses. A student who is not making satisfactory progress in his or her program, or who has failed to demonstrate an ability to succeed in his or her plan of studies, may be required to withdraw from the University.

A student whose cumulative grade point average is below a *B* (5.0) cannot be recommended for a degree or certificate, and may be limited in the transfer of credit hours.

## Modification of the Conditions of Academic Standing or Discipline

University actions, in response to a student's academic deficiencies, that result in 1) admitting a student on probationary status, 2) placing a continuing student on probation, 3) requiring a student to withdraw from the University, or 4) not recommending a student for a degree or certificate are "conditions of academic standing or discipline" and affect the student's academic status. Under certain special circumstances the actions described above may be waived, by petition, to modify the conditions of academic standing or discipline as follows:

A student on probation when last enrolled in a Rackham program who wishes to be reinstated or change fields or degree level, must petition the graduate program and the Graduate School to modify the conditions of academic standing or discipline. The petition should: provide reasons for the poor academic record; explain how conditions that produced this poor performance have changed; and present specific plans for improvement. The graduate program must approve the petition before a student can be reinstated.

For additional information, refer to the individual unit section in this *Catalog*.

## Satisfactory Academic Progress

The UM-Dearborn's satisfactory academic progress policy establishes standards of progress toward a degree. Recipients of Title IV funds must achieve and maintain these standards of progress in order to continue to receive funding from the Office of Financial Aid. 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 programs supported by the UM-Dearborn's General Fund and awarded through the Office of Financial Aid.

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 (GPA). Federal law specifies that students must, in general, have a *B* (5.0) graduate cumulative average or its equivalent or have an academic standing consistent with the requirements for graduation in their program of study. The UM-Dearborn generally requires a minimum of 5.0 graduate cumulative GPA for graduation (however, since the minimum GPA requirement varies from program to program, please consult the academic unit advisers for program-specific requirements).

Grade point average alone is not a sufficient measure of progress. To accurately measure a student's progress in a program of study, standards of academic progress must use a quantitative measure as well as a qualitative measure. To quantify academic progress, education institution must set a maximum timeframe in which a student is expected to finish the program. To insure quantitative progress at the University, students are expected to complete a minimum of 67% of all attempted courses annually. Students fulfilling this minimum rate of course completion, and following departmental recommendations on course selection, will complete their degree within the maximum timeframe allowed.

Students at UM-Dearborn are *not* required to attend full time in order to achieve satisfactory academic progress or receive financial aid (however, a student must be enrolled at least half time, a minimum of four credit hours for graduate students, to qualify for financial aid disbursements). Academic records are reviewed at least annually to assess academic progress and may include terms when financial aid was not received. Students who are terminated from receiving financial aid may appeal the decision to the Director of Financial Aid. For additional information, please request a copy of the brochure *Standards of Satisfactory Academic Progress* from the Office of Financial Aid.

## Maintaining Good Standing

All academic units are expected to review the student's academic progress at the end of each term. If a student does not meet the unit's written standards, the student will not be allowed to register. However, the strict use of a 5.0 grade point average (GPA) as the sole criterion may not be appropriate in all

situations, since certain cases may require that other criteria be used.

## Registration Information

### Academic Advising

Academic advising should be sought from the student's 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 Enrollment Services/Registration and Records Website ([http://www.umd.umich.edu/rr\\_reg-timetable](http://www.umd.umich.edu/rr_reg-timetable)).

### Closed Courses

Closed course information will be posted at the Enrollment Services Counter (1169 UC) and on Enrollment Services/Registration and Records Website ([www.umd.umich.edu/registration](http://www.umd.umich.edu/registration)).

### 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 Accounts 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 via UM-Dearborn Connect. 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

UM-Dearborn 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 UM-Dearborn Connect.

## Reporting of Grades

Enrollment Services/Registration and Records reports term grades to students via UM-Dearborn Connect 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").

## CAMPUS SERVICES

### Athletics and Recreation

Athletics and Recreation offers instruction, participation, and three levels of competition in a variety of sports. Participants can learn new skills or improve current levels of skill. Classes in Zumba, weight training, fitness/conditioning and weight reduction are designed to enhance physical fitness.

Open recreation time is scheduled in the Fieldhouse and Ice Arena for students, faculty and staff. The schedule is posted weekly and information can be obtained by calling the Athletics Department.

UM-Dearborn athletes participate in men's and women's basketball, women's volleyball, and softball and are affiliated with the National Association of Intercollegiate Athletics (NAIA) and the Wolverine-Hoosier Athletics Conference. Admission to games is free with a student ID card.

The recreational sports program provides opportunities to compete in club sports and intramural leagues and to participate in a variety of special events, "pick-up" games, seminars, and other related activities. The club sport program sponsors teams in lacrosse, rugby, soccer, cross-country running, bowling, and ice hockey that compete against other college/university. Intramural competition includes flag football, volleyball, broomball, wallyball, basketball and ice hockey.

The athletics complex is located at the south end of the campus. The gymnasium floor can accommodate eight volleyball or three basketball games. The ice arena has a seating capacity of 1,250 and is the home for the club and intramural teams, recreational skating, drop-in hockey and physical education classes.

Other facilities in the Fieldhouse/Arena include a Wellness Center equipped with free weights, numerous weight-training stations, stationary bicycles, rowing machines, treadmills, and a dance studio. The building also houses a conference room, administrative offices, concession stand and locker rooms. Hours of operation, schedule of activities, team tryouts and other information can be obtained by calling (313) 593-3534, going to the Fieldhouse/Ice Arena, or on the web at [www.gowolves.net](http://www.gowolves.net).

Internships or other student work experiences are available in sports information, exercise leadership, athletic training, coaching, officiating, marketing, communication, team manager/statistician and administration.

## Football Ticket Distribution Policy

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-Dearborn students are handled by the Ticket Office on the Ann Arbor campus.

A student ticket information flyer outlining procedures to purchase tickets is mailed in March to students enrolled during Winter term. The deadline for purchase is mid-April. For more information, contact the ticket office at (734) 764-0247.

## Bookstore

Located in the University Center, the Barnes & Noble Bookstore has a complete line of textbooks, trade books, and periodicals. The store also has a complete line of supplies, UM and UM-Dearborn souvenirs and sportswear. American Express, Discover, MasterCard and VISA are accepted. Normal bookstore hours: 8:00 am to 6:30 pm (Monday-Thursday); 8:00 am to 3:00 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.umd.bncollege.com>.

## Career Services

Career Services provides a range of services to assist undergraduates, graduate students, graduating seniors, and alumni in their career development and job search. 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, online career resources, an online job club through Linked In, Career Planning classes (Exps.102) and employer connections. *FOCUS*, an online career planning system, is available for self-assessment and career exploration, at no cost.

Annually a Fall Career Fair and a Spring Career Fair are held on campus, linking employers with our students and graduates. Other career fairs or recruiting opportunities, in which UM-Dearborn participates, are also promoted. Campus recruiting programs provide opportunities for graduating students and recent alumni to connect with recruiters. Students and alumni can create on-line resumes and employers recruit by posting job listings, requesting resumes, and through campus interviews. Career counselors are available to provide advice on job search techniques, resumes, and interviewing.

Career Services is a great place for career exploration, professional development and job search. Alumni 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](http://www.umd.umich.edu/careerservices).

## Counseling and Disability Services

The mission of Counseling and Disability Services is to resolve barriers to the learning process and serve as a vital link in the UM-Dearborn "safety net." Counseling and Disability Services advance the academic mission of the University by enhancing personal development, problem solving, and communication. Our office is located at 2157 University Center.

### Personal Counseling

We provide short-term therapy (up to 12 sessions per academic year) to all registered UM-Dearborn students. 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&D 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 our office at (313) 593-5430 or email: [counseling@umd.umich.edu](mailto:counseling@umd.umich.edu).

### Training/Internship Program

Currently, our training/Internship program (clinical or counseling psychology and community counseling) is only available to graduate students. Please contact our training coordinator, Dr. Sarah Pouliot, for more information.

## Disability Services

Disability Services 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. Staff will train students to use the Adaptive Equipment Lab in the Mardigian Library. Please contact (313) 593-5430 if you have any questions.

## Student Health Insurance

A student group health insurance policy is available to any enrolled student. Information and application forms are available at 2157 UC. 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.

## Referral Service

A low-cost referral service can be provided for faculty, staff and students at The Henry Ford Medical Center – Fairlane only, located at 19401 Hubbard Drive, Dearborn, Michigan. You must contact Counseling & Disability Services located in The University Center, Room 2157, or telephone (313) 593-5430 prior to any medical services for authorization.

## Housing Referral Services

A Housing Referral Service, located at 2174 UC, is available to all students in search of an apartment, house, room or roommate. Interested individuals should complete an application, available in the Office of International Affairs. If you are in search of a roommate, the information on your application will be shared with other individuals seeking a roommate. The Housing Coordinator can provide you with an Apartment Shoppers Guide. A Practical Guide to Landlord/Tenant Rights and Responsibilities, housing referral applications, rental listings, inventory/damage checklist, city maps, bus schedules, and property insurance applications. For further information, please call (313) 583-6610.

## Food Service

### McKinley Café

The University Center features a variety of fast food services including: Bene Pizzeria (pasta & pizza), Express (pre-made sandwiches, sushi and salads) Grille Works (burgers, fries and hot sandwiches) Starbucks (hot beverages) and Subway.

### Extreme Pita

Fairlane Center South houses Extreme Pita offering fresh, made to order pitas and flat pita crust pizzas.

Current information on food services and hours can be obtained by consulting

<http://www.umd.umich.edu/universitycenter/>.

## Refreshments

Beverage and snack vending machines are located throughout campus for convenience to the campus community.

## Housing

Effective Fall 2013, UM-Dearborn students are able to live and learn at The Union at Dearborn, a private property run by Urban Campus Communities (UCC). The 231,000 square foot apartment complex is located directly across Evergreen Road from our main campus. The Union at Dearborn is available exclusively for incoming and current UM-Dearborn students.

Additional information about The Union at Dearborn can be found at <http://www.umd.umich.edu/housing>.

## Information Technology Services

General Purpose Labs: 1140 CW (313) 593-5073 and 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 supports the computing needs of faculty, staff, and students. The department has responsibility for: 1) the campus network including Internet access; 2) the Banner student information system; 3) computer access accounts and passwords; 4) Help Desk support; and 5) computer labs in the CW and Library.

## Facilities

The primary academic 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 150 PC's running Windows XP that are available for use by any UM-Dearborn student. 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 Internet browsers, communications, databases, word processing, spreadsheets, statistical and graphical packages, and artificial intelligence. Specialized software is available, including Visual Studio, SPSS, SAS, Minitab, and Mathematica. The lab also provides instructional software required by faculty for some classes.

In addition, a licensing agreement with Microsoft provides students with excellent discounts on some of their products. Purchases can be made during business hours, Monday - Friday in the Computing Wing. Packages include Windows and Office. Mathematica can

also be purchased. UM-Dearborn students are also eligible to make purchases from the Computer Showcase, <http://showcase.itcs.umich.edu/>. The Computer Showcase sells computers, software, iPods, iPads, printers, accessories and other items at not-for-profit academic prices.

### 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 computer access logins. These include Uniqnames, passwords, lab access, and access to your home directory. The Accounts Office can also provide information on the Google suite (includes mail, Calendar, Docs, and Drive). ITS administers the primary campus web server and provides space to students for personal web pages.

In partnership with Box.com, University of Michigan is offering a great new service that provides active students with 50Gig of storage space in the cloud. It provides an easy and safe way to store and share files and collaborate with others inside and outside UM. It includes features such as content and task management, online workspaces for collaboration, user and group permissions, and a built-in editor. Your files on M+Box can be accessed remotely from anywhere using a variety of devices such as desktop, laptop, tablet, and smart phone. It uses the standard University kerberos login system so there is no need for a new user ID or password. It also offers a variety of applications that help you sync your files on different platforms, and integrate automatically with Microsoft Office and Google apps.

### Assistance and Services

The ITS Help Desk is the primary point of contact for support. Please call or email the Help Desk when assistance, service, documentation and information regarding the campus network, hardware and services are needed. 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 can be immediately reported to the Lab Counselor on duty.

### 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 am until 4:45 pm on Saturday; and 12:00 noon until 8:45 pm on Sunday. ML Lab hours are 10:00 am until 10:30 pm, Monday through Thursday; 10:00 am to 5:45 pm on Friday; 12:00 noon until 5:45 pm on Saturday; and 1:00 pm until 9:45 pm on Sunday.

## Institutional Equity Officer

The Institutional Equity Officer (IEO) 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, veterans, and gay, lesbian

and transgender individuals. The IEO oversees compliance with Regental by-laws, Presidential policy and legislation regarding nondiscrimination, equal opportunity, and /affirmative action and provides information and pre-grievance counseling to faculty, staff, and students with questions or complaints. The office of the IEO is located in 1020 Administration Building, telephone (313) 593-5190.

## Mardigian Library

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. The library provides access (<http://library.umd.umich.edu>) to a multitude of research resources, including over 20,000 online journals, over 500 online research databases, and thousands of online books. The four-story Mardigian Library houses a 365,000-volume collection and offers space for 1,200 students. Twenty-two public workstations on the main floor provide access to all online resources, most of which are also accessible from off campus.

Two floors are available for silent study and one floor is for group study. Facilities housed in the Mardigian Library include a coffee shop, computer lab, and distance learning classroom on the first floor, the Alfred Berkowitz Gallery, the Voice-Vision Holocaust Survival Oral History Archive, the Archives of the University of Michigan-Dearborn, and the Integrated Learning and Community Partnership Office (ILCPO).

Students may borrow materials from the library's collection. Items not owned by the library may be requested from other libraries through the Interlibrary Loan Department or from MeLCat, a statewide resource-sharing service of over 400 public and academic libraries. Currently enrolled UM-Dearborn students are eligible to borrow materials directly from most of the libraries in the UM-Ann Arbor University Library system. Additional information regarding this service may be obtained from University Library Circulation Services at the Harlan Hatcher Graduate Library. Call (734) 764-0401.

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 per week of regular drop-in research assistance. Other research assistance includes by phone, "Ask-A-Question" (e-mail service), Instant Messaging (IM), text messaging, 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 offered as well.

Guides to the use of the library and its resources are available on the library's website. As of January, 2013 the library is open 95 hours per week during the Fall and Winter terms, with extended hours during final exams and study days. Library hours of operation can be found on the website.

### Media Services



Campus Media Services (CMS) supports instruction and research by providing facilities and expertise in multimedia. These services include studio and remote video production, video streaming, video editing, audio production, Blue Stream conversion, and equipment repair. Most multimedia support for courses is provided without cost to faculty or the academic unit. CMS provides media production facilities and services for student projects. Production services that support course assignments are provided without charge to students. Production support for work that is not related to instruction may be provided for a fee. Costs vary depending on the nature of the production. All service requests should be made 24 hours in advance. Major productions require production proposals. CMS also supports a room with teleconferencing capability. Please call 313-593-5150 for more details.

## Office of International Affairs

Office of International Affairs

4901 Evergreen Road

2174 University Center

Dearborn MI 48128

Telephone: (313) 583-6600

Fax: (313) 583-6725

Email: [international@umd.umich.edu](mailto:international@umd.umich.edu)

Web-address: <http://www.umd.umich.edu/internationaloffice/>

### OIA Mission

UM-Dearborn is embedded in a diverse community located in the Detroit metropolitan region. The university's students, faculty and staff are as diverse as the community in which it resides. The mission of the Office of International Affairs (OIA) is to provide support, resources and experiential learning opportunities to students and scholars that will impact the metropolitan region and the global community.

### OIA Services

The Office of International Affairs welcomes and has the commitment to provide support services to international and domestic students, faculty and visiting scholars at the University of Michigan-Dearborn. Our campus community is dedicated to providing quality services addressing the following:

- Processing DS-2019 and/or I-20
- Admission Process
- Student Success Assistance
- Faculty Exchange
- Employment
- Community Engagement
- English Language Program
- Overseas Traveling
- Health Insurance – domestic and international
- Housing Referrals
- Homeland Security Compliance Advising
- Cross-cultural programs and workshops
- Emergency Assistance

Potential students are afforded assistance to ensure a seamless admissions process. Assistance begins once prospective

students express an interest in the university and continues throughout their academic tenure. The OIA provides information to international students and scholars about maintaining F-1 and J-1 status. They are encouraged to explore and integrate within the local and metropolitan communities while being challenged with the rigor of the university's academic process. The Student Success Center offers diverse academic, personal and professional support through blended services that are designed to complement and support the educational track.

As we prepare our students to achieve the "Degree That Makes the Difference," we encourage and support our students to participate in study abroad, global civic engagement projects and international internships. These opportunities help provide practical applications to what our students are learning within their academic programs. UM-Dearborn offers faculty led study abroad opportunities and assistance to students that participate in non-UM-Dearborn programs.

OIA works with the academic units to explore and support faculty exchange opportunities. Currently, the University of Michigan-Dearborn works with colleges and universities in over 10 countries where faculty, students and resources are shared and rich friendships are discovered. The University of Michigan-Dearborn welcomes worldwide intellectual dialogue and exchanges that provide our students with a diverse global perspective and that challenges and prepares them for the Twenty-First Century and beyond.

## Ombuds Services

Ombuds Services provides students 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-Dearborn's commitment to ensure that students are treated with fundamental fairness and personal dignity.

Ombuds Services is located in 2106 University Center, telephone (313) 593-5440, e-mail [ombuds-office@umd.umich.edu](mailto:ombuds-office@umd.umich.edu).

## Parking and 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 (DDOT).

Direct service is available for most Detroit and western Wayne County residents, with transfer service available for Oakland and Macomb County commuters. Additional information may be obtained by telephoning SMART at (313) 962-5515.



UM-Dearborn provides a shuttle service between the main campus and Fairlane Center for students, staff and faculty. A valid ID card is required to board the shuttle. The shuttle will pick up and drop off passengers at the University Center turnaround, the Fairlane Center South turnaround and the Administration Building turnaround. For times of operation consult the Parking website: <http://www.umd.umich.edu/parking/>.

Parking of all motor vehicles at UM-Dearborn 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. Student permits are available at the Parking Office (in the Campus Support Services Building) and online by emailing your name, address and UMID number to [parking@umd.umich.edu](mailto:parking@umd.umich.edu) to have a parking sticker mailed to you.

The Monteith Parking Structure provides parking for all visitors. For further information, refer to the UM-Dearborn Parking & Transportation Manual or contact the Parking Office by telephone at (313) 593-5480.

### **Parking Enforcement**

Parking enforcement, including issuance of tickets, is primarily handled by the Parking Office. There is a \$70.00 fine for unauthorized parking in Faculty/Staff lots and in fire lanes, and a \$125.00 fine for unauthorized parking in handicap zones. All fines are paid to the 19th District Court in the City of Dearborn.

Although the Public Safety and Environmental Health Office provides 24-hour surveillance of all parking lots, UM-Dearborn cannot be held responsible for acts of theft or vandalism committed upon vehicles parked in campus lots or in the parking structure.

### **Public Safety**

The Department of Public Safety, located in the Campus Support Services building, provides 24-hour emergency, safety and security services. Services offered include: crime prevention, emergency assistance, health/safety/crime reporting, escort service, patrol of buildings, grounds and parking lots, administration of the lost & found program, and safety programs.

For immediate response to any campus emergency, DIAL 911 from a campus phone or (313) 593-5333 from a cell phone. There are 53 direct-dial emergency phones strategically placed around campus.

For emergency medical assistance, DIAL 911 from a campus phone or (313) 593-5333 from a cell phone. For minor injuries, transportation from campus to the Henry Ford Hospital-Fairlane may be provided.

**For additional information telephone (313) 593-9953 (department office), or (313) 593-5333 (dispatch center).**

### **Office for Student Engagement**

In support of the mission and goals of the University of Michigan-Dearborn and Enrollment Management and Student Life, the Office for Student Engagement works to:

- Foster an inclusive living and learning community through innovative programs and services designed to build global leaders and citizens
- Provide support and resources to assist students in their personal, professional and academic development
- Advance engagement through strategic collaborations with academic affairs, University and community partners

This mission is accomplished through a variety of programs and services that complement students' academic experience including student organizations, leadership programs, civic engagement opportunities, volunteer experiences, inclusion programming and much more!

The Office for Student Engagement is located in 2136 University Center, (313) 593-5390. They can also be reached at [student\\_engagement@umich.edu](mailto:student_engagement@umich.edu). For more information about Office for Student Engagement programs and services, please visit <http://sao.umd.umich.edu>.

### **Student Success Center**

The mission of the Student Success Center is to prepare and educate students to succeed. Students are encouraged to stop by the Student Success Center whenever they need help. The SSC can help students manage and succeed academically, personally, and professionally.

The Student Success Center offers counseling, training, workshops, and resources to help students achieve success today and tomorrow. Whether it's tutoring in math, learning to set goals, finding the right career path, or making good choices, our Student Success Center helps students gain the confidence needed to reach their full potential.

A large range of services in Academic Assistance, Career Planning, Counseling and Disability Services, Personal Development, Women's Services, International Services, and Veteran's Services are offered by the Student Success Center.

Overall services offered include:

- individual tutoring
- group study
- mentoring
- writing assistance
- supplemental instruction for classes
- study skills assessment & training
- exploring majors
- career planning
- career assessment
- interview training
- resume writing

- individual counseling
- procrastination assistance
- stress & time management
- test & math anxiety assistance
- disability services
- motivational interviewing
- goal setting
- self-advocacy
- work/life balance
- returning student support,
- personal safety
- English language assistance
- health insurance
- housing referrals
- homeland security compliance advising
- emergency assistance

Workshops/Seminars are also available in essay writing, test taking, note taking, overcoming math anxiety, goal setting, interviewing techniques, and how to study effectively. Students are referred to the College Writing Center, Math Learning Center, and Student Clubs & Organizations.

The Student Success Center (SSC) is a coalition of the following Enrollment Management & Student Life (EMSL) departments: Academic Assistance; Career Services; Counseling & Support Services, Office of International Affairs, and the Women's Resource Center.

The Student Success Center is located on the second Floor of the University Center. Telephone: 313-583-6776. Website: <http://www.umd.umich.edu/success>.

## Women's Resource Center

The Women's Resource Center (WRC), located in 2106 University Center, offers assistance with self-advocacy, work/life balance, returning student support, and personal safety through programming and individual appointments. The overall mission of the center is to increase the empowerment of all women by offering quality programs; providing personal, professional, and academic coaching; encouraging students to reach their academic and post-graduate goals; linking women to current campus and community resources; and partnering with academic units and other women's agencies to address gender and diversity issues.

In support of its mission the WRC provides quality programming and activities, extensive resources, a meeting place, volunteer opportunities and a commitment to collaborations. Visitors will find a variety of written materials for their use. A lending library offers books and magazines on issues of interest to women. A resource shelf offers pamphlets on diverse topics including scholarships, childcare, and domestic violence. An on-line resource guide contains community resources and referrals. The WRC's Impact Grant provides small, emergency grants for students. These one-time grants, typically between \$50 and \$150, are meant to address

serious unanticipated emergencies that could delay or halt the education of students. Grants may not be used for tuition.

For more information about these services and programs contact the Women's Resource Center at (313) 583-6445 or [WomensResourceCenter@umd.umich.edu](mailto:WomensResourceCenter@umd.umich.edu) or visit the WRC website at <http://www.umd.umich.edu/womenscenter/>.

## GENERAL POLICIES

### Alcohol at Campus Events (Policy on Serving)

Consumption of beverages containing alcohol is prohibited on the UM-Dearborn 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-Dearborn 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-Dearborn. 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

Under the "Drug Free Workplace Act of 1988" and the "Drug Free Schools and Communities Act Amendments of 1991" the

University is required to notify all employees and students of its specific alcohol and drug policy program.

The elements of the policy and program include consequences that may follow the use of alcohol and other drugs, and sanctions that may be applied both by the University and by external authorities. The law requires that individuals be notified of possible sources of assistance for problems that may arise as a result of use. The following material is provided to supplement the comprehensive policies that are being prepared in accordance with the Task Force report.

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.

Prevention strategies include efforts to change inappropriate community norms regarding alcohol and other drug use, to alter environmental factors that support inappropriate use, and to provide information and skills regarding sensible use.

### **Health Risks**

The use or abuse of alcohol and other drugs increase 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 disease, ulcers, and cancer of the liver, mouth, throat, and stomach; contracting diseases, such as AIDS, through the sharing of hypodermic needles; pregnancy problems including miscarriages, still births and learning disabilities; fetal alcohol syndrome (physical and mental birth defects); psychological or psychiatric problems; diminished behavior (hangovers, hallucinations, disorientation, slurred speech); unusual or inappropriate risk-taking which may result in physical or emotional injury, or death; violent behavior towards others, such as assaults and rape; accidents caused by operating machinery while impaired; impaired driving resulting in alcohol and drug-related arrest, traffic accidents, injuries, and fatalities; negative effects on academic or work performance; conflict with co-workers, classmates, family, friends, and others; conduct problems resulting in disciplinary actions, including loss of employment; and legal problems including imprisonment.

### **Counseling and Treatment Programs**

The University encourages individuals with alcohol or other drug-related problems to seek assistance.

Confidential, no-cost services are available to University of Michigan-Dearborn students, faculty and staff members at:

### **Counseling and Disability Services**

2157 University Center, 593-5430

This office can also provide additional information on local, state, and national resources for those seeking assistance.

### **University Sanctions**

Unlawful possession, use, manufacture, 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:

A 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) or from a specific 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 and staff); and/or

Other appropriate sanctions

Sanctions for violations by faculty and staff shall be imposed pursuant to the Code of Student Conduct or pursuant to other approved procedures. More detailed descriptions of sanctions related to these and other drug and alcohol offenses are available at the Human Resources office, 1050 AB, 593-5190; and at the Student Affairs office, 1060 AB, 593-5151.

### **External Sanctions**

Unlawful possession, use, manufacture, or distribution of alcohol or illicit drugs may also lead to a referral to the appropriate local, state, and/or federal authorities for prosecution for a misdemeanor or 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 in 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, 10-99 grams may result in sanctions up to and including 20 years imprisonment and fines of up to \$20 million. A first offense for trafficking in marijuana may lead to sanctions up to life imprisonment for an offense involving 1,000 kg or more or up to 5 years imprisonment for an offense involving less than 50 kg. 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 ranges from up to one-year imprisonment and up to \$100,000 in fines to three years imprisonment and \$250,000 in fines for repeat offenders. Under Michigan laws, 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 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 punished by up to 90 days in jail, a fine of not less than \$100 nor more than \$500, suspended license for not less than six months nor more than two years, and up to 45 days of community service. 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 punished by up to 90 days in jail and a \$100 fine.

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 with 48 hours.

### **Employee Reporting Requirement**

Under the Drug-Free Workplace Act of 1988, in addition to the other requirements 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 or 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 and 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.

## **Code of Conduct for Student Loans**

Although the University of Michigan-Dearborn's existing conflict of interest policies would already preclude the conduct prohibited by 34 C.F.R. § 668.14(b)(27),<sup>1</sup> for clarity, the University of Michigan-Dearborn hereby establishes, as an addendum to the University of Michigan-Dearborn's *Conflict of Interest and Conflicts of Commitment Staff Implementation*

*Guidelines and the Policy on Faculty Conflicts of Interest and Conflicts of Commitment*, this code of conduct in regards to private student loans.

The responsibility for the administration of this code of conduct and its enforcement resides with the UM-Dearborn Provost and UM-Dearborn Vice Chancellor for Enrollment Management and Student Life of the University of Michigan-Dearborn.

This code of conduct is applicable to all officers, employees and agents of the University of Michigan-Dearborn and any affiliated organizations with responsibilities (directly or indirectly) with respect to private student loans. UM-Dearborn officers, employees and agents subject to this policy are prohibited from doing any of the following, either on their own behalf or on behalf of the University:

- Participating in a revenue-sharing arrangement with any lender by which the lender pays a fee or provides other material benefits to UM-Dearborn or any officer, employee or agent subject to this policy in exchange for the UM-Dearborn's recommendation of that lender or its loan products;
- Soliciting or accepting gifts, including reimbursement of expenses or payment of expenses in a manner inconsistent with the requirements set forth in UM-Dearborn's COI/COC Policies as requiring possible conflicts disclosure, from any lender, guarantor, or servicer that provides private education loans to students, unless the item or payment in question meets the exceptions set forth in 34 C.F.R. § 601.21(c)(2)(iii);
- Accepting from any lender or affiliate any fee, payment, or other financial benefit as compensation for any consulting arrangement or other services contract with or on behalf of a lender of private education loans, except that UM-Dearborn officers, employees, or agents subject to this policy who do *not* work in the Office of Financial Aid may serve on a lender's board of directors, provided that they recuse themselves from any board decisions relating to private education loans at UM-Dearborn;
- Directing borrowers to particular lenders or delaying loan certifications;
- Requesting or accepting from any lender any offer of funds to be used for private education loans in exchange for UM-Dearborn's providing the lender with a specified number of, loan volume of, or preferred lender arrangement for, private education loans
- Requesting or accepting any lender's assistance with call center or Office of Financial Aid staffing, except that UM-Dearborn may request or accept from any lender (a) professional development training for financial aid administrators, educational counseling or other materials to provide to UM-Dearborn's student borrowers (provided that such materials indicate the lender's involvement in preparing or providing them), or (b) short-term, nonrecurring staffing assistance with financial aid-related functions during emergencies; and

- Receiving anything of value from any lender, other than reimbursement for reasonable expenses, in exchange for service on an advisory board, commission, or group established by a lender, guarantor, or group of lenders or guarantors.

Any employee who is offered any gift or monetary compensation from a lender should contact the Office of Financial Aid for clarification and guidance before responding favorably to that offer.

Should an employee subject to this policy inadvertently accept a gift or other type of monetary compensation from a lender, that employee must immediately notify the Department's Director or Dean. The amount received, the name of the employee or agent, a brief description of the activity and the dates of the activity for which the expenses were paid or provided must be reported to the Department's Director or Dean, who must then share that report with the UM-Dearborn Director of Financial Aid. The Director of Financial Aid is responsible for reporting this information annually to the Secretary of the Department of Education.

The UM-Dearborn Director of Financial Aid is responsible for providing annual notification of these requirements to all employees and agents with responsibilities (directly or indirectly) for administration of private education loans. This notification will be done via email in January of each year. In addition, this code of conduct will be published on the websites of UM-Dearborn's Office of Financial Aid, Human Resources, Enrollment Management and Student Life, and the Provost's Office.

*1 This regulation requires all institutions that participate in the federal Title IV student loan programs to adopt a code of conduct that meets the requirements of 34 C.F.R. § 601.21. 2 Because the University of Michigan-Dearborn does not participate in the FFEL Program, the regulation cited applies to the University only as its terms relate to private education loans.*

Completed and Approved 7/1/10

## Electronic Communication (E-Mail) With Students

The UM-Dearborn uses your assigned UM-Dearborn email address for all university email communications. You are responsible for accessing your UM-Dearborn 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-Dearborn 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-Dearborn email account (including how to forward your UM-Dearborn email address), go to <http://www.its.umd.umich.edu/> and select Accounts.

This policy reflects UM-Dearborn'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-Dearborn 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-Dearborn 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.

## Institutional Equity

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, gender identity, gender expression, disability, or veteran status in employment, educational programs and activities, and admissions. Inquiries or complaints may be directed to the Senior Director for Institutional Equity and Title IX/Section 504 Coordinator, Office of Institutional Equity, 2072 Administrative Services Building, Arbor, Michigan 48109-1432, (734) 763-0235; TTY (734) 647-1388. University of Michigan-Dearborn inquiries may be addressed to the Dearborn Institutional Equity Officer, Office of Institutional Equity, 1020 Administration Building, Dearborn, Michigan 48128-2406, (313) 593-5320 or 593 -5190, TTY (313) 593-5430, fax (313) 593-3568.

The Office of Institutional Equity aims to ensure that all groups, including racial, ethnic and religious minorities, women, the disabled, senior citizens, gays, lesbians, transgender individuals and veterans all have equal opportunity and receive the support they need to be effective and successful as students, faculty or staff members. The office oversees the University's compliance with affirmative action/ nondiscrimination legislation, and University policies and procedures. The office is available to provide information and pre-grievance counseling to faculty, staff and students with discrimination or harassment complaints 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, disability, individual's sexual orientation, gender identity, gender expression or veteran status. Such a policy ensures that only relevant factors are considered and that equitable and consistent standards of conduct and performance are applied. The University 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.

Any University of Michigan - Dearborn employee having a complaint of discrimination should notify the Institutional Equity Officer, 1020 Administration Building, (313) 593-5320, TTY (313) 593-5430, fax (313) 593-3568. A student should notify either the Institutional Equity Officer or the Ombudsman in 2106 University Center, (313) 583-6445.

## Posting and Handbill Distribution

The posting of any information or advertisement and distribution of handbills (fliers) is governed not only by the below policy 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 for posting" and officially stamped with a removal date on the lower left hand 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 SAO in extenuating circumstances.
3. The indiscriminate distribution (littering) of handbills (fliers) on the UM-Dearborn campus is strictly prohibited. Offending parties may have their personal and/or organizational rights to distribute handbills (fliers) on campus revoked and/or may be re-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 polls, 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, thumb tacks and pushpins are the only acceptable methods of affixing posted materials to bulletin boards.
8. Individuals and organizations are limited to posting one (1) flyer 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 banner, not to exceed 4' x 8' with official approval, may be posted on the University Center posting area for a period not to exceed twenty-one (21) days and must be appropriately hung as not to result in an obstruction or a 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-Dearborn 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. The SAO retains the right to refuse the approval of material that is not in keeping with University policy or procedure.



13. Failure to adhere to the above 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 of 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 Protesters at Public Presentations of the University of Michigan-Dearborn

1. 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-Dearborn has no 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 an 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 broadcast 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 attach 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-Dearborn 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-Dearborn 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 of 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 student panel which hears complaints under the Interim Policy on Discrimination and Discriminatory Conduct by Students in the University Environment or 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.

## Smoke-Free Policy

Since September 1, 1992, smoking has not been permitted in campus buildings. The success of this policy depends upon the thoughtfulness, consideration, and cooperation of smokers and non-smokers. All faculty, staff, students and visitors share the responsibility for adhering to and enforcing the policy. For the full policy, see the Dearborn Administrative Guide, [umd.umich.edu/dag/](http://umd.umich.edu/dag/).

In our ongoing effort to create an environment that is healthy for all members of our community, the University of Michigan-Dearborn became a smoke-free university as of July 1, 2011.

This will help ensure a healthier environment for faculty, staff, students and visitors. For more information, visit [umd.umich.edu/smokefree/](http://umd.umich.edu/smokefree/).

## 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

## 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 web page at: [www.umich.edu/~vpgc/faq\\_student.html](http://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 Enrollment Services/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 & 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 & 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

Academic Support and Outreach Services	2136 UC
Admissions	1145 UC
Alumni Society	1040 AB
Athletics	205 FH
Career Services	2149 UC
College of Arts Sciences and Letters	1039 CB
College of Business	FCS
College of Education, Health and Human Services	FCS
College of Engineering and Computer Science	2070 EC
Counseling and Support Services	2157 UC
Enrollment Management and Student Life	1060 AB
Financial Aid	1183 UC
Honors Program	3018 CB
Human Resources	1020 AB
Library	1157 ML
Parking	CSS
Registration, Records and Student Certification	1169 UC
Safety and Security	CSS
Student Accounts	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 Enrollment Management and Student Life, 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-Dearborn Statement of Student Rights and Code of Student Conduct was written by students, faculty, and staff of the UM-Dearborn.

## 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.

### 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.

### **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 events.
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.

### **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 or 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.

# COLLEGE OF ARTS, SCIENCES, AND LETTERS



**THE UNIVERSITY OF MICHIGAN-DEARBORN**

# COLLEGE OF ARTS, SCIENCES, & LETTERS

## Administration

Martin Hershock, PhD, Dean  
 Ilir Miteza, PhD, Associate Dean  
 Jennifer Zhao, PhD, Associate Dean  
 Robin Wagner, MBA, Financial Manager  
 Marlene Pruitt, BA, Business Administrator  
 Deborah Parker, Assistant to the Dean  
 Susan Cushner, MA, Program Manager, Academic Outreach  
 Susan Gedert, AB, Alumni Coordinator and Communication  
 Editor  
 Elizabeth Fomin, MLS, Director, On-Line Learning  
 Carol Ligienza, BGS, Graduate Programs  
 Chalina Hillson, MA, Financial Specialist  
 Sharie Beard, Administrative Coordinator  
 Patricia D Jones, MPA, Director, Experiential Learning  
 Don Barbacci, AS, Technical Support Manager  
 Karen Wittkopp, MA, Director, Office of Advising and Student  
 Records  
 Ellen Judge Gonzalez, MA, Director, SOAR Program

## Chairs and Directors

Suzanne Bergeron, Director, Women's and Gender Studies  
 Gerald Moran, Director, Honors Program  
 Kevin Early, Director, Criminal Justice Program  
 Jonathan Smith, Chair, Department of Literature, Philosophy, and  
 the Arts  
 Georgina Hickey, Chair, Department of Social Sciences  
 Claude Jacobs, Director, Center for the Study of Religion and  
 Society  
 Michael A. Lachance, Chair, Department of Mathematics and  
 Statistics  
 Gabriella Eschrich, Chair, Department of Language, Culture, and  
 Communication  
 David Chatkoff, Director, MS in Psychology  
 Gerald Moran, Director, Cooperative Education  
 Donald Bord, Chair, Department of Natural Sciences  
 Bruce Pietrykowski, Director, Urban and Regional Studies  
 Gloria House, Director, African and African American Studies  
 Thomas Snabb, Director, MS in Applied and Computational  
 Mathematics  
 Ara Sanjian, Director, Center for Armenian Studies  
 Sonia Tiquia-Arashiro, Director, MS in Environmental Science  
 David Susko, Director, Environmental Interpretive Center  
 Paul Draus, Director, Master of Public Policy and Master of  
 Public Administration  
 Liz Rohan, Director, MA in Liberal Studies  
 Roger Verhey, Director, Center for Mathematics Education  
 William DeGenaro, Director, Campus Writing Center  
 Nancy Wrobel, Chair, Department of Behavioral Sciences

## Faculty (Full-Time)

### Department of Behavioral Sciences

Pamela Aronson, PhD, University of Minnesota, Associate  
 Professor of Sociology  
 Lars Bjorn, PhD, University of North Carolina, Professor of  
 Sociology  
 David Chatkoff, PhD, University of Southern Mississippi,  
 Associate Professor of Psychology  
 Arlen Clark-Foos, PhD, University of Georgia, Assistant  
 Professor of Psychology  
 Francine Dollins, PhD, University of Stirling, Assistant  
 Professor of Psychology  
 Paul Draus, PhD, Loyola University, Associate Professor of  
 Sociology  
 Janet Dunn, PhD, University Michigan, Assistant Professor of  
 Anthropology  
 Kevin Early, PhD, University of Florida, Associate Professor of  
 Sociology  
 Ivy Forsythe Brown, PhD, University of Maryland, Assistant  
 Professor of Sociology  
 James Gruber, PhD, University of North Carolina, Professor of  
 Sociology  
 Robert W. Hymes, PhD, Michigan State University, Associate  
 Professor of Psychology  
 Claude Jacobs, PhD, Tulane University, Associate Professor of  
 Behavioral Science  
 Lora Lempert, PhD, University of California at San Francisco,  
 Professor of Sociology  
 Michelle Leonard, PhD, Wayne State University, Assistant  
 Professor of Psychology  
 David Lilley, PhD, Michigan State University, Assistant  
 Professor of Sociology  
 Roger C. Loeb, PhD, Cornell University, Professor of  
 Psychology  
 Lisa Martin, PhD, University of Michigan, Assistant Professor of  
 Women's and Gender Studies and Health Policy Studies  
 Pamela McAuslan, PhD, Wayne State University, Associate  
 Professor of Psychology  
 Brian McKenna, PhD, Michigan State University, Associate  
 Professor of Anthropology  
 Megan Moore, PhD, University of Tennessee, Assistant  
 Professor of Anthropology  
 Nehal Patel, PhD, Northwestern University, Assistant Professor  
 of Sociology  
 Susana Pecina, PhD, University of Michigan, Associate  
 Professor of Psychology  
 Lawrence Radine, PhD, Washington University, Associate  
 Professor of Sociology  
 Muniba Saleem, PhD, Iowa State University, Assistant Professor  
 of Psychology  
 Nitya Sethuraman, PhD, University of California San Diego,  
 Assistant Professor of Psychology  
 Jane Sheldon, PhD, University of Michigan, Professor of  
 Psychology  
 Caleb Siefert, PhD, Adelphi University, Assistant Professor of  
 Psychology  
 Richard O. Straub, PhD, Columbia University, Professor of  
 Psychology  
 Dan J. Swift, PhD, University of New Hampshire, Associate  
 Professor of Psychology  
 Marie Waung, PhD, Ohio State University, Associate Professor  
 of Psychology  
 Nancy Wrobel, PhD, Wayne State University, Professor of  
 Psychology

## Department of Language, Culture, and Communication

Samara Anarbaeva, PhD, Bowling Green State University, Assistant Professor of Communication  
 Daniel D. Davis, PhD, Oxford University, Associate Professor of Linguistics  
 William DeGenaro, PhD, University of Arizona, Associate Professor of Composition and Rhetoric  
 Gabriella Eschrich, PhD, Wayne State University, Associate Professor of French  
 Jorge Gonzalez del Pozo, PhD, University of Kentucky, Assistant Professor of Spanish  
 Jerold L. Hale, PhD, Michigan State University, Professor of Communication  
 Farah Kawtharani, PhD, McGill University, Assistant Professor of Arabic  
 Timothy Kiska, PhD, Wayne State University, Associate Professor of Communications  
 Carolyn Kraus, PhD, University of Michigan, Professor of Communications and Director, Humanities Internship Program  
 Jamie Lee, PhD, University of Illinois, Associate Professor of Linguistics  
 Rashmi Luthra, PhD, University of Wisconsin-Madison, Professor of Communications  
 Francia Martinez Valencia, PhD, University of Alabama, Assistant Professor of Spanish  
 Troy Murphy, PhD, University of Pittsburgh, Associate Professor of Communications  
 Carlos Rodriguez-McGill, PhD, Ohio State University, Associate Professor of Spanish  
 Jennifer Proctor, PhD, MFA, University of Iowa, Assistant Professor of Journalism and Screen Studies  
 Elizabeth Rohan, PhD, University of Illinois at Urbana-Champaign, Associate Professor of Composition and Rhetoric  
 Stephane Spoiden, PhD, Ohio State University, Professor of French  
 Jacqueline Vansant, PhD, University of Texas-Austin, Professor of German  
 Margaret Willard-Traub, PhD, University of Michigan, Associate Professor of Composition and Rhetoric  
 Randal Woodland, PhD, University of North Carolina-Chapel Hill, Associate Professor of Composition and Rhetoric  
 Wayne Woodward, PhD, University of Illinois at Urbana-Champaign, Associate Professor of Communications

## Department of Literature, Philosophy, and the Arts

Imran Aijaz, PhD, University of Auckland, Assistant Professor of Philosophy  
 Elias Baumgarten, PhD, Northwestern University, Associate Professor of Philosophy  
 Nicole Bensoussan, PhD, Yale University, Assistant Professor of Art History  
 Erik Bond, PhD, New York University, Associate Professor of English Language and Literature

Scott Degregorio, PhD, University of Toronto, Associate Professor of English Language and Literature  
 Susan N. Erickson, PhD, University of Minnesota, Professor of Art History  
 Caitlin Finlayson, PhD, University of Toronto, Assistant Professor of English  
 Gloria House, PhD, University of Michigan, Professor of Humanities and African/African-American Studies  
 Paul Hughes, PhD, University of Illinois-Chicago, Professor of Philosophy  
 Michelle Jarenski, PhD, Loyola University, Assistant Professor of English  
 Maureen Linker, PhD, City University of New York, Associate Professor of Philosophy  
 William J. Linn, PhD, New York University, Associate Professor of English Language and Literature  
 Daniel Little, PhD, Harvard University, Professor of Philosophy  
 Diana Ng, PhD, University of Michigan, Assistant Professor of Art History  
 Sheryl S. Pearson, PhD, University of Michigan, Associate Professor of English Language and Literature, and Communications  
 Deborah Smith Pollard, PhD, Michigan State University, Professor of English Language and Literature  
 Nadja Rottner, PhD, Columbia University, Assistant Professor of Art History  
 Melita Schaum, PhD, University of Notre Dame, Professor of English Language and Literature  
 Jonathan Smith, PhD, Columbia University, Professor of English Language and Literature  
 Kathleen Wider, PhD, Wayne State University, Professor of Philosophy

## Department of Mathematics and Statistics

Mahesh Agarwal, PhD, University of Michigan, Assistant Professor of Mathematics  
 Nesrin Cengiz, PhD, Western Michigan University, Assistant Professor of Mathematics Education  
 John Clifford, PhD, Michigan State University, Associate Professor of Mathematics  
 John F. Fink, PhD, Western Michigan University, Professor of Mathematics  
 Thomas Fiore, PhD, University of Michigan, Assistant Professor of Mathematics  
 John A. Gillespie, PhD, Temple University, Professor of Mathematics and Statistics  
 Yulia Hristova, PhD, Texas A&M University, Assistant Professor of Mathematics and Statistics  
 Kelly Jabbusch, PhD, University of Washington, Assistant Professor of Mathematics and Statistics  
 David A. James, PhD, University of Wisconsin, Professor of Mathematics  
 Yangjin Kim, PhD, University of Minnesota, Assistant Professor of Mathematics  
 Angela Krebs, PhD, Michigan State University, Associate Professor of Mathematics Education and Mathematics  
 Michael A. Lachance, PhD, University of South Florida, Professor of Mathematics



Paul Lin, PhD, Wayne State University, Associate Professor of Mathematics and Statistics  
 Frank J. Massey, PhD, University of California-Berkeley, Associate Professor of Mathematics and Computer Science  
 Christopher Novak, PhD, Northwestern University, Assistant Professor of Mathematics  
 Tomoki Ohsawa, PhD, University of Michigan, Assistant Professor of Mathematics and Statistics  
 Margaret Rathouz, PhD, University of California-San Diego, Associate Professor of Mathematics Education  
 Joan Remski, PhD, Michigan State University, Associate Professor of Mathematics  
 Rheta N. Rubenstein, PhD, Wayne State University, Professor of Mathematics Education and Mathematics  
 Thomas E. Snabb, PhD, Wayne State University, Associate Professor of Mathematics and Statistics  
 Alan Wiggins, PhD, Texas A&M, Assistant Professor of Mathematics  
 Jennifer Zhao, PhD, Indiana University, Professor of Mathematics

## Department of Natural Sciences

Radwan Abu Issa, PhD, Baylor College of Medicine, Assistant Professor of Biology  
 Richard Adler, PhD, Pennsylvania State University, Associate Professor of Biology and Microbiology  
 Krisanau Bandyopadhyay, PhD, National Chemical Laboratory University of Dune (India), Associate Professor of Chemistry  
 Ali A. H. Bazzi, PhD, Wayne State University, Professor of Chemistry  
 Marilee Benore, PhD, University of Delaware, Professor of Biology and Biochemistry  
 Donald J. Bord, PhD, Dartmouth College, Professor of Physics  
 Melissa Bowlin, PhD, Princeton University, Assistant Professor of Biology  
 Ann Danielson-Francais, PhD, University of Arizona, Assistant Professor of Biology  
 Mark R. DeCamp, PhD, Princeton University, Associate Professor of Chemistry  
 Yiwei Deng, PhD, Swiss Federal Institute of Technology, Associate Professor of Chemistry  
 Craig J. Donahue, PhD, University of Massachusetts, Associate Professor of Chemistry  
 Orin G. Gelderloos, PhD, Northwestern University, Professor of Biology and Environmental Studies  
 Matthew Heinicke, PhD, Pennsylvania State University, Assistant Professor of Biology  
 Daniel Lawson, PhD, Michigan State University, Associate Professor of Chemistry  
 Nicholas Licata, PhD, University of Michigan, Assistant Professor of Physics  
 Simona Marincean, PhD, Michigan State University, Assistant Professor of Chemistry  
 M. Kazem Mostafapour, PhD, Wayne State University, Associate Professor of Chemistry and Biochemistry  
 Kent Murray, PhD, University of California-Davis, Professor of Geology  
 Vaman Naik, PhD, University of Michigan, Professor of Physics  
 Jacob Napieralski, PhD, Purdue University, Associate Professor of Geology  
 Peter Oelkers, PhD, Wake Forest University, Assistant Professor of Biology

Charlotte A. Otto, PhD, University of Illinois at Urbana-Champaign, Professor of Chemistry  
 Jeffrey J. Prentis, PhD, University of Michigan, Professor of Physics  
 John Riebesell, PhD, University of Chicago, Associate Professor of Biology  
 Emily Saarinen, PhD, University of Florida, Assistant Professor of Biology  
 Sheila R. Smith, PhD, University of North Carolina, Associate Professor of Chemistry  
 David Susko, PhD, University of Windsor, Associate Professor of Biology  
 John Thomas, PhD, University of Arizona, Professor of Biology  
 Sonia Tiquia-Arashiro, PhD, University of Hong Kong, Associate Professor of Biology  
 Michael Twiner, PhD, University of Western Ontario, Assistant Professor of Biology  
 JinWang, PhD, University of Queensland, Assistant Professor of Physics

## Department of Social Sciences

Rayne Allinson, PhD, University of Oxford, Assistant Professor of History  
 Camron M. Amin, PhD, University of Chicago, Professor of History  
 R Warren Anderson, PhD, George Mason University, Assistant Professor of Economics  
 Hani Bawardi, PhD, Wayne State University, Assistant Professor of History  
 Suzanne Bergeron, PhD, University of Notre Dame, Professor of Women's Studies and Social Sciences  
 Julio Borquez, PhD, University of Michigan, Associate Professor of Political Science  
 Elizabeth Crowell, PhD, Indiana University, Associate Professor of Economics  
 Natalia Czap, PhD, University of Nebraska, Assistant Professor Economics  
 Martin Hershock, PhD, University of Michigan, Professor of History  
 Georgina Hickey, PhD, University of Michigan, Professor of History  
 Seth Hirshom, PhD, Syracuse University, Associate Professor of Political Science  
 Sally Howell, PhD, University of Michigan, Assistant Professor of History  
 Brooks B. Hull, PhD, University of Washington, Professor of Economics  
 Joe Lunn, PhD, University of Wisconsin-Madison, Professor of History  
 Ilir Miteza, PhD, University of Wisconsin-Milwaukee, Associate Professor of Economics  
 Gerald F. Moran, PhD, Rutgers University, Professor of History  
 Michael New, PhD, Stanford University, Assistant Professor of Economics  
 Pamela Pennock, PhD, Ohio State University, Associate Professor of History  
 Bruce Pietrykowski, PhD, New School for Social Research, Professor of Economics  
 Vadym Pyrozhenko, PhD, Syracuse University, Assistant Professor of Public Policy  
 Ahmad Rahman, PhD, University of Michigan, Associate Professor of History

Juliette Roddy, PhD, Wayne State University, Associate Professor of Public Policy  
 Michael Rosano, PhD, University of Toronto, Associate Professor of Political Science  
 Lara Rusch, PhD, University of Michigan, Assistant Professor of Political Science  
 Ara Sanjian, PhD, University of London, Associate Professor of History  
 Patricia Smith, PhD, Virginia Polytechnical Institute and State University, Professor of Economics  
 Mitchel Sollenberger, PhD, Catholic University, Associate Professor of Political Science  
 Ronald R. Stockton, PhD, Michigan State University, Professor of Political Science  
 Dale Thompson, PhD, University of Maryland, Associate Professor of Political Science  
 Michael J. Twomey, PhD, Cornell University, Professor of Economics  
 Francis W. Wayman, PhD, University of Pennsylvania, Professor of Political Science

## Professors Emeriti

Michael Akiyama, PhD, Professor of Psychology  
 Donald F. Anderson, PhD, Professor of Political Science  
 Kathryn M. Anderson Levitt, PhD, Professor of Anthropology  
 Richard Axsom, PhD, Professor of Art History  
 Philip H. Peter, PhD, Associate Professor of Music  
 Lawrence I. Berkove, PhD, Professor of English Language and Literature  
 Barry A. Bogin, PhD, William E. Stirton Professor of Anthropology  
 Sidney M. Bolkosky, PhD, William E. Stirton Professor of History  
 James W. Brown, PhD, Professor of Mathematics  
 Elaine G. Clark, PhD, Professor of History  
 John G. Constant, PhD, Associate Professor of Music  
 Richard M. Dahlke, PhD, Professor of Mathematics and Mathematics Education  
 Allan Emery, PhD, Professor of Chemistry  
 Robert Fakler, PhD, Associate Professor of Mathematics  
 Neil M. Flax, PhD, Associate Professor of Comparative Literature and German  
 Gerald Gardner, PhD, Professor of Psychology  
 Frank Garland, PhD, Associate Professor of Chemistry  
 Eugene Grewe, PhD, Professor of Rhetoric and English Composition  
 Judith E. Heady, PhD, Associate Professor of Biology  
 Elton Higgs, PhD, Professor of English Language and Literature  
 Margret H. Höft, PhD, Professor of Mathematics  
 Noriko Kamachi, PhD, Professor of History  
 Bernard W. Klein, PhD, Professor of Political Science  
 John Kotre, PhD, Professor of Psychology  
 Robert Lyjak, PhD, Professor of Mathematics and Computer Science  
 Stephen Milles, PhD, Associate Professor of Mathematics and Mathematics Education  
 Daniel E. Moerman, PhD, William E. Stirton Professor of Anthropology  
 Ronald P. Morash, PhD, Professor of Mathematics  
 Arunajallam Nadasen, PhD, Professor of Physics  
 Richard S. Norman, PhD, Associate Professor of Biology

Dennis R. Papazian, PhD, Professor of History  
 F. J. Papp, PhD, Professor of Mathematics  
 Ted-Larry Pebworth, PhD, William E. Stirton Professor of English Language and Literature  
 Shelley K. Perlove, PhD, Professor of Art History  
 Donald Proctor, PhD, Professor of History  
 Richard Roehl, PhD, Professor of Economics  
 Edward Sayles, PhD, Professor of Philosophy  
 Michael Schneider, PhD, Professor of Biology  
 Robert L. Simpson, PhD, Professor of Biology and Environmental Science  
 Emily L. Spinelli, PhD, Professor of Spanish  
 Jeffrey Stern, PhD, Psychology  
 Claude Summers, PhD, Professor of English Language and Literature  
 Julia C. Tai, PhD, Professor of Chemistry  
 Leslie W. Tentler, PhD, Professor of History  
 William Thomson, PhD, Associate Professor of Psychology  
 Roger F. Verhey, PhD, Professor of Mathematics and Mathematics Education  
 Paul W. Zitzewitz, PhD, Professor of Physics  
 Louis Zuck, PhD, Professor of Linguistics

## College of Arts, Sciences, and Letters History of the College

From the beginning of the Dearborn Center of the University of Michigan, as it was called at first, 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; by Fall 1965 the LSA Division was 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-Dearborn). Two years later, the Regents approved a new set of UM-Dearborn 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. CASL now consists of six multidisciplinary departments: Behavioral Sciences; Language, Culture, and Communication; Literature, Philosophy, and the Arts; Mathematics and Statistics; Natural Sciences and Social Sciences.

## College of Arts, Sciences, and Letters Mission Statement

The College of Arts, Sciences, and Letters inspires and equips its students, through education in the liberal arts, to be servant leaders in society at large and for the resurgence and renewal in southeast Michigan. The College fulfills its mission by providing rigorous and intellectually challenging educational experiences rich in critical thinking, collaborative and

reflective learning, civic engagement, and personal interaction with high quality and dedicated faculty. The College of Arts, Sciences, and Letters promotes the value of life-long intellectual growth and development, rational and respectful discourse, living and leading in multicultural societies, striving for justice and fairness, and in gaining a global perspective.

## College of Arts, Sciences, and Letters Graduate Programs

Graduate programs in the College of Arts, Sciences, and Letters engage a diverse, highly motivated, and talented student body in disciplined and sustained study for both intellectual and vocational purposes. In particular, these programs are designed to equip students with the intellectual resilience required for the complex challenges of a changing world—and for the intersecting domains of professional activity, citizenship and public policy, and life-long learning.

Building on the talents of a distinguished faculty of teacher-scholars and the resources of the region, these programs fulfill two broad liberal arts functions. They enlarge, deepen, and refine students' knowledge and awareness. They also develop students' analytical, critical thinking, and problem-solving skills. Most emphasize interdisciplinary perspectives and methods, a hallmark of the College, in the conviction that multiple perspectives yield richer analytical contexts. Most offer small classes, close interaction with faculty, and special sensitivity to issues that have regional significance. Whether specifically oriented to a particular profession or not, these programs try to accommodate the interests and needs of working adults through convenient scheduling, customized plans of study, and thoughtful advising. Partnerships with the broader community provide opportunities for the dissemination and application of knowledge, and for collaborative projects. For example, our students might develop problem-solving applications for industrial and scientific settings like those in southeastern Michigan, use the Rouge River watershed as a laboratory for environmental concerns, or work with nearby healthcare providers.

CASL offers six graduate degrees: Master of Science in Applied and Computational Mathematics, Master of Science in Environmental Science, Master of Arts in Liberal Studies, Master of Science in Psychology with Specializations in Health Psychology and Clinical Health Psychology, Master of Public Administration and Master of Public Policy.

Following are descriptions of each program's mission, admission standards, and requirements. Additional information is available at <http://casl.umd.umich.edu/gradprograms/>.

### Master of Science in Applied and Computational Mathematics

The Applied and Computational Mathematics (ACM) program provides graduate-level education in applied mathematics for people whose goal is to develop comprehension of principles of applied mathematics and skills in employing those principles in industrial or scientific settings. It has three central

themes: general principles and theories of applied mathematics, the construction and analysis of mathematical models, and the development and efficient execution of computational mathematical algorithms. Effective use of advanced applied mathematical techniques has become increasingly important in industrial settings as the amount of sophisticated simulation software has mushroomed. People are needed who can help engineers, scientists and managers in the precise formulation of complex problems and in selecting the analytical methods and software appropriate for their solution. These people should understand the algorithms underlying mathematical software and be able to implement additional mathematical algorithms knowledgeably and efficiently in the framework of existing software. Finally, these people need to be able to interpret the results of computations to others. It is the goal of the program to provide people with these skills.

### The Program

The ACM program provides not only coursework in various areas of applied mathematics, but also opportunities for independent or collaborative work. These approaches to learning contribute to a student's outlook and depth of understanding. The program supports the development and enhancement of students' skills useful in industrial and scientific careers, and in other careers having applied mathematics as its primary focus. It is geared toward three groups of prospective students: individuals in established careers who want or require further training for their current positions, individuals in the workforce who wish to retrain for new career directions, in some cases preparing for a more mathematically-oriented assignment with their current employer, and recent graduates who desire a deeper understanding of applied mathematics as an aid in launching a career.

### Admission and Prerequisites

Admission to the ACM program as a regular student requires a BA or a BS degree in mathematics, computer and information science, engineering, a physical science or a life science earned from a program at an accredited institution with an average of *B* or better. Individuals with other degrees or less than a *B* average may be considered for conditional admission status and may be required to submit evidence of potential for success in a graduate program. An entering student should have completed three courses in Calculus, including multivariate calculus, plus introductory courses in Linear Algebra and Differential Equations. Deficiencies in prerequisites may be made up after entrance to the Graduate Program. However, credits received in courses elected to make up the deficiencies do not count toward the degree.

Each applicant should submit the following:

- 1) Official transcripts from all universities attended.
- 2) A one-page statement of purpose describing the applicant's career goals and personal objectives in pursuing the program.
- 3) Three letters of recommendation. At least one letter must be from an academic source.

- 4) Students whose native language is not English are also required to satisfy the English Language Requirements for Admission which can be found in the General Information section of this catalog.

Please send materials to: University of Michigan-Dearborn, CASL Graduate Programs, 2200 SSB, 4901 Evergreen Road, Dearborn, MI 48128. For more information, visit the ACM website at: <http://casl.umd.umich.edu/math/> or call (313) 593-1183.

## Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Horace H. Rackham School of Graduate Studies regulations. You may transfer up to one-half (1/2) the minimum number of credit hours required for your master's or professional degree from U-M/non-Rackham departments and programs (including Ann Arbor, Dearborn and Flint).

## Degree Requirements

The general master's degree requirements are on the Rackham School of Graduate Studies website: [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/) and are to be considered as degree requirements. In addition, the ACM degree requires 30 semester hours of graduate coursework with a cumulative grade point average of *B* or better. The 30 hours must meet the requirements below and be selected from lists of approved courses and be approved by the student's graduate advisor. At least 15 of the hours must be in courses of the Department of Mathematics and Statistics.

## Specific Course Requirements

### Core Courses

One course from each of the following areas. At most, nine hours of these courses may count toward the 30 hours.

#### Mathematical Analysis

MATH 551	Advanced Calculus I.....	3 hrs
MATH 554	Fourier Series and Boundary Value Problems .....	3 hrs
MATH 555	Functions of a Complex Variable with Applications.....	3 hrs

#### Modeling

MATH 562	Mathematical Modeling.....	3 hrs
----------	----------------------------	-------

#### Numerical Methods

MATH 572	Introduction to Numerical Analysis .....	3 hrs
MATH 573	Matrix Computation .....	3 hrs

#### Concentration

At least four courses from the modeling specialization areas listed below. At least two courses must be from the same area; however, not all four may be from the same area.

#### Linear Models

STAT 530	Applied Regression Analysis.....	3 hrs
MATH 515	B-Splines and Their Applications .....	3 hrs
MATH 523	Linear Algebra with Applications .....	3 hrs
MATH 558	Introduction to Wavelets.....	3 hrs

#### Discrete Models

MATH 582	Computer Algebra Systems .....	3 hrs
MATH 583	Discrete Optimization .....	3 hrs
MATH 584	Applied and Algorithmic Graph Theory .....	3 hrs

#### Differential Models

MATH 504	Dynamical Systems.....	3 hrs
MATH 514	Numerical Solutions of Partial Differential Equations .....	3 hrs
MATH 516	Partial Differential Equations .....	3 hrs

#### Stochastic Models

MATH 520	Stochastic Processes .....	3 hrs
MATH 525	Mathematical Statistics II .....	3 hrs
STAT 535	Data Analysis and Modeling .....	3 hrs
STAT 545	Reliability and Survival Analysis.....	3 hrs

#### Project

At least one of the following is required:

MATH 595	Master's Project Seminar.....	3 hrs
or		
MATH 599	Independent Research Project.....	3 hrs
Cognate .....		6 hrs

Six hours of cognate courses outside the Department of Mathematics and Statistics are required. The courses should be selected from an approved list.

#### Cognate Courses

#### Computer and Information Science

CIS 505	Algorithm Design and Analysis .....	3 hrs
CIS 515	Computer Graphics .....	3 hrs
CIS 527	Computer Networks .....	3 hrs
CIS 537	Advanced Networking.....	3 hrs
CIS 544	Computer and Network Security.....	3 hrs
CIS 551	Advanced Computer Graphics .....	3 hrs
CIS 552	Information Visualization and Multimedia Gaming .....	3 hrs
CIS 568	Data Mining.....	3 hrs
CIS 574	Compiler Design .....	3 hrs
CIS 575	Software Engineering Management.....	3 hrs
CIS 652	Information Visualization and Computer Animation .....	3 hrs

**Economics**

ECON 515 Introduction to Econometrics .....3 hrs

**Electrical and Computer Engineering**

ECE 552 Fuzzy Systems .....3 hrs

ECE 555 Stochastic Processes .....3 hrs

ECE 560 Modern Control Theory .....3 hrs

ECE 565 Digital Control.....3 hrs

ECE 567 Non-linear Control Systems .....3 hrs

ECE 585 Pattern Recognition .....3 hrs

ECE 665 Optimal Control.....3 hrs

**Industrial and Manufacturing Systems Engineering**

IMSE 500 Models of Operations Research .....3 hrs

IMSE 505 Optimization .....3 hrs

IMSE 510 Probability and Statistical Models .....3 hrs

IMSE 511 Design and Analysis of Experiments .....3 hrs

IMSE 514 Multivariate Statistics.....3 hrs

IMSE 520 Managerial Decision Analysis .....3 hrs

IMSE 567 Reliability Analysis .....3 hrs

**Management**

DS 570 Management Science .....3 hrs

OM 521 Operations Management.....3 hrs

OM 660 Analysis &amp; Design of Supply Chains.....3 hrs

**Mechanical Engineering**

ME 510 Finite Element Methods.....3 hrs

ME 518 Advanced Engineering Analysis.....3 hrs

**Physics**

PHYS 503 Electricity &amp; Magnetism.....3 hrs

PHYS 553 Quantum Mechanics.....3 hrs

## Master of Science in Environmental Science

The Master of Science in Environmental Science (MSES) is a two-year program designed for students who wish to pursue graduate study on a full or part-time basis so they can balance professional and personal goals. Courses are primarily held in the evening and occasionally on Saturdays. Graduate students in the Department of Natural Sciences are talented and often have significant professional experience. Graduate faculty are highly qualified and experienced, and the educational culture is one in which learning, teaching, and research are emphasized. Pursuing a graduate degree in Environmental Science at UM-Dearborn will result in substantial growth in knowledge, skills, and long-term career potential.

With approximately 40 students enrolled, we stress personalized, individual attention to graduate student education and research. The program provides a choice between emphasizing the environmental aspects of biology, chemistry, or geology, or a more broadly focused approach involving courses in each of the

above fields. Faculty and students are engaged in the research of environmental issues including: wetlands delineation; the treatment of nitrate contaminated groundwater with microbiological techniques; the impact of land use on groundwater and surface water quality; the use of phytoremediation in the cleanup of polycyclic aromatic hydrocarbon contaminated soil; brownfield investigation and restoration; migration behavior and ecology of birds, and behavioral ecology of spiders and other arthropods; microbial source tracking; the use of microorganisms in biofuel synthesis; and microbial community dynamics and diversity in marine and freshwater sediments.

## Research Facilities

The Department of Natural Sciences has extensive networked computing facilities, including scanners, digitizers and plotters, GIS and groundwater modeling software, GPS equipment, ICP-MS and labs for preparation and chemical analysis of environmental, biological and geological samples. We also have extensive mineralogic and paleontologic collections as well as the Merritt Geode Collections, one of the finest in the world. A focal point for the environmental program on the Dearborn campus is the Environmental Interpretive Center that opened in May, 2001. Rouge River Bird Observatory (RRBO) studies the importance of urban areas to birds, especially migratory birds. We are the longest-running, full-time urban bird research station in North America.

## Admission and Prerequisites

Admission to the MSES program requires a bachelor's degree in biology, chemistry, environmental science or geology from an accredited institution with a cumulative undergraduate GPA of 3.1 or higher (based on a 4.0 scale). Candidates with degrees in other fields may be conditionally accepted into the program with the understanding that additional prerequisites may be required. Entering students should have completed a field course in biology or geology; one course in biology, geology, physics, and statistics; two courses in calculus; and three courses in chemistry. Deficiencies may be satisfied by completing prerequisite courses at UM-Dearborn or at another school with the approval of the graduate program committee. Each applicant should submit the following:

- 1) Official transcripts from all universities attended.
- 2) A one-page statement of purpose describing the applicant's career goals and personal objectives in pursuing the program.
- 3) Two letters of recommendation.
- 4) Students whose native language is not English are also required to satisfy the English Language Requirements for Admission which can be found in the General Information section of this catalog.

Please send materials to: University of Michigan-Dearborn, CASL Graduate Programs, 2200 SSB, 4901 Evergreen Road, Dearborn, MI 48128. For more information, visit the MSES website at [http://www.casl.umd.umich.edu/envsci\\_ms/](http://www.casl.umd.umich.edu/envsci_ms/) or call (313) 593-5148.

## Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Horace H. Rackham School of Graduate Studies regulations. Up to one-half the minimum number of credit hours required for your master's or professional degree from U-M/non-Rackham departments and programs (including Ann Arbor, Dearborn and Flint) may be transferred.

## Degree Requirements

The general master's degree requirements on the Rackham School of Graduate Studies website [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/) are to be considered as degree requirements. In addition, the MSES degree requires 30 semester hours of graduate coursework with a cumulative grade point average of *B* or better. The 30 hours must meet the requirements below, be selected from lists of approved courses, and be approved by the student's graduate advisor.

## Three Options for a MSES Degree

- **Plan A. Thesis Option** 24 credit hours (500 level or above) plus ESCI 699. A thesis will be based on original research. (Preferred by the environmental consulting industry)
- **Plan B. Project Option** 27 credit hours (500 level or above) plus ESCI 698. A project will be based on library/field/laboratory research or classroom exercises demonstrating analysis and interpretation of scientific data.
- **Plan C. Coursework Option** 30 credit hours (500 level or above) (Not recommended for students interested in doctoral degrees).

## Specific Course Requirements

Core Courses ..... 15 hrs

BIOL 514	Applied Ecology .....	3 hrs
CHEM 548	Environmental Chemistry .....	3 hrs
ESCI 572	Environmental Communications .....	3 hrs
GEOL 550	Glacial Geology .....	3 hrs
ESCI 574	Watershed Analysis .....	3 hrs

Electives..... 15 hrs

### Department of Natural Sciences

BIOL 508	Invasive Species Ecology .....	3 hrs
BIOL 515	Aquatic Ecosystems .....	4 hrs
BIOL 516	Limnology.....	3 hrs
BIOL 519	Behavior and Evolution.....	3 hrs
BIOL 524	Biology of Spiders .....	4 hrs
BIOL 545	Restoration Ecology .....	3 hrs
BIOL 552	Medical & Environmental Toxicology.....	3 hrs
BIOL 556	The Science of Animal Behavior.....	4 hrs
BIOL 561	Recent Advances in Cell Biology.....	2 hrs
BIOL 590	Topics in Biology .....	1-4 hrs
BIOL 590B	Conservation Biology .....	3 hrs
CHEM 590	Topics in Chemistry.....	1-4 hrs
ENST 574	Environmental Education .....	3hrs
ESCI 504	Field Studies in Environmental Science.....	2 hrs

ESCI 525	Soils in the Environment .....	3 hrs
ESCI 585	Spatial Analysis and GIS .....	3 hrs
ESCI 595	Topics in Environmental Science.....	3 hrs
ESCI 597	Independent Study Off Campus .....	1-3 hrs
ESCI 599	Independent Study On Campus.....	1-3 hrs
ESCI 698	MSES Project.....	3 hrs
ESCI 699	MSES Thesis.....	1-6 hrs
GEOL 560	Engineering Geology .....	3 hrs
GEOL 570	Geochemistry .....	3 hrs
GEOL 574	Urban Watersheds.....	3 hrs
GEOL 575	Contaminant Hydrogeology.....	3 hrs
GEOL 577	Geology Field Methods .....	1-2 hrs
GEOL 587	Groundwater Modeling.....	3 hrs
GEOL 590	Topics in Earth Science .....	1-4 hrs
MICR 505	Applied and Environmental Microbiology .....	3 hrs

### Other Departments

LIBS 586	Ecological Economics .....	3 hrs
STAT 530	Applied Regression Analysis.....	3 hrs
STAT 545	Reliability and Survival Analysis .....	3 hrs
STAT 555	Environmental Statistics .....	3 hrs

## Master of Arts in Liberal Studies

The Master of Arts in Liberal Studies (MALS) program offers an interdisciplinary approach to learning. Its purpose is to provide a liberal arts experience at the post-graduate level to motivated and mature individuals who wish to expand their intellectual horizons, to explore new areas of learning, and to extend the range of ideas and knowledge. The program offers students the opportunity to explore the relationship between the self and society, the environment and technological changes affecting everyday life, and a variety of topics such as gender and identity formation and the intersection of science and literature. While the program is neither professional nor vocational in orientation, it does develop critical thinking skills and interdisciplinary knowledge and techniques and communication skills that are broadly applicable in professional and workplace contexts.

## The Program

The MALS program consists of a minimum of thirty graduate-level credit hours. Students take a minimum of 15 LIBS graduate courses. For the remainder of their credits, they may draw on other graduate courses in CASL to design a plan of study. To accommodate those working full-time, required classes are offered in the evening hours.

## Admission and Prerequisites

Admission to the MALS program requires a bachelor's degree in any field, or the equivalent from an accredited college or university with a minimum GPA of 3.0 on a 4.0 scale. Students must receive a *B* or better in LIBS 560 to continue in the program.

Each applicant should submit the following:

- 1) Official transcripts from all universities attended.



- 2) A statement of applicant's purpose and objectives in seeking admission to the program.
- 3) A writing sample that displays the applicant's critical and analytical skills.
- 4) Students whose native language is not English are also required to satisfy the English Language Requirements for Admission which can be found in the General Information section of this catalog.

Please send materials to: University of Michigan-Dearborn, CASL Graduate Programs, 2200 SSB, 4901 Evergreen Road, Dearborn, MI 48128. For more information, visit the MALS website at: <http://www.casl.umd.umich.edu/mals> or call (313) 593-1183.

## Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for the master's or professional degree from U-M/non-Rackham departments and programs (including Ann Arbor, Dearborn and Flint).

## Degree Requirements

The general master's degree requirements of the Horace H. Rackham School of Graduate Studies are specified on its website [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/) and are to be considered as degree requirements. The MALS degree requires 30 semester hours of graduate coursework with a cumulative grade point average of *B* or better. The 30 hours must meet the requirements below, be selected from lists of approved courses, and be approved by the Director of the program.

## Specific Course Requirements

LIBS 560 Foundations in Liberal Studies .....3 hrs  
(Prerequisite for all LIBS Graduate Seminars)

After completing LIBS 560, students may choose to design a theme-centered program of graduate study by selecting courses from LIBS graduate seminars and other graduate courses in CASL. Areas that students have focused on include Environmental Studies, and Women and Gender Studies. However, students are not required to choose a thematic focus.

LIBS Graduate Seminars and Graduate Courses .....21 hrs

To complete the last 6 credit hours of the MA, students have 3 options: 1) a thesis, 2) a project, or 3) LIBS 697 (the Capstone Course) plus an additional LIBS Graduate Seminar.

### Liberal Studies Seminars

LIBS 536 Memoir and Travel Writing .....3 hrs  
LIBS 561 Self and Society .....3 hrs  
LIBS 562 Postmodernism and truth .....3 hrs  
LIBS 564 Literature and Science Studies .....3 hrs  
LIBS 566 Investigating Academic Literacy .....3 hrs  
LIBS 567 The Self in Philosophy and Literature .....3 hrs

LIBS 568 Religion and Society .....3 hrs  
LIBS 569 The Texture of Memory .....3 hrs  
LIBS 570 History of Warfare during the Age of  
Gunpowder, 1500-2000 .....3 hrs  
LIBS 571 The Science, Psychology, and Philosophy  
of Emotions .....3 hrs  
LIBS 572 Migrations of the Holy .....3 hrs  
LIBS 575 Making Modern Science .....3 hrs  
LIBS 580 Gender, Culture and Identity .....3 hrs  
LIBS 581 Aspects of Greek Culture .....3 hrs  
LIBS 584 Environmental Studies: Concepts and  
Philosophy .....3 hrs  
LIBS 585 Watershed Analysis .....3 hrs  
LIBS 586 Ecological Economics .....3 hrs  
LIBS 587 Women and Public Spaces .....3 hrs  
LIBS 588 Creative Class/Working Class .....3 hrs

### Additional Courses

LIBS 599 MALS Independent Study .....3 hrs  
LIBS 690 Topics in Liberal Studies .....3 hrs  
LIBS 697 MALS Capstone Experience .....3 hrs  
LIBS 698 MALS Masters Project .....3 or 6 hrs  
LIBS 699 MALS Masters Thesis .....3 or 6 hrs

## Master of Science in Psychology

The Master of Science in Psychology (MS) is a graduate degree offered by the Behavioral Sciences Department in the College of Arts, Sciences, and Letters (CASL) at the UM-Dearborn. Two specializations are available.

## Master of Science: Specialization in Health Psychology

This two-year, 39-credit program provides students with intensive training in one or more content areas within Health Psychology and is intended to serve several populations: 1) students who would like to continue graduate training in a research related behavioral sciences field, 2) medical professionals who wish to continue their education on a part- or full-time basis, and 3) individuals who require an advanced degree to advance in their careers. This program will not fulfill the course requirements for the Michigan Limited License in Psychology.

## The Program

The 39-credit program consists of 24 hours (8 courses) in core areas of Health Psychology. Students will complete either a 3 credit project or a 6 credit thesis under the supervision of program faculty. The remaining 9-12 credits will be composed of elective courses that focus on one or more content areas.

## Admission and Prerequisites

Admission decisions are based upon applicants' records of academic achievement, Graduate Record Examination (general test) scores, letters of recommendation, and personal statements of education and career goals. More specifically a BA or BS in

Psychology or a related major with a cumulative undergraduate GPA of at least 3.0 (4.0 scale) and a minimum GRE score (general test) of approximately 300 are required for admission. Students without undergraduate psychology degrees are welcome to apply but will need Introductory Psychology, Statistics, and Abnormal Psychology; undergraduate Health Psychology and Research Methods are strongly recommended.

Each applicant should submit the following:

- 1) Official transcripts from all universities attended.
- 2) A 600-word statement of purpose describing the applicant's personal history, educational and professional goals and personal objectives in pursuing the program.
- 3) Three letters of recommendation. (at least 2 from academic sources).
- 4) GRE Test Results (general test).
- 5) Students whose native language is not English are also required to satisfy the English Language Requirements for Admission which can be found in the General Information section of this catalog.

Please send materials to: University of Michigan-Dearborn, CASL Graduate Programs, 2200 SSB, 4901 Evergreen Road, Dearborn, MI, 48128. For more information, visit the psychology website at: <http://www.casl.umd.umich.edu/psychology> or call (313) 593-1183.

## Degree Requirements

To complete the degree program a minimum of 39 credits are required in the Behavioral Sciences. The following schedule provides the sequence of courses that students in the MS in Psychology: Specialization in Health Psychology program are expected to take. Although it is possible to take some of the courses out of sequence, many build on previous courses and all course schedules will need to be approved by the program director or your appointed program advisor.

## Specific Course Requirements

Year 1: Fall	
PSYC 557	Advanced Health Psychology.....3 hrs
PSYC 5825	Basic Methods & Statistics in Health Psychology.....3 hrs
Elective 1	.....3 hrs
Year 1: Winter	
PSYC 5835	Advanced Methods & Statistics in Health Psychology.....3 hrs
PSYC 575	Biological Foundations of Health Psy.....3 hrs
PPO 506	Program Evaluation.....3 hrs
Year 1: Spring/Summer	
PSYC 584	Applied Research in Behavioral Medicine.....3 hrs
Year 2: Fall	
PSYC 593	Professional & Ethical Issues.....1 hr
Elective 2	.....3 hrs

Elective 3	.....3 hrs
Year 2: Winter	
HPS 512	Principles of Epidemiology.....3 hrs
PSYC 697	Thesis or Project.....3 hrs
Year 2: Spring/Summer	
PSYC 697	Thesis or Elective.....3 hrs
Electives	.....9-12 hrs

Students are required to have 9-12 credits in approved elective courses. Examples of elective courses that would fulfill program requirements include: Advanced Psychopathology (PSYC 545), Multicultural Counseling (PSYC 523), Human Sexual Behavior (PSYC 546), and Medical Sociology (SOC 540). More information about the specific elective courses that will fulfill program requirements should be discussed with your program advisor or the program director each semester.

## Thesis/Project Requirements.....3-6 hrs

Students in the MS in Psychology: Specialization in Health Psychology program will complete either a 3 credit Project or a 6 credit master's thesis during their second year.

## Plan of Work

Students will be required to complete a plan of work during their first semester in the MS in Psychology: Specialization in Health Psychology program. The plan of work requires discussion between students and their program advisers. Copies will be retained by the student and the program director or program advisor.

## Grade Requirements

The graduate grading system is intended to reflect higher standards of critical and creative scholarship than those applied at the undergraduate level. To receive a graduate grade in courses open to both undergraduate and graduate students, the graduate student is expected to do work of superior quality and is required to do additional work specified by the instructor. Graduate students are required to earn a B (5.0) average or higher to satisfy degree requirements.

Grades of C+ and below are unsatisfactory for graduate level work and constitute valid cause for dropping a student from the graduate program. To be awarded the MS in Psychology: Specialization in Health Psychology, a student must have achieved at least a 5.0 GPA (a B average). No more than two grades of C may be applied toward the MS in Psychology: Specialization in Health Psychology degree; grades of C- or lower will not be applied toward the MS in Psychology: Specialization in Clinical Health Psychology. Students who fail to maintain a 5.0 average or have more than two C or lower grades will be placed on academic probation for the term following the lapse. Upon the recommendation of the Program Director, a student may be granted an opportunity to correct the scholastic and/or academic deficiency. Students who fail to meet

program requirements may be denied permission to register or may be required to withdraw from the program.

## Master of Science: Specialization in Clinical Health Psychology

This two-year, 48-credit program trains mental health care providers to work in primary care settings, as well as more traditional clinical psychology settings. The curriculum of the program, in conjunction with 1 year of supervised postgraduate experience in an organized health care setting, is designed to fulfill the course requirements for the Michigan Limited License.

### The Program

The 48-credit program consists of 11 required courses (36 credits) in core areas of Clinical Health Psychology. Six credit hours will be devoted to practicum in a community setting. Students will take either two elective courses or complete a master's thesis under the supervision of program faculty.

### Admission and Prerequisites

Admission decisions are based upon applicants' records of academic achievement, Graduate Record Examination (general test) scores, letters of recommendation, and personal statements of education and career goals. More specifically a BA or BS in Psychology or a related major with a cumulative undergraduate GPA of at least 3.0 on a 4.0 scale and a minimum GRE score (general test) of approximately 300 are required for admission. Students without undergraduate psychology degrees are welcome to apply but will need Introductory Psychology, Statistics, and Abnormal Psychology; undergraduate Health Psychology and Research Methods are strongly recommended.

Each applicant should submit the following:

- 1) Official transcripts from all universities attended.
- 2) A 600-word statement of purpose describing the applicant's personal history, educational and professional goals and personal objectives in pursuing the program. An additional 300-word statement describing the applicant's potential effectiveness as a mental health professional are required for students applying to the Clinical Health Psychology program.
- 3) Three letters of recommendation. (at least 2 from academic sources).
- 4) GRE Test Results (general test).
- 5) Students whose native language is not English are also required to satisfy the English Language Requirements for Admission which can be found in the General Information section of this catalog.

Please send materials to: University of Michigan-Dearborn, CASL Graduate Programs, 2200 SSB, 4901 Evergreen Road, Dearborn, MI, 48128. For more information, call (313) 593-1183 or visit the psychology website at: <http://www.casl.umich.edu/psychology>.

## Degree Requirements

To complete the degree program a minimum of 48 credits are required in the Behavioral Sciences. The following schedule provides the sequence of courses that students in the MS in Psychology: Specialization in Clinical Health Psychology program are expected to take. Although it is possible to take some of the courses out of sequence, many build on previous courses and all course schedules will need to be approved by the program director or your appointed program advisor.

### Specific Course Requirements

Year 1: Fall  
 PSYC 557 Advanced Health Psychology ..... 3 hrs  
 PSYC 5825 Basic Methods & Statistics in Health Psychology..... 3 hrs  
 PSYC 545 Advanced Psychopathology ..... 3 hrs

Year 1: Winter  
 PSYC 5835 Advanced Methods & Statistics in Health Psychology ..... 3 hrs  
 PSYC 547 Theories & Techniques of Therapeutic Intervention ..... 4 hrs  
 PSYC 575 Biological Foundations of Health Psychology ..... 3 hrs

Year 1: Spring/Summer  
 PSYC 548 Psychological Assessment I ..... 4 hrs  
 PSYC 552 Advanced Techniques of Therapeutic Intervention..... 3 hrs

Year 2: Fall  
 PSYC 593 Professional and Ethical Issues ..... 3 hrs  
 PSYC 549 Psychological Assessment II ..... 4 hrs  
 PSYC 565 Individual & Group Techniques in Clinical Health Psychology ..... 3 hrs

Year 2: Winter  
 PSYC 698 Practicum in Clinical Health Psychology ..... 3 hrs  
 PSYC 697 Thesis or Elective 1 ..... 3 hrs

Year 2: Spring/Summer  
 PSYC 698 Practicum in Clinical Health Psychology ..... 3 hrs  
 PSYC 697 Thesis or Elective 2 ..... 3 hrs

**Electives ..... 0-6 hrs**

Students are required to have six credits in approved elective courses if they do not elect to complete a master's thesis. Information about specific elective courses that will fulfill these requirements should be discussed with your program advisor or the program director each semester.

**Thesis ..... 6 hrs**

Students in the MS in Psychology: Specialization in Clinical Health Psychology who choose to do so can elect to complete a master's thesis during their second year of the program. Students selecting this option will need to take 3 credits in an approved elective course and 6 thesis credits.

## Plan of Work

Students will be required to complete a Plan of Work during their first semester in the MS in Psychology: Specialization in Clinical Health Psychology program. The plan of work requires discussion between students and their program advisers. Copies will be retained by the student and the program director or program advisor.

## Grade Requirements

The graduate grading system is intended to reflect higher standards of critical and creative scholarship than those applied at the undergraduate level. To receive a graduate grade in courses open to both undergraduate and graduate students, the graduate student is expected to do work of superior quality and is required to do additional work specified by the instructor. Graduate students are required to earn a *B* (5.0) average or higher to satisfy degree requirements.

Grades of *C+* and below are unsatisfactory for graduate level work and constitute valid cause for dropping a student from the graduate program. To be awarded a MS in Clinical Health Psychology, a student must have achieved at least a 5.0 grade point average (a *B* average). *C+* grades in the core classes, PSYC 545, 547, 548, 549, 565, 593, and 698 will not be applied toward the MS in Psychology: Specialization in Clinical Health Psychology degree. A grade of *B-* or higher is required in each of these classes. Students may re-take the class one time to raise the grade to an acceptable level. Furthermore, no more than two grades of *C* in other courses may be applied toward the MS in Psychology: Specialization in Clinical Health Psychology degree; grades of *C-* or lower will not be applied toward the MS in Psychology: Specialization in Clinical Health Psychology degree. Students who fail to maintain a 5.0 average or have more than two *C* or lower grades will be placed on academic probation for the term following the lapse. Upon the recommendation of the program director, a student may be granted an opportunity to correct the scholastic and/or academic deficiency. Students who fail to meet program requirements may be denied permission to register or may be required to withdraw from the program.

## Master of Public Administration

The MPA is offered by the Public Administration Program in conjunction with the Horace H. Rackham School of Graduate Studies. The MPA is offered at times convenient for public, educational, and nonprofit employees, and is intended to serve a diverse student body drawn from a variety of service organizations.

The MPA curriculum emphasizes practical skills, rooted in theoretical knowledge, for a wide range of human service organizations. The classes are designed to develop administrative skills and competence in leadership, personnel, finance and analytical areas. The program develops skills necessary to handle current administrative issues and to adapt to future challenges in the ever-changing political, social, and economic environment. Given the diversity of candidate backgrounds and agencies represented, MPA candidates are encouraged to develop their abilities to work in teams and in a

variety of organization contexts. Candidates prepare a portfolio which best presents their administrative competencies.

## The Program

The 36 (minimum) credit hour master's degree is divided into three parts: 1) Core Courses, 2) Specialty Courses, and 3) Assessment Seminar and Internship. A minimum cumulative GPA of *B* (5.0) must be maintained to continue in the program.

## Admission

Eligibility for entrance into the MPA program includes a clear interest in the service sector, a bachelor's degree from an accredited school, an undergraduate 3.0 GPA (on a 4-point scale), and an ability to write on an acceptable level.

## Information

Individuals who wish to apply for the Master of Public Administration degree program on the Dearborn campus may obtain application material on the Program's website or from the College of Arts, Sciences, and Letters, CASL Graduate Programs University of Michigan-Dearborn, SSB, 4901 Evergreen Road, Dearborn, MI 48128, telephone (313) 593-1183. Applications should be mailed for receipt by July 30 for the fall semester; by November 30 for the winter semester; and by April 1 for spring semester.

## Regulations

Master of Public Administration Program students are fully responsible for determining both the program and Rackham requirements. Rackham School of Graduate Studies academic policies can be found at [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/).

## Registration Information

If MPA students wish to elect an appropriate graduate-level Extension course, elective (other than those suggested), a directed study, or the Master's Project, they must obtain permission from the program director prior to registering. No courses are to be elected on a pass-fail basis. Students whose grade point average falls below a 5.0 (*B*) will be placed on probation (*D+* and lower grades do not count toward graduation but are calculated as 0 for GPA). Continued deficiencies will result in a required withdrawal from the University. Students who have been absent for one calendar year must apply for readmission before registering for classes.

All newly admitted students must meet with their advisor to develop an official plan of study. Advising may be obtained by phone or appointment at the discretion of the advisor. With proper approval and signatures, Rackham students may be permitted to drop or withdraw from courses up to the last day of classes without academic penalty. Drops, as well as withdrawals, for graduate students are initiated in the CASL Graduate Programs Office, SSB.

## Residency Requirements and Time Limits

Students seeking a MPA degree must fulfill the residency requirement by completing at least one-half of their degree in courses offered by the UM-Dearborn. All coursework toward the MPA degree must be completed within five consecutive years from the date of first enrollment.

## Graduation

Students who plan to graduate in a specific semester must submit a diploma application found online at [www.umd.umich.edu](http://www.umd.umich.edu). MPA students may participate in graduation exercises (if desired) with the Dearborn and/or Ann Arbor student body.

## Curriculum

### Public Administration Core .....15 hrs

PADM 505	Introduction to Administration .....	3 hrs
PADM 520	Leadership and Administration .....	3 hrs
PADM 540	Administration of Financial Resources.....	3 hrs
PADM 560	Administration of Human Resources .....	3 hrs
PADM 580	Information Systems and Statistics for Administrators.....	3 hrs

Electives ..... 18 hrs approved by advisor

PADM 507	Strategic Communication.....	3 hrs
PADM 523	Legal and Regulatory Issues in Admin .....	2-3 hrs
PADM 525	Consulting and Staff Development.....	2 hrs
PADM 527	PR for the Nonprofit/Public Sector.....	2-3 hrs
PADM 541	Fund Accounting.....	2 hrs
PADM 548	Fundraising.....	2-3 hrs
PADM 561	Organizational Development and Theory..	2-3 hrs
PADM 562	Labor Relations in a Service Setting.....	2-3 hrs
PADM 564	Performance Appraisal.....	2 hrs
PADM 581	Strategic Planning/Needs Assessment .....	2-3 hrs
PADM 582	Policy Analysis and Development .....	2-3 hrs
PADM 583	Program Evaluation.....	2-3 hrs
PADM 585	Technology for Administrators .....	3 hrs

Assessment Seminar..... 3 hrs

PADM 650 Assessment Seminar.....3 hrs  
Internship (additive credit only for students with less than 2 years administrative experience)

PADM 720 Internship..... 1-3 hrs

## Master of Public Policy

The Master of Public Policy (MPP) program is an interdisciplinary public policy program, designed for adult, part-time, college-educated students who are already working in related policy positions and for students who wish to prepare for careers in public service and public affairs. The program is aimed at developing analytical skills essential to understanding and improving public policy for persons engaged in a wide range of professional careers in the public, non-profit, and private sectors.

This interdisciplinary program offers students an opportunity to integrate research and learning in an innovative and open atmosphere that fosters links among higher education, the health care industry, governmental agencies and non-profit organizations. Contemporary political, social, and economic problems are interdisciplinary in nature, and an interdisciplinary approach is required to address those problems in a holistic way. Contemporary public leadership requires a broad understanding of and skill in policy analysis in order to design, implement, and evaluate effective new policies. Trained policy analysts who can address increasingly complex policy issues are in demand in the public and private sector. There are thousands of governmental units at the local, state and national level that employ specialized policy analysts. They assist elected and appointed officials of every nature in the process of governing. Their job titles vary but include positions such as program specialist, legislative or administrative assistant, policy analyst, research analyst and research director, among others. In addition, there are literally thousands of interests groups, trade associations and consulting firms operating in the private and non-profit sector that likewise employ individuals with the ability to analyze policy issues and engage in the political process.

The interdisciplinary nature of UM-Dearborn's administrative structure also makes it easier for faculty from diverse disciplines and programs to cooperate naturally with the Program. Interdisciplinary cooperation is second nature to UM-Dearborn faculty and historically part of the educational culture at UM-Dearborn. The MPP Program is designed to complement existing graduate programs such as the MBA program in the College of Business, and the M in Public Administration, MS in Psychology, the MS in Environmental Science and the MA in Liberal Studies offered in the College of Arts, Sciences, and Letters. MPP students will be able to access relevant elective courses in other programs that fit their career needs that may be unavailable in the MPP program.

## The Program

The MPP Program requires 21 hours of required core courses and either:

Plan A: 21 credits of policy-related electives approved by a program advisor plus a Project Writing course (1 credit)

or

Plan B: 15 credits of policy-related electives approved by a program advisor plus a thesis (6 credits).

## Admission and Prerequisites

Admission to the MPP program as a regular student requires a bachelor's degree from an accredited college or university with an undergraduate 3.0 grade point average in the last 60 credits (on a 4.0 scale), and an ability to write on an acceptable level. Individuals with less than a 3.0 average, but no lower than 2.75, may be considered for conditional admission status. Two basic courses in the principles of microeconomics and macroeconomics are a prerequisite for the program. The prerequisite may be fulfilled after admission to the program but prior to enrollment in PPOL 503 Economics and Public Policy or PPOL 507 Cost-Benefit Analysis. The prerequisite can also be fulfilled by taking PPOL 500 Economic Theory and Policy.



Non-core policy courses or electives may also have prerequisites that must be completed before enrolling in those courses.

Each applicant should submit the following:

- 1) Official transcripts from all universities attended.
- 2) A five-hundred word statement of purpose describing the applicant's career goals and personal objectives in pursuing the program.
- 3) Two letters of recommendation from academic or professional references who know the applicant's abilities and potential for graduate work.
- 4) GRE Test Results. (general test) The minimum GRE passing score is the 50<sup>th</sup> percentile.
- 5) Students whose native language is not English are also required to satisfy the English Language Requirements for Admission which can be found in the General Information section of this catalog.

Please send materials to: University of Michigan-Dearborn, CASL Graduate Programs, 2200 SSB, 4901 Evergreen Road, Dearborn, MI, 48128. For more information, visit the MPP website at: <http://www.casl.umd.umich.edu/mpp> or call (313) 593-1183.

## Undergraduate students

For UM-Dearborn undergraduate students, there will be a transition term available in the final semester prior to graduation. If students have a course load in the transition term that allows room for the start of MPP courses, they will be allowed to begin such coursework if they meet all other admission criteria. If students do not finish their undergraduate work in the transition term, they must successfully finish their undergraduate degree prior to taking any additional MPP courses.

## Advanced Standing

Up to six credit hours toward the degree may be granted by the Graduate Program Committee to a student through the transfer of credit for approved graduate-level courses completed post-baccalaureate with a grade of B or better at an accredited institution. Up to fifteen hours of such course work from the Ann Arbor or Flint campuses may be transferred.

## Guest Student Enrollment

Guest students may enroll in graduate courses with permission of the director of the MPP.

## Degree Requirements

A cumulative average grade of B or higher will be required in all graduate courses taken for credit and applied to the credit hour requirements. A passing grade is B- or above. No more than two grades of I can be counted towards a student's degree. To be recommended for the MPP degree, the student must file a formal diploma application online at the beginning of their final

semester of work. Depending on the thesis option selected, a total of 42-43 hours of graduate credit is required for graduation.

## Specific Course Requirements

Core courses are designed to provide students with perspectives of several disciplines on how to evaluate and improve public policy. The premise is that we should be aiming at good public policy, and that can only be attained by understanding both the policy making process and the methods of studying policy, particularly the tools of economics and political science, ethics and philosophy, cost-benefit analysis, policy evaluation, and rational choice theory, among others. With the approval of a program advisor, students will have additional flexibility in fulfilling the requirements of the core by electing comparable, available courses in other units.

### Core Courses ..... 21-22 hrs

PPOL 501	Research Methods.....	3 hrs
PPOL 502	The Political Environment of Public Policy..	3 hrs
PPOL 503	Economics and Public Policy .....	3 hrs
PPOL 504	Rational Choice .....	3 hrs
PPOL 505	Ethics and Public Policy .....	3 hrs
PPOL 506	Program Evaluation .....	3 hrs
PPOL 507	Cost-Benefit Analysis .....	3 hrs
PPOL 508	Project Writing.....	1 hr

### Policy Related Electives..... 21 hrs

Each student in the program is expected to take twenty-one credit hours of additional policy-related courses available across the campus. Relevant policy courses in such areas as economics, health, foreign relations, the environment, social welfare, and criminal justice (among others) are offered intermittently and can be found in the *Schedule of Courses* and in the *Graduate Catalog*. Students, however, should note that some courses have required prerequisites that must be taken before enrolling in a course. Moreover, enrollment in courses offered by other graduate programs such as the MPA, the MBA, or the MS in Health Psychology may not always be available. Students should consult each semester with the program director for the time and semester of core course offerings as well as the availability of electives in other graduate programs.

### Thesis/Project Requirements

Each student is expected to complete a master's project to demonstrate that he or she has the ability to analyze and design improvements in public policy. Students will have two basic ways of satisfying this requirement.

- **Plan A. Course Only** This plan calls for the generation of four specific policy-related papers/class projects in different courses. This project is integrated into the entire curriculum from the onset. The PPOL 508 Project Writing course provides the capstone course in which the fourth and final required paper is produced, integrating previous papers into a final policy-oriented study.



- **Plan B. Thesis** (six hours) A committee of three faculty members selected by the student and program director oversees thesis work. The research plan is approved at a proposal meeting, after which the student conducts the proposed research and data analysis. On completion of the thesis, the student must present and successfully defend the thesis at an oral examination before his committee.

## Professional Studies Certificate in Public Policy

A Professional Studies Certificate option is also available. Students must complete fifteen graduate credits from the required core or at least nine credits from the required core and six credits of policy-related electives approved by the program director. Credits earned in the certificate program are transferable to the MPP program.

## University of Michigan-Dearborn, University of Windsor Master of Public Policy/Master of Political Science Joint Degree Program

The UM-Dearborn and the University of Windsor (Canada) offer a distinctive and valuable opportunity for individuals to earn both a Master of Public Policy (MPP) degree and a Master of Political Science (MA) degree. This unique partnership between the two campuses allows University of Windsor students to benefit from policy-focused courses with a U.S. perspective while UM-Dearborn students benefit from the international orientation and academic excellence of the Windsor program.

The **Master of Public Policy** program at the UM-Dearborn is an interdisciplinary public policy program integrating economics and political science in a demanding set of policy-related core courses designed for individuals working in policy positions and for individuals who wish to prepare for policy related careers in the public, non-profit, and private sectors.

The **Master of Arts in Political Science** program at the University of Windsor offers specializations in International Relations and Global Politics, and in Canadian Government and Politics and is especially valuable for those considering a career in government service at any level, a research position in the public or private sector, or a career in other professions such as law, journalism, or business.

The joint degree program integrates research and learning in an innovative and open atmosphere that fosters links between higher education, non-profit organizations and government agencies. It provides a sound professional foundation in policy analysis. Trained policy analysts are in demand in the public and private sectors. Literally thousands of interest groups, trade associations and consulting firms employ individuals who analyze policy issues and participate in the policy process. Job titles vary, but include program specialist, legislative assistant, policy analyst, research analyst, and research director, among others.

Participants complete the twenty-four credit hours at the University of Windsor required for a Master of Political Science degree. The UM-Dearborn accepts that Master's degree as satisfying the electives for its Master of Public Policy degree, which requires an additional twenty-one credit hours of core courses. Courses for the two degrees can be completed concurrently.

## COURSE DESCRIPTIONS

The following lists include all courses normally offered at UM-Dearborn. However, not all courses are offered every year and periodically courses are added and deleted. For details, students should consult the *Schedule of Classes* for each term.

### AFRICAN & AFRICAN-AMERICAN STUDIES (AAAS)

**AAAS 503 Minority Groups**  
3.000 Credits  
Prerequisites: SOC 200 or 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. Additional reading assignments or projects will distinguish this course from its undergraduate version AAAS 403. Students cannot receive credit for both AAAS 403 and AAAS 503. (AY)

**AAAS 504 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'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. This course is distinguished from its 400-level counterpart by the requirement of additional assignments, including a required additional paper.

**AAAS 5401 Seminar: African Diaspora**  
3.000 Credits

Research seminar on the history of the African Diaspora in the Atlantic World. This course covers examples of classic texts in the field, as well as significant new scholarship, with an emphasis on critical reading, analysis, and the development of an independent research project. Students gain a deeper understanding of the significance of the African Diaspora in the New World, derived from lectures and discussions providing an overview of this subject, as well as the micro

views gleaned from sharing classroom presentation about students individual research topics. The graduate version of this course includes weightier readings and assignments, with a research paper for potential publication.

#### **AAAS569 20th-Cent Afr Amer Lit**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 or COMP 270) and (ENGL 200 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 on the works. (OC).

#### **AAAS 577 African American English**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version. Students cannot receive credit for both AAAS 477 and AAAS 577.

#### **AAAS 591 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 591 when the topic title is the same.

### **ARAB AMERICAN STUDIES (AAST)**

#### **AAST 5676 Arab Americans Since 1890**

3.000 Credits

This course traces immigration from Syria, Lebanon and Palestine (Biladal Sham) to the U.S. from the 1890s to the present. We begin by utilizing theories on immigration and ethnicity in order to understand patterns of settlement, work, and leisure, and examine the Arab Americans' religious life, press, and evaluate their membership in unions and political parties. Participants will gain knowledge of the immigrants' past achievements and more recent scholarship on their development in public and private spheres. The course includes activities in local institutions, researching archival material, and contact with community leaders. This course will provide knowledge of the historical roots of the Arab Americans'

adjustment to life as U.S. citizens and will prepare the students for further inquiry. Graduate Students can expect to evaluate archival manuscript collections, lead class discussions and could engage original research.

#### **AAST 5677 Arab American Identity**

3.000 Credits

Prerequisites: HIST 300

Extensive discussions and critical analysis of the main markers of Arab American identity formation from late nineteenth century to present. This seminar provides in-depth assessments of immigrant narratives from various sources and disciplinary approaches on specific racial, ethnic, and gender experiences within the larger U.S. context. Additional assignments distinguish the graduate version of this course from the undergraduate version.

#### **AAST 573 Arab American Women Writers**

3.000 Credits

Examines the literary and cultural contributions of Arab and Arab American women novelists, poets, and artists to the development and consolidation of the cultures of understanding and coexistence; explores the tensions between citizenship and belonging, race and the politics of fear, gender and geographical mobility, and ethnic minorities and mainstream consciousness; discerns how Arab women writers and artists retool their various artistic endeavors to channel socio-political disenchantment, critique and civil disobedience; stresses how literary and artistic productions of heterogeneous number of Arab American women writers and artists can indeed foster alternative visions of socio-cultural coexistence, dialogue, and hospitality via artistic commitments to technical and stylistic experimentation and renovation.

#### **AAST 590 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. (OC)

### **ANTHROPOLOGY (ANTH)**

#### **ANTH 506 Culture and Sexuality**

3.000 Credits

The study of women, men, children, socialization practices, and the genesis of sex roles cross-culturally. Additionally, reading assignments or projects will distinguish this course from its undergraduate version ANTH 406. Students cannot receive credit for both ANTH 406 and ANTH 506. ANTH 101 recommended. (YR).

#### **ANTH 507 Sexual Praxis and Theory**

3.000 Credits

Prerequisites: WST 275 or WGST 275 or PSYC 275 or SOC 275 or ANTH 275 or HUM 275 or SOC 443 or PSYC 405 or ANTH 406 or ANTH 101 or ANTH 506 or WGST 303 or PSYC 303 or SOC 303 or ANTH 303 or HUM 303

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. (F).

**ANTH 509 Human Body, Growth and 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 515 Nutrition and Health**  
3.000 Credits

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) nutrient and food problems in the local region and in global perspective. Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 415. Students cannot receive credit for both ANTH 415 and ANTH 515. (YR).

**ANTH 520 Kinship and Marriage**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 420. Students cannot receive credit for both ANTH 420 and ANTH 520. (OC).

**ANTH 521 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? Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 421. Students cannot receive credit for both ANTH 421 and ANTH 521. (AY).

**ANTH 525 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.

Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 425. Students cannot receive credit for both ANTH 425 and ANTH 525. (OC).

**ANTH 530 Health, Culture and Medicine**  
3.000 Credits

A comprehensive examination of how culture mediates processes of illness and healing. Comparative materials worldwide are examined and provide a context for an anthropological analysis of modern biomedicine. Special attention is given to psychosocial illnesses, culture-bound syndromes, and the role of meaning in sickness and curing. Admission to the Master of Science in Health Psychology Program or permission of instructor. (W).

**ANTH 555 Immigrant Cultures and Gender**  
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. Additional reading assignments or project will distinguish this course from its undergraduate version ANTH 455. Students cannot receive credit for both ANTH 455 and ANTH 555. ANTH 101 recommended. (OC).

**ANTH 560 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 570 Doing Anthropology**  
3.000 Credits  
Prerequisites: ANTH 101

A practicum of anthropological theory and method, including ethnographic interviews and participant observation. Students will conduct field research and evaluate results with the help of classmates. Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 470. Students cannot receive credit for both ANTH 470 and ANTH 570. (YR).

**ANTH 577 Ethnographic Film**  
3.000 Credits  
Prerequisites: FILM 248 or HUM 248 or ANTH 101 or ENGL 248 or JASS 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. Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 477. Students cannot receive credit for both ANTH 477 and ANTH 577. (AY).

**ANTH 581 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. Students cannot receive credit for both ANTH 481 and ANTH 581. (AY).

**ANTH 582 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. Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 482. Students cannot receive credit for both ANTH 482 and ANTH 582.  
ANTH 101 and PSYC 170 or 171 highly recommended. (YR).

**ANTH 590 Topics in Anthropology**  
1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of anthropology. Title in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. (OC).

**ANTH 598 Independent Study**  
1.000 TO 6.000 Credits

Readings or analytical assignments in Anthropology in accordance with the needs and interests of those enrolled and agreed upon by the student and instructor. (F, W,S).

**ANTH 599 Readings in Anthropology**  
1.000 TO 3.000 Credits

For students desiring study not available in the regular course offerings. Additional reading assignments or projects will distinguish this course from its undergraduate version ANTH 499. Students cannot receive credit for both ANTH 499 and ANTH 599. (F, W, S).

## ART HISTORY (ARTH)

**ARTH 516 Earl Mod Jpn Paint&Wood Prnts**  
3.000 Credits

Prerequisites: 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 arts and artists from China and the West. Special attention is given to female artists and images of women. (AY).

**ARTH 525 Women in Classical Antiquity**  
3.000 Credits

Prerequisites: 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. (AY)

**ARTH 526 City of Ancient Rome**  
3.000 Credits

Prerequisites: ARTH 101 or ARTH 102 or ARTH 103 or LIBS 560

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 historical and archaeological techniques used to analyze the evidence. Students cannot receive credit for both ARTH 426 and 526. (OC)

**ARTH 528 Roman Art and Memory**  
3.000 Credits

Prerequisites: ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

In this course, we examine Roman art closely associated with personal commemoration and cultural memory, including portraiture, funerary monuments, imperial monuments, and public architecture. We explore these objects relationship to Roman literary cultures theories of mnemotechnics, and in the social context of the Roman obsession with memory perpetuation. We also examine how art historians apply modern theories of collective and social memory in their scholarship on Roman art, creating new ways of understanding Roman sculpture, painting, and architecture. Finally, we investigate Roman spectacle and performance as a vehicle of cultural memory. Graduate students enrolled in this seminar will be exposed in greater depth to the theoretical and

historiographical scholarship of cultural and collective memory, as well as to current topics in Roman art. Graduate students are responsible for additional reading assignments and more lengthy and substantial oral presentations and final papers, as outlined below. Students cannot earn credit for both ARTH 428 and ARTH/LIBS 528.

**ARTH 554 Rembrandt**

3.000 Credits

Prerequisites: ARTH 101 or ARTH 102 or ARTH 103

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, and artistic technique. (AY).

**ARTH 569 Collage, Montage, Assemblage**

3.000 Credits

Different conceptions of collage, montage, and assemblage have vitally shaped artistic practice in the twentieth century, perhaps even more so than the advent of modernist abstraction. The modern phenomenon of collecting, mixing, and sampling that permeates the last century up to and including the contemporary moment will be traced in the class across the thresholds of painting, sculpture, architecture, photography, and film. We will discuss a wide range of movements, genres, and styles (Cubism, Futurism, Surrealism, Dada, Weimar and Russian photomontage, Soviet film, found footage film, French decollage, postwar assemblage) and their relation to the ever-changing mass media, the urban, and the modernized in short, the everyday. The last segment of the class addressed more recent interpretations of the collage paradigm, including installation art and digital applications. Student cannot receive credit for both ARTH 469 and ARTH 569.

## BIOLOGICAL SCIENCE (BIOL)

**BIOL 501 Discoveries in Current Biology**

3.000 Credits

Current issues in biology based on an inquiry approach to learning with a primary emphasis on laboratory, field observations, and discussion. Students will help to develop the specific topics within the subject areas that include the environment, heredity, and health. Projects will have direct applications for classroom teaching. Lecture and laboratory. Permission of School of Education advisor. Teacher experience. (S).

**BIOL 508 Invasive Species Ecology**

3.000 Credits

Prerequisites: BIOL 304 and BIOL 320

This course will examine the biological, ecological and societal impacts of invasive species. Major issues including characteristics of invasive species, invaded communities, origins and success rates of invaders, economic and health effects, methodologies and regulatory strategies for dealing with invasive species will be discussed. Students will

investigate an invasive species and make oral and written reports.

**BIOL 514 Applied Ecology**

3.000 Credits

Prerequisites: BIOL 304 or ESCI 304

An advanced treatment of the principles of ecology especially as they relate to environmental problems and environmental management. This course is intended for graduate students only. Students should have earned a C or above in Ecology (BIOL/ESCI 304) or equivalent. (AY).

**BIOL 515 Aquatic Ecosystems**

4.000 Credits

Prerequisites: BIOL 130 and CHEM 124 and GEOL 118

Advanced course based on the comparative study of the structure and function of lakes, wetlands and rivers. The physical, geological, chemical and biological characteristics of natural and disturbed ecosystems will be emphasized. (F, AY).

**BIOL 516 Limnology**

3.000 Credits

Prerequisites: BIOL 304 or ESCI 301 or ESCI 304 or ESCI 275

The study of the structural and functional relationships and productivity of organisms in lakes and streams as they are regulated by their physical, chemical and biotic environments. BIOL/ESCI 304 or ESCI 275 required. Not open to undergraduates or students who have taken BIOL/ESCI 414.

**BIOL 517 Wetland Biology**

3.000 Credits

Prerequisites: BIOL 304 or ESCI 304

An in depth examination of wetlands from functional, habitat and management perspectives. Topics include hydrology, soils, biogeochemical cycling, biological adaptations, major wetland types, regulation, restoration and creation. Two all-day Saturday field trips required.

**BIOL 519 Behavior and Evolution**

3.000 Credits

An in depth examination of how evolutionary processes shape behavior, focusing on the influence of natural, sexual, and kin selection. Topics include behavioral genetics, natural selection, sexual selection, kin selection, optimality, game theory, evolutionary stable strategies, phylogenetics, and the comparative method. Additional assignments will distinguish this course from the undergraduate version.

**BIOL 524 Biology of Spiders**

4.000 Credits

Prerequisites: BIOL 130

An introduction to the biology of spiders and related arachnids. Lectures include spider anatomy, natural history, ecology, and evolution. Laboratory work includes specimen preparation, use of dichotomous keys, spider behavior, field methods, rearing

and collecting techniques, and identification of spiders and their webs. Three hours lecture, four hours laboratory. Students cannot receive credit for both Biology 424 and Biology 524.

**BIOL 545 Restoration Ecology**

3.000 Credits

Prerequisites: BIOL 304 or ESCI 304

Restoration Ecology is an interdisciplinary course that develops theories and practices that help rehabilitate impaired ecosystems towards a sustainable state. Bioremediation and phytoremediation are some approaches to be discussed. Short-term site management is discussed, often including continued resource or recreational use, with the eventual site sustainability in mind. (F, AY)

**BIOL 552 Med & Env Toxicology**

3.000 Credits

Prerequisites: BIOL 140 and CHEM 225 or (BIOL 301 or BIOL 303 or BIOL 385 or BIOL 370 or BIOL 455 or BIOL 470)

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 556 Behavioral Biology**

4.000 Credits

Co-requisites: BIOL 556L

This course uses evolutionary and ecological theory to evaluate behavioral adaptations of organisms to their environment. Topics discussed include game theory, kin selection, sexual selection, eusociality, orientation and navigation, and signal evolution. Laboratory sessions include: observations of animal behavior, required manipulations of live animals, and field trips. Three hours of lecture, one four-hour laboratory.

**BIOL 561 Advances in Cell Biology**

2.000 Credits

Prerequisites: BIOL 140 and CHEM 225 and (BIOL 301 or BIOL 303 or BIOL 304 or BIOL 306 or BIOL 307 or BIOL 309 or BIOL 310 or BIOL 311 or BIOL 312 or BIOL 313 or BIOL 315 or BIOL 320 or BIOL 326 or BIOL 333 or BIOL 335 or BIOL 350 or BIOL 351 or BIOL 360 or BIOL 361 or BIOL 370 or BIOL 380 or BIOL 385 or BIOL 390 or BIOL 405 or BIOL 406 or BIOL 414 or BIOL 416 or BIOL 420 or BIOL 450 or BIOL 455 or BIOL 459 or BIOL 470 or BIOL 471 or BIOL 472 or BIOL 473 or BIOL 474 or BIOL 485 or BIOL 489 or BIOL 490 or BIOL 495 or BIOL 497 or BIOL 498 or BIOL 499 or BIOL 501 or BIOL 514 or BIOL 515 or BIOL 545 or BIOL 552 or BIOL 590)

Normal and environmentally changing circumstances regulate genes and proteins affecting many important cellular processes. This course will link recent discoveries in cell biology to organisms and the environment that the cell inhabits. Lectures will discuss the roles of organelle and membrane structure and

function, gene regulation, metabolism, immunology, and cellular pathology. (OC).

**BIOL 590 Topics in Biology**

1.000 TO 4.000 Credits

Current topics in Biology. One to four credit hours. (OC)

---

**CHEMISTRY (CHEM)**

---

**CHEM 548 Environmental Chemistry**

3.000 Credits

Prerequisites: CHEM 344 and (CHEM 225 or CHEM 325)

Advanced study of the concepts, principles, practices, and current problems in the chemistry of natural waters, the soils, and the atmosphere. Students in this graduate-level course will engage in mutually agreed-upon projects in addition to the class work assigned undergraduates. (W, AY).

**CHEM 590 Topics in Chemistry**

1.000 TO 4.000 Credits

Current topics in Chemistry. One to four credit hours. (OC)

---

**COMMUNICATION (COMM)**

---

**COMM 520 Critical Media Studies**

3.000 Credits

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). Students cannot receive credit for both COMM 420 and COMM 520. (F, W).

**COMM 530 International Communications**

3.000 Credits

Course covers key concepts and debates in international communications, including interculturalism, media globalization; international news, coverage; flows of data and cultural programming across national boundaries; and the control of communication resources. Students cannot receive credit for both COMM 430 and COMM 530. (F, W).

**COMM 550 Prin of Organizational Comm**

3.000 Credits

Prerequisites: 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 shorter papers (practical and analytical) on assigned topics. Areas of focus include persuasion, decision-making, conflict resolution, problem solving, and the role of communication in leadership, motivation, small group activity, organizational change, and job satisfaction. (AY)



**COMM 555 Gender and Media Studies**

3.000 Credits

Prerequisites: WGST 275 or WGST 303

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 international 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.

**COMM 564 Contemporary Rhetorical Theory**

3.000 Credits

Prerequisites: COMM 201 or COMM 220 or COMM 290 or 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

An examination of contemporary rhetorical theories through study of representative practitioners in related developments in linguistics, philosophy, and psychology. (OC)

**COMM 570 Adv Technical and Prof Comm**

3.000 Credits

Review and practice of advanced professional communication skills, especially audience analysis, assessment of organizational contexts and field-specific conventions, document design, varieties of formal and informal report writing, proposal writing, abstracting, editing, and documentation. Students will study specialized formats and communication issues specific to their professional needs, and will develop their abilities to present technical and complex information to a variety of audiences, both general and specialized, in a variety of professional contexts. Appropriate for graduate students in professional degree programs, such as engineering, management, public administration, and education. Undergraduates must have permission of instructor.

**COMM 577 Professional Comm Ethics**

3.000 Credits

Prerequisites: COMM 340 or COMM 440 or COMM 450

An examination of professional communication 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. (YR)

**COMM 581 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. Students cannot receive credit for both COMM 481 and COMM 581. (AY).

**COMM 590 Topics in Communication**

1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of Communications. Titles listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. Only offered for graduate credit. (OC)

**COMPARATIVE LITERATURE (COML)****COML 533 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 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).

**COML 555 This American Life**

3.000 Credits

The course "This American Life: Immigrant Literature and the American Dream" is a literary and cultural analysis of the literature of immigration. The readings are from works of fiction in a variety of genres, and are written by American and non-American prize-winning authors. Their common denominator is the pursuit of the American Dream and its many multifaceted aspects. The themes explored include: assimilation, acculturation, diversity, language, subculture, intertextuality, nostalgia, belonging, and double identity. This course will be distinguished from its undergraduate counterpart, COML 455, by the inclusion of additional readings and assignments.

## ENGLISH COMPOSITION (COMP)

---

### COMP 564 Contemporary Rhetorical Theory

3.000 Credits

Prerequisites: COMP 106 or COMP 220 or COMP 270 or CPAS 40 or COMP 280

An examination of contemporary rhetorical theories through study of representative practitioners and related developments in linguistics, philosophy, psychology, communication, and composition and rhetoric. Additional work will distinguish this course from its undergraduate version. Students may not receive credit for both COMP 464 and COMP 564.

### COMP 585 Theories of Writing

3.000 Credits

Prerequisites: COMP 106 or COMP 220 or COMP 270 or COMP 280 or CPAS 40

This course investigates why and how people write for particular audiences while investigating writing as it takes place in a variety of contexts. Subjects 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 is appropriate and 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. Additional reading assignments or projects distinguish this course from its undergraduate version. Students will not receive credit for both ENGL 485 and COMP 485 and COMP 585.

### COMP 590 Topics in Composition

1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of Composition. Titles listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. Only offered for graduate credit. (OC)

## COMPUTER & COMPUTATIONAL MATH (CCM)

---

### CCM 504 Dynamical Systems

3.000 Credits

Prerequisites: 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 solution with remarks about their numerical aspects. Also included are autonomous and periodic solutions, phase space, stability, perturbation techniques and Method of Liapunov. Additional reading assignments or projects will distinguish this course from its undergraduate version CCM 404. Students cannot receive credit for both

CCM 404 and CCM 504. (AY)

### CCM 551 Computer Graphics

3.000 Credits

Prerequisites: (CCM 350 or CIS 350) and (MATH 215 or MATH 205) and MATH 217

Basic geometrical concepts, graphics output primitives, two dimensional transformations, windowing, and clipping, three dimensional viewing, visible surface detection methods, graphical user interfaces. Additional reading assignments or projects will distinguish this course from its undergraduate version CCM 451. Students cannot receive credit for both CCM 451 and CCM 551. (YR)

### CCM 558 Introduction to Wavelets

3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

This course will introduce the student to theory and application of wavelets using linear algebra. Topics will include the discrete Fourier transform, linear transformations, orthogonal decomposition, discrete wavelet analysis, the filter bank, Harr Wavelet family, Daubechies's Wavelet family, and applications. Additional reading assignments or projects will distinguish this course from its undergraduate version CCM 458. Students cannot receive credit for both CCM 458 and CCM 558. (OC)

### CCM 572 Intro to Numerical Analysis

3.000 Credits

Prerequisites: MATH 216 and (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. Additional reading assignments or projects will distinguish this course from its undergraduate version CCM 472. Students cannot receive credit for both CCM 472 and CCM 572. (F)

### CCM 573 Matrix Computation

3.000 Credits

Prerequisites: MATH 217 or MATH 227

A study of the most effective methods for finding the numerical solution of problems that can be expected in terms of matrices, including simultaneous linear equations, orthogonal projections and least squares, eigenvalues and eigenvectors, positive definite matrices, and difference and differential equations. Additional reading assignments or projects will distinguish this course from its undergraduate version CCM 473. Students cannot receive credit for both CCM 473 and CCM 573. (AY)

## CRIMINAL JUSTICE STUDIES (CRJ)

---

### CRJ 513 American Constitutional Law

3.000 Credits

Prerequisites: 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 the law". Prerequisite or equivalent recommended. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (AY).

**CRJ 514 Civil Rights and Liberties**  
3.000 Credits  
Prerequisites: 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. Prerequisite or equivalent recommended. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**CRJ 543 Gender Roles**  
3.000 Credits  
Prerequisites: 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 of 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (F, W).

**CRJ 546 Marriage and Family Problems**  
3.000 Credits  
Prerequisites: 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**CRJ 547 Family Violence**  
3.000 Credits  
Prerequisites: 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. This course is distinguished from its 400 level counterpart by the

requirement of additional readings and research. (YR).

**CRJ 553 Sociology of Law**  
3.000 Credits  
Prerequisites: 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**CRJ 555 Immigrant Cultures and Gender**  
3.000 Credits  
Prerequisites: ANTH 101 or WST 275 or WGST 275 or PSYC 275 or SOC 275 or ANTH 275 or HUM 275 or WGST 303 or PSYC 303 or SOC 303 or ANTH 303 or HUM 303

The history and culture of immigration since 1850, including: (1) formation and perseverance of immigrant communities and inter-ethnic boundaries; (2) relations between the homeland and the immigrant; and (3) impact of migration on family life and gender roles. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (AY).

**CRJ 565 Deviant Behavior/Soc Disorganiz**  
3.000 Credits  
Prerequisites: 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**CRJ 566 Drugs, Alcohol, and Society**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Analyses of the sociology of substance use and abuse. Provide 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. Additional assignments will distinguish this course from its undergraduate version.

**CRJ 568 Criminology**  
3.000 Credits  
Prerequisites: SOC 200 or 201

Analysis of criminal behavior in relationship 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and

research. (F, W).

**CRJ 569 Juvenile Delinquency**  
3.000 Credits  
Prerequisites: SOC 200 or 201

The analysis of juvenile delinquent behavior in relationship to the institutional framework of society. Emphasis on the extent, causes, and methods of treatment of juvenile delinquency in the United States. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**CRJ 570 Current Issues in Crim Justice**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Current issues in the field of criminal justice and law enforcement in the US 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. Prerequisite or permission of instructor. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (F, W, S).

**CRJ 571 Comp Crim Justice Systems**  
3.000 Credits  
Prerequisites: 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**CRJ 572 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (OC).

**CRJ 590 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 for credit when specific topics differ. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research.

**CRJ 598 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. (F, S, W).

## ECONOMICS (ECON)

**ECON 5011 Monetary Economics**  
3.000 Credits  
Prerequisites: ECON 311 and ECON 301

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. Students cannot receive credit for ECON 411 and ECON 4011 or ECON 5011.

**ECON 5015 Introduction to Econometrics**  
3.000 Credits  
Prerequisites: MATH 113 or MATH 115 and ECON 305

The theory and practice of the statistical analysis of economic relationships. Topics covered include the construction and estimation of econometric models and tests of economic theories, emphasizing the use of multiple linear regression. Students cannot receive credit for ECON415 and ECON 4015 or ECON 5015.

**ECON 5021 Economics of the Labor Sector**  
3.000 Credits  
Prerequisites: 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. Students cannot receive credit for ECON 421 and ECON 4021 or ECON 5021.

**ECON 503 Economics and Public Policy**  
3.000 Credits  
Prerequisites: ECON 201 and ECON 202

In this course students will review basic neoclassical microeconomics theory and learn to apply it to the analysis of public policy issues. Microeconomics offers important insights into the behavior of businesses, consumers, and government entities. We will review key microeconomic concepts, applying each to an array of public policy questions. Next we'll evaluate resource allocation via the market system and consider how public policy might address situations where the market fails to produce desirable results. Lastly, we'll learn about the basic tools economists use to evaluate public policies. (YR)

**ECON 5065 History of Economic Thought**  
3.000 Credits  
Prerequisites: ECON 302

Course examines the evolution of economic thought and theory

from the early origins to the present, focusing on the major contributions to economics, especially from Adam Smith onward, and assesses the current condition of economic analysis. Students cannot receive credit for ECON 465 and ECON 4065 or ECON 5065.

**ECON 5085 Public Finance**  
3.000 Credits  
Prerequisites: ECON 302

Analysis of the role of government in the economy. Course examines theories of the need for and nature of government intervention in economic activities. Includes analysis of public goods, externalities, taxation, state, and local finance, and models of public decision making. Students cannot receive credit for ECON 481 and ECON 4085 or ECON 5085.

**ECON 533 Antitrust and Regulation**  
3.000 Credits  
Prerequisites: ECON 202

This course uses economic theory to examine major antitrust laws and to evaluate government regulation of industry. ECON 331, Industrial Organization, is valuable background to this course although it is not a prerequisite. Students cannot receive credit for ECON333 and ECON433 or ECON533(OC).

**ECON 542 Economic Development**  
3.000 Credits  
Prerequisites: ECON 201 and ECON 201

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. Students cannot receive credit for ECON 342 and ECON442 or ECON 542(OC).

**ECON 544 Economies of the Middle East**  
3.000 Credits  
Prerequisites: ECON 201 or ECON 202

Survey of socio-economic issues of the post-WWII Middle East, using textbooks and web-based readings. Topics include population growth, urbanization, migration, gender issues, land reform, privatization, and stabilization policies. The Arab-Israeli conflict is not a focus of study. Grade based on papers and exams. Students cannot receive credit for ECON 344 and ECON 444 or ECON 544.

**ECON 547 International Finance**  
3.000 Credits  
Prerequisites: ECON 201

This course studies the large-scale economic issues in interdependent economies, such as the behavior of exchange rates, interest rates, income, wealth, prices, and the balance of payments. International finance focuses particularly on economic policies in a world with a multitude of currencies and increasingly integrated goods, financial, and capital markets. Students cannot receive credit for ECON 347 and ECON 447 or ECON 547.

**ECON 548 International Trade**  
3.000 Credits  
Prerequisites: ECON 201 or ECON 202

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 of the European Union. Students cannot receive credit for ECON348 and ECON 448 or ECON 548.

**ECON 582 Regional Economics**  
3.000 Credits  
Prerequisites: ECON 201 or ECON 202 or ECON 2001

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. Students cannot receive credit for both ECON382 and ECON482.

**ECON 583 Urban Economics**  
3.000 Credits  
Prerequisites: 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. Students cannot receive credit for ECON 381 and ECON 483 or ECON 583.

**ECON 597 Economics Seminar**  
3.000 Credits

An advanced study in selected areas of economics. Topics vary; see the current Schedule of Classes for topics and prerequisites. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (OC).

**ECON 599 Directed Research**  
1.000 TO 3.000 Credits

Independent study under the direction of a faculty supervision in advanced topic areas. Normally must be elected on the "pass/fail" option, in which case it does not count toward credit hour requirement or concentration. Special consideration for the A through E grading option must be approved by members of the Economics discipline. In all cases students must have faculty supervision's permission to register. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (F, W, S).

**ENGLISH (ENGL)**

**ENGL 501 Beowulf and Other Engl Poems**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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. Students cannot receive credit for both ENGL 401 and ENGL 501.

**ENGL 505 Chaucer**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 introduction to the poetry of Chaucer, with primary reference to the Canterbury Tales and some attention to Chaucer's short poems. Students cannot receive credit for both ENGL 405 and ENGL 505.

**ENGL 508 Shakespeare I: Earlier Works**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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)

Intensive study of selected works from the first half of Shakespeare's career, designed to increase the student's critical appreciation and understanding. Students cannot receive credit for both ENGL 408 and ENGL 508

**ENGL 509 Shakespeare II: Later Works**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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)

Intensive study of selected works from the second half of Shakespeare's career, designed to increase the student's critical appreciation and understanding. Student cannot receive credit for both ENGL 409 and ENGL 509.

**ENGL 512 Milton**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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, Aeropagitica, and the shorter poems, including Samson

Agonistes and Comus. Consideration is given to historical background and to other writings by Milton in so far as they illuminate his major works. Students cannot receive credit for both ENGL 412 and ENGL 512.

**ENGL 513 Engl Ren Drama, Exc Shakespr**

3.000 Credits

Prerequisites: (COMP 106 or COMP 220 or COMP 270 or COMP 280 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 examination of representative works of Elizabethan and Stuart playwrights, with special attention being given to the literary history reflected in the plays. Students cannot receive credit for both ENGL 413 and 513.

**ENGL 514 Seventeenth-Century Readings**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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. Students cannot receive credit for both ENGL 414 and ENGL 514.

**ENGL 520 Maj Engl 18th-Century Authors**

2.000 TO 3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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, Behn, Pope, Swift, Burney, Austen, or Samuel Johnson. Students cannot receive credit for both ENGL 420 and ENGL 520.

**ENGL 524 18th-Century English Novel**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 rise and development of the English novel during the 18th Century. Consideration is given to such novelists as Defoe, Richardson, Fielding, Sterne, Austen, and Smollett. Students cannot receive credit for both ENGL 424 and ENGL 524.

**ENGL 531 English Romantic Writers**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 selected British Romantic writers, with attention to the historical and literary contexts in which they wrote. Students cannot receive credit for both ENGL 431 and ENGL 531.

**ENGL 532 Victorian Writers**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 selected Victorian poets and/or nonfiction prose writers, with attention to the literary and historical contexts in which they wrote. Students cannot receive credit for both ENGL 432 and ENGL 532.

**ENGL 536 Memoir and Travel Writing**

3.000 Credits

Prerequisites: COMP 106 or COMP 220 or COMP 270 or COMP 280 or CPAS 40

A course in narrative non-fiction that focuses on memoir and travel writing. Reading involves several books as well as 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. In addition to these assignments, graduate students must prepare a substantial critical analysis focusing on a particular writer or theme, and present their work to the class as well as in writing. (YR).

**ENGL 540 Maj Engl/Amer 20th-Cent Author**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 representative English and American authors since 1900. Students cannot receive credit for both ENGL 440 and ENGL 540.

**ENGL 541 Major 20C/21C English Authors**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 several modern English authors, such as Shaw, Joyce, Forster, Dylan Thomas, D.H. Lawrence, and Woolf. Students cannot receive credit for both ENGL 441 and ENGL 541.

**ENGL 542 Studies in 20-21 Century Lit**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 270 or COMP 280 or COMP 220) and (ENGL 230 or ENGL 231 or ENGL 232 or ENGL 235 or ENGL 236 or ENGL 237 or ENGL 239 or ENGL 200)

Intensive study of a special topic in 20th- or 21st-century literatures in English. 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).

**ENGL 545 20C/21C Women Authors**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 analysis of selected works of significant and emerging 20th and 21st century women authors writing in English, with special emphasis on issues of gender and social and cultural identity. Additional assignments will distinguish this course from its undergraduate version.

**ENGL 550 Maj Amer Auth to the Civil War**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 Charles Brockden Brown, Nathaniel Hawthorne, or Harriet Beecher Stowe, from the earlier periods of American Literature. Students cannot receive credit for both ENGL 450 and ENGL 550.

**ENGL 551 Maj Am Auth: Civ War to WWI**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 major authors from the period between the Civil War and World War I, such as Emily Dickinson, Charles Chesnut, or Henry James. Students cannot receive credit for both ENGL 451 and ENGL 551.

**ENGL 552 Major 20C/21C American Authors**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 American authors from World War I to the present, such as Langston Hughes, Frost, Hemingway, and Faulkner. Students cannot receive credit for

both ENGL 452 and ENGL 552.

**ENGL 553 Contemporary American Novel**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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)

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. Students cannot receive credit for both ENGL 453 and ENGL 553.

**ENGL 554 Postmodern Literature**

3.000 Credits

Prerequisites: (COMP 106 or COMP 220 or COMP 270 or COMP 380 or CPAS 40) and (ENGL 230 or ENGL 231 or ENGL 232 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. Students cannot receive credit for both ENGL 454 and ENGL 554.

**ENGL 556 Teaching Fiction**

3.000 Credits

**ENGL 561 Modern English Grammar**

3.000 Credits

Prerequisites: LING 280 or LING 480 or LING 580

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 ENGL 461 and ENGL 561.

**ENGL 564 Contemporary Rhetorical Theory**

3.000 Credits

Prerequisites: COMM 201 or COMM 220 or COMM 290 or 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

An examination of contemporary rhetorical theories through study of representative practitioners in related developments in linguistics, philosophy, and psychology. (OC)

**ENGL 565 Discourse Analysis**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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)

An examination of the syntactic and semantic devices and structures underlying communication in written text 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. (OC)

**ENGL 568 Writing Young Adult Fiction**

3.000 Credits

In this course participants will explore the young adult novel form 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. Additional reading assignments or projects will distinguish this course from its undergraduate version. Students will not receive credit for both ENGL 468 and ENGL 568.

**ENGL 569 20th-Cent Afr Amer Lit**

3.000 Credits

Prerequisites: (COMP 106 or COMP 220 or COMP 270 or COMP 280 or CPAS 40) and (ENGL 200 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. (OC).

**ENGL 571 Sexual Subcultures in Lit**

3.000 Credits

This course surveys primarily contemporary literature by writers who identify as gay, lesbian, bi-sexual, transgender, or queer. By studying the self-representation and culturally unique perspective of this emerging canon of writers, students in this course understand the emergence of LGBTQ literary traditions and understand the cultural diversity within these traditions. Students learn to identify the aesthetic qualities (such as camp, performativity, coded subtexts, homoeroticism, and the relationship between creativity and sexuality), and historical, political, and social concerns that characterize LGBTQ literary and cultural production. Topics covered include the struggle for civil rights before and after Stonewall, coming out narratives, the negotiation of homophobic cultures, post-colonial writers, and memoirs of the LGBTQ experience, as well as the historical emergence of sexual categories and the literary critique of heteronormativity. This course counts

toward the English discipline diversity requirement.

**ENGL 572 Readings in Muticult Contexts**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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 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. (YR)

**ENGL 573 Arab American Women Writers**

3.000 Credits

This course examines the literary and cultural contributions of Arab and Arab American women novelists, poets, filmmaker and artists to the development and consolidation of cultures of understanding and coexistence; explores the relations between, among others, citizenship and belonging, race and national security, gender and geographical mobility, and ethnic minorities and mainstream consciousness; stresses how literary and artistic productions of Arab and Arab American women writers and artists foster alternative visions of socio-cultural coexistence, dialogue, and hospitality by means of technical and stylistic experimentation and renovation.

**ENGL 574 Second Lang Acquisition:Engl**

3.000 Credits

Prerequisites: LING 480 or LING 580

A survey of fundamental concepts and major concerns in the study of English as a Second Language (ESL). The course examines a variety of psycholinguistic and sociolinguistic issues related to second language acquisition (SLA), ranging from theoretical to pedagogical. A primary focus is on developmental patterns and cognitive processes of SLA and individual variation in ESL speakers in terms of their social motivations and learning strategies. Implications for practical concerns such as the ESL teaching profession, instructional materials and curriculum development will be addressed where relevant. Graduate students will be assigned additional readings from a graduate course text and be required to submit an extra data analysis assignment and write a longer research paper.

**ENGL 577 African American English**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version. Student cannot receive

credit for both ENGL 477 and ENGL 577.

**ENGL 582 History of the English Lang**

3.000 Credits

Prerequisites: LING 480 or LING 580

A thorough grounding in the history and structure of the English language. At issue are the linguistic and ideological origins 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)

**ENGL 584 World Englishes**

3.000 Credits

Prerequisites: LING 580 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 588 Env Lit & Reps of Nature**

3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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)

An interdisciplinary study of the ways in which the relationship between "nature" and humankind has been represented in literature and other forms of cultural expression. Emphasis on American and British texts of the 19th and 20th centuries, but assigned materials may include reading from other cultures and historical periods.

**ENGL 590 Topics in English**

1.000 TO 3.000 Credits

Examination of problems and issues in selected areas of English. Titles listed in the Schedule of Classes will change according to content. Course may be repeated for credit when specific topic differs. Only offered for graduate credit. (OC)

**ENVIRONMENTAL SCIENCE (ESCI)**

**ESCI 504 Field Studies in Env Science**

2.000 Credits

A systematic analysis of the environment. This course will focus on the analysis of the Rouge River Watershed as an ecological unit. The student will make intensive analyses of the river water and the surrounding land surface at selected sites. The results will provide a composite of the water quality and land use of the various tributaries. Emphasis will be placed on proper sampling and testing techniques, field and lab safety procedures, aquatic chemistry, biological organisms as indicators of pollution, and the role of wastewater dumping on the watershed.

**ESCI 572 Environmental Communications**

3.000 Credits

Preparation and presentation of both oral and written technical abstracts and reports, including environmental newsletters, thesis, and media releases. Professional scientists must be able to effectively communicate ideas and concepts to other scientists and to the general public. This course will provide the foundations in learning how to communicate ideas effectively and succinctly. (F, YR)

**ESCI 574 Watershed Analysis**  
3.000 Credits

An interdisciplinary study of watersheds, the most commonly used bio-regional unit. The course integrates the analysis of many factors which contribute to the character of watersheds, including bedrock and surficial geology, surface and groundwater hydrology, social history, land use history, water quality analysis, biological diversity, laws and regulations, management models, drinking water and wastewater systems, best management practices, and educational programs. The Rouge River watershed will serve as the primary case study.

**ESCI 585 Spatial Analysis and GIS**  
3.000 Credits

Application of the principles of Spatial Analysis and the use of Geographic Information Systems as a research tool in Environmental Science. Emphasis will be placed on the use of commercially available software including: ESRI's ArcView GIS, Golden Software's Surfer and Adobe PhotoShop. Emphasis will also be placed on the use of the Michigan spatial data warehouse program and the Michigan geographic framework program for metadata specific to Michigan. (AY).

**ESCI 595 Topics in Environmental Science**  
3.000 Credits

Problems or readings on specific topics or subjects in environmental science. (YR)

**ESCI 597 Off-Campus Independent Study**  
1.000 TO 3.000 Credits

Provides opportunity for qualified graduate students in the MSES program to pursue independent research under the direction of a graduate faculty member off campus. A written proposal describing the project (including the nature of the project itself, dates, where the project will be done and the faculty member supervising the project) must be approved by the MSES program director/committee before the student can register for the course. Project must be appropriate to the student's chosen track. It must be designed to produce a scholarly paper, papers, or other evidence(s) that reflect significant results from the course (F, W, S).

**ESCI 599 On-Campus Independent Study**  
1.000 TO 3.000 Credits

Provides opportunity for qualified graduate students in the MSES program to pursue independent research under the direction of a graduate faculty member. A written proposal describing the project (including the nature of the project itself,

dates, and the supervising faculty member) must be submitted to the Program Director/committee for approval before the student can register for the course. Project must be appropriate to the student's chosen track. It must be designed to produce a scholarly paper, papers, or other evidence(s) that reflect significant results from the course. (F, W, S).

**ESCI 698 MSES Master's Project**  
3.000 Credits

Intended for students who present a plan for a project using methods of intellectual exploration and analysis. Possible projects include gathering data through laboratory or field based studies, using interviews and survey instruments to gauge human responses. They should involve creative representations, writing, and other forms of interdisciplinary analysis. To be carried out under the general supervision of a member of the graduate faculty in Natural Sciences. Project plan must be approved by the MSES Program Director/committee before student registers for this course. (F, W, S).

**ESCI 699 MSES Master's Thesis**  
1.000 TO 6.000 Credits

MSES students electing this thesis option in the last stage of the program will work under the general supervision of a member of the graduate faculty in Natural Sciences, but will plan and carry out the work independently. Prospectus and thesis plan must be approved by the MSES Program Director/committee before student registers for this course. (F, W, S).

## ENVIRONMENTAL STUDIES (ENST)

**ENST 574 Environmental Education**  
3.000 Credits

This course involves an in-depth analysis of the environmental education at both the elementary and secondary school level, particularly stressing the environment as a teaching resource. Community resources as they related to environmental education are also investigated. Graduate students will be expected to become knowledgeable about and complete a review of current research that involves the efficacy of environmental education.

**ENST 588 Env Lit & Repts of Nature**  
3.000 Credits

Prerequisites: (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)

An interdisciplinary study of the ways in which the relationship between "nature" and humankind has been represented in literature and other forms of cultural expression. Emphasis on American and British texts of the 19th and 20th centuries, but assigned materials may include readings from other cultures and historical periods.

**GEOLOGY (GEOL)****GEOL 510 Urban Geology**  
3.000 Credits

The study of how the geosciences can be used to solve community-based environmental problems. Taught within the context of the Rouge River watershed, one of the most urbanized watersheds in the country, the focus of this 3-week course is water and watersheds. Classroom lectures are combined with extensive field work, field trips and guest speakers. Taught as a summer II course in July primarily for teachers (middle school and high school) with little or no background in geology. Teachers taking this course serve as mentors for their respective students. Teachers also spend time developing modules that can be incorporated into their existing classroom activities.

**GEOL 550 Glacial Geology**  
3.000 Credits  
Prerequisites: GEOL 118 and GEOL 218

The study of landforms and sediments created by glaciers both past and present. The glacial activities of the past 2 million years will be emphasized, particularly the evolution of landforms common to the upper Midwest. The influence of glacial deposits on development, construction methods, planning and environmental protection will also be discussed. (AY)

**GEOL 560 Engineering Geology**  
3.000 Credits  
Prerequisites: GEOL 370

The application of structural geology and stratigraphy to the practice of civil engineering. Emphasis is placed on the application of geologic analysis to facilitate the successful completion of engineering projects. Case histories will be used to evaluate how geologic knowledge has been used in both successful and unsuccessful engineering projects. (W, AY)

**GEOL 570 Geochemistry**  
3.000 Credits  
Prerequisites: GEOL 375 and CHEM 344

Application of the principles and techniques of geochemistry to the field of groundwater hydrology. Composition of natural water and the processes affecting the geochemical mobility of dissolved solids will be studied. Emphasis will be on the influence of the geochemical environment on water composition and water pollution. Course will include a review of analytical methods for the determination of water quality. Three hours lecture. (AY).

**GEOL 574 Urban Watersheds**  
3.000 Credits

Study of the geology, contamination and sustainable development in urban watersheds with a focus on the fate and transport of contaminants in the soil and water. Students are expected to have a rudimentary background in physical geology.

**GEOL 575 Contaminant Hydrogeology**  
3.000 Credits  
Prerequisites: 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 selected case histories. (AY)

**GEOL 577 Geology Field Methods**  
1.000 TO 2.000 Credits  
Prerequisites: GEOL 118 and GEOL 218

One to two week long intensive field course conducted at the end of the winter semester. The course will emphasize geological field methods and analysis of geologic terrains. Use of Brunton compass and clinometer, GPS, recognition and identification of geological structures, preparation and interpretation of geologic maps, satellite images and aerial photographs will also be covered. May be repeated for credit when destination varies. Two credit hours will be given for a field course which lasts two weeks. Alternatively, students may elect to take the shorter course (one-week to 10 days) for 2 credit hours if they are willing to serve as a teaching assistant. Organizational meetings will be held during the winter semester. (YR).

**GEOL 578 Geology of the National Parks**  
3.000 Credits

The study of the geology (stratigraphy, structure, geomorphology) of major national parks and monuments. Specific areas visited vary from year to year, enabling the course to be repeated for credit. Emphasis is placed on developing note taking skills in the field, describing rock sequences in outcrop, interpreting geologic maps and aerial photographs, and evaluating cratonic sequences, regional correlations, paleogeographic and paleoclimatic reconstructions, small and regional scale structural patterns, and facies changes related to rising and falling sea level.

**GEOL 587 Groundwater Modeling**  
3.000 Credits  
Prerequisites: GEOL 375 or GEOL 498\*

Lecture and computer laboratory applications of two- and three-dimensional groundwater flow and contaminant transport problems. Visual Modflow, Modpath (-PLOT and SUTRA), MT3D, and Surfer will be used to evaluate remedial alternatives (e.g., pump and treat, funnel and gate or trench and drain systems). EPA's Basin software combined with ESRI's GIS software ArcView will be used to evaluate and compare the Rouge River watershed with other small-scale watersheds in Michigan. (AY)

**GEOL 590 Topics in Earth Science**  
1.000 TO 4.000 Credits

Current topics in Earth Science. One to four graduate credit hours. (OC)

**GERMAN (GER)**

**GER 599    Advanced Individual Projects**  
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).

**HEALTH POLICY STUDIES (HPS)****HPS 501    Health Policy St Internship**  
3.000 Credits  
Prerequisites: HPS 440 or HPS 540

The Health Policy Studies Internship is an academic, curriculum-based practical work experience in a health care setting, health insurance firm, or health policy agency that provides students with hands-on experience to enhance understanding of issues relevant to health policy and health service delivery. The internship is normally unpaid and, when taken as a three credit hour course, consists of 8 hours per week of field work over a 14-week semester. Students are required to attend an internship seminar that meets weekly and includes a series of lectures on organizational, ethical, and administrative topics, intended to link the work experience with students' prior coursework. (F,W)

**HPS 502    Graduate Seminar**  
3.000 Credits  
Prerequisites: HPS 440 or HPS 540

Seminar focuses on current issues and practical problems in health care organization, delivery, and financing. The Case Method (where appropriate) is used to demonstrate and discuss real problems and approaches in functioning health care institutions in Southeastern Michigan. The course is primarily from the point of view of individuals responsible for administering or advising institutions. Students cannot receive credit for both HPS 402 and HPS 502. (F)

**HPS 503    Medical Information Sys**  
3.000 Credits  
Prerequisites: HPS 440 or HPS 540

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. Student cannot receive credit for both HPS 403 and HPS 503.

**HPS 504    Financing Health & Medical Sys**  
3.000 Credits  
Prerequisites: ECON 201

The American health care system faces two great 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 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 504, HPS 451, HPS 551, or PADM 451. (W)

**HPS 505    Healthcare Administration**  
3.000 Credits  
Prerequisites: HPS 440 or HPS 540

FULL TITLE: Concepts of Healthcare and Human Services Administration. 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 510    Quantitative Research**  
4.000 Credits  
Prerequisites: SOC 200 or SOC 201

An introduction to methods of data collection and analysis. Also a discussion of research design and the philosophy of social sciences. Additional reading assignments or projects will distinguish this course from its undergraduate version HPS 410. Students cannot receive credit for both HPS 410 and HPS 510. (F, W, S).

**HPS 512    Principles of Epidemiology**  
3.000 Credits

The study of the frequency and distribution, as well as the causes and control, of disease in human populations. Using data analysis tools, one can identify causes of disease and the effects of prevention and treatment. This course is an application of research design to determine the extent to which environment (toxins, for instance), heredity, childhood development, and lifestyle influence morbidity and mortality rates. Graduate students work will include re-analyzing original data in a confirmatory, in contrast to exploratory mode.

**HPS 530    Health Behavior & Health Educ**  
3.000 Credits

This course provides an overview of social and behavioral science theories that guide the development of health education and promotion interventions aimed at preventing, reducing, and eliminating public health problems. Part one of the course describes the relationship between behavior and health, through a review of several current health problems faced by people in the United States. Part two presents a survey of health behavior theories ranging from those aimed at individual behavioral change to community health education promotions. The final part of the course looks at the application of theory to real-world health promotion and education interventions. Students will learn how social and behavioral theory informs intervention design, implementation, and evaluation.

**HPS 540 Medical Sociology**  
3.000 Credits

An analysis of health and illness behaviors from the point of view of the consumer, as well as the 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. Additional reading assignments or projects will distinguish this course from its undergraduate version HPS 440. Students cannot receive credit for both HPS 440 and HPS 540. (F).

**HPS 542 Medical Ethics**  
3.000 Credits

Prerequisites: 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

Issues in medical ethics are among the most exciting and most urgent facing the world today. This course will explore some of these issues: the relationship between patient and health caregiver (truth-telling, informed consent, the right to refuse treatment, confidentiality); assisted suicide and euthanasia; treatment of defective newborns; scarce resources, social justice and the right to health care; cloning and genetic manipulation; new reproductive technologies; and others. We will discuss issues from the standpoint of patients, medical professionals, and citizens who shape policy in a democratic society. Ethical theories and concepts will be stressed. 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 548 Comparative Health Care System**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version HPS 448. Students cannot receive credit for both HPS 448 and HPS 548. (F, W, S).

**HPS 556 Health Care and the Law**  
3.000 Credits

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. (W).

## HISTORY (HIST)

**HIST 5312 European Encounters 1400-1800**  
3.000 Credits

During the early modern period, merchants, explorers and travelers set out from the European West in unprecedented voyages of discovery, intensifying interaction between cultures and initiating contact with previously unknown civilizations. In this advances seminar we examine original documents (in English) as well as current scholarship about encounters between groups of Europeans and inhabitants of other parts of the world from the perspective of both sides. Comparing these contradictory (and often incompatible) accounts of the same events, provides a more comprehensive understanding of the process of European expansion, and of the strengths (and limitations) of historical sources. Additional assignments will distinguish the undergraduate and graduate versions of this course.

**HIST 5401 Seminar: African Diaspora**  
3.000 Credits

Research seminar on the history of the African Diaspora in the Atlantic World. This course covers examples of classic texts in the field, as well as significant new scholarship, with an emphasis on critical reading, analysis, and the development of an independent research project. Students gain a deeper understanding of the significance of the African Diaspora in the New World, derived from lectures and discussions providing an overview of this subject, as well as the micro views gleaned from sharing classroom presentation about students individual research topics. The graduate version of this course includes weightier readings and assignments, with a research paper for potential publication.

**HIST 5505 Feminism & Mod. Mid. East**  
3.000 Credits

This course provides an analysis of the history, historiography, and sources for the study of feminism in the Middle East since 1800. Additional assignments will distinguish the graduate version of this course from the undergraduate version.

**HIST 5515 Culture & Hist. in Mod. Iran**  
3.000 Credits



Alongside the most influential academic studies of Iran, this course uses cultural sources (such as literature and film) as windows on the pivotal social and political movements in Iranian history since 1800. This study of cultural change factors in cultural debates inside Iran, the growth of the Iranian Diaspora, and the increased presence of Iranian culture in electronic media. Additional assignments distinguish the graduate version of this course from the undergraduate version.

**HIST 5600 U.S. Cultural History**  
3.000 Credits

The seminar concentrates on scholarly interpretations of U.S. history through a cultural lens. It features close analysis of classic texts in American cultural history as well as significant new works of scholarship, with an emphasis on critical reading, analysis, and historiography of the field. Students gain a deeper understanding of the cultural aspect of U.S. history and a familiarity with this mode of analysis, its guiding theories, newest trajectories and scholarly debates, and impact on the field of history as a whole. The graduate version of the course features a major research project. Cannot receive credit for both HIST 490A and HIST 5600.

**HIST 565 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, intrafamilial and inter-generational relationships and population patterns. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (AY)

**HIST 5650 Sem in US Women's History**  
3.000 Credits

Seminar on the historiography and key primary sources related to U.S. Women's History. The course covers examples of classic texts in the field as well as significant new works of scholarship, with an emphasis on critical reading, analysis, and historiography of the field. Students gain a deeper understanding of the field, its guiding concepts, foundational texts, newest trajectories, and impact on the field of history as a whole. The graduate version of this course includes weightier readings and assignments.

**HIST 5677 Arab American Identity**  
3.000 Credits  
Prerequisites: HIST 300

Extensive discussions and critical analysis of the main markers of Arab American identity formation from late nineteenth century to present. This seminar provides in-depth assessments of immigrant narratives from various sources and disciplinary approaches on specific racial, ethnic, and gender experiences within the larger U.S. context. Additional assignments distinguish the graduate version of this course from the undergraduate version.

**HIST 5678 Middle Eastern Diasporas**  
3.000 Credits

This course explores the diasporas of Arabs, Turks, Assyrians, and Iranians living in Europe and the Americas that have occurred since the 1880s. It pays careful attention to how "aspects of diaspora" shape, mimic, transect, and undermine the political and economic regimes of which they are part. The reception of Middle Eastern communities in different national contexts and historical periods receive special attention as do their adaptive strategies as religious, ethnic, gendered, and racialized minorities. Those enrolled in the graduate level of the course pursue additional readings and assignments.

**HIST 590 Topics in History**  
1.000 TO 3.000 Credits

Problems and issues in selected areas of history. Title changes according to content. Course may be repeated when specific topic differs. (OC).

**HIST 599 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (F, W).

---

## HUMANITIES (HUM)

**HUM 509 Feminist Theories**  
3.000 Credits  
Prerequisites: LIBS 560

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 for both HUM 409 and HUM 509. Additional reading assignments or projects will distinguish this course from its undergraduate version.

**HUM 533 Writing Women in Renaissance**  
3.000 Credits

This course will be taught in English, and will focus in 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 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 557 American Cinema**

3.000 Credits  
Prerequisites: ENGL 248 or FILM 248 or HUM 248 or JASS 248 ENGL 240

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. Students who elect the course for graduate credit will do additional graduate-level work as outlined in the course syllabus.

**HUM 577 Ethnographic Film**

3.000 Credits  
Prerequisites: FILM 248 or ANTH 101 or ENGL 248 or HUM 248 or JASS 248

**HUM 590 Advanced Topics in Humanities**

3.000 TO 4.000 Credits

The presentation of a topic in a discipline of the Humanities or an interdisciplinary course involving humanities on an advanced undergrad/graduate level.

**JOURNALISM AND SCREEN STUDIES (JASS)**

**JASS 503 Issues in Cyberspace**

3.000 Credits

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. (YR).

**JASS 506 History & Theory of Documentary**

3.000 Credits  
Prerequisites: COMP 106 or COMP 220 or COMP 270 or CPAS 40 or COMP 280

This course surveys the history of European and American documentary and explores its ethical, aesthetic, legal and economic issues. Students study documentary's central moments, forms and artists; the changing theoretical approaches to documentary making; and the range of documentary purposes (informational, educational, propagandistic, entertainment). The course also provides historical and theoretical background for those students who wish to pursue their interest in documentary in the script-writing and production courses also offered in the Communications (Journalism and Screen Studies) Discipline. The graduate course includes a substantial additional research

paper, for example on one particular documentary producer, on ethical issues in documentary or on the use of documentary as a political tool.

**JASS 536 Memoir and Travel Writing**

3.000 Credits  
Prerequisites: COMP 106 or COMP 220 or COMP 270 or CPAS 40 or COMP 280

A course in narrative nonfiction that focuses on memoir and travel writing. Reading involves several books as well as classic essay-length examples. Assignments include both short and analytical papers and the writing and revising of three original articles, based on research, interviews, memory, and observation, and drawing on literary techniques. In addition to these assignments, graduate students must prepare a substantial critical analysis focusing on a particular writer or theme, and present their work to the class as well as in writing. (YR).

**JASS 557 American Cinema**

3.000 Credits  
Prerequisites: ENGL 248 or HUM 248 or JASS 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. Students who elect the course for graduate credit will do additional graduate-level work as outlined in the course syllabus.

**JASS 577 Ethnographic Film**

3.000 Credits  
Prerequisites: ENGL 248 or HUM 248 or JASS 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 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. (AY)

**LIBERAL STUDIES (LIBS)**

**LIBS 528 Roman Art and Memory**

3.000 Credits  
Prerequisites: ARTH 101 or ARTH 102 or ARTH 103 or ARTH 104 or ARTH 106

In this course, we examine Roman art closely associated with personal commemoration and cultural memory, including portraiture, funerary monuments, imperial monuments, and public architecture. We explore these objects relationship to Roman literary cultures theories of mnemotechnics, and in the social context of the Roman obsession with memory perpetuation. We also examine how art historians apply

modern theories of collective and social memory in their scholarship on Roman art, creating new ways of understanding Roman sculpture, painting, and architecture. Finally, we investigate Roman spectacle and performance as a vehicle of cultural memory. Graduate students enrolled in this seminar will be exposed in greater depth to the theoretical and historiographical scholarship of cultural and collective memory, as well as to current topics in Roman art. Graduate students are responsible for additional reading assignments and more lengthy and substantial oral presentations and final papers, as outlined below. Students cannot earn credit for both ARTH 428 and ARTH/LIBS 528.

**LIBS 536    Memoir and Travel Writing**  
3.000 Credits  
Prerequisites: LIBS 560

A course in narrative nonfiction that focuses on memoir and travel writing. Reading involves several books as well as classic essay-length examples. Assignments include both short and analytical papers and the writing and revising of three original articles, based on research, interviews, memory, and observation, and drawing on literary techniques. In addition to these assignments, graduate students must prepare a substantial critical analysis focusing on a particular writer or theme, and present their work to the class as well as in writing. (YR).

**LIBS 560    Foundations in Liberal Studies**  
3.000 TO 6.000 Credits

This course is mandatory for students entering the MALS program. It will introduce students to the understanding of advanced liberal studies and to graduate-level interdisciplinary skills and methodologies.

**LIBS 561    Self and Society**  
3.000 Credits  
Prerequisites: LIBS 560

This seminar examines various facets of autobiography and memoir within the context of historical and contemporary cultures. Drawing on texts from Europe, Africa, Asia, and North America, the seminar analyzes the purpose of self-narrative and explores the cultural patterning of individual experience and literary discourse. (YR).

**LIBS 562    Postmodernism and Truth**  
3.000 Credits  
Prerequisites: LIBS 560

Examines the development in the last 20 years of the emergence of "postmodern" scholarship in a number of fields in the natural and social sciences, humanities, and popular culture; considers how in each case these approaches seem to challenge the authority of single explanations and absolute truth. Addresses issues such as diversity in cultures; why cultural pressures produce new forms of relativism; the dynamics of race and gender in intercultural clashes; and the interplay of strongly held values and toleration. Course format will require close reading of complex texts and responses to them in class discussion.

**LIBS 563    New World Cultures**  
3.000 Credits  
Prerequisites: LIBS 560

This is a MALS Core Seminar that will focus on the topic of cross cultural encounters in the Atlantic from the advent of the Atlantic slave trade to the emancipation of slaves in the western hemisphere. Course will stress interdisciplinary approaches to the topic, including economics, history, and anthropology. (YR).

**LIBS 564    Literature & Science Studies**  
3.000 Credits  
Prerequisites: LIBS 560

An introduction to the humanistic study of science using works of literature and the techniques of literary, historical, sociological, philosophical, cultural, feminist and rhetorical analysis. Additional assignments will distinguish this course from its undergraduate version.

**LIBS 566    Investigating Academic Literacy**  
3.000 Credits  
Prerequisites: LIBS 560

Intensive investigation of, and practice with, writing and research skills required for graduate-level work. Through regular assignments, guided reading of a variety of texts, and intensive work with instructor/s and one another, students will explore what it means to produce academic discourse, learn its conventions, and develop skills in written analysis. Additional assignments will distinguish this course from its undergraduate version.(YR).

**LIBS 567    The Self in Philosophy & Lit**  
3.000 Credits  
Prerequisites: LIBS 560

This course will utilize both philosophical and literary texts to examine the nature of the self. We will explore the self's inwardness, its relation to others, its capacity for self-knowledge and self-deception, its connection to gender, its desire to disown itself and finally its relation to death. The philosophical texts will provide theoretical structures within which to both experience and discuss the literary texts. Additional assignments will distinguish this course from its undergraduate version.

**LIBS 568    Religion & Society**  
3.000 Credits  
Prerequisites: LIBS 560

The course will focus upon how social scientists examine the role of religion in public life. It will examine several religious organizations or communities or religious-based ideologies. The format of the class will be to read primary source materials or research studies and discuss them. This is not a class in theology or faith. (OC).

**LIBS 569    The Texture of Memory**  
3.000 Credits  
Prerequisites: LIBS 560

This seminar will examine theories of individual, collective, and cultural memory and their practical application. In addition, we will read three major novels in which the authors explore memory in its various forms. We will begin the semester by examining the ways in which clinical psychologists have looked at memory versus the ways in which social constructive sociologists and psychologists have viewed memory. In our examination, we will try to find some points of intersection between the two groups. This will provide the framework for further explorations of memory and the study of constructions of memory and their uses and abuses. We will focus on the ways in which memory has been conceptualized in the disciplines of art history, history, literary criticism, Holocaust studies, sociology, and psychology, as well as the interdisciplinary field of cultural studies. (OC).

**LIBS 570 History of Warfare, 1500-2000**  
3.000 Credits  
Prerequisites: LIBS 560

A History of Warfare during the Age of Gunpowder offers a summary of human strife from approximately 1500 to the present. Drawing on a series of diverse sources - including analytical assessments by eminent contemporary historians, eyewitness accounts by combatants, and cinematic representations of warfare - this course seeks to explore the origins of human conflict, its evolution during the past 500 years, and its future, if any. (OC).

**LIBS 571 Science & Philosophy of Emotion**  
3.000 Credits  
Prerequisites: LIBS 560

This course will examine how past philosophers and psychologists analyzed emotions to set the stage for an examination of more recent work on emotions being produced in philosophy, psychology, and neuroscience. This course will use these analyses to explore the following topics: the relationship of emotions to reason, memory, and morality, and the overall role of emotions in our relationship to ourselves and to others. Additional assignments will distinguish this course from its undergraduate version.

**LIBS 572 Migrations of the Holy**  
3.000 Credits  
Prerequisites: LIBS 560

This course will probe the dynamic shifts in religious subjectivity that mark the years ranging from the early Christian centuries (first and second centuries AD) to the end of the Middle Ages (1500 AD). It will attend mainly to the evidence to be found in the literary record of these two sequential periods, and will be concerned with examining a wide variety of topics, such as the formation of orthodox belief, the challenges posed by apostate and heretical sects, competing modes of ascetic life and practices, the power struggles between secular and ecclesiastical authority, and the rise of mysticism and affective piety. The course will demand close analysis and comparison of texts in class discussion as well as in written assignments.

**LIBS 575 Making Modern Science**

3.000 Credits  
Prerequisites: LIBS 560

This seminar will explore how science became a defining feature of modern life around the world in the last five centuries. We will study the so-called "Scientific Revolution" in a global context in relation to other forms of belief, such as religion and magic, and changes in human society at large. By critically studying theoretical texts, primary sources, and secondary materials tied to the emergence of the modern sciences, the seminar will challenge participants to examine their assumptions and presuppositions about what science is, how science was in the past, how science has been done, and what its history should be. We will discover how people in different cultures made knowledge of the natural world in pre-modern times, and examine why some ways of making natural knowledge became more reliable and widespread than others in recent centuries.

**LIBS 580 Gender, Culture and Identity**  
3.000 Credits  
Prerequisites: LIBS 560

This is a course about how scholars analyze women, gender, and feminist theories. It introduces students to key questions about gender and the principal methods for studying them. It will serve as a forum for building and testing theories on the totality of women's experience. Additional assignments will distinguish this course from its undergraduate version. (YR).

**LIBS 581 Aspects of Greek Culture**  
3.000 Credits  
Prerequisites: LIBS 560

Despite its clichéd ring, Greco-Roman and Judeo-Christian cultures are the origins of the western world. The seminar will consider a variety of classical texts (for example, the Iliad, the Oedipus Trilogy, The Oresteia, The Peloponnesian Wars) as signposts to Greek culture and values. What do the texts reveal about Greek values, social mores, social interaction--between men and women, men and men, children and adults, gods and men?

**LIBS 582 Eur Ideas in American Culture**  
3.000 Credits  
Prerequisites: LIBS 560

This course will introduce students to key topics in modern western culture, with focus specifically on the role played by European ideas in the creation of American culture from the eighteenth century to the present. Organized around three case studies of European intellectual influences on America using the writings of John Locke, Charles Darwin, and Sigmund Freud. (OC)

**LIBS 583 Early Mod Era/New & Old World**  
3.000 Credits  
Prerequisites: LIBS 560

This is a course on the history of the early modern West from multiple perspectives, with special emphasis on the role played by the Old and New World, together, in the creation of the modern. Course fulfills the Liberal Studies track core seminar

requirement. (OC).

**LIBS 584 ENST: Concepts and Philosophy**  
3.000 Credits  
Prerequisites: LIBS 560

An extensive and intensive analysis of the roots of environmental studies. Environmental studies becomes meta-disciplinary as it makes connections between the traditional disciplines in the natural sciences, social sciences, humanities, and technological sciences when dealing with current environmental issues. The students will examine and discuss the philosophical, scientific, social, and religious basis of the environmental movements through classical and contemporary readings. Possible topics will include: views of nature, sustainability, carrying capacity, management of commons, the environment of cities, and developing a sense of place. Additional assignments will distinguish this course from its undergraduate version.

**LIBS 585 Watershed Analysis**  
3.000 Credits  
Prerequisites: LIBS 560

An interdisciplinary study of watersheds, the most commonly used bioregional unit. The course will integrate the analysis of many factors which contribute to the character of watersheds, including bedrock and surficial geology, surface and groundwater hydrology, social history, land use history, water quality analysis, biological diversity, laws and regulations, management models, drinking water and wastewater systems, best management practices, and educational programs. The Rouge River Watershed will serve as the primary case study. Additional assignments will distinguish this course from its undergraduate version.(YR).

**LIBS 586 Ecological Economics**  
3.000 Credits  
Prerequisites: LIBS 560

A review of major theories and issues concerning the relationship between ecological and economic systems. Topics include these questions: What is the purpose of economic 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. (OC).

**LIBS 587 Women and Public Spaces**  
3.000 Credits  
Prerequisites: LIBS 560

Despite old and persistent myths of a woman's place being in the home, women in America have consistently maintained a presence in public spaces. Their participation, however, was not unfettered. Laws, social mores, familial and religious restraints, etiquette, the threat of violence, lack of funds, and other factors influenced and restricted women's behavior when

in public and structured society's reactions to their presence. This course will consider the development of these codes of behavior, formal and informal, how women of different ethnicities, races, sexual orientations, and classes experienced their effects, and the ways in which women sought to temper and undermine the system, particularly in the 20th century. This course will provide an interdisciplinary approach to historic, social physical, economic, and cultural geographies through which women have traveled. Readings will consider the scholarship generated by urban geographers, historians, sociologists, anthropologists, literary critics, economists, novelists, and journalists. Additional assignments will distinguish this course from its undergraduate version.(OC)

**LIBS 588 Creative Class/Working Class**  
3.000 Credits  
Prerequisites: LIBS 560

In this course we will explore changing conceptions of work and its impact on urban redevelopment policies. The issue will be set within a larger theme: the relationship between work and creativity. We begin with a review of writings by Adam Smith, Karl Marx, Max Weber, Karl Polyani, E. P. Thompson and others on the history and concept of work as a specific form of productive human activity. We will then critically examine the nature of the shift from manufacturing to services and the emergence of a new, knowledge-based system of production. Specific policies aimed at recruiting members of the "creative class" to live and work in "cool cities" - Michigan's cool cities initiative, for example - will be examined and critically evaluated. (OC)

**LIBS 599 Independent Studies - MALS**  
1.000 TO 3.000 Credits  
Prerequisites: LIBS 560

Provides opportunity for qualified graduate students in the MALS program to pursue independent research under the direction of a graduate faculty member. Project must be defined in advance, in writing, and must be appropriate to the student's chosen track. It must be designed to produce a scholarly paper or papers which reflect significant results from the course.

**LIBS 690 Topics in Liberal Studies**  
3.000 Credits  
Prerequisites: LIBS 560

Presents topics of current interest in graduate liberal studies. Topics vary from term to term. (OC).

**LIBS 697 MALS Capstone Experience**  
3.000 Credits

This course is designed as a capstone experience for students in the MALS program who are interested in a non-thesis/non-project option. Its aim is to allow students to reflect and draw upon the knowledge they gained in MALS, and then apply this knowledge in class discussions, essays, and research projects on an interdisciplinary topic chosen from an agreed-upon list of topics that relate to the general MALS curriculum. In the first section of the course, students will reflect upon the

interdisciplinary nature of their graduate training, drawing connections between diverse courses they have taken, pinpointing applications to the outside world, and examining the ways that interdisciplinary work has transformed their thinking. The remainder of the class will be organized around an interdisciplinary exploration of one of the following interrelated topics: "Memory", "Identity", "Place", "Community", or "Ways of Knowing". Students will examine how different disciplines and scholars approach the topic. They will also consider the relevance of this broad theme for contemporary issues and debates. Also, students should have completed at least 24 credits in the MALS program, if enrolled concurrently in a LIBS graduate course, or 27 credits otherwise, with a minimum GPA of 3.0.

**LIBS 698 MALS Master's Project**  
3.000 OR 6.000 Credits

An alternative to the usual master's thesis for students who can present a feasible plan for a project using methods of intellectual exploration and analysis other than the document-based research typically used in preparing a thesis. Might include gathering data through the use of human subjects, as with interviews and survey instruments; creative representation, as in painting; creative writing, and other forms of artistic expression; or devising new modes of interdisciplinary analysis of human experience and thought. To be carried out under the general supervision of a member of the graduate faculty in CASL. Project plan must be approved by the MALS program director before student registers for this course. Report and oral presentation to a panel of faculty members required when the project is completed. (F,W,S).

**LIBS 699 MALS Master's Thesis**  
3.000 OR 6.000 Credits

MALS students electing the Thesis option in the last stage of the program will work under the general supervision of a member of the graduate faculty in CAS&L, but will plan and carry out the work independently. A prospectus for the thesis must be approved by the MALS program director before the student registers for this course. The student will submit a report on the thesis and give an oral presentation to a panel of faculty members when the thesis is completed. (F,W,S).

## LINGUISTICS (LING)

**LING 525 Language and Society**  
3.000 Credits  
Prerequisites: ANTH 101 or LING 280

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. (OC).

**LING 561 Modern English Grammar**  
3.000 Credits  
Prerequisites: LING 280 or LING 480 or LING 580

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.

**LING 564 Contemporary Rhetorical Theory**  
3.000 Credits

Prerequisites: COMM 201 or COMM 220 or COMM 290 or 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

An examination of contemporary rhetorical theories through the study of representative practitioners in related developments in linguistics, philosophy, and psychology. (OC)

**LING 565 Discourse Analysis**  
3.000 Credits

Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 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)

An examination of the syntactic and semantic devices and structures underlying communication in written text 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. (OC)

**LING 574 Second Lang Acquisition: Engl**  
3.000 Credits  
Prerequisites: LING 480 or LING 580

A survey of fundamental concepts and major concerns in the study of English as a Second Language (ESL). The course examines a variety of psycholinguistic and sociolinguistic issues related to second language acquisition (SLA), ranging from theoretical to pedagogical. A primary focus is on developmental patterns and cognitive processes of SLA and individual variation in ESL speakers in terms of their social motivations and learning strategies. Implications for practical concerns such as the ESL teaching profession, instructional materials and curriculum development will be addressed where relevant. Graduate students will be assigned additional readings from a graduate course text and be required to submit an extra data analysis assignment and write a longer research paper.

**LING 575 Arab American English**  
3.000 Credits  
Prerequisites: LING 480 or LING 580

The study of the development, features, functions, and significance of varieties of English in the Arab American community. A range of sociolinguistic approaches are explored and applied to the subject matter. Topics to be addressed include code switching, language shift and maintenance, and the role of language in identity formation. Students cannot receive credit for both LING 475 and LING 575. Additional reading assignments or projects will distinguish this course from its undergraduate version.

**LING 576 Sociolinguistics**

3.000 Credits  
Prerequisites: LING 480 or LING 580

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 577 African American English**  
3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version LING 477. Student cannot receive credit for both LING 477 and LING 577.

**LING 580 Concepts in Linguistics**  
3.000 Credits

An examination of foundational concepts in linguistics 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. (YR)

**LING 582 History of the English Lang**  
3.000 Credits

Prerequisites: LING 480 or LING 580

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 584 World Englishes**  
3.000 Credits

Prerequisites: LING 480 or LING 580

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 599 Graduate Independent Studies**  
1.000 TO 3.000 Credits

Graduate-level research project in accordance with the needs and interests of those enrolled and agreed upon by the student

and advising instructor.

## LOCAL GOVERNMENT MANAGEMENT (LGM)

**LGM 507 Strategic Communication**  
1.000 Credits

This Internet course addresses three levels of administrative communications - individual, group and organization - and examines the concepts and skills needed to be an effective communicator. Students will develop written and oral applications emphasizing goal-oriented communications and making strategic choices in content, structure, style and delivery. An emphasis is given to applications in the Local Government context. The course also covers basic ethical and legal issues of work-place communications.

**LGM 509 Pub Relations and News Media**  
1.000 Credits

LGM 509 is presented in three modules that examine: (1) how the news media operates, (2) "Getting the news" and how to deal with these special constituencies in your community and (3) how to work with the news media as a primary channel of communication to reach residents with information or to influence public opinion. The course includes assignments designed to test your knowledge, improve your media relations skills and help you plan for both proactive and reactive situations involving the news media.

**LGM 511 Citizen Participation for LGM**  
1.000 Credits

Local Government Management 511 examines the concepts associated with public participation and develops skills needed by local government administrators in their interaction with the public. Course objectives include: 1) Improve the awareness and recognition of the public and some of the principles of citizen participation in local government. 2) Identify and explore different techniques for enhancing and increasing the public's participation in local government. 3) Increase the understanding of, and compliance with, the legal obligations of local government regarding public hearings and discuss techniques for maximizing the benefit derived from such hearings.

**LGM 512 Professionalism/Ethics for LGM**  
1.000 Credits

Local Government Management 512 examines the concepts and develops skills needed by local government administrators in ethical decision making and professional behavior. This one hour course encourages local government officials to continually cultivate personal integrity and to respond ethically to challenging situations. Given the recent abundance of ethical failures in government and business (from Watergate to Enron and beyond); and the increasing pressures of complex social and scientific dilemmas, it is essential that leaders see ethics as the greater part of expertise. The course will cover many of the ethical issues local officials encounter, and will analyze means by which local officials can respond ethically and



professionally to difficult situations. Finally, the course will explore strategies for influencing a culture of high ethical and professional standards within organizations.

**LGM 541 LGM Finance I**  
1.000 Credits

Local Government Management 541 examines the concepts and develops skills needed by local government administrators in performing the budgetary and financial requirements of their local community. It identifies the characteristics of an effective budget development process. It also examines and provides guidance on essential financial practices such as managing cash and investments and debt management in the local government context. Course objectives include: 1) Improve the budget development process in your local community. 2) Assess your community's debt situation and develop strategies and policies addressing the local debt. 3) Know how to properly manage cash, revenue and cash disbursements including the management of investments.

**LGM 542 LGM Finance II**  
1.000 Credits

Local Government Management 542 examines the concepts and develops skills needed by local government administrators in performing financial requirements of their local community. It focuses on proper accounting and auditing practices and procedures and provides guidance on essential financial practices such as procurement policies and procedures, pension, and risk management in the local government context. Course objectives include: 1) Explain the purposes and requirements of accounting and auditing in local government. 2) Explain the purposes and requirements of local procurement procedures, pension plan(s) and risk management policies.

## MATH (MATH)

**MATH 504 Dynamical Systems**  
3.000 Credits

Prerequisites: 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 solution with remarks about their numerical aspects. Also included are autonomous and periodic solutions, phase space, stability, perturbation techniques and Method of Liapunov. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 404. Students cannot receive credit for both MATH 404 and MATH 504. (AY)

**MATH 5055 Integral Equations**  
3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

Origin and classifications of integral equations. Connections with differential equations. Integral equations of convolution type. Method of successive approximations. Singular Kernels.

Elements of Hilbert space. Linear operators. Resolvents. Fredholm theory. Hilbert-Schmidt theory. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 405. Students cannot receive credit for both MATH 405 and MATH 505. (AY)

**MATH 508 Topics for Elem and Mid Tchrs**  
1.000 TO 4.000 Credits  
Prerequisites: MATH 385

Topics such as problem solving, calculators, microcomputers, applications, algebraic and geometric concepts, probability and statistics are to be considered. Emphasis is on developing skills in these topics and their uses in the curriculum.

**MATH 512 First Course in Modern Algebra**  
3.000 Credits

Prerequisites: 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, field, polynomial rings, Kronecker's theorem, also properties of the integral, rational, real and complex numbers. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 412. Students cannot receive credit for both MATH 412 and MATH 512. (W)

**MATH 513 Linear Algebra**  
3.000 Credits

Prerequisites: MATH 216 and MATH 200 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. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 413. Students cannot receive credit for both MATH 413 and MATH 513. (Y).

**MATH 514 Fin Diff Meth Part Diff Equat**  
3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

Numerical methods for the solution of initial and boundary value problems including finite difference schemes, finite element methods and steepest descent methods. Issues relating to the convergence, stability, efficiency and implementation of these methods will be examined. (OC).

**MATH 515 B-Splines & Their Applications**  
3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

A historical look at approximation of functions by polynomials in the uniform and least square norms; B-splines represent the natural and concise extension of approximation by piecewise polynomials; with applications to computer-aided design and geometric modeling.

**MATH 516 Partial Differential Equations**

3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

Modeling physical problems, such as fluid flow and stochastic optimization, by partial differential equations. Basic theory of partial differential equations including first order equations, the wave equation and characteristics, energy estimates and maximum principles for elliptic and parabolic equations, and the solution of equations in terms of integral formulas. (OC)

**MATH 520 Stochastic Processes**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 420. Students cannot receive credit for both MATH 420 and MATH 520. (AY)

**MATH 523 Linear Algebra w/Applications**

3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

Vector spaces, linear transformations of vector spaces and their representations as matrices and canonical forms for similarity. Inner product spaces, diagonalization of the Hermitian forms by unitary transformations. Applications to linear programming and to the solution of systems of differential equations. (AY)

**MATH 525 Mathematical Statistics II**

3.000 Credits

Prerequisites: MATH 325

Internal estimation and pivotal quantities; maximum likelihood estimation; hypothesis tests; linear models and analysis of variance; bivariate normal distribution, regression and correlation analysis; nonparametric methods. Additional reading assignments or projects will distinguish this course from its undergraduate version, MATH 425. Students cannot receive credit for both MATH 425 and MATH 525. (OC)

**MATH 5385 Nnbr Sys & Oper Tchrs**

2.000 OR 3.000 Credits

This course is designed to deepen grades 3-5 elementary teachers' understanding of the whole number and rational number systems. Major topics include interpretations of whole number operations, the extension of whole number operations to rational numbers, the representations of rational numbers and the conceptual underpinnings of non-standard and standard algorithms. Other topics include analyzing number theoretic concepts such as prime numbers and divisibility. Pedagogical and curriculum issues will be addressed as they relate to teaching for understanding and developing computational fluency. The topics of the 2-credit hour course

will include whole numbers and operations. The 3-credit course will extend topics covered to rational numbers. Open only to certified teachers. (OC)

**MATH 5386 Geom & Meas 1 Tchrs**

2.000 OR 3.000 Credits

This course will provide participants an opportunity to develop a deeper understanding of the mathematics they teach through a thorough development of the geometric and measurement concepts associated with two-dimensional figures. Topics will include characteristics and properties of geometric shapes with an emphasis on developing mathematical arguments about geometric relationships, transformations and use of symmetry to analyze mathematical situations, measurable attributes of objects and processes of measurement, and appropriate techniques, tools, and formulas to determine measurements. Coursework will focus on developing mathematical thinking and will highlight interactive learning styles. A three-credit course extends measurement to the real numbers by introducing the Pythagorean Theorem. Open only to certified teachers. (OC)

**MATH 5387 Geom & Meas 2 Tchrs**

2.000 OR 3.000 Credits

This course will provide participants an opportunity to develop a deeper understanding of the mathematics they teach through a thorough development of the geometric and measurement concepts associated with three-dimensional figures. Topics will include characteristics and properties of geometric shapes with an emphasis on developing mathematical arguments about geometric relationships and use of symmetry to analyze mathematical situations, measurable attributes of objects and processes of measurement, and appropriate techniques, tools, and formulas to determine measurements. In addition, topics to be covered include the Pythagorean Theorem. Coursework will also focus on developing mathematical thinking and will highlight interactive learning styles. Open to only certified teachers. (OC)

**MATH 542 Geometry for Teachers**

3.000 Credits

Prerequisites: 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. Open only to certified teachers or elementary education students. (F, W, S.)

**MATH 543 Algebra for Teachers**

3.000 Credits

Prerequisites: MATH 386

Algebraic structure is emphasized, especially as it relates to arithmetic. Emphasis is on the development of algebraic reasoning and generalizations with 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 communication 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. Open only to certified teachers or elementary education students. (F, W, S).

**MATH 544 Data Anlsys,Prob&Stat forTchrs**

3.000 Credits

Prerequisites: MATH 387

Concepts of elementary 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 inferences using best fit techniques. Evaluation of 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. Open only to certified teachers or elementary education students.

**MATH 5440 Pedagogy Content Alg Tchrs I**

2.000 OR 3.000 Credits

This is the first in a sequence of courses for secondary school teachers of mathematics. The sequence emphasizes a deep understanding of the mathematics and the pedagogical issues in students learning the mathematics embodied in the algebra components of secondary school mathematics as defined in the Michigan Merit Exam in mathematics for graduation from high school. The first two courses in this sequence emphasize the algebra and the algebraic reasoning basic to student success in Algebra I, and the beginning of Algebra II. The three credit hour course furthers teachers' understanding of the use of mathematical models to represent quantitative relationships. Pedagogical and curriculum issues will be addressed as they relate to teaching for students' understanding of patterns and algebraic content.

**MATH 5441 Pedagogy Content Alg Tchrs II**

2.000 OR 3.000 Credits

This is the second in a sequence of courses for secondary school teachers of mathematics. The sequence emphasizes a deep understanding of the mathematics and the pedagogical issues in students learning the mathematics embodied in the algebra components of secondary school mathematics as

defined in the Michigan Merit Exam in mathematics for graduation from high school. The first two courses in this sequence emphasize the algebra and the algebraic reasoning basic to student success in Algebra I and the beginning of Algebra II. The three credit hour course furthers teachers' understanding of the use of mathematical models to represent quantitative relationships. Pedagogical and curriculum issues will be addressed as they relate to teaching for students' understanding of patterns and algebraic content.

**MATH 5442 Geom & Meas 3 Tchrs**

2.000 OR 3.000 Credits

This course will provide participants an opportunity to develop a deeper understanding of the mathematics they teach through a thorough development of the geometric and measurement concepts associated with two- and three-dimensional figures. Topics will include characteristics and properties of geometric shapes with an emphasis on developing mathematical arguments about geometric relationships, transformations and use of symmetry to analyze mathematical situations, measurable attributes of objects and processes of measurement, and appropriate techniques, tools, and formulas to determine measurements. In addition, topics to be covered include Pythagorean Theorem and right-angle trigonometric concepts. Coursework will also focus on developing mathematical thinking and will highlight interactive learning styles. Open only to certified teachers. (OC)

**MATH 5443 Patterns Algebra 2 Tchrs**

2.000 OR 3.000 Credits

This course is designed to deepen in-service teachers' understanding of patterns and algebraic concepts. Major topics include the representation, analysis, and generalization of a variety of linear and non-linear patterns (including exponential and quadratic) with tables, graphs, words, and symbolic rules; the comparing and contrasting of linear and non-linear patterns; the representation and analysis of mathematical situations and structures using algebraic symbols; the use of mathematical models to represent and understand quantitative relationships; and the analysis of change in various contexts. Pedagogical and curriculum issues will be addressed as they relate to teaching for students' understanding of patterns and algebraic concepts. Open only to certified teachers. (OC)

**MATH 5445 Nmbr Sys Oper&Prop Reas Tch**

2.000 OR 3.000 Credits

This course is designed to deepen middle school mathematics teachers' understanding of the whole number system and its operations and its extensions to the rational number system and their operations. The primary focus is on proportional reasoning as a major ingredient for success in mathematics. Pedagogical and curriculum issues will be addressed as they relate to teaching for understanding. Materials include exemplary curriculum materials and records of student thinking. Only open to certified teachers. (OC)

**MATH 545 Number & Prop'l Rnsng for Tchrs**

3.000 Credits

Prerequisites: (MATH 442 or MATH 542) and (MATH 443 or MATH 543)

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. Open only to certified teachers or elementary education students. (YR).

**MATH 546 Discrete Math/Modeling for Tch**

3.000 Credits

Prerequisites: (MATH 442 or MATH 542) and (MATH 443 or MATH 543)

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. Open only to certified teachers or elementary education students. (YR).

**MATH 547 Microcomp in Math for Teach**

2.000 Credits

Prerequisites: MATH 386

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. Open only to certified teachers or elementary education students. (S)

**MATH 549 Concepts of Calc for Teachers**

3.000 Credits

Prerequisites: (MATH 442 or MATH 542) and (MATH 443 or MATH 543)

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. Open only to certified teachers or elementary education students. (YR).

**MATH 551 Advanced Calculus I**

3.000 Credits

Prerequisites: 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, Riemann integrability. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 451. Students cannot receive credit for both MATH 451 and MATH 551. (YR).

**MATH 552 Advanced Calculus II**

3.000 Credits

Prerequisites: MATH 451 or MATH 551

Includes the rigorous study of two and more variables, partial differentiation and multiple iteration. Special topics include: Taylor Series, Implicit Function Theorem, Weierstrass Approximation Theorem, Arzela-Ascoli Theorem. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 452. Students cannot receive credit for both MATH 452 and MATH 552. (AY)

**MATH 554 Fourier and Boundary**

3.000 Credits

Prerequisites: 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 MATH 554. (YR).

**MATH 555 Func of a Complex Var with App**

3.000 Credits

Prerequisites: 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,S).

**MATH 558 Introduction to Wavelets**

3.000 Credits

Prerequisites: 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, and applications. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 458. Students cannot receive credit for both MATH 458 and MATH 558. (OC)

**MATH 562 Mathematical Modeling**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 462. Students cannot receive credit for both MATH 462 and MATH 562. (AY)

**MATH 572 Intro to Numerical Analysis**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 472. Students cannot receive credit for both MATH 472 and MATH 572. (F)

**MATH 573 Matrix Computation**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 473. Students cannot receive credit for both MATH 473 and MATH 573. (AY).

**MATH 580 History of Mathematics**

3.000 Credits

Prerequisites: 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). Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 480. Students cannot receive credit for both MATH 480 and MATH 580. (OC).

**MATH 582 Computer Algebra Systems**

3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

The use of computer algebra in various areas of mathematics including the solution of algebraic and differential equations, matrix computations, approximation techniques, probability, and discrete mathematics. Programming within the system is

also included. Students will be expected to design, implement, and present a project using a computer algebra system. (OC).

**MATH 583 Discrete Optimization**

3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

This is an introductory course in discrete optimization at the graduate level for mathematics, science, engineering, and management majors. The goal of this course is to provide an overview of the problem settings in discrete optimization. In particular, the students will learn some of the fundamental combinatorial and heuristic optimization methods used in practice. The main emphasis of the course will be on modeling optimization problems mathematically and solving them using standard optimization techniques. The course will also address the limitations and complexity of the solutions that are found. The important theoretical and practical aspects of discrete optimization will be introduced using standard software packages such as Lingo and Lindo.

**MATH 584 Applied & Algorithmic Graph Theory**

3.000 Credits

Prerequisites: MATH 217 or MATH 227

Selected graph theory concepts and their application to a variety of real-world problems. A study of associated algorithms. Solution of problems using existing software packages. (OC)

**MATH 586 Sec School Math for Teachers**

3.000 Credits

Prerequisites: 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. Open only to certified teachers or secondary education students. (OC).

**MATH 590 Topics in Math & Stat**

3.000 Credits

Prerequisites: MATH 216 and (MATH 217 or MATH 227)

A course designed to offer selected topics in different areas of mathematics. The specific topic or topics will be announced together with the prerequisites when offered. Course may be repeated for credit when specific topic differs. (OC).

**MATH 591 Topics in Math for Teachers**

1.000 TO 3.000 Credits

A course designed to offer selected topics in different areas of mathematics for teachers of mathematics. 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).

**MATH 592 Introduction to Topology**

3.000 Credits

Prerequisites: MATH 451 or MATH 551

Metric spaces, topological spaces, continuous maps, connectedness, compactness, separation axioms. Additional reading assignments or projects will distinguish this course from its undergraduate version MATH 492. Students cannot receive credit for both MATH 492 and MATH 592. (OC).

**MATH 595 Master's Project Seminar**

3.000 Credits

Students will do a project involving a problem which may be from either an industrial or academic source. It may involve searching for appropriate techniques developed by others or the development of one's own methods. Part of the project will be both written report and an oral presentation to the seminar. In the case that the problem arises from an industrial source there should also be a written and/or oral report to the sponsoring group. (OC).

**MATH 597 Indep Studies in Mathematics**

1.000 TO 3.000 Credits

Independent Study in mathematics for topics at the graduate level. Topics and objectives chosen by agreement between students and instructor.

**MATH 598 Indep Study in Math Education**

1.000 TO 6.000 Credits

Independent study project in Mathematics Education under the supervision of a faculty member.

**MATH 599 Independent Research Project**

1.000 TO 3.000 Credits

Independent research project in applied mathematics or statistics with a faculty or industrial collaborator under the supervision of a faculty member. (YR).

**MICROBIOLOGY (MICR)****MICR 505 Applied & Environ Microbiology**

3.000 Credits

Advanced treatment of the interplay of microorganisms and the environment. Topics will include soil and water microbiology (bacteria, archaea, fungi, algae) and plant-microbe interactions (pathogenic and symbiotic) as well as the role of microorganisms in decomposition, nutrient cycling, and bioremediation. Three hours lecture. Students cannot receive credit for both BIOL/MICR 405 and MICR 505. (W, AY)

**MODERN & CLASSICAL LANGUAGE (MCL)****MCL 501 Images of Women in Germany**

3.000 Credits

This course will focus on the position of women in Germany

after WWII and up to and after the unification of East and West Germany. Particular attention will be given to the gendered history of working through the National Socialist past, the division and reconstruction of the two nation-states, and the terrorism in West Germany in the 1970's. Students will examine images of women in films and tie them to the ideologies of gender and status of women in these larger issues of German history. Course readings will be in English. Additional assignments will distinguish this course from its undergraduate version. Students cannot receive credit for both MCL 401 and MCL 501.

**MCL 555 This American Life**

3.000 Credits

The course "This American Life: Immigrant Literature and the American Dream" is a literary and cultural analysis of the literature of immigration. The readings are from works of fiction in a variety of genres, and are written by American and non-American prize-winning authors. Their common denominator is the pursuit of the American Dream and its many multifaceted aspects. The themes explored include: assimilation, acculturation, diversity, language, subculture, intertextuality, nostalgia, belonging, and double identity. This course will be distinguished from its undergraduate counterpart, MCL 455, by the inclusion of additional readings and assignments.

**NATURAL SCIENCE (NSCI)****NSCI 515 Nutrition and Health**

3.000 Credits

Prerequisites: 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) nutrient and food problems in the local region and in global perspective. Additional reading assignments or projects will distinguish this course from its undergraduate version NSCI 415. Students cannot receive credit for both NSCI 415 and NSCI 515. (YR).

**NSCI 531 Adv Learning Inquiry: Phys Sci**

3.000 Credits

Prerequisites: NSCI 231

This course is designed to provide in-service teachers with additional tools and knowledge to teach physical science concepts to elementary and middle school students. Topics selected from the science benchmarks in the Michigan Curriculum Framework (MCF) will be explored at significant depth. Students will be expected to integrate major themes of the physical sciences and understand how the topics covered in the course fulfill the National Science Education Standards (NSES) and the MCF. The learning cycle and inquiry methods of instruction will be modeled and students will be expected to use these in their assignments. (YR).



**NSCI 532 Adv Inquiry: Earth/Planet Sci**  
3.000 Credits  
Prerequisites: NSCI 232

This course is designed to provide in-service teachers with additional tools and knowledge to teach the concepts of Earth and planetary science to elementary and middle school students. Topics selected from the science benchmarks in the Michigan Curriculum Framework (MCF) will be explored at significant depth. Students will be expected to integrate major themes and understand how the topics covered in the course fulfill the National Science Education Standards (NSES) and the MCF. The learning cycle and inquiry methods of instruction will be modeled and students will be expected to use these in their assignments. (YR).

**NSCI 533 Adv Inquiry: Life Science**  
3.000 Credits  
Prerequisites: NSCI 233

This course is designed to provide in-service teachers with additional tools and knowledge to teach biological science concepts to elementary and middle school students. Topics selected from the life science benchmarks in the Michigan Curriculum Framework (MCF) will be explored at significant depth. Students will be expected to integrate major biological themes and understand how the topics covered in the course fulfill the National Science Education Standards (NSES) and the MCF. The learning cycle and inquiry methods of instruction will be modeled and students will be expected to use these in their assignments. (YR).

**NSCI 598 Independent Study in NSCI**  
1.000 TO 3.000 Credits

Provide an opportunity for students to pursue graduate level independent library-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. The project must be approved by the program director and the faculty member before students register for the course.

**NSCI 599 Laboratory Research in NSCI**  
1.000 TO 3.000 Credits

Provide an opportunity for students to pursue graduate level 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. The project must be approved by the program director and the faculty member before students register for the course.

## PHILOSOPHY (PHIL)

**PHIL 542 Medical Ethics**  
3.000 Credits  
Prerequisites: PHIL 240

Issues in medical ethics are among the most exciting and the most urgent in the world today. This course will explore some of these issues: the relationship between patient and health caregiver (truth-telling, informed consent, the right to refuse treatment, confidentiality); assisted suicide and euthanasia; treatment of defective newborns; scarce resources, social justice and the right to health care; cloning and genetic manipulation; new reproductive technologies; and others. We will discuss issues from the standpoint of patients, medical professionals, and citizens who shape policy in a democratic society. Ethical theories and concepts will be stressed. (F, YR)

## PHYSICS (PHYS)

**PHYS 503 Electricity & Magnetism**  
3.000 Credits  
Prerequisites: (MATH 205 or MATH 215) and PHYS 151

The study of electrostatics, magnetostatics, and electrodynamics using Maxwell's equations. The course focuses on the development of Maxwell's equations from observation and experiment and on the application of these equations to electromagnetic phenomena. Additional reading assignments and/or projects will distinguish this course from its undergraduate version PHYS 403. Students cannot receive credit for both PHYS 403 and PHYS 503. (W)

**PHYS 553 Quantum Mechanics**  
3.000 Credits  
Prerequisites: MATH 216 and PHYS 305

A course in non-relative quantum mechanics emphasizing the basic postulates of quantum theory, the concepts of eigenstates and eigenvalues, and the role and use of operators and communication relations in the development of the subject. Application of the Schrodinger and Heisenberg formalisms to the solution of single-particle systems subject to a variety of potential functions, including simple step/barrier potentials, the harmonic oscillator potential and the Coulomb potential, will be made. Additional reading assignments and/or projects distinguish this course from its undergraduate version PHYS 453. Students cannot receive credit for both PHYS 453 and PHYS 553.

**PHYS 590 Topics in Physics**  
1.000 TO 4.000 Credits

Topics in Physics. (OC).

## POLITICAL SCIENCE (POL)

**POL 513 American Constitutional Law**  
3.000 Credits  
Prerequisites: 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". Prerequisite or equivalent recommended. This course is distinguished from its 400 level

counterpart by the requirement of additional readings and research. (AY).

**POL 514 Civil Rights and Liberties**  
3.000 Credits  
Prerequisites: 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. Prerequisite or equivalent recommended. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**POL 517 Constitution&National Security**  
3.000 Credits

This course focuses on the issue of national security and how the federal government has used power to protect its citizens. It analyzes relevant national security issues in order to understand how government action is constrained by the Constitution and social norms. The course examines the historical development of national security in the United States including habeas corpus, wiretapping, military tribunals, state secrets, and extraordinary rendition. Particular close attention is paid to the modern development of national security. The emphasis in reading will be on cases, executive orders, congressional hearings, and statutes. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research.

**POL 550 Revolution**  
3.000 Credits

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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. Students cannot receive credit for both POL 450 and POL 550. (YR).

**POL 551 Peace and War**  
3.000 Credits

An examination of the causes of war and the means of securing peace. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (YR).

**POL 560 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 policy-makers 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 566 Politics&Policies Soc Welfare**  
3.000 Credits

FULL TITLE: The Politics and Policies of Social Welfare. The course examines the relationship between politics and public policy as related to the provision of social welfare programs in the United States.

**POL 571 American Foreign Policy I**  
3.000 Credits

American foreign policy in Western Europe, Russia, and Latin America. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (OC)

**POL 572 American Foreign Policy II**  
3.000 Credits  
Prerequisites: POL 101 or POL 201

American foreign policy in the non-western world. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (OC).

**POL 573 International Security Affairs**  
3.000 Credits  
Prerequisites: POL 101

International Security is a 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (AY).

**POL 589 Seminar in Urban Politics**  
3.000 Credits

Selected topics in urban politics. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research.

**POL 590 Topics in Political Science**  
1.000 TO 3.000 Credits

Problems and issues in selected areas of political science. Title changes according to content. Courses may be repeated when specific topic differs. (OC)

**POL 591 Seminar in Political Science**  
3.000 Credits

Selected topics in political science. Course may be repeated for credit when topics differ. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (AY).

**POL 592 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (OC).

**POL 598 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. (F, S, W).

**POL 599 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. This course is distinguished from its 400 level counterpart by the requirement of additional readings and research. (F, W, S).

## PSYCHOLOGY (PSYC)

**PSYC 505 Gender Roles**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 405. Students cannot receive credit for both PSYC 405 and PSYC 505. (YR).

**PSYC 507 Psychology of Adolescence**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 407. Students cannot receive credit for both PSYC 407 and PSYC 507. (YR).

**PSYC 515 Lab in Developmental Psych**  
3.000 Credits  
Prerequisites: PSYC 300 or PSYC 302 or PSYC 315 or PSYC 407 or PSYC 418 or PSYC 507 or PSYC 518

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. Additional reading

assignments or projects will distinguish this course from its undergraduate version PSYC 415. Students cannot receive credit for both PSYC 415 and PSYC 515. (YR).

**PSYC 518 Cognitive Development**  
3.000 Credits  
Prerequisites: 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 processes, and the acquisition of world knowledge. Discussions leading to the formation of new research ideas are emphasized. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 418. Students cannot receive credit for both PSYC 418 and PSYC 518. (YR).

**PSYC 522 Psychology of Leadership**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

Analysis of theories and research findings in the field of leadership. Class will participate in and observe leadership-group interactions. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 422. Students cannot receive credit for both PSYC 422 and PSYC 522. (YR).

**PSYC 523 Multicultural Counseling**  
3.000 Credits

This course will explore multicultural issues in counseling and clinical psychology. The central focus for this course will be ethnic and racial diversity, although attention will be given to gender, sexual orientation, age and socio-economic status as they relate to issues of diversity in counseling. Students will gain an appreciation of the complexities of the influence of culture on social, emotional, behavioral and cognitive development, and the major issues involved in assessment and treatment of diverse clients and their families. (F)

**PSYC 530 Psychology in the Workplace**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171 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. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 4305. Students cannot receive credit for both PSYC 4305 and PSYC 530. (YR).

**PSYC 531 Organizational Entry**  
3.000 Credits

An in-depth consideration of the psychological aspects of the organizational entry process. Topics include recruitment, selection, orientation, socialization, and training. Additional

reading assignments or projects will distinguish this course from its undergraduate version. Students cannot receive credit for both PSYC 431 and PSYC 531. (OC).

**PSYC 532 Socialization of the Child**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

An in-depth consideration of some major social systems that affect the development of the child. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 432. Students cannot receive credit for both PSYC 432 and PSYC 532. (YR).

**PSYC 540 Abnormal Psychology**  
3.000 Credits  
Prerequisites: PSYC 170 or 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. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 440. Students cannot receive credit for both PSYC 440 and PSYC 540. (YR).

**PSYC 542 Child Psychopathology**  
3.000 Credits  
Prerequisites: PSYC 170 or 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 modifications are considered. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 442. Students cannot receive credit for both PSYC 442 and PSYC 542. (YR).

**PSYC 544 Personality Assessment**  
4.000 Credits  
Prerequisites: PSYC 170 or 171

This is a course in methods of assessing personality. The theory and methods of observation, interviewing, and psychological testing are discussed and then employed in brief, individually-designed studies. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 4445. Students cannot receive credit for both PSYC 4445 and PSYC 544. (AY).

**PSYC 545 Advanced Psychopathology**  
3.000 Credits

This course is designed for graduate students who require an advanced knowledge of psychological disorders and their diagnosis. Course content includes an overview of the symptoms, etiology, and treatment alternatives for major psychological disorders. The emphasis includes both an

overview of research based knowledge and practical application of the current diagnostic system.

**PSYC 546 Human Sexual Behavior**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

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. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 446. Students cannot receive credit for both PSYC 446 and PSYC 546. (AY).

**PSYC 547 Therapeutic Intervention**  
4.000 Credits

This course provides an introduction to the theories, practice, and ethical issues in clinical psychology. The emphasis is on the application of psychotherapeutic processes. Topics include ethical practices, formation of a therapeutic relationship, use of basic counseling skills, differing clinical orientations, and a review of relevant research. (W)

**PSYC 548 Psychological Assessment I**  
4.000 Credits  
Prerequisites: PSYC 545

This course is the first of a two-course sequence for graduate students who require an advanced knowledge of psychological assessment. Course content includes an overview of interviewing, behavioral observations, and personality tests used in clinical practice. The emphasis includes both an overview of research-based knowledge and practical application of assessment techniques through supervised lab experience. Only individuals admitted to the Clinical Health Psychology program can enroll. (S,YR)

**PSYC 549 Psychological Assessment II**  
4.000 Credits  
Prerequisites: PSYC 545

This course is the second of a two-course sequence designed for graduate students who require an advanced knowledge of psychological assessment. Course content includes an overview of tests and measures used in clinical practice, particularly those used in the assessment of intelligence, achievement, adaptive behavior, and child evaluation. The emphasis includes both an overview of research-based knowledge and practical application of assessment techniques through supervised lab experience. (F)

**PSYC 550 Personality Theory**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

A comparative review and examination of leading theories of personality, their basic concepts, similarities and differences, applications in clinical psychology, in education, social planning and in research. Additional reading assignments or projects will distinguish this course from its undergraduate

version PSYC 450. Students cannot receive credit for both PSYC 450 and PSYC 550. (YR).

**PSYC 552 Adv Tech in Therapeutic Inter**  
3.000 Credits  
Prerequisites: PSYC 546

This course introduces clinical health psychology graduate students to the theory and application of cognitive-behavioral therapy and mindfulness therapies. The course is aimed at providing students with a thorough understanding of the theory behind these modalities, as well as the experiential application of the associated therapy techniques in a clinical setting.

**PSYC 555 Health Psychology**  
3.000 Credits

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. (YR).

**PSYC 557 Advanced Health Psychology**  
3.000 Credits

This course will examine the research on psychological factors associated with the development and/or progression of illness, as well as psychological and social factors in health promotion. Topics include cognitive and social representation of health and illness, stress and coping, factors and interventions for behavioral change and the development of healthy lifestyles, and the treatment of psychological and behavioral risk factors for illness.

**PSYC 561 Learning and Memory**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

A consideration of major theories and research results related to learning and memory. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 461. Students cannot receive credit for both PSYC 461 and PSYC 561. (YR).

**PSYC 563 Sensation and Perception**  
3.000 Credits  
Prerequisites: PSYC 170 or 171

Analysis of basic sensory and perceptual phenomena with a review of relevant behavioral and physiological literature. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 463. Students cannot receive credit for both PSYC 463 and PSYC 563. (YR).

**PSYC 565 Ind&Grp Tech in Cln Hlth Psyc**  
3.000 Credits  
Prerequisites: PSYC 547

An introduction to the variety of assessment and intervention procedures used by health psychologists in medical settings; issues in medical consultation and liaison. Techniques

discussed fall in areas such as stress management, smoking cessation, weight management, and the treatment and prevention of cardiovascular disease, cancer, and HIV/AIDS. The theoretical, conceptual, and empirical bases of intervention will be stressed. Prerequisites required or permission of instructor. Preference will be given to students enrolled in the Master of Science in Health Psychology Program. (YR).

**PSYC 570 Advanced Physiological Psych**  
3.000 Credits  
Prerequisites: PSYC 370

Further study of the subject matter of PSYC 431. Advanced study of topics in the area of psychology. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 470. Students cannot receive credit for both PSYC 470 and PSYC 570. (YR).

**PSYC 571 Reproductive Physio & Behavior**  
3.000 Credits  
Prerequisites: PSYC 170

An in depth examination of reproduction from a physiological viewpoint. Physiological topics include anatomy, hormones, and neural mechanisms. Psychological topics include behavior development and descriptions. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 471. Students cannot receive credit for both PSYC 471 and PSYC 571. (YR)

**PSYC 572 Motivation and Behavior**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

Study of the psychobiological aspects of motivated behavior. Topics include hunger, addiction, aggression, sleep, and achievement. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 4725. Students cannot receive credit for both PSYC 4725 and PSYC 572. (YR)

**PSYC 574 Animal Intelligence**  
3.000 Credits  
Prerequisites: PSYC 372 or PSYC 363 or PSYC 461 or BIOL 419 or BIOL 456 or ANTH 336

Animal Intelligence involves the study of human and non-human animal behavior and cognition in an evolutionary and comparative framework. As an introduction to human and non-human animal cognition and thought processes this course will examine topics such as problem-solving, spatial cognition, categorization, memory, number concepts, tool-use and tool-production, insight, imitation, social cognition, self-recognition and language (-like) behavior. In addition to discussing basic experimental findings about cognition in animals, an emphasis is placed on the logic and evidence used to justify theoretical conclusions. The course requires reading and critiquing original journal articles in addition to textbook chapters for foundational concepts.

**PSYC 575 Bio Foundations of Health Psyc**  
3.000 Credits  
Prerequisites: PSYC 555 or PSYC 455 or PSYC 557

or PSYC 557

Advanced study of the anatomical, physiological, and chemical correlates of behavior and mental processes, including the relationships among brain and body function/structure (neurochemistry, histology, anatomy), psychological variables (motor behavior, motivation, emotion, perception, learning, memory), health, and mental and physical illness. Integrates experimental and clinical research methodologies. Prerequisites or permission of instructor. Preference will be given to students enrolled in the Master of Science in Health Psychology Program. (YR).

**PSYC 5825 Basic Methods Health Psych**  
3.000 Credits

This course assumes a basic background in statistics and methodology and builds from there, with special emphasis on methodological issues and statistical techniques appropriate to Health Psychology. Computer skills related to statistical packages, databases, etc. will be stressed. Specific methods and analyses include multiple regression, ANOVA, ANCOVA, MANOVA, factor analysis, power, validity, experimental design, placebo effects, and random sampling. Preference will be given to students enrolled in the Master of Science in Health Psychology Program. (F).

**PSYC 5835 Adv Methods Health Psych**  
3.000 Credits  
Prerequisites: PSYC 5825

As a continuation of PSYC 5825, this course assumes a more advanced background in statistics and methodology. The course focuses on methodological issues and statistical techniques appropriate to Health Psychology. Computer skills related to statistical packages, databases, etc. will be stressed. Specific methods and analyses include survey research, program evaluation, epidemiological research, qualitative research, MANCOVA, multiple regression, logistic regression, cluster analysis, and meta-analysis. Preference will be given to students enrolled in the Master of Science in Health Psychology Program. (F).

**PSYC 584 Research Methods in Beh Med**  
3.000 Credits  
Prerequisites: PSYC 557

This course introduces graduate health psychology students to laboratory based research methods typically used in behavioral medicine. The focus is on laboratory methods of cardiovascular and pain research, specifically cardiovascular reactivity, heart rate variability, acute and chronic pain responses. The class also includes several special topics related to health psychology research (e.g., skin conductance, cortisol sampling, etc.). Students are responsible for physical implementation of research protocols, data analysis, and presentation of research findings.

**PSYC 585 Psychology Internship**  
3.000 Credits  
Prerequisites: PSYC 170 or PSYC 171

The psychology internship offers experience in a wide variety of placements dealing with human services. These include programs related to child abuse, crisis intervention, developmental disabilities, geriatrics, human resources/staff development, probation departments, teenage runaways, substance abuse, and women's issues. The program involves training in listening and helping skills. Written permission of instructor is required. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 485. (F,W).

**PSYC 590 Adv Topics in Psychology**  
1.000 TO 3.000 Credits  
Prerequisites: PSYC 455 or PSYC 555

This course provides an introduction to the field of psychoneuroimmunology. This area of study is concerned with the multidirectional communication between psychological processes such as stress or depression and central/peripheral nervous system, endocrine system, and immune system functioning. Ultimately, this field seeks to understand the relative contribution of psychological processes to traditional disease states (cardiovascular disease, pregnancy complications, etc). Students will learn the basic functioning of the immune system, and pathways via endocrine and nervous system functioning by which psychological processes influence immune functioning. Finally, students will learn the current state of research examining the relationship between psychological processes and disease outcomes. Students cannot receive credit for both PSYC 590 and PSYC 490.

**PSYC 592 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 member of the staff. The students, in electing, should indicate the staff member with whom the work has been arranged. Additional reading assignments or projects will distinguish this course from its undergraduate version PSYC 492. Students cannot receive credit for both PSYC 492 and PSYC 592. (YR).

**PSYC 593 Ethical Issues**  
3.000 Credits

Provides graduate psychology students with current information and decision making strategies on professional and ethical issues associated with service delivery, research, and teaching. (F,YR)

**PSYC 697 Health Psych Thesis Research**  
3.000 TO 6.000 Credits

Students electing the Thesis option in the last stage of the Master of Science in Health Psychology program will work under the general supervision of a member of the graduate faculty in the Behavioral Sciences Department but will plan and carry out the work independently. A prospectus for the thesis must be approved by the Master of Science in Health Psychology program director before the student registers for the course. The student will submit a report on the thesis and



give an oral presentation to a panel of faculty members when the thesis is completed. (YR)

**PSYC 698 Pract. Clinical Health Psych**  
3.000 TO 6.000 Credits

Prerequisites: PSYC 545 and PSYC 547 and PSYC 548 and PSYC 549 and PSYC 565 and PSYC 593

The Practicum in Clinical Health Psychology offers students supervised clinical experience in a variety of clinical health and human service settings. The practicum is designed for students in the MS in Clinical Health Psychology program who have completed all coursework related to clinical diagnoses, assessment and therapy. Written permission of instructor or Program Director required.

## PUBLIC ADMINISTRATION (PADM)

**PADM 500 Topics in Public Admin**  
1.000 TO 3.000 Credits

A major topic or set of related topics in public administration will be examined in the course. For example, the topic one semester might be the "Classics of Public Administration." The topics may change and, therefore, it is possible to take the course more than once.

**PADM 505 Intro to Pub & Non-Prof Admin**  
3.000 Credits

This introductory course provides an overview of topics encountered in government or nonprofit administrator positions. Topics emphasized in the seminar include decision-making, finance, human resources, leadership, performance, accountability, organizational responsiveness, and strategic management.

**PADM 507 Strategic Comm for Admin**  
3.000 Credits

This Internet course addresses three levels of administrative communications - individual, group and organization - and examines the concepts and skills needed to be an effective communicator. Students will develop applications emphasizing goal-oriented communications and making strategic choices in content, structure, style and delivery. An emphasis is given to the design and best use of computer technologies such as Word and PowerPoint applications. The course also covers basic ethical and legal issues of work-place communications.

**PADM 520 Leadership and Administration**  
3.000 Credits

An overview and examination of the background and current practices and applications associated with substantive leadership and futures-oriented management of a variety of public service and nonprofit organizations.

**PADM 522 Qlty and Prod in Serv Org**  
2.000 Credits

Contemporary service organizations are concerned with improving their quality and productivity. What are the

different approaches to accomplishing these ends? Subjects such as Total Quality Management and other approaches will be examined and utilized to suggest techniques to improve educational, public, and nonprofit organizations.

**PADM 523 Administrative Law**  
2.000 OR 3.000 Credits

This class will focus on important legal and regulatory issues as they relate to public, education, and nonprofit organizations. It will consider the various court and administrative decisions which affect these. Numerous case situations will be used to facilitate the students' learning.

**PADM 525 Consulting and Staff Dev**  
3.000 Credits

This two-pronged program aligns the planning, design, and implementation of pre-service and in-service staff development programs for individuals and groups with an analysis and study of internal and external consultant roles and practices that help ensure proper development of personnel, processes and programs to enhance the organizational mission and desired outcomes.

**PADM 527 PR for Nonprofit/Public Sector**  
2.000 OR 3.000 Credits

The seminar examines the interaction of bureaucracies and their communities. It is particularly concerned with citizen roles and involvement in governance and communications in education, public and nonprofit organizations. Concepts used include community power, pressure groups and organization culture and climate.

**PADM 530 Loc Govt for Teach/Admin**  
1.000 TO 3.000 Credits

At the seminar, teachers participate in interactive learning activities with local government staff members. Officials serve as resource people, not lecturers. Teachers experience each lesson through the eyes of their students. All participants provide complete lesson plans for each activity, making it easy to share favorites from the course/academy with colleagues. Teachers work on developing coordinated learning experiences in local government including field trips, case studies and class visitations drawn from both school district and local government resource-bases.

**PADM 540 Admin of Financial Resources**  
3.000 Credits

Basic principles and actual practices of financial administration and accounting for state/local governments, public school systems and nonprofit organizations, particularly budgeting and financial reporting within the context of other organizational processes and political demands and/or requirements. As one of the MPA core seminars, the case method will be employed to illustrate issues and problems of financial administration.

**PADM 541 Fund Accounting**  
3.000 Credits

This seminar focuses on the goals, methods and issues associated with accounting for funds used in public agencies, school districts and nonprofit organizations. Included in the course is consideration of the preparation and use of financial statements, and Comprehensive Annual Financial Reports. A variety of other related topics will be covered such as managing debt, investments, and cash management practices.

**PADM 548 Fundraising**  
2.000 OR 3.000 Credits

The course will analyze the role of fundraising and philanthropy for nonprofits. The class will examine issues such as the cultural, political and economic supports and constraints within which nonprofit organizations operate. Students will be able to enhance their fundraising skills and their knowledge of the fundraising practices of nonprofits.

**PADM 560 Admin of Human Resources**  
3.000 Credits

This seminar will examine human resource administration activities in public, educational and nonprofit settings. Issues such as recruiting, selection, planning, performance appraisal, contracting and collective bargaining will be related to the overall administrative activities. Emphasis will be placed on the connections between human resource issues in public, education, and nonprofit organizations.

**PADM 561 Organization Dev and Theory**  
2.000 OR 3.000 Credits

Students will learn how organizations are structured and shaped, know what features of organizations vary and the parameters on which they vary, and be able to analyze, synthesize, and apply concepts to reduce organizational uncertainty, and to improve and regulate organization behaviors and outcomes. Attention will also focus on top down and participatory administration in organizations, and change in public, educational, and nonprofit organizations and agencies.

**PADM 562 Labor Relations in Serv Setting**  
2.000 OR 3.000 Credits

The seminar will consider the impact of collective bargaining on traditional human resource administration in public, education and nonprofit settings. It also will focus on developing an initial competency in the various activities associated with collective bargained situations.

**PADM 564 Performance Appraisal**  
3.000 Credits

Evaluating the performance of individuals in an organization is crucial to the motivation of the individual and the success of the organization. This class will consider the available methods for assessing performance of personnel in different public, educational and nonprofit settings. The different methodologies and concepts in the field will be utilized in the class.

**PADM 580 Info Sys and Stats for Admin**  
3.000 Credits

This course will introduce MPA students to descriptive and basic inferential statistics. Participants will use microcomputers and software to perform elementary statistical analyses and to prepare presentation quality reports and graphics, making use of statistical information.

**PADM 581 Strat Planning/Needs Assessmnt**  
2.000 OR 3.000 Credits

This course develops the strategic planning and needs assessment competencies of the participants. Emphasized in the course is the "cascade" process of information gathering involving interviewing, focus groups, and surveys as applied in strategic planning.

**PADM 582 Policy Analysis & Development**  
2.000 OR 3.000 Credits

Policy formulation involves two different activities: 1) identifying and assessing alternative courses of action, i.e., deciding what, if anything, needs to be done about a problem; and 2) developing the policy, regulation or law that will carry an agreement in principle into effect. Both aspects of policy development will be covered in the course.

**PADM 583 Program Evaluation**  
2.000 OR 3.000 Credits

This class will examine procedures for evaluating programs in public, education and nonprofit settings. The concern will be to examine the various techniques available to determine whether a program is doing what it was intended to do. Students will utilize various techniques in examining a variety of case situations.

**PADM 585 Technology for Administrators**  
3.000 Credits

This course will focus on the role of organizational administrators in the applications of technology within an organization, including policy development, personnel management, financial planning and budgeting, program planning and evaluation, training, and strategic planning.

**PADM 650 Assessment Seminar**  
1.000 TO 3.000 Credits

This "capstone" seminar involves the assessment of public administration degree candidates' knowledge, skills and abilities in core program areas. These core areas include administration of programs, finance and human resource administration, and leadership. Students will prepare and present portfolios of their work.

**PADM 690 Directed Studies in Pub Admin**  
1.000 TO 3.000 Credits

This course will permit students to take subjects not currently

offered in regular courses but within the capacity of existing or adjunct faculty. To be elected only with the permission of the program director and an instructor.

**PADM 720 Internship**  
1.000 TO 3.000 Credits

Students who lack the necessary experience in responsible administration will be afforded the opportunity to gain the experience in the internship. The class and the number of hours will be arranged to fit the needs of the students the program coordinator believes are necessary.

## **PUBLIC POLICY (PPOL)**

**PPOL 500 Economic Theory and Policy**  
3.000 Credits

This course provides an intensive and comprehensive introduction to economics for students entering the Masters in Public Policy program. Topics covered include a range of microeconomic and macroeconomic concepts, issues, and techniques with a special focus on the application of economics to public policy. (YR)

**PPOL 501 Research Methods**  
3.000 Credits

All students must begin with Research Methods, a course that provides an overview of the scientific method, methods of ethical analysis, methods of research design, widely used statistical methods, and specific means of social observation such as survey research.

**PPOL 502 Pol Env of Public Policy**  
3.000 Credits

This course examines how policy making occurs in our political system: the roles of community leaders, citizens, scientists and experts in the policy process; the stages of policy formulation, agenda setting, legislative action, administration of policy, and judicial oversight of the policy process; and the pros and cons of various ways of making policy, including cost-benefit analysis, democratic deliberation by informed citizens, the interest group process, and legal-judicial activism.

**PPOL 503 Economics and Public Policy**  
3.000 Credits  
Prerequisites: ( ECON 201 and ECON 202 ) or  
PPOL 500

In this course students will review basic neoclassical economic theory and learn to apply it to the analysis of public policy issues. Economics offers important insights into the behavior of businesses, consumers, and government entities. We will review key economic concepts, applying each to an array of public policy questions. Next we'll evaluate resource allocation via the market system and consider how public policy might address situations where the market fails to produce desirable results. Lastly, we'll learn about the basic tools economists use to evaluate public policies.

**PPOL 504 Rational Choice**

3.000 Credits

Good public policy requires that leaders make sound decisions. A good choice is a rational choice, so the study of rational choice is central to good policy making and to policy studies. This course examines the literature on rational choice, with an emphasis on more practical and applied studies that can aid practitioners who are trying to make rational decisions that will benefit communities. (OC)

**PPOL 505 Ethics and Public Policy**  
3.000 Credits

This course focuses on the tensions and relationships between personal morality and political action by examining the moral aspect of contemporary policy issues such as (but not limited to) the right to life, environmental policy, social welfare policy, discrimination, and war. These will be examined in the political context of the tension between the demands of personal conscience and the need to be a member of a team in an organization, as well as in the philosophical context of contending normative theories about justice and sound public policy.

**PPOL 506 Program Evaluation**  
3.000 Credits

Program Evaluation focuses on how particular policies and programs can be evaluated to assess how well they are working and whether they are attaining their goals. A required core MPP course.

**PPOL 507 Cost-Benefit Analysis**  
3.000 Credits  
Prerequisites: PPOL 503

The course focuses on the various techniques used in cost-benefit analysis, the strengths and weaknesses of these techniques, and case studies illustrating the practical problems involved in such analyses.

**PPOL 508 Project Writing**  
1.000 Credits

Required only for students not writing a Master's thesis, the course is designed to produce a capstone paper that demonstrates the student's ability to integrate previous policy papers (three) into a final coherent overview of a policy area. This course is required only of students electing the course-only Plan A.

**PPOL 551 Environmental Econ and Policy**  
3.000 Credits  
Prerequisites: PPOL 503

Environmental policy at all levels of government is of increasing importance. This course uses the tools of economics to examine government policy related to pollution, natural resources, and other environmental issues. Topics covered in this course include externalities, common property, 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.

**PPOL 552 Michigan Econ Environment**  
3.000 Credits

This course will provide students with an overview of the Michigan economy by highlighting key issues and challenges facing the regional economy. In addition, students will be instructed in how to locate economic data sources and how to utilize economic data. Current policy debates and proposals will be introduced and evaluated. Topics include the decline of manufacturing employment, income and wealth inequality, education policy and the knowledge/innovation economy, land use policy, and alternative economic policies including social entrepreneurship, third-sector economics, community economy movements and advocacy planning. The economic environment of Ontario will also be explored as a comparative case study.

**PPOL 560 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 policy-makers 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.

**PPOL 581 Terrorism & US Intl Security**  
3.000 Credits

The United States responded to the events of September 11, 2001 with a series of unprecedented action under the umbrella of homeland security and the "War on Terror." This course examines American National security policy by asking a few key questions: What is terrorism and how does it threaten the United States? How has the United States responded to the threat of terrorism over time? What have the consequences of US policy been to date? Finally, how would we balance a desire for security with our desire for civil liberties and ethical action?

**PPOL 587 Comparative Enviro Policy**  
3.000 Credits

This course explores environmental policy as a result of political processes involving diverse participants and entailing movement through several stages from defining an issue as an environmental problem to placing it on political agenda and then receiving a response at domestic governmental or international levels. This course analyzes environmental issues from a cross-cultural and comparative perspective, with a particular attention given to political institutions, political change, levels of development, political culture, public participation, and international commitments that shape the nature and dynamics of environmental politics and policy in different countries. Additional reading assignments or projects will distinguish this course from its undergraduate version.

**PPOL 680 Internship**  
1.000 TO 6.000 Credits

Students who desire practical experience in the area of public policy will be afforded the opportunity to gain the experience in the internship. The class and the number of hours will be arranged to fit the needs of the students, subject to approval by the program coordinator.

**PPOL 690 Topics in Public Policy**  
3.000 Credits

Public policy topics of current interest. Topics vary from term to term.

**PPOL 698 Directed Study in Pub Pol**  
1.000 TO 3.000 Credits

This course will permit students to take subjects not currently offered in regular courses but within the capacity of existing faculty. To be elected only with the permission of the program director and an instructor.

**PPOL 699 Master's Thesis**  
1.000 TO 6.000 Credits

MPP students electing the thesis option in the last stage of the program will work under the general supervision of a member of the graduate faculty in CAS&L, but will plan and carry out the work independently. The MPP Program Director must approve a prospectus of the thesis before the student registers for the course. The student will defend the completed thesis before a panel of program faculty.

---

**RELIGIOUS STUDIES (RELS)**

---

**RELS 501 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 in 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. (YR,S).

---

**SOCIAL SCIENCES (SSCI)**

---

**SSCI 585 The Middle East for Teachers**  
2.000 Credits

This is an orientation and curriculum development course for teachers who a) include the Middle East in their curriculum or b) have students of Middle Eastern background and would like to know more about the region.

---

**SOCIOLOGY (SOC)**

---

**SOC 503 Minority Groups**  
3.000 Credits  
Prerequisites: SOC 200 or 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 403. Students cannot receive credit for both SOC 403 and SOC 503. (AY)

**SOC 504 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'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 SOC 404 and SOC 504. This course is distinguished from its 400-level counterpart by the requirement of additional assignments, including a required additional paper.

**SOC 5075 Sexual Praxis and Theory**  
3.000 Credits  
Prerequisites: WST 275 or WGST 275 or PSYC 275 or SOC 275 or ANTH 275 or HUM 275 or SOC 443 or PSYC 405 or ANTH 406 or ANTH 101 or WGST 303 or PSYC 303 or SOC 303 or ANTH 303 or HUM 303

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. (F)

**SOC 509 Feminist Theories**  
3.000 Credits  
Prerequisites: LIBS 560

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 for both

SOC 409 and SOC 509. Additional reading assignments or projects will distinguish this course from its undergraduate version.

**SOC 510 Quantitative Research**  
4.000 Credits  
Prerequisites: SOC 200 or SOC 201

An introduction to methods of data collection and analysis. Also a discussion of research design and the philosophy of social sciences. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 410. Students cannot receive credit for both SOC 410 and SOC 510. (F,W,S)

**SOC 511 Program Evaluation**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201 or PSYC 170 or PSYC 171 or POL 101

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 and measurement as well as issues of how to get research findings utilized. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 411. Students cannot receive credit for both SOC 411 and SOC 511. (YR)

**SOC 522 Structure of American Society**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

An analysis of the institutional structure of American society, with a view of determining the degree of its integration. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 422. Students cannot receive credit for both SOC 422 and SOC 522. (YR)

**SOC 523 American Social Classes**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Stratification of American communities and society; a review of the findings of major studies and an introduction to methodology. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 423. Students cannot receive credit for both SOC 423 and SOC 523. (YR)

**SOC 526 Society and Aging**  
3.000 Credits  
Prerequisites: 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. Additional assignments or projects will distinguish this course from its undergraduate version SOC 426. Students cannot receive credit for both SOC 426 and SOC 526. (YR)

**SOC 535 Urban Sociology**

3.000 Credits

Prerequisites: SOC 200 or 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 435. Students cannot receive credit for both SOC 435 and SOC 535. (YR)

**SOC 540 Medical Sociology**

3.000 Credits

Prerequisites: SOC 200 or SOC 201

An analysis of health and illness behavior from the point of view of the consumer, as well as the 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 440. Students cannot receive credit for both SOC 440 and SOC 540. (F,W,S)

**SOC 541 Sociology of the Auto Industry**

3.000 Credits

Prerequisites: SOC 200 or SOC 201

The American auto industry is examined in its relationship 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 industry on a local community (Detroit). Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 441. Students cannot receive credit for both SOC 441 and SOC 541. (F,W)

**SOC 542 Sociology of Work**

3.000 Credits

Prerequisites: SOC 201 or SOC 200

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 occupational associations are among the topics to be considered. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 442. Students cannot receive credit for both SOC 442 and SOC 542. (YR)

**SOC 543 Gender Roles**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 443. Students cannot receive credit for both SOC 443 and SOC543. (YR)

**SOC 545 The Family**

3.000 Credits

Prerequisites: SOC 200 or SOC 201

The family is 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 445. Students cannot receive credit for both SOC 445 and SOC 545. (YR)

**SOC 546 Marriage and Family Problems**

3.000 Credits

Prerequisites: SOC 200 or SOC 201

A 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 446. Students cannot receive credit for both SOC 446 and SOC 546. (YR)

**SOC 547 Family Violence**

3.000 Credits

Prerequisites: SOC 200 or SOC 201 or SOC 301 or SOC 443 or PSYC 405 or WST 405 or PSYC 505 or WST 505 or SOC 543

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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 447. Students cannot receive credit for both SOC 447 and SOC 547. (YR)

**SOC 548 Comparative Health Care System**

3.000 Credits

Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 448. Students cannot receive credit for both SOC 448 and

SOC 548. (F,W,S)

**SOC 550 Political Sociology**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 450. Students cannot receive credit for both SOC 450 and SOC 550. (YR)

**SOC 553 Sociology of Law**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 453. Students cannot receive credit for both SOC 453 and SOC 553. (YR)

**SOC 554 Mental Health and the Law**  
3.000 Credits  
Prerequisites: 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 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 454. Students cannot receive credit for both SOC 454 and SOC 554. (YR)

**SOC 555 Sociology of Religion**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Religion as a social institution; its purposes, methods, structures, and beliefs, and its relation to other institutions. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 455. Students cannot receive credit for both SOC 455 and SOC 555. (YR)

**SOC 556 Health Care and the Law**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201 or POL 364

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 and other topics. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 456. Students cannot receive credit for both SOC

456 and SOC 556. (AY)

**SOC 558 Sociology of Education**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Education as a social institution; its purpose, methods, structure, and philosophy, and its relation to other institutions, particularly in the urban setting. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 458. Students cannot receive credit for both SOC 458 and SOC 558. (YR)

**SOC 560 America in a Global Society**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Social studies in America are studied from an internal and an external perspective. The internal dynamics of social change emphasize the role of social movements, 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 origins 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 460. Students cannot receive credit for both SOC 460 and SOC 560. (OC)

**SOC 565 Deviant Behavior/Soc Disorganiz**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

A general analysis of the concept of social deviance and social disorganization: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 465. Students cannot receive credit for both SOC 465 and SOC 565. (YR)

**SOC 566 Drugs, Alcohol, and Society**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Analyses of the sociology of substance use and abuse. Provide 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. Additional assignments will distinguish this course from its undergraduate version.

**SOC 569 Juvenile Delinquency**  
3.000 Credits  
Prerequisites: 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 treatment of juvenile delinquency in the United States. Additional reading assignments or projects will distinguish this course from its undergraduate version, SOC 469. Students cannot receive credit for both SOC 469 and SOC 569. (YR).

**SOC 579 Comparative Hlth Systems: Trip**  
3.000 Credits  
Prerequisites: 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 479. Students cannot receive credit for both SOC 479 and SOC 579. (AY)

**SOC 581 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. Students cannot receive credit for both SOC 481 and SOC 581. (AY).

**SOC 583 Images of Organizations**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201

Formal bureaucratic organizations such as government agencies, hospitals, and colleges are distinctive features 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. Additional reading assignments or projects will distinguish this course from its undergraduate version SOC 483. Students cannot receive credit for both SOC 483 and SOC 583. (YR)

**SOC 590 Advanced Topics in Sociology**  
3.000 Credits

A seminar in which selected topics pertaining to sociology are studied in depth. (YR).

**SOC 598 Independent Study**  
1.000 TO 6.000 Credits

Analytical assignments in sociology.

## SPANISH (SPAN)

**SPAN 521 Advanced Translation**

3.000 Credits  
Prerequisites: SPAN 303 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).

## SPEECH (SPEE)

**SPEE 500 Speech Skills for Professional**  
3.000 Credits  
Prerequisites: 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. (AY)

**SPEE 530 Small Group Communications**  
3.000 Credits  
Prerequisites: 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. (F,W,S)

## STATISTICS (STAT)

**STAT 530 Applied Regression Analysis**  
3.000 Credits  
Prerequisites: 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 transformation will be covered. Basic time series analysis and forecasting using moving averages and autoregressive models with prediction errors are covered. Additional assignments in logistic regression and forecasting will distinguish this course from its undergraduate version, STAT 430. Statistical packages will be used. Students cannot receive credit for both STAT 430 and STAT 530.

**STAT 535 Data Analysis and Modeling**  
3.000 Credits

Linear models including models with factors associated with both fixed and random effects together with covariates. Models containing more complex covariance structure including repeated measures and time dependence. The statistical processing package SAS will be used extensively to analyze

data associated with such models. The SAS procedures Proc GLM, Proc REG, and Proc Mixed will be used extensively in examples, assignments, and projects. (OC).

**STAT 545 Reliability & Survival Analysis**  
3.000 Credits

Parametric and nonparametric modeling of reliability data from industrial experiments and survival data from biological experiments where the data may be censored. This includes models where covariates are present and where the data may be from the Weibull, log-normal, or the gamma distribution and also the nonparametric proportional hazards model and Cox regression. The statistical processing package SAS will be used extensively to analyze data associated with such models. The SAS procedure Proc LIFEREG will be used to analyze parametric regression models and the procedure Proc LIFETEST will be used to analyze nonparametric regression models in examples, assignments, and projects. (OC).

**STAT 555 Environmental Statistics**  
3.000 Credits

A wide variety of statistical tests important in environmental sciences will be covered through the use of case studies. Theory and applications of datasets, data displays, and formal statistical inference will be discussed. Students will obtain direct experience with the study and analysis of data, do projects, and write reports. (W, AY)

**STAT 590 Topics in Applied Statistics**  
3.000 Credits

A course designed to offer selected topics in applied statistics. The specific topic will be announced together with the prerequisites when offered. Course may be repeated for credit when specific topic differs. (OC)

**STAT 597 Ind Studies in Statistics**  
1.000 TO 3.000 Credits

Independent Study in statistics for topics at the graduate level. Topics and objectives chosen by agreement between students and instructor.

## WOMEN'S AND GENDER STUDIES (WGST)

**WGST 501 Images of Women in Germany**  
3.000 Credits

This course will focus on the position of women in Germany after WWII and up to and after the unification of East and West Germany. Particular attention will be given to the gendered history of working through the National Socialist past, the division and reconstruction of the two nation-states, and the terrorism in West Germany in the 1970's. Students will examine images of women in films and tie them to the ideologies of gender and status of women in these larger issues of German history. Course readings will be in English. This course will be distinguished from its undergraduate counterpart, WGST 401, by the inclusion of additional readings and assignments.

**WGST 504 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'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. This course is distinguished from its 400-level counterpart by the requirement of additional assignments, including a required additional paper.

**WGST 505 Gender Roles**  
3.000 Credits

Prerequisites: PSYC 170 or PSYC 171 or SOC 200 or SOC 201

This course will investigate the development of sex roles in childhood and adolescence due to either innate physiological differences of 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. Additional reading assignments or projects will distinguish this course from its undergraduate version WGST 405. Students cannot receive credit for both WGST 405 and WGST 505.

**WGST 506 Culture and Sexuality**  
3.000 Credits  
Prerequisites: ANTH 101

The study of women, men, children, socialization practices and the genesis of sex roles cross-culturally. Additional reading assignments or projects will distinguish this course from its undergraduate version WGST 406. Students cannot receive credit for both WGST 406 and WGST 506.

**WGST 507 Sexual Praxis and Theory**  
3.000 Credits

Prerequisites: WGST 303 or PSYC 303 or ANTH 303 or SOC 303 or HUM 303 or WGST 275 or WST 275 or PSYC 275 or SOC 275 or ANTH 275 or HUM 275 or SOC 403 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 of Narratives of Transexuality*, and *Lesbian and Gay Marriage*.

**WGST 508 Gender, Pwr & Intl Development**  
3.000 Credits

This course provides an overview of gender issues in development in the global South, including the differential effects of development policies on women and men, and the role of social movements in transforming development policy frameworks. Students may not receive credit for both WGST 408 and 508. Additional assignments will distinguish this course from its undergraduate counterpart (WGST 408).

**WGST 509 Feminist Theories**  
3.000 Credits  
Prerequisites: LIBS 560

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 for both WGST 409 and WGST 509. Additional reading assignments or projects will distinguish this course from its undergraduate version.

**WGST 516 Earl Mod Jpn Paint&Wood Prnts**  
3.000 Credits  
Prerequisites: ARTH 101 or ARTH 102 or ARTH 103

Painting and woodblock prints of the Edo/Tokugawa (1600-1868) and MeijiIII (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 arts and artists from China and the West. Special attention is given to female artists and images of women.

**WGST 520 Kinship and Marriage**  
3.000 Credits  
Prerequisites: 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 history. Additional reading assignments or projects will distinguish this course from its undergraduate version WGST 420. Students cannot receive credit for both WGST 420 and WGST 520.

**WGST 525 Women in Classical Antiquity**  
3.000 Credits  
Prerequisites: 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.

**WGST 533 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 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.

**WGST 545 20C/21C Women Authors**  
3.000 Credits  
Prerequisites: (COMP 106 or CPAS 40 or COMP 220 or COMP 280 or COMP 270) and (ENGL 230 or ENGL 231 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 20th and 21st centuries. Style and narrative techniques will also be closely examined. Students cannot receive credit for both WGST 445 and WGST 545.

**WGST 546 Marriage and Family Problems**  
3.000 Credits  
Prerequisites: SOC 200 or SOC 201 or WGST 275 or WST 275 or PSYC 275 or SOC 275 or ANTH 275 or HUM 275 or WGST 303 or PSYC 303 or SOC 303 or ANTH 303 or HUM 303

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 WGST 446 and WGST 546. Additional reading assignments or projects will distinguish this course from its undergraduate version.

**WGST 547 Family Violence**

3.000 Credits

Prerequisites: SOC 200 or SOC 201 or SOC 301 or SOC 443 or PSYC 405 or WGST 405

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. Additional reading assignments or projects will distinguish this course from its undergraduate version WGST 447. Students cannot receive credit for both WGST 447 and WGST 547.

**WGST 5505 Feminism & Mod. Mid. East**

3.000 Credits

This course provides an analysis of the history, historiography, and sources for the study of feminism in the Middle East since 1800. Additional assignments will distinguish the graduate version of this course from the undergraduate version.

**WGST 555 Gender and Media Studies**

3.000 Credits

Prerequisites: WGST 275 or WGST 303

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 international 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.

**WGST 5555 Immigrant Cultures and Gender**

3.000 Credits

Prerequisites: LIBS 560

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 and junior or senior standing. Students may not receive credit for both WGST 4555 and WGST 5555. For graduate credit take WGST 5555. This course is distinguished from its 400-level counterpart by the requirement of additional assignments.

**WGST 5650 Sem in US Women's History**

3.000 Credits

Seminar on the historiography and key primary sources related to U.S. Women's History. The course covers examples of classic texts in the field as well as significant new works of scholarship, with an emphasis on critical reading, analysis, and

historiography of the field. Students gain a deeper understanding of the field, its guiding concepts, foundational texts, newest trajectories, and impact on the field of history as a whole. The graduate version of this course includes weightier readings and assignments.

**WGST 571 Sexual Subcultures in Lit**

3.000 Credits

This course surveys primarily contemporary literature by writers who identify as gay, lesbian, bi-sexual, transgender, or queer. By studying the self-representation and culturally unique perspective of this emerging canon of writers, students in this course understand the emergence of LGBTQ literary traditions and understand the cultural diversity within these traditions. Students learn to identify the aesthetic qualities (such as camp, performativity, coded subtexts, homoeroticism, and the relationship between creativity and sexuality), and historical, political, and social concerns that characterize LGBTQ literary and cultural production. Topics covered include the struggle for civil rights before and after Stonewall, coming out narratives, the negotiation of homophobic cultures, post-colonial writers, and memoirs of the LGBTQ experience, as well as the historical emergence of sexual categories and the literary critique of heteronormativity. This course counts toward the English discipline diversity requirement.

**WGST 573 Arab American Women Writers**

3.000 Credits

Examines the literary and cultural contributions of Arab and Arab American women novelists, poets, and artists to the development and consolidation of the cultures of understanding and coexistence; explores the tensions between citizenship and belonging, race and the politics of fear, gender and geographical mobility, and ethnic minorities and mainstream consciousness; discerns how Arab women writers and artists retool their various artistic endeavors to channel socio-political disenchantment, critique and civil disobedience; stresses how literary and artistic productions of heterogeneous number of Arab American women writers and artists can indeed foster alternative visions of socio-cultural coexistence, dialogue, and hospitality via artistic commitments to technical and stylistic experimentation and renovation. Additional reading assignments or projects will distinguish this course from its undergraduate version WGST 473. Students cannot receive credit for both WGST 473 and WGST 573.

**WGST 581 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. Students cannot receive credit for both WGST 481 and WGST 581.

**WGST 590 Topics in Women's Studies**

3.000 Credits

Prerequisites: WGST 275 or WST 275 or LIBS 580  
or WGST 303

Examination of problems and issues related to Women and Gender Studies. Title as listed in Schedule of Classes will change according to specific content.

**WGST 599 Independent Studies**

1.000 TO 3.000 Credits

Provides opportunity for qualified Women and Gender 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 BUSINESS



**THE UNIVERSITY OF MICHIGAN -DEARBORN**

# COLLEGE OF BUSINESS

## Administration

Raju Balakrishnan, PhD, Dean  
 Lee Redding, PhD, Associate Dean  
 Michael D. Harkness, PhD, CPA, Chair, Department of Accounting and Finance  
 Karen Strandholm, PhD, Chair, Department of Management Studies  
 Michael Kamen, PhD, Director of Graduate Programs  
 Mary Howard, Associate Director of Graduate Programs  
 Julie Tigani, Graduate Admissions Coordinator  
 Joan Doherty, Graduate Admissions Advisor  
 Andrea Lewis, Academic Records Specialist  
 Jennifer Nordstrom, Senior Marketing Communications Specialist  
 Mike Callahan, Placement/Career Services Director  
 Fabia Snage, Placement/Career Services Coordinator  
 Christine Dunning, Placement/Career Services

## FACULTY (Full-time)

### ACCOUNTING AND FINANCE

Susan Baker, MBA, University of Michigan, Lecturer  
 Mohamed E. Bayou, PhD, University of Cincinnati, Professor  
 Robert E. Blatz Jr, JD, University of Detroit Mercy, Professor  
 Bruce Bublitz, PhD, University of Illinois, Professor  
 Kelly Nianyun Cai, PhD, University of Houston, Associate Professor  
 Patricia Graybeal, PhD, Virginia Tech, Lecturer  
 Brian P. Green, PhD, CPA, Kent State University, Professor  
 Michael D. Harkness, PhD, CPA, University of South Florida, Associate Professor  
 Kevin Kobelsky, PhD, University of California, Irvine, Assistant Professor  
 Claudia Kocher, PhD, Michigan State University, Associate Professor  
 Hei Wai Lee, PhD, University of Illinois at Urbana-Champaign, Professor  
 Gail K. McCracken, JD, CPA, Wayne State University, Lecturer  
 Mercedes Maria Miranda, PhD, University of New Orleans, Lecturer  
 Kevin Cheongkyu Park, PhD, University of Kentucky, Assistant Professor  
 Kirk Philipich, DBA, Indiana University, Associate Professor  
 Lee Redding, PhD, Princeton University, Associate Professor  
 Martha Rowland, MA, Wayne State University, Lecturer  
 Vivek Singh, PhD, Virginia Tech, Associate Professor  
 Magali Valero-Tonone, PhD, Arizona State University, Associate Professor  
 George Vlachos, MA, State University of New York, Lecturer  
 Qin Wang, PhD, University of Arizona, Assistant Professor  
 Yan Alice Xie, PhD, Syracuse University, Associate Professor

### MANAGEMENT STUDIES

Aaron Ahuvia, PhD, Northwestern University, Professor  
 Raju Balakrishnan, PhD, Purdue University, Professor

Joy Beatty, PhD, Boston College, Associate Professor  
 Thomas Callahan, PhD, Michigan State University, Associate Professor  
 Charu Chandra, PhD, Arizona State University, Professor  
 Yi-Su Chen, PhD, University of Minnesota, Assistant Professor  
 Hans Czap, Lecturer  
 Lee A. Freeman, PhD, Indiana University, Associate Professor  
 Yi Guo, PhD, Texas A&M University, Associate Professor  
 Timothy Hartge, M.A. University of Michigan, Lecturer  
 Jun He, PhD, University of Pittsburgh, Associate Professor  
 Gerald Holowicki, MS Eastern Michigan University, Lecturer  
 Elif Izberk-Bilgin, PhD, University of Illinois at Chicago, Assistant Professor  
 Barbara D. Klein, PhD, University of Minnesota, Associate Professor  
 Kamalesh Kumar, PhD, University of North Texas, Professor  
 Junghyun (Jessie) Lee, PhD, The George Washington University, Assistant Professor  
 Zhixin (Jason) Liu, PhD, Ohio State University, Assistant Professor  
 K. H. Padmanabhan, PhD, Michigan State University, Associate Professor  
 Young Ro, PhD, University of Michigan, Associate Professor  
 Donald F. Rossin, PhD, University of California at Los Angeles, Associate Professor  
 Chris Samfilippo, MBA, Wayne State University, Lecturer  
 Crystal Scott, PhD, Pennsylvania State University, Assistant Professor  
 Karen S. Strandholm, JD, PhD, Indiana University, Associate Professor  
 Andrew Urbaczewski, PhD, Indiana University, Associate Professor  
 Lise Urbaczewski, MS, Eastern Michigan University, Lecturer  
 Matt Wimple  
 Michelle Yoder, PhD, University of Wisconsin, Assistant Professor

### PROFESSORS EMERITI

Yu-Min Chou, PhD, University of Illinois at Urbana-Champaign  
 D. Ross Cowan, MF, University of Michigan  
 William H. Culp, PhD, CPA, University of Michigan  
 Richard E. Czarnecki, PhD, CPA, Michigan State University  
 Michael Foran, PhD, University of Washington  
 Cedric V. Fricke, PhD, University of Michigan  
 Benjamin Lev, PhD, Case Western Reserve University  
 Thomas F. Lyons, PhD, University of Michigan  
 William R. D. Martin, MBA, University of Chicago  
 Robert P. Steel, PhD, University of Tennessee-Knoxville  
 Victor J. Streeter, PhD, University of Michigan  
 Gary R. Waissi, PhD, University of Michigan

## College of Business Accreditation

### COLLEGE OF BUSINESS ACCREDITATION

The College of Business's graduate and undergraduate degree programs are accredited by AACSB-International, The Association to Advance Collegiate Schools of Business. AACSB-International is the premier accreditation agency for business schools.

### MISSION STATEMENT



Our mission is to be the college of choice for quality business education, preparing future business leaders for Southeastern Michigan and beyond.

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.

## GRADUATE DEGREE PROGRAMS

The University of Michigan-Dearborn (UM-Dearborn) is one of the three campuses of the University of Michigan and has been in existence since 1959. It is committed to the same rigorous academic standards and tradition of excellence for which the University of Michigan is so well known. The regional campuses, Flint and Dearborn, each have a Chancellor as chief executive officer. The President of the University, located in Ann Arbor, has responsibility for all three campuses. One Board of Regents governs the three campuses.

The College of Business offers the following master degree programs, all accredited by AACSB-International:

- **MASTER OF BUSINESS ADMINISTRATION (MBA)**  
Evening and Online Program  
Concentrations
  - Accounting
  - Finance
  - Human Resource Management
  - International Business
  - Investment
  - Management Information Systems/Marketing
  - Supply Chain Management
  - Taxation
- **MASTER OF SCIENCE IN ACCOUNTING (MSA)**
  - Evening Program
  - Financial Accounting Concentration
  - Taxation Concentration
- **MASTER OF SCIENCE IN FINANCE (MSF)**  
Evening and Online Program
- **MASTER OF SCIENCE DEGREE PROGRAMS (MS)**  
**Business Analytics** (blended- requires campus presence)

Concentrations:

- Financial Analytics
- Information Management and Coordination Analytics
- Marketing Analytics
- Supply Chain Analytics

**Information Systems** (blended-requires campus presence)

**Supply Chain Management** (blended-requires campus presence)

## DUAL DEGREE PROGRAMS

Evening and Online Program

- Master of Business Administration (MBA) and
- Master of Science in Finance (MS in Finance) – (Student-Initiated)
- Master of Business Administration (MBA) and
- Master of Science in Engineering-Industrial & Systems Engineering (MSE) (Student-Initiated)
- Master of Business Administration (MBA) and
- Master of Health Services Administration (MHSA) – (Student-Initiated)
- Master of Science in Accounting (MSA) and Master of Science in Finance (MSF)

The average GMAT score for the most recent admitted graduate class is 580 and the average undergraduate grade point average is 3.50. Undergraduate degrees in engineering, business, computer science, natural science, social or behavioral science, humanities, health care or education are all appropriate as preparation for business graduate programs.

## Master of Business Administration

### PROGRAM DESCRIPTION

The MBA is tailored for busy professionals working full-time. Courses are offered on weekday evenings as well as online. The MBA program is right for you if you want to:

- Pursue an MBA while balancing your job, travel, or life commitments.
- Expand your network of professional relationships.
- Interact with a talented and experienced faculty as well as talented and experienced fellow students.
- Customize your degree with specialized electives that allow you to earn a concentration in Finance, International Business, Marketing, Management Information Systems, Supply Chain Management, or Accounting.

Students may earn their degree entirely through on-campus evening courses, or entirely through online MBA courses, or through a mixture of both.

Online MBA courses are the same courses as taught on the Dearborn campus, taught by the same full-time faculty. There is no distinction between online MBA courses and on-campus MBA courses or the degree earned. There is no on-campus residency requirement, so students can earn their MBA from anywhere. Pursuing the MBA through online courses may be right for those who work long or unusual hours, travel extensively, live far from a good college or university, or for other personal or work reasons need the flexibility of online MBA courses. Online courses allow you to tailor the time and place of your learning to fit your work schedule and lifestyle.

**MBA GOALS AND OBJECTIVES**

**Goal 1:** Students will have an understanding of the core business disciplines and be able to apply this knowledge to global business situations.

- **Objective 1:** Students will demonstrate knowledge of disciplinary concepts, terminology, models, and perspectives.
- **Objective 2:** Students will identify business problems and apply appropriate solutions (problem-finding/problem-solving).
- **Objective 3:** Students will integrate knowledge across disciplinary areas (integrative thinking).
- **Objective 4:** Students will apply knowledge in a global environment.

**Goal 2:** Students will be effective communicators.

- **Objective 5:** Students will effectively communicate business solutions.

**Goal 3:** Students will appreciate the importance of ethical/corporate social responsibility principles.

- **Objective 6:** Students will identify and explain alternative approaches to ethical/corporate social responsibility issues.

**CURRICULUM**

The MBA curriculum is comprised of courses from three categories. To earn the MBA requires 36-48 credits distributed as follows:

MBA Core Courses .....	27 hrs
MBA Applied Integrated Management (AIM) Courses.....	12 hrs
Electives/Concentration.....	9 hrs
Total Credits Required.....	48 hrs

The total number of credits required to earn the degree will be reduced for those receiving core course waivers, as discussed in the Course Waivers and Exemptions section of this Bulletin. A minimum of 36 graduate credits is required for the MBA.

The MBA curriculum requirements are the same whether the degree is pursued through online courses or evening, on-campus courses. However, there may be fewer elective courses and concentrations available for students doing their MBA entirely through online courses. However, all concentrations can be earned by those able to take elective courses on campus.

**MBA Core Courses** ..... 27 hrs

Core courses are designed to provide students with exposure to the functional areas of business. They provide the foundation for MBA AIM courses and electives/concentration courses. MBA core course waivers reduce the number of credits required to complete the MBA degree; however, a minimum of 36 graduate credit hours is required to graduate. Refer to this topic under the Course Waivers and Exemption section of this Bulletin for detailed information.

ACC505	Developing and Interpreting Financial Information.....	3 hrs
BPS 516	Corporate Social Responsibility .....	3 hrs
OB 510	Organization Behavior .....	3 hrs
MKT 515	Marketing Management.....	3 hrs
DS 520	Applied Statistical Modeling.....	3 hrs
OM 521	Operations Management.....	3 hrs
MIS 525	Computer and Information Systems .....	3 hrs
BE 530	Economic Analysis: Firm and Consumer .....	3 hrs
FIN 531	Finance Fundamentals and Value Creation ..	3 hrs

**MBA AIM (Applied Integrated Management Courses) .....** 12 hrs

The AIM courses provide an integrated perspective needed to master today’s complex business problems.

**International Business .....** 3 hrs

Choose one course from:

BE 583	The Global Economy: Crisis and Growth...	3 hrs
FIN 655	International Financial Management .....	3 hrs
MKT 6XX*	International Marketing.....	3 hrs

\*Course number TBD

**Capstone .....** 3 hrs

BPS 535	Strategic Planning and Decision Making .....	3 hrs
---------	--	-------

**Additional AIM courses .....** 6 hrs

Choose two courses (6 credits) from:

BPS 585	Managing Strategic Innovation and Change ..	3 hrs
ACC 616	Corporate Actions and Reactions and Their Relationship to Firm Value .....	3 hrs

Additional Courses TBD

**MBA Electives or Optional Concentration**9 hrs

Students complete the MBA program by choosing at least three graduate advisor-approved elective courses (9 credits) tailored to their individual interests. No more than three graduate credits can be taken from units other than the College of Business. Elective courses must be approved by the Graduate Program Advisor in advance of course election.

Courses cannot be taken off-campus except by prior permission of the Academic Standards Committee. The Committee will consider a request to take a course off-campus only if there are unusual, extenuating circumstances. Tailor the degree to your own interests with an optional concentration in any of the areas listed below.

No single course may be counted toward more than one MBA requirement or concentration.

**MBA Breadth Requirement (3, 4, 5 Rule)**

- Complete AIM courses in at least 3 different disciplines
- Complete more than 4 AIM, Concentration, and Elective courses (12 credits) in any one discipline
- Complete graduate business courses in at least 5 different disciplines.

**MBA Business Communication Requirement**

Two, 4-hour workshops in Business Writing and Business Presentation skills are required for the MBA degree.

**MBA CONCENTRATIONS**

MBA concentrations are available to students wishing to specialize in one of the following areas. Students are not required to select a concentration. More than one concentration may be earned. Some concentrations can be completed with online coursework and others may require campus presence. Concentrations are awarded at the time of graduation.

**ACCOUNTING****Choose three courses from:**

ACC 601	Advanced Accounting Information Systems .....	3 hrs
ACC 603	Controllership .....	3 hrs
ACC 604	Issues in Auditing and Forensic Examination .....	3 hrs
ACC 605	International Accounting and Taxation .....	3 hrs
ACC 608	Financial Statement Analysis .....	3 hrs

**FINANCE****Required**

FIN 581	Topics in Corporate Finance .....	3 hrs
---------	-----------------------------------	-------

**Choose two courses from:**

FIN 650	Corporate Valuation and Strategy .....	3 hrs
FIN 651	Investment Process, Analysis and Management .....	3 hrs
FIN 652	Derivatives and Risk Management .....	3 hrs
FIN 654	Financial Intermediation .....	3 hrs
FIN 655	International Financial Management .....	3 hrs

**HUMAN RESOURCE MANAGEMENT**

HRM 561	Human Resource Management .....	3 hrs
OB 560	Management Skills Development .....	3 hrs
OB 610	International Dimensions of Organizational Behavior and Human Resource Management .....	3 hrs

**INTERNATIONAL BUSINESS****Choose three courses from:**

FIN 655	International Financial Management .....	3 hrs
MKT 622	Global Marketing .....	3 hrs
OB 610	International Dimensions of Organizational Behavior and Human Resources Management .....	3 hrs
OM 571	Supply Chain Management .....	3 hrs

**INVESTMENT****Required**

FIN 561	Investment Process, Analysis & Management .....	3 hrs
---------	---	-------

**Choose two courses from:**

FIN 652	Derivatives and Risk Management .....	3 hrs
FIN 653	Current Issues in Investments and Capital Markets .....	3 hrs
FIN 654	Financial Intermediation .....	3 hrs
FIN 655	International Financial Management .....	3 hrs
FIN 656	Fixed Income Securities .....	3 hrs

**MANAGEMENT INFORMATION SYSTEMS**

Choose any three MIS graduate courses other than MIS 525.

**MARKETING****Required**

MKT 565	Advanced Marketing Management .....	3 hrs
---------	-------------------------------------	-------

**Choose two courses from:**

MKT 620	Understanding Customers .....	3 hrs
MKT 621	Advertising and Promotion .....	3 hrs
MKT 628	Turning Data into Revenue .....	3 hrs

**SUPPLY CHAIN MANAGEMENT****Required**

OM 571	Supply Chain Management .....	3 hrs
--------	-------------------------------	-------

**Choose two courses from:**

OM 661	Supply Chain Logistics Management .....	3 hrs
OM 664	Strategic Sourcing .....	3 hrs
OM 665	Information Technology in Supply Chain Management .....	3 hrs

**TAXATION**

Choose three courses from:

TAX 510	Fundamentals of Corporate Income Taxation	3 hrs
TAX 611	Advanced Corporate Income Taxation .....	3 hrs
TAX 615	Flow through Entities .....	3 hrs
TAX 627	Survey of International Income Tax Issues...	3 hrs

Credits required for MBA degree -- 36- 48 hours

**Master of Science in Accounting**

The Master of Science in Accounting (MSA) serves professionals in public accounting, controllership, corporate accounting, and taxation. It provides those with bachelor degrees in accounting with the appropriate number of business and accounting credits required to sit for the Uniform Certified Public Accountant Exam in Michigan. UM-D students who are close to finishing a Bachelor of Business Administration

degree in Accounting, and have been admitted to the MS-Accounting program, may take up to six graduate credits during their final term of undergraduate coursework.

**MSA PROGRAM GOALS AND OBJECTIVES**

**Goal:** MS in Accounting students will be able to integrate theory and applications in a wide variety of business situations.

**Objectives** – MS in Accounting students will:

- Be able to effectively communicate ideas orally, in writing, and using computer technologies.
- Integrate multiple sources of information to formulate solutions to complex business issues.
- Apply standards and regulations that affect multinational businesses.
- Apply standards of practice to business situations.

**CURRICULUM**

The Master of Science in Accounting Program consists of 30 credits of accounting, taxation and advisor approved elective courses. Students must choose one of two concentrations within the MS-Accounting degree – the Financial Accounting concentration or the Taxation concentration.

**COURSES REQUIRED FOR THE FINANCIAL ACCOUNTING CONCENTRATION**

**Required Core Courses**..... 21 hrs

ACC 601	Advanced Accounting Information Systems	3 hrs
ACC 603	Controllership	3 hrs
ACC 604	Issues in Auditing and Forensic Examination	3 hrs
ACC 605	International Accounting and Taxation	3 hrs
ACC 520	Communications for the Accounting and Tax Professional	3 hrs
TAX 510	Fundamentals of Corporate Taxation	3 hrs
LE 510	Commercial Transactions	3 hrs

**Electives Required for the Financial Accounting Concentration**..... 9 hrs

Choose three courses from:

ACC 516	Advanced Accounting	3 hrs
ACC 539	Government/Not for Profit Accounting	3 hrs
BE 583	The Global Economy: Crisis and Growth	3 hrs
BI 500	Business Internship	3 hrs
DS 520	Applied Statistical Modeling	3 hrs
FIN 581	Topics in Corporate Finance	3 hrs
FIN 651	Investment Process, Analysis and Management	3 hrs
FIN 652	Derivatives and Risk Management	3 hrs
FIN 653	Topics in Investments and Capital Markets	3 hrs
MIS 525	Computer and Information Systems	3 hrs
MIS 575	Information Management	3 hrs
MIS 640	Information Systems Development	3 hrs
MIS 641	Computer Networking	3 hrs
MIS 642	Information Technology Security	3 hrs

MIS 643	Information Technology Project and Change Management	3 hrs
MKT 622	Global Marketing	3 hrs
MKT 625	Global Sourcing and Logistics	3 hrs
OM 660	Analysis & Design of Supply Chains	3 hrs
TAX 501	Income Tax Accounting Rules and Timing Issues	3 hrs
TAX 502	Income Taxation of Property Transactions I	3 hrs
TAX 603	Income Taxation of Property Transactions II	3 hrs
TAX 611	Advanced Corporate Income Taxation	3 hrs
TAX 615	Flow through Entities	3 hrs
TAX 622	Estate and Gift Taxation	3 hrs
TAX 627	International Income Taxation	3 hrs
TAX 630	State and Local Taxation	3 hrs
TAX 680	Special Topics in Taxation	3 hrs

**Courses Required for the Taxation**

**Concentration** ..... 9 hrs

Required Core Courses

ACC 520	Communications for Accounting and Tax Professionals	3 hrs
TAX 510	Fundamentals of Corporate Income Taxation	3 hrs
TAX 615	Flow through Entities	3 hrs

**Tax Electives Required for the Taxation**

**Concentration** ..... 15 hrs

Choose five courses from:

TAX 501	Income Tax Accounting Rules and Timing Issues	3 hrs
TAX 502	Income Taxation of Property Transactions I	3 hrs
TAX 603	Income Taxation of Property Transactions II	3 hrs
TAX 611	Advanced Corporate Income Taxation	3 hrs
TAX 622	Estate and Gift Taxation	3 hrs
TAX 627	International Income Taxation	3 hrs
TAX 630	State and Local Taxation	3 hrs
TAX 680	Special Topics in Taxation	3 hrs

(maximum of 6 credits)

**Electives Required for the Taxation**

**Concentration** ..... 6 hrs

Six credit hours, advisor approved elective coursework from College of Business graduate level courses.

**Credits required for the MS-Accounting degree – 30 hours**  
 Note: ACC 608 does not carry credit toward degree in the MS-Accounting Program.

**Master of Science in Business Analytics**

The Master of Science in Business Analytics (MS-BA) program is designed for students who want to solve important business problems through the analysis of data and statistics. The program trains students to become data scientists, an important new career field in which professionals use

algorithms and formulas to identify which business problems to solve, then devise strategies to solve them. Students with a mind for math and statistics, regardless of their undergraduate major, may pursue this professional degree path.

The MS-BA program is right for you if you want to:

- Learn application of quantitative and analytical skills through data analysis for problem solving in various business domains.
- Pursue a master’s degree while balancing your job, travel, or life commitments.
- Expand your network of professional relationships.
- Interact with a talented and experienced faculty as well as talented and experienced fellow students at a prestigious institution with one of the nation’s top business school rankings.

Courses are available on campus through weekday evening offerings and students have the flexibility to choose some limited online courses. The program requires a campus presence.

### MS-BA PROGRAM GOALS AND OBJECTIVES

The program aims to help students achieve the following educational goals:

**Goal 1:** Students will acquire discipline-specific knowledge in business analytics.

**Objectives:** Students will:

- **1a:** Explain and evaluate business analytics approaches and functions.
- **1b:** Explain and evaluate relevant business analytics tools and techniques.
- **1c:** Effectively communicate business ideas verbally and in writing.

**Goal 2:** Students will develop analytical skills for business problems.

**Objectives:** Students will:

- **2a:** Formulate business analytics problems.
- **2b:** Synthesize relevant business analytics information.
- **2c:** Evaluate business analytics solution alternatives.
- **2d:** Analyze business analytics problem-solving approaches.

### CURRICULUM

The Master of Science in Business Analytics program consists of 30 graduate credits. Up to 6 graduate transfer credits may be applied to the degree. Up to two of the following Business Analytics Core and Concentration courses can be exempted at the discretion of the program faculty: ACC 505, BE 530, DS

520, MIS 525, MKT 515, FIN 531 and OM 521. Exempted credits must be satisfied through other advisor-approved graduate courses. Regardless of waivers and/or exemption credits received, the MS-BA degree requires a minimum of 24 credits of program course work to be completed at the University of Michigan-Dearborn.

University of Michigan –Dearborn undergraduate students, who have been admitted into the Master of Science in Business Analytics program, may take up to six graduate credits (with the approval of their academic advisor) during the final semester of undergraduate coursework. If such students do not finish their undergraduate work in the transition semester, they must successfully finish their undergraduate degree prior to taking any additional graduate-level courses.

<b>Business Analytics Core Courses</b> .....	15 hrs
DS 520 Applied Statistical Modeling .....	3 hrs
DS 570 Management Science .....	3 hrs
DS 630 Applied Forecasting .....	3 hrs
DS 631 Decision Analysis .....	3 hrs
DS 632 Computer Networking .....	3 hrs
MIS 575 Information Management .....	3 hrs
MKT 628 Turning Data into Revenue .....	3 hrs
OM 665 Information Technology in Supply Chain Management .....	3 hrs

### Business Analytics Concentration Courses.....15hrs

Choose 15 credits from one concentration area from the following:

<b>Supply Chain Analytics Concentration</b> .....	15 hrs
5 courses/15 credits from:	
MIS 525 Computerized Information Systems .....	3 hrs
OM 521 Operations Management.....	3 hrs
OM 571 Supply Chain Management .....	3 hrs
OM 661 Supply Chain Logistics Management .....	3 hrs
OM 664 Strategic Sourcing .....	3 hrs
OM 665 Information Technology in Supply Chain Management .....	3 hrs
BA 690 Graduate Research.....	3 hrs
BA 691 Graduate Seminar .....	3 hrs

### Marketing Analytics Concentration.....15 hrs

5 courses/15 credits from:	
MKT 515 Marketing Management.....	3 hrs
MKT 565 Advanced Marketing Management.....	3 hrs
MKT 620 Understanding Customers .....	3 hrs
MKT 625 Global Sourcing and Logistics .....	3 hrs
MKT 628 Turning Data into Revenue .....	3 hrs
BA 690 Graduate Research.....	3 hrs
BA 691 Graduate Seminar .....	3 hrs

### Financial Analytics Concentration.....15 hrs

5 courses/15 credits from:

ACC 505	Developing and Interpreting Financial Information .....	3 hrs
BE 530	Economic Analysis–Firm & Consumer .....	3 hrs
FIN 531	Finance Fundamentals and Value Creation...	3 hrs
FIN 581	Topics in Corporate Finance .....	3 hrs
FIN 650	Corporate Valuation and Strategy .....	3 hrs
FIN 651	Investment Process, Analysis and Management.....	3 hrs
FIN 655	International Financial Management.....	3 hrs
BA 690	Graduate Research .....	3 hrs
BA 691	Graduate Seminar.....	3 hrs

### Information Management and Coordination Analytics Concentration .....

15 hrs  
5 courses/15 credits from:

MIS 525	Computer Information Systems .....	3 hrs
MIS 575	Information Management.....	3 hrs
MIS 642	Information Assurance .....	3 hrs
MIS 643	Information Technology Project and Change Management.....	3 hrs
MIS 646	Human Design Interaction and Interface.....	3 hrs
BA 690	Graduate Research .....	3 hrs
BA 691	Graduate Seminar.....	3 hrs

**Credits required for MS in Business Analytics degree -- 30 hours**

## Master of Science in Finance

The Master of Science in Finance (MSF) serves the needs of current finance professionals who wish to increase their competencies in financial and investment knowledge and skills for career advancement and professional development. The MS-Finance also provides professional education for those who aspire to pursue careers in the fields of corporate financial management, financial services, investments, and risk management. The MS-Finance curriculum, which extensively incorporates the Chartered Financial Analysts (CFA) body of knowledge, provides a solid foundation for individuals who are interested in pursuing the CFA credentials, while offering a broad knowledge base in Finance and related disciplines for individuals who aspire to pursue other finance career paths. While the Master of Science in Finance program is designed for anyone who has an undergraduate degree from an accredited university, students generally find that a solid quantitative background in Calculus, Economics, Financial Accounting and Statistics is particularly helpful in preparing them for pursuing the MS-Finance degree.

This program is tailored for busy professionals who appreciate the benefits of a flexible learning platform while receiving the tradition of excellence in finance education. Students may earn their MS-Finance degree entirely through weekday evening on-campus courses, or entirely through online courses, or through a mixture of both. Students may choose the learning platform that best fits their work schedule and lifestyle. The same full-time COB faculty teaches the online program and the on-campus program. The online program allows students to earn their degrees without setting foot on the UM-Dearborn campus. Pursuing the MS-Finance online may be right for those who work long or unusual hours, travel extensively, live

far from a college or university, or for other personal or work reasons need the flexibility of online courses.

University of Michigan –Dearborn undergraduate students, who have been admitted into the Master of Science in Finance program, may take up to six graduate credits (with the approval of their academic advisor) during the final semester of undergraduate coursework. If such students do not finish their undergraduate work in the transition semester, they must successfully finish their undergraduate degree prior to taking any additional graduate-level courses.

## MSF PROGRAM GOALS AND OBJECTIVES

**Goal 1:** Our students will demonstrate analytical skills in solving financial problems.

**Objectives:** Students will:

- **1a.** analyze and manage risk in a global setting.
- **1b.** estimate the value of real or financial assets.
- **1c.** assess the effect of strategic financial policies on firm cash flows.

**Goal 2:** Our students will be knowledgeable about ethical issues in finance.

**Objective:** Students will identify ethical perspectives on the social responsibilities of a finance professional.

**Goal 3:** Our students will be persuasive and /or informative communicators.

**Objective:** Students will be able to convey finance knowledge through effective communication.

## CURRICULUM

The MS-Finance program consists of 30 graduate credits, including up to 6 graduate transfer and/or graduate waiver credits. Admitted students will receive waiver consideration as outlined in the Course Waivers and Exemptions section of this bulletin. At least 15 of these 30 graduate credits must be from Finance courses beyond FIN 531 (Finance Fundamentals and Value Creation), and a minimum of 12 of these 15 graduate Finance credits (excluding FIN 531) must be taken from UM-D COB Finance courses. In addition, students who receive exemption(s) are required to replace the exempt credits with approved course(s) from all MS-Finance and Tax courses, ACC 600 level courses, and other graduate courses with approval of the MS-Finance Director. Students who receive an exemption from DS 520 are required to replace the DS 520 exempt credits with DS 570 or above DS course work. Though Calculus is not required for admission to the MS-Finance Program, it is one of the course prerequisites for FIN 652 (Derivatives and Risk Management) and FIN 656 (Fixed Income Securities). Hence, students are required to complete a college level Calculus course prior to their enrollment in these two courses. For MS-Finance applicants who aspire to pursue a career in the fields of investments and risk management, as well as those who are interested in pursuing the Chartered Financial Analysts (CFA) credentials, they are strongly recommended to satisfy the Mathematics admission requirement with a college level Calculus course.

**Required**..... 18 hrs

BE 530	Economic Analysis: Firm and Consumer.....	3 hrs
DS 520	Applied Statistical Modeling .....	3 hrs
FIN 531	Finance Fundamentals and Value Creation...	3 hrs
FIN 581	Topics in Corporate Finance .....	3 hrs
FIN 651	Investment Process, Analysis and Management.....	3 hrs

Choose one of the following courses:

ACC 608	Financial Statement Analysis .....	3 hrs
<b>or</b>		
BE 583	The Global Economy: Crisis and Growth .....	3 hrs

**Electives**..... 12 hrs

Choose four courses (three must be FIN) from:

FIN 650	Corporate Valuation and Strategy.....	3 hrs
FIN 652	Derivatives and Risk Management.....	3 hrs
FIN 653	Topics in Investments and Capital Markets ..	3 hrs
FIN 654	Financial Intermediation .....	3 hrs
FIN 655	International Financial Management.....	3 hrs
FIN 656	Fixed Income Securities .....	3 hrs
ACC 608	Financial Statement Analysis .....	3 hrs
ACC 555	Cost Management .....	3 hrs
ACC 603	Controllorship .....	3 hrs
BE 583	The Global Economy: Crisis and Growth	3 hrs

A maximum of three credits of Business Internship (BI 500, BI 505, or BI 560) may count as non-Finance elective credit by petition. The petition must be submitted to the Student Services Office prior to the election of the Internship course.

**Credits required for MS-Finance degree -- 30 hours**

## Master of Science in Information Systems

The Master of Science in Information Systems (MS-IS) serves the needs of current IS professionals who wish to continue their educational path, as well as provide alternative career training for those who wish to earn a professional degree to complement their liberal arts or other non-IS education. Particularly, the MS-IS program is designed primarily for the part-time student (though certainly some students will be full-time) who has an undergraduate degree from an accredited university and wishes to obtain a graduate degree in management, specializing in MIS. The MS-IS is also designed for IS professionals and others who wish to strengthen their competencies, gain greater knowledge and understanding, and further their positions as leaders in the field. With courses like IT Security, IT Policy and Strategy, and other advanced topics in computing and IT development, students will become experts in information systems and their uses as a means to further the goals of the organization.

As with other graduate and professional degree programs, the program is tailored for busy professionals. Courses are available on campus through weekday evening offerings and students have the flexibility to choose some limited online courses. The program requires a campus presence.

For University of Michigan-Dearborn undergraduate students,

there will be a transition term available in the final semester prior to graduation. If students have a course load in the transition term that allows room for the start of MS-IS courses, they will be allowed to begin such coursework if they apply to the MS-IS program and meet all other admission criteria. If students do not finish the undergraduate work in the transition term, they must successfully finish their undergraduate degree prior to taking any additional MS-IS courses.

## MS-IS PROGRAM GOALS AND OBJECTIVES

**Goal 1: Students will acquire discipline-specific knowledge & competencies.**

**Objectives:** Students will be able to:

- 1a:** design an information system for an organization.
- 1b:** evaluate security risks of an organization.
- 1c:** manage an IT project.
- 1d:** implement computer programs to solve business problems.

**Goal 2: Students will develop effective communication skills.**

**Objectives:** Students will be able to:

- **2a:** communicate complex IT concepts orally.
- **2b:** communicate complex IT concepts effectively in writing.

**Goal 3: Students will develop IT strategy skills:**

**Objectives:** Students will be able to:

- **3a:** to formulate an appropriate IT strategy for an organization.
- **3b:** create a plan to transform an IT function from reactive to proactive mode.

## CURRICULUM

The Master of Science in Information Systems program consists of 30 – 48 graduate credits, including up to 6 graduate transfer credits and/or up to 33 graduate waiver credits. Regardless of waivers and/or transfer credit received, the MS-IS degree requires a minimum of 30 credits. If more than 18 credits are waived, additional MIS courses must be taken to reach the 30 credit minimum. Admitted students will receive waiver consideration as outlined in the Course Waivers and Exemption section of this bulletin.

**Business Foundation Courses<sup>a</sup>** .....9 hrs

Choose three courses from:

ACC 505 <sup>a</sup>	Developing and Interpreting Financial Information.....	3 hrs
OB 510 <sup>a</sup>	Organization Behavior.....	3 hrs
MKT 515 <sup>a</sup>	Marketing Management.....	3 hrs
DS 520 <sup>a</sup>	Applied Statistical Modeling.....	3 hrs
OM 521 <sup>a</sup>	Operations Management.....	3 hrs
BE 530 <sup>a</sup>	Economic Analysis: Firm and Consumer .....	3 hrs
FIN 531 <sup>a</sup>	Finance Fundamentals and Value Creation ..	3 hrs

**MIS Foundation Courses** .....9 hrs



MIS 525 <sup>a</sup>	Computers and Information Systems .....	3 hrs
MIS 526	IT Services and Management (ITSM).....	3 hrs
MKT 527 <sup>a</sup>	Programming and Data Structures .....	3 hrs

<b>MIS Core Courses</b> .....	21 hrs	
MIS 575 <sup>a</sup>	Information Management.....	3 hrs
MIS 585	Network Application Development .....	3 hrs
MIS 640	Information Systems Development .....	3 hrs
MIS 641 <sup>a</sup>	Computer Networking.....	3 hrs
MIS 642	Information Technology Security .....	3 hrs
MIS 643	Information Technology Project & Change Management.....	3 hrs
MIS 644	Information Technology Policy and Strategy .....	3 hrs

<b>Advanced MIS</b> .....	6 hrs	
Choose two courses from:		
MIS 645	Global Outsourcing of IS Activities.....	3 hrs
MIS 646	Human Computer Interaction and Interface Design .....	3 hrs
MIS 647	Advanced Programming.....	3 hrs
MIS 648	Information Management II .....	3 hrs

<b>Advanced Business</b> .....	3 hrs	
Choose one course from:		
ACC 555	Cost Management .....	3 hrs
DS 570	Management Science .....	3 hrs
OM 571	Supply Chain Management.....	3 hrs
FIN 581	Topics in Corporate Finance.....	3 hrs
OB 560	Management Skills Development .....	3 hrs
HRM 561	Human Resource Management .....	3 hrs
MKT 565	Advanced Marketing Management .....	3 hrs
BA 690	Graduate Research .....	3 hrs
BI 500	Business Internship .....	3 hrs

### Credits required for MS-IS degree -- 30 – 48 hours<sup>b</sup>

#### Notes:

<sup>a</sup> Course may be waived based upon prior coursework. Waivers may be granted based upon completion of equivalent courses taken as part of a degree completed within seven years, from an AACSB accredited school, with grade of B or better. UM-Dearborn courses that waive MS-IS courses are:

- ACC 298 –ACC 505
- OB 354-OB 510
- MKT 352-MKT 515
- OM 300/400-OM 521
- BE 401-BE 530
- FIN 401-FIN 531
- MIS/ITM 310-MIS 525
- MIS/ITM 301 + MIS/ITM 302 - MIS 527
- MIS/ITM 321-MIS 575
- MIS/ITM 351-MIS 641

Admitted students will receive waiver consideration as outlined in the Course Waivers and Exemptions section of this bulletin.

<sup>b</sup> Regardless of waivers received, the MS-IS degree requires a minimum of 30 credits. If more than 18 credits are waived, additional graduate level MIS courses must be taken to reach the 30 credit minimum.

## Master of Science in Supply Chain Management

The Master of Science Supply Chain Management ( MS-SCM) is designed for students who want to manage the organizations, people, technology, and resources that transform raw materials into the finished products delivered to customers. MS-SCM graduates can excel in logistics, transportation, and the creation of manufacturing efficiencies – activities that make our exciting global economy go. Students with an interest in the management of global systems may pursue this professional degree path, regardless of their undergraduate major. The MS-SCM program is right for you if you want to:

- Pursue a masters degree while balancing your job, travel, or life commitments.
- Expand your network of professional relationships.
- Interact with a talented and experienced faculty as well as talented and experienced fellow students.

**Courses are available on campus through weekday evening offerings and students have the flexibility to choose some limited online courses. The program requires a campus presence.**

### MS-SCM PROGRAM GOALS AND OBJECTIVES

**Goal 1:** Students will acquire discipline-specific knowledge in supply chain management.

**Objectives:** Students will:

- **1a:** Explain and evaluate supply chain approaches and functions.
- **1b:** Explain and evaluate relevant supply chain tools and techniques.
- **1c:** Effectively communicate business ideas verbally and in writing.

**Goal 2:** Students will develop supply chain analysis skills.

**Objectives:** Students will:

- **2a:** Formulate supply chain problems.
- **2b:** Synthesize relevant supply chain information.
- **2c:** Evaluate supply chain solution alternatives.
- **2d:** Analyze supply chain problem-solving approaches.

### CURRICULUM

The Master of Science in Supply Chain Management program consists of 30 graduate credits. Up to 6 graduate transfer credits may be applied to the degree. Up to two of the following Supply Chain Core courses can be exempted at the discretion of the program faculty: DS 520, MIS 525 and OM 521. Exempted credits must be satisfied through other advisor-approved graduate courses. Regardless of waivers and/or

exemption credits received, the MS-SCM degree requires a minimum of 24 credits of program course work to be completed at the University of Michigan-Dearborn.

University of Michigan –Dearborn undergraduate students, who have been admitted into the Master of Science in Supply Chain Management program, may take up to six graduate credits (with the approval of their academic advisor) during the final semester of undergraduate coursework. If such students do not finish their undergraduate work in the transition semester, they must successfully finish their undergraduate degree prior to taking any additional graduate-level courses.

### Business Foundation Courses 18 hrs

ACC 505	Developing & Interpreting Financial Information .....	3 hrs
FIN 531	Finance Fundamentals and Value Creation.....	3 hrs
LE 523	Legal Environment for Managers.....	3 hrs
MIS 525	Computer and Information Systems.....	3 hrs
OB 510	Organizational Behavior .....	3 hrs

### Supply Chain Core ..... 21 hrs

OM 521	Operations Management .....	3 hrs
OM 571	Supply Chain Management.....	3 hrs
OM 661	Supply Chain Logistics Management.....	3 hrs
OM 664	Strategic Sourcing.....	3 hrs
OM 665	Information Technology in Supply Chain Management.....	3 hrs
DS 520	Applied Statistical Modeling .....	3 hrs
MIS 525	Computer Information Systems.....	3 hrs

### Supply Chain Electives ..... 9 hrs

Choose nine credits from the following

MIS 575	Information Management.....	3 hrs
MIS 644	IT Policy and Strategy.....	3 hrs
DS 570	Management Science .....	3 hrs
DS 632	System Simulation .....	3 hr
BA 690	Graduate Research .....	3 hrs
BA 691	Graduate Seminar.....	3 hrs

**Credits required for MS in Supply Chain Management degree -- 30hours**

## Student-Initiated Dual Degree Program: MBA and MS-Finance

This dual degree program takes advantage of course overlap between the MBA and MS-Finance curricula, and allows students to receive both degrees upon completion of a minimum of 57-66 graduate credits. Waivers reduce the number of credits required to complete the dual MBA/MSF degree; however, a minimum of 57 graduate credit hours is required to graduate. Refer to this topic under the Course Waivers and Exemption section of this Bulletin. Both the MBA and the MS-Finance are offered through evening courses targeted to full-time working professionals and through online courses available to students worldwide.

## ADMISSIONS AND ADMINISTRATION

Students who wish to pursue the dual MBA and MS in Finance degrees must meet the entrance requirements of both programs. See the information about application and admission for the MBA and the MS-Finance elsewhere in this Bulletin.

## CURRICULUM

The curriculum requirements for the dual MBA and MS in Finance degree program are:

<b>MBA Core Courses</b> .....	27 hrs	
ACC505 <sup>a</sup>	Developing and Interpreting Financial Information..... 3 hrs	
BPS 516*	Corporate Social Responsibility .....	3 hrs
BE 530 <sup>b</sup>	Economic Analysis: Firm and Consumer .....	3 hrs
DS 520 <sup>b</sup>	Applied Statistical Modeling.....	3 hrs
FIN 531 <sup>b</sup>	Finance Fundamentals and Value Creation ..	3 hrs
MIS 525	Computer and Information Systems .....	3 hrs
MKT 515	Marketing Management.....	3 hrs
OB 510	Organization Behavior.....	3 hrs
OM 521	Operations Management.....	3 hrs

### MBA AIM (Applied Integrated Management Courses) ..... 12 hrs

The AIM courses provide an integrated perspective needed to master today's complex business problems.

### International Business ..... 3 hrs

Choose one course from:

BE 583	The Global Economy: Crisis and Growth	3 hrs
	Global Economy: Crisis and Growth.....	3 hrs
FIN 655	International Financial Management .....	3 hrs
MKT 6XX*	International Marketing .....	3 hrs

### Capstone ..... 3 hrs

BPS 535	Strategic Planning and Decision Making .....	3 hrs
---------	--	-------

### Additional AIM courses ..... 6 hrs

Choose two courses (6 credits) from:

BPS 585	Managing Strategic Innovation and Change..	3 hrs
ACC 616	Corporate Actions and Reactions and Their Relationship to Firm Value .....	3 hrs
	Additional Courses TBD	

### MBA Electives or Optional Concentration 6-9 hrs

Students complete the student-initiated dual MBA/MSF program by choosing at least two graduate advisor-approved elective courses (6 credits) tailored to their individual interests. No more than three graduate credits can be taken from units other than the College of Business. Elective courses must be approved by the Graduate Program Advisor in advance of course election. Concentrations are optional and require 9 hrs.

### MBA Breadth Requirement (3, 4, 5 Rule)

- Complete AIM courses in at least 3 different disciplines
- Complete no more than 4 AIM, Concentration, and Elective courses (12 credits) in any one discipline
- Complete graduate business courses in at least 5 different disciplines.

**MBA Business Communication Requirement**

Two, 4-hour workshops in Business Writing and Business Presentation skills are required for the MBA degree.

**MSF Core (9 additional credit hours-BE 530, DS 520, and FIN 531 above are also MSF Core**

FIN 581	Topics in Corporate Finance.....	3 hrs
FIN 651	Investment Process, Analysis and Management.....	3 hrs

Choose one of the following courses:

ACC 608	Financial Statement Analysis.....	3 hrs
<b>or</b>		
BE 583	The Global Economy: Crisis and Growth ...	3 hrs

**MSF Electives..... 12 hrs**

Choose four courses (three must be FIN) from:

FIN 650	Corporate Valuation and Strategy.....	3 hrs
FIN 652	Derivatives and Risk Management.....	3 hrs
FIN 653	Topics in Investments and Capital Markets ..	3 hrs
FIN 654	Financial Intermediation .....	3 hrs
FIN 655	International Financial Management.....	3 hrs
FIN 656	Fixed Income Securities .....	3 hrs
ACC 608	Financial Statement Analysis.....	3 hrs
ACC 555	Cost Management .....	3 hrs
ACC 603	Controllership .....	3 hrs
BE 583	The Global Economy: Crisis and Growth ...	3 hrs

A maximum of three credits of Business Internship (BI 500, BI 505, or BI 560) may count as non-Finance elective credit by petition. The petition must be submitted to the Student Services Office prior to the election of the Internship course.

Courses cannot be taken off-campus except by prior permission of the Academic Standards Committee. The Committee will consider a request to take a course off-campus only if there are unusual, extenuating circumstances. Tailor the degree to your own interests with an optional concentration in any of the areas listed below.

No single course may be counted toward more than one dual MBA/MSF requirement or concentration.

\*\*Course number TBD

**Credits required for the Dual MBA/MS-Finance degrees — 57 – 66 hours.<sup>f</sup>**

Upon completion of the entire 66 credit program the MBA and the MS in Finance will be awarded simultaneously.

Notes:

<sup>a</sup> The MS-Finance program requires a course in Financial Accounting – equivalent to ACC 298 – as an admissions prerequisite. Students lacking this course take ACC 505 to fulfill this prerequisite.

<sup>b</sup> These courses contribute to both the MBA and the MS-Finance degrees.

<sup>c</sup> Core MBA courses may be waived, reducing the credits required for the MBA, but students must complete a minimum of 36 credits for the MBA plus the 21 credits shown above for the MS-Finance degree, for a minimum

total of 57 credits. <sup>f</sup> A minimum of 15 credits in Finance courses beyond FIN 531 is required. Upon completion of the entire 66 credit program the MBA and the MS in Finance will be awarded simultaneously.

<sup>d</sup> Students must submit a petition to pursue the student-initiated dual MBA/MSF degree program. See your advisor for instructions.

## Dual Degree Program: Master of Science in Accounting and Master of Science in Finance

This dual degree program takes advantage of course overlap between the MSA and MSF curricula, and allows students to receive both degrees upon completion of a minimum of 51 graduate credits. Waivers reduce the number of credits required to complete the dual MSA/MSF degree; however, a minimum of 51 graduate credit hours is required to graduate. Refer to this topic under the Course Waivers and Exemption section of this Bulletin. The MSA degree requirements are offered through evening courses targeted to full-time working professionals and the MSF degree requirements are offered through evening and through online courses available to students worldwide.

**ADMISSIONS AND ADMINISTRATION**

Students who wish to pursue the dual MSA and MSF degrees must meet the entrance requirements of both programs. See the information about application and admission for the MSA and the MSF elsewhere in this Bulletin.

**CURRICULUM**

The curriculum requirements for the dual MSA and MSF degree program are:

**COURSES REQUIRED FOR THE MSA-FINANCIAL ACCOUNTING CONCENTRATION AND MSF****MSA Financial Accounting Core Courses.... 21 hrs**

ACC 601	Advanced Accounting Information Systems .....	3 hrs
ACC 603	Controllership .....	3 hrs
ACC 604	Issues in Auditing and Forensic Examination .....	3 hrs
ACC 605	International Accounting and Taxation .....	3 hrs
ACC 520	Communications for the Accounting and Tax Professional .....	3 hrs
TAX 510	Fundamentals of Corporate Taxation .....	3 hrs
LE 510	Commercial Transactions .....	3 hrs

**Required MSF Core Courses..... 18 hrs**

BE 530	Economic Analysis: Firm and Consumer .....	3 hrs
DS 520	Applied Statistical Modeling.....	3 hrs
FIN 531	Finance Fundamentals and Value Creation ..	3 hrs
FIN 581	Topics in Corporate Finance .....	3 hrs
FIN 651	Investment Process, Analysis and Management .....	3 hrs
BE 583	The Global Economy: Crisis and Growth...3 hrs	

**Finance Electives** .....9 hrs  
 Choose three courses from:

FIN 650	Corporate Valuation and Strategy	3 hrs
FIN 652	Derivatives and Risk Management	3 hrs
FIN 653	Topics in Investments and Capital Markets	3 hrs
FIN 654	Financial Intermediation	3 hrs
FIN 655	International Financial Management	3 hrs
FIN 656	Fixed Income Securities	3 hrs

**Electives** .....3 hrs  
 Choose one course from:

ACC 516	Advanced Accounting	3 hrs
ACC 539	Government/Not for Profit Accounting	3 hrs
FIN 650	Corporate Valuation and Strategy	3 hrs
FIN 652	Derivatives and Risk Management	3 hrs
FIN 653	Topics in Investments and Capital Markets	3 hrs
FIN 654	Financial Intermediation	3 hrs
FIN 655	International Financial Management	3 hrs
FIN 656	Fixed Income Securities	3 hrs
TAX 501	Income Tax Accounting Rules and Timing Issues	3 hrs
TAX 502	Income Taxation of Property Transactions I	3 hrs
TAX 603	Income Taxation of Property Transactions II	3 hrs
TAX 611	Advanced Corporate Income Taxation	3 hrs
TAX 615	Flow through Entities	3 hrs
TAX 622	Estate and Gift Taxation	3 hrs
TAX 627	International Income Taxation	3 hrs
TAX 630	State and Local Taxation	3 hrs
TAX 680	Special Topics in Taxation	3 hrs

**Total Credits for Dual MSA (Financial Accounting) and MSF Degree Program - 51**

Upon completion of the entire 51 credit program the MSA and the MSF will be awarded simultaneously.

**COURSES REQUIRED FOR THE MSA-TAXATION CONCENTRATION AND MSF**

**Required MSA Taxation Core Courses**.....9 hrs

ACC 520	Communications for Accounting and Tax Professionals	3 hrs
TAX 510	Fundamentals of Corporate Income Taxation	3 hrs
TAX 615	Flow through Entities	3 hrs

**Required MSF Core Courses**.....18 hrs

BE 530	Economic Analysis: Firm and Consumer	3 hrs
DS 520	Applied Statistical Modeling	3 hrs
FIN 531	Finance Fundamentals and Value Creation	3 hrs
FIN 581	Topics in Corporate Finance	3 hrs
FIN 651	Investment Process, Analysis and Management	3 hrs
BE 583	The Global Economy: Crisis and Growth	3 hrs

**Tax Electives** .....15 hrs

Choose five courses from:

TAX 501	Income Tax Accounting Rules and Timing Issues	3 hrs
TAX 502	Income Taxation of Property Transactions I	3 hrs
TAX 603	Income Taxation of Property Transactions II	3 hrs
TAX 611	Advanced Corporate Income Taxation	3 hrs
TAX 622	Estate and Gift Taxation	3 hrs
TAX 627	International Income Taxation	3 hrs
TAX 630	State and Local Taxation	3 hrs
TAX 680	Special Topics in Taxation	3 hrs

**Finance Electives** ..... 9 hrs

Choose three courses from:

FIN 650	Corporate Valuation and Strategy	3 hrs
FIN 652	Derivatives and Risk Management	3 hrs
FIN 653	Topics in Investments and Capital Markets	3 hrs
FIN 654	Financial Intermediation	3 hrs
FIN 655	International Financial Management	3 hrs
FIN 656	Fixed Income Securities	3 hrs

**Total Credits for Dual MSA (Taxation) and MSF Degree Program - 51**

Upon completion of the entire 51 credit program the MSA and the MSF will be awarded simultaneously.

**Student-Initiated Dual Degree Program: MBA and MSE in Industrial and Systems Engineering**

The College of Business and the College of Engineering and Computer Science, through the Rackham School of Graduate Studies, offers an innovative dual degree program awarding both an MBA and a Master of Science in Engineering in Industrial and Systems Engineering degree (MBA & MSE-IS&E). The dual program requires 66 credit hours of specified coursework to earn both degrees.

This unique dual degree program has been carefully developed in direct response to an increasing need among employers in southeast Michigan, for professionals who are prepared for careers that require expertise in both technology and management.

**ADMISSIONS AND ADMINISTRATION**

Students who wish to pursue the dual MBA and MSE-I&SE degree must meet the entrance requirements of, and gain admission, independently to both the College of Business, and Department of Industrial and Manufacturing Systems Engineering (IMSE) in the College of Engineering and Computer Science. In addition to meeting the admission requirements for the MBA, applicants will also need to meet the requirements for MSE-IS&E admission. See "Admission" under "Requirements for the MSE Degree in Industrial and Systems Engineering"

located in the College of Engineering and Computer Science Bulletin or [www.engin.umd.umich.edu/IMSE/grad\\_prog/](http://www.engin.umd.umich.edu/IMSE/grad_prog/)

This includes:

- 1) Introductory courses in:
  - a. Probability and Statistics (IMSE 510 or equivalent)
  - b. Operations Research (IMSE 500 or equivalent)
  - c. Human Factors and Ergonomics (IMSE 501 or equivalent)
- 2) Three letters of recommendation.
- 3) A Bachelor of Science degree in engineering, a physical science, computer science, or applied mathematics.

Advising, academic records, and student services for COB courses in this Dual Degree program are handled by the COB Graduate Programs Office. IMSE student records are handled independently by the IMSE department.

**CURRICULUM**

The curriculum requirements for the dual MBA and MSE-ISE degree are:

MBA Core Courses .....21 hrs  
 MBA AIM Courses.....12 hrs

**Total MBA Credits Required**.....33 hrs

IMSE Core Courses .....12 hrs  
 IMSE Concentration Courses .....12 hrs  
**Total IMSE Credits Required**.....24 hrs

Electives (at least 6 credits from the COB).....9 hrs  
**Total Credits Required**.....66 hrs

**MBA Core Courses** .....27 hrs  
**MBA Core Courses** .....21 hrs

Core courses are designed to provide students with exposure to the functional areas of business. They provide the foundation for MBA AIM courses and elective/concentration courses. MBA core course waivers reduce the number of credits required to complete the MBA degree; however, a minimum of 36 graduate COB MBA credit hours is required to graduate. Refer to this topic under the Course Waivers and Exemption section of this Bulletin for detailed information.

ACC505 Developing and Interpreting Financial Information .....3 hrs  
 BPS 516 Corporate Social Responsibility.....3 hrs  
 OB 510 Organization Behavior .....3 hrs  
 MKT 515 Marketing Management .....3 hrs  
 MIS 525 Computer and Information Systems.....3 hrs  
 BE 530 Economic Analysis: Firm and Consumer.....3 hrs  
 FIN 531 Finance Fundamentals and Value Creation...3 hrs

**MBA AIM (Applied Integrated Management Courses)**.....12 hrs

The AIM courses provide an integrated perspective needed to master today’s complex business problems.

**International Business** .....3 hrs  
 Choose one course from:  
 BE 583 The Global Economy: Crisis and Growth... 3 hrs  
 FIN 655 International Financial Management ..... 3 hrs  
 MKT 6XX\* International Marketing ..... 3 hrs  
 \*Course number TBD

**Capstone** ..... 3 hrs  
 BPS 535 Strategic Planning and Decision Making ..... 3 hrs

**Additional AIM courses** .....6 hrs  
 Choose two courses (6 credits) from:  
 BPS 585 Managing Strategic Innovation and Change.. 3 hrs  
 ACC 616 Corporate Actions and Reactions and Their Relationship to Firm Value ..... 3 hrs  
 Additional Courses TBD

**Industrial and Systems Engineering Core Courses**.....12 hrs  
 Note: Consult the College of Engineering and Computer Science website for course descriptions.

IMSE 505 Optimization..... 3 hrs  
 IMSE 511 Design and Analysis of Experiments..... 3 hrs  
 IMSE 514 Multivariate Statistics..... 3 hrs  
 IMSE 580 Production Management ..... 3 hrs

**Industrial and Systems Engineering Concentration Courses** .....12 hrs  
 Four courses may be taken from one concentration area, or any combination of the following four areas.

**INDUSTRIAL AND SYSTEMS ENGINEERING CONCENTRATION**

**Human Factors and Ergonomics**  
 IMSE 543 Industrial Ergonomics ..... 3 hrs  
 IMSE 545 Vehicle Ergonomics I..... 3 hrs  
 IMSE 546 Safety Engineering ..... 3 hrs  
 IMSE 548 Human Factors ..... 3 hrs  
 IMSE 549 Product Design and Evaluation ..... 3 hrs  
 IMSE 577 User Interface Design and Analysis..... 3 hrs  
 IMSE 593 Vehicle Packaging Engineering ..... 3 hrs  
 AE 546 Vehicle Ergonomics II..... 3 hrs

**Operations Research & Management Science**  
 IMSE 506 Stochastic Models ..... 3 hrs  
 IMSE 5205 Engineering Risk-Benefit Analysis ..... 3 hrs  
 ISME 5215 Program Budget, Cost Estimation and Control ..... 3 hrs  
 IMSE 559 System Simulation..... 3 hrs  
 IMSE 605 Advanced Optimization..... 3 hrs

**INTEGRATED DESIGN AND MANUFACTURING ENGINEERING CONCENTRATION**

**Quality Systems Design**

IMSE 513	Robust Design.....	3 hrs
IMSE 561	Total Quality Management.....	3 hrs
IMSE 567	Reliability Analysis.....	3 hrs

### Advanced Manufacturing & Automation

IMSE 502	Computer-Integrated Manufacturing.....	3 hrs
IMSE 538	Intelligent Manufacturing .....	3 hrs
IMSE 5655	Supply Chain Management .....	3 hrs

## INFORMATION SYSTEMS CONCENTRATION

### Information Systems Management

IMSE 553	Software Engineering.....	3 hrs
IMSE 556	Database Systems.....	3 hrs
IMSE 557	Computing Networks and Communication....	3 hrs

### Enterprise Information Systems

IMSE 555	Decision Support and Expert Systems .....	3 hrs
IMSE 5585	Electronic Commerce.....	3 hrs
IMSE 564	ABAP/4 Programming .....	3 hrs
IMSE 570	Enterprise Information Systems .....	3 hrs
IMSE 5715	Modeling of Integrated Information Systems .....	3 hrs
IMSE 5725	Object Oriented System Design .....	3 hrs
IMSE 574	IS Based Production Planning and Control .....	3 hrs
IMSE 579	Software Integrated Manufacturing and Logistics Management.....	3 hrs

## PROGRAM MANAGEMENT & PRODUCT DEVELOPMENT CONCENTRATION

AENG 583	Project Management and Concurrent Engineering .....	3 hrs
EMGT 580	Management of Product and Process Design.....	3 hrs
IMSE 515	Fundamentals of Program Management.....	3 hrs
IMSE 516	Project Management and Control.....	3 hrs
IMSE 517	Managing Global Systems .....	3 hrs

**Electives**..... 9 hrs  
Three courses (nine credit hours) with the approval of both graduate advisers from the graduate offerings of Business, Industrial and Systems Engineering, Electrical and Computer Engineering, or Mechanical Engineering, with at least two courses (six credit hours) from the College of Business.

A thesis option may be elected which will count for six hours of the Electives requirement.

## Student-Initiated Dual Degree Program: MBA and Master of Health Services Administration

The College of Business and the School of Public Health on the University of Michigan-Ann Arbor campus offer a jointly administered Dual Degree program leading to the Master of Health Services Administration (MHSA) and the Master of Business Administration (MBA). This program takes

advantage of many areas of overlap between the two curricula, and allows admitted students to receive both degrees upon completion of a minimum of 81 graduate credits.

The UM-Ann Arbor MHSA has been the top-ranked program of its kind by *US News and World Report* every year since 1994.

### ADMISSIONS AND ADMINISTRATION

Students must apply and be accepted by each school to pursue the dual MHSA and MBA. Students already enrolled in either degree may apply for the second degree before completing one-half of their degree requirements. Applicants submit either GMAT or GRE test scores in support of their applications.

The Dual MHSA and MBA program is co-directed by the Director of the MHSA residential program and the Director of Graduate Programs for the COB. Students will have an advisor in each school. For more information on the MHSA, please visit the School of Public Health, MHSA website at [www.sph.umich.edu/hmp/programs/joint\\_degrees/mhsa-mba-dearborn.htm](http://www.sph.umich.edu/hmp/programs/joint_degrees/mhsa-mba-dearborn.htm).

### CURRICULUM

The courses taught for the MHSA are tailored to the health care industry, while MBA courses generalize to a broader range of business and industry. For three areas of study – organizational behavior, information systems, and microeconomics – dual MHSA and MBA students may choose either the relevant MHSA course or the MBA course. Students take MHSA courses in the areas of law, operations, managerial accounting, and advanced finance; and take MBA courses in the areas of advanced statistics, financial accounting, marketing, and finance. The rest of the curriculum includes courses offered solely by the COB (e.g. strategy, strategic innovation), or solely by the SPH (e.g. health services systems, epidemiology).

Depending upon where students choose to take their three “either-or” courses, the curriculum allows from one to four MBA elective courses, and from zero to three MHSA elective courses. To earn both degrees, students must complete at least 36 credits from the COB and 45 credits from the SPH (note that 4 of the 45 SPH credits are for basic statistics, which is an admission prerequisite for the MBA).

Courses for the following areas may be taken either from the College of Business or from the School of Public Health<sup>a</sup>.

#### Choose one course:

OB 510	Organizational Behavior.....	3 hrs
HMP 643	Individual and Group Behavior in Health Service Organizations.....	3 hrs
HMP 616	Understanding Organizations .....	3 hrs

#### Choose one course:

MIS 525	Computers and Information Systems.....	3 hrs
HMP 665	Computer Information and Decision Support Systems in Health Care .....	3 hrs

#### Choose one course:

BE 530	Economic Analysis: Firm and Consumer .....	3 hrs
HMP 660	Microeconomic Theory I.....	3 hrs

**COLLEGE OF BUSINESS COURSES**

The following courses must be taken from the College of Business:

**MBA Core Courses** ..... 15 hrs

ACC505	Developing and Interpreting Financial Information .....	3 hrs
BPS 516	Corporate Social Responsibility.....	3 hrs
MKT 515	Marketing Management .....	3 hrs
DS 520	Applied Statistical Modeling .....	3 hrs
FIN 531	Finance Fundamentals and Value Creation...	3 hrs

**MBA AIM (Applied Integrated Management**

**Courses** ..... 12 hrs

The AIM courses provide an integrated perspective needed to master today's complex business problems.

**International Business** ..... 3 hrs

Choose one course from:

BE 583	The Global Economy: Crisis and Growth.....	3 hrs
FIN 655	International Financial Management.....	3 hrs
MKT 6XX*	International Marketing .....	3 hrs

\*\*Course number TBD

**Capstone** ..... 3 hrs

BPS 535 Strategic Planning and Decision Making ..... 3 hrs

**Additional AIM courses** ..... 6 hrs

Choose two courses (6 credits) from:

BPS 585	Managing Strategic Innovation and Change ..	3 hrs
ACC 616	Corporate Actions and Reactions and Their Relationship to Firm Value.....	3 hrs

Additional Courses TBD

MBA electives

courses ..... 3-12 hrs

Minimum MBA credits required<sup>b</sup> ..... 36 hrs

**SCHOOL OF PUBLIC HEALTH COURSES**

The following courses must be taken from the School of Public Health:

HMP 600	The Health Services System I .....	3 hrs
HMP 601	The Health Services System II .....	3 hrs
HMP 608	Health Care Financial Accounting .....	3 hrs
HMP 615	Introduction to Public Health Policy .....	3 hrs

HMP 652 Health Law..... 3 hrs

or

HMP 653 Law and Public Health..... 3 hrs

or

HMP 684 The Politics of Health Services Policy..... 3 hrs

or

HMP 685 The Politics of Public Health Policy..... 3 hrs

HMP 663 Economics of Health Management and Policy II ..... 3 hrs

BIO 503 Introduction to Biostatistics ..... 4 hrs

or

BIO 553 Applied Biostatistics<sup>c</sup> ..... 4 hrs

BIO 513 Application of Regression Analysis to Public Health Studies ..... 3 hrs

or

BIO 523 Biostatistical Analysis for Health-Related Studies..... 3 hrs

or

HMP 654 Operations Research and Control Systems... 3 hrs

EPID 503 Strategies and Uses of Epidemiology ..... 3 hrs

EHS 500 Principles of Environmental Health Sciences..... 2 hrs

HMP 664 Applied Health Policy Analysis ..... 3 hrs

or

HMP 682 Case Studies in Health Services Administration..... 3 hrs

HMP 606 Managerial Accounting for Health Care Administration<sup>c</sup> ..... 3 hrs

HMP 607 Corporate Finance for Health Care Administration<sup>d</sup> ..... 3 hrs

MHSA Electives<sup>a</sup> 0-7 hrs

Minimum MHSA credits required<sup>b</sup> 45 hrs

**Credits required for MBA/MHSA degrees – 81 hours**

<sup>a</sup> Students may choose either the MBA or MHSA course (but not both) for these areas. Students may choose electives from either MBA or MHSA courses, but must complete at least 45 credits of MHSA courses and at least 36 credits of MBA courses. If students take HMP 643 (or 616 or 620 or 603); and HMP 665; and HMP 660, they will need 9 MBA credits of elective to reach the minimum 36 total MBA credits, and will need no MHSA electives to reach the minimum 45 MHSA credits.

<sup>b</sup> Students who have completed courses equivalent to the required core courses may select substitute courses with the approval of their advisers, but must still complete at least 45 credits of MHSA courses and at least 36 credits of MBA courses.

<sup>c</sup> Students taking HMP 606 may not enroll in the MBA course ACC 555.

<sup>de</sup> Students taking HMP 607 may not enroll in the MBA course FIN 581.

<sup>e</sup> Upon completion of the entire 81 credit program the MBA and the MHSA will be awarded simultaneously.

**COURSE WAIVERS AND EXEMPTIONS**

Waivers reduce the number of credits required to complete a degree; however, a minimum of 36 graduate credit hours is required to graduate with an MBA degree, 57 graduate credit hours for the dual MBA/MSF degree, and 66 graduate credit hours for the dual MBA/MSE-I&SE degree

Exemptions do not reduce the number of credits required to complete a degree **and must be replaced with other advisor approved, graduate-level COB coursework as noted in the MS Program curriculum requirements. Exemptions are determined by the same guidelines as waivers (see below).**



The Graduate Office determines all course waivers and/or exemptions at the time of admission to the program. Students may, at their option, enroll in courses that have been waived or exempt, although completion of waived courses will result in a loss of the respective course waiver. Once admitted to a graduate program in the College of Business, students must take graduate level courses, or courses approved for graduate credit.

#### Waiver and Exemption Policy

Waivers and exemptions will be considered based on previous equivalent undergraduate or graduate coursework as reflected on official transcripts.

There are three options available for determining course waivers and exemptions based on the above guidelines:

1. MBA Core courses can be waived, in their entirety, if a student has an AACSB undergraduate business degree, an undergraduate recalculated post-60 GPA of 3.2 or higher, and a similar course to that being waived can be identified in the student's previous coursework.
2. For all students not meeting the above requirement, waivers to MBA Core course and exemptions for specified MS Program courses are considered on a course by course basis. Only undergraduate courses completed with a grade of B or better and taken as part of a baccalaureate degree program completed within seven years of admission to the COB Graduate Program will be considered for course waivers or exemptions.
3. Prior graduate coursework, completed with a grade of B or better, can be considered for course waivers in the MBA (including MBA dual degree programs), or exemptions in the MS Programs if (a) the graduate coursework was completed within seven years of admission to the COB Graduate Program, or (b) the graduate coursework was part of a graduate degree that had been completed within seven years of admission to the COB Graduate Program.
4. In some cases, students may be advised to petition for a waiver or exemption and provide additional course information before the waiver/exemption decision is made.
5. Admitted applicants may request a course waiver or exemption based on the above policy by completing a petition form. The following supporting documentation must accompany the petition: copy of the course description from the college catalogue, a copy of the course syllabus, and a copy of the title page and table of contents of the textbook used in the course. The petition form is available at <http://cob.umd.umich.edu/grad-advising/>.
6. Some courses may also be waived by proficiency demonstrated by examination. Admitted candidates who wish to waive courses in this manner must petition the Graduate Office to take a proficiency exam and must provide reasonable justification for the request. Proficiency exams are generally administered two to three times per year and must be taken within one year of initial enrollment. Admitted

students must complete the required proficiency examination registration forms and pay the applicable non-refundable fee prior to taking the exam. Students receiving a grade of B or better on the exam will be waived from the applicable course. Additional information regarding proficiency examinations is available to admitted students in the COB Student Services Office, 168 Fairlane Center South.

## ADMISSION PREREQUISITES

The following academic prerequisites for admission must be completed with grades of C or better prior to, or within the first term of enrollment.

### MBA, MS in BUSINESS ANALYTICS, MS in INFORMATION SYSTEMS, AND MS in SUPPLY CHAIN MANAGEMENT ADMISSION PREREQUISITE

1. COB Mathematics requirement

### MS IN ACCOUNTING ADMISSION PREREQUISITES

1. COB Mathematics requirement
2. COB MSA Accounting requirements

A minimum of 18 credits of accounting beyond the introductory accounting courses (equivalent to UM-Dearborn ACC 298 and ACC 299), including courses equivalent to the following COB undergraduate courses:

ACC 355	Cost Accounting and Analysis.....	3 hrs
ACC 356	Asset Accounting.....	3 hrs
ACC 357	Equity Accounting.....	3 hrs
ACC 360	Federal Income Taxation.....	3 hrs
ACC 380	Accounting Information Systems .....	3 hrs
ACC 457	Auditing.....	3 hrs

### MS IN FINANCE ADMISSION PREREQUISITES

1. Three credits of financial accounting equivalent to the COB undergraduate course ACC 298, Financial Accounting
2. COB Mathematics requirement

Though Calculus is not required for admission to the MS-Finance Program, it is one of the course prerequisites for FIN 652 (Derivatives and Risk Management) and FIN 656 (Fixed Income Securities). Hence, students are strongly advised to complete a college level Calculus course prior to their enrollment in these two courses. For MS-Finance applicants who aspire to pursue a career in the fields of investments and risk management, as well as those who are interested in pursuing the Chartered Financial Analysts (CFA) credentials, they are strongly recommended to satisfy the Mathematics admission requirement with a college level Calculus course.

### COB MATHEMATICS REQUIREMENT FOR ADMISSION



Quantitative skills and reasoning are important and frequently used in graduate business courses. An applicant's mathematics background will be considered in admissions decisions. The minimum requirement for admission is demonstrated proficiency in mathematics as evidenced by successful completion of courses through pre-calculus or finite mathematics. If an applicant's university transcripts do not show satisfactory completion of pre-calculus, finite mathematics, or higher-level math courses (e.g. calculus), the burden will be on the applicant to explain and document that they have math knowledge equivalent to pre-calculus or finite mathematics. The following UM-Dearborn courses will satisfy the mathematics admission requirement.

Math 104 Pre-calculus: Management, Life, and Social Science, 4 credits, or MATH 105 Pre-calculus, 4 credits. The prerequisite for both courses is at least two years of high school Algebra, or Math 090 Intermediate Algebra and one year of high school Geometry.

### COB ACCOUNTING REQUIREMENT FOR MSF ADMISSION

**Three credits of financial accounting equivalent to the COB undergraduate course ACC 298, Financial Accounting is required for admission. If an applicant's university transcripts do not show satisfactory completion of financial accounting, the student must complete ACC 505 Developing and Interpreting Financial Information, with a grade of C or better, in their first term of the MSF program.**

### COB COMPUTER APPLICATIONS REQUIREMENT FOR ADMISSIONS

The faculty expects every graduate student to be proficient in word processing and spreadsheets, including spreadsheet math and statistical functions. Prior to enrollment in COB graduate courses, students must have completed a college-level computer applications course, or they must have acquired equivalent expertise through training or work experience.

### TAKING UM-DEARBORN UNDERGRADUATE ADMISSION PREREQUISITE COURSES

Please check the *Schedule of Classes* online at [www.umd.umich.edu/registration](http://www.umd.umich.edu/registration) for course availability each term. To register for admission prerequisite courses as a non-degree student (personal enrichment) prior to entry in a graduate program, contact the Undergraduate Admissions Office for admission information, 313-593-5100 or online at [www.umd.umich.edu/futurestudents](http://www.umd.umich.edu/futurestudents). Please note that personal enrichment students are not eligible for financial aid. For further information and guidance please contact the COB Graduate Admissions Advisor at [umd-gradbusiness@umich.edu](mailto:umd-gradbusiness@umich.edu) or phone 313-593-5460.

Applicants deficient in one of the admission prerequisites may be considered for admission contingent upon their completing the appropriate course during their first term of enrollment in the graduate degree program.

## Application and Admission

The College of Business accepts applications from those holding a bachelor degree or its equivalent from an accredited college or university. Applications may be obtained online at <http://cob.umd.umich.edu/apply-now> or from:

Student Services Office  
College of Business  
University of Michigan-Dearborn  
168 Fairlane Center South  
19000 Hubbard Drive  
Dearborn, MI 48126-2638  
Telephone: 313-593-5460  
Fax: 313-271-9838  
Email: [umd-gradbusiness@umich.edu](mailto:umd-gradbusiness@umich.edu)  
[www.cob.umd.umich.edu](http://www.cob.umd.umich.edu)

### APPLICATION AND ADMISSION CRITERIA

All credentials and documents submitted become the property of the UM-D College of Business. Originals or copies of application/admission documents are not released to the applicant or to any third party. Applicants are carefully appraised on the following criteria.

### ACADEMIC RECORDS

Applicants' undergraduate and graduate records will be heavily considered in the admission decision. Transcripts will be examined not only for overall grade point average but also for trends of grades and particular scholastic capabilities.

### SCORES FROM THE GRADUATE MANAGEMENT ADMISSION TEST (GMAT) or GRADUATE RECORDS EXAM (GRE)

Applicants must take the GMAT or GRE before admission is granted. GMAT or GRE scores older than five years will not be considered.

GMAT and GRE Verbal and Quantitative scores will be heavily considered in the admission decision.

### EXCEPTIONS POLICY FOR GMAT/GRE SCORES

The College of Business reserves the right to request a GMAT or GRE score from an applicant even if these conditions are met. The MBA Program requires the GMAT for all applicants.

Applicants to the MS-Accounting, MS-Business Analytics, MS-Finance, MS-Information Systems, and MS-Supply Chain Management Programs who meet certain provisions will be considered for admission without submitting a GMAT or GRE score. If, upon review by the Graduate Programs Office, the applicant is considered admissible without a GMAT or GRE score, that requirement will be waived. The following provisions qualify an applicant to be considered for the GMAT or GRE waiver:

1. An advanced degree (e.g. master's, doctorate, JD, etc.) in business, economics, law, or related field, or in a discipline involving a significant quantitative component (e.g. engineering, science, statistics)
2. CPA, CFA or CFM certification; SOA or the CAS and holders of the FRM
3. A bachelor degree in business with a cumulative GPA of 3.20 or higher, earned within the past five years

from a business school accredited by AACSB-International

4. There are no exceptions to the GMAT or GRE requirement for MBA applicants.

Applicants are encouraged to make every effort to take the GMAT or GRE test at the earliest possible date and request that score be reported to the University of Michigan-Dearborn. The GMAT website at [www.mba.com](http://www.mba.com) describes the GMAT, where it is given, how to schedule an appointment, what to expect at the test center, about your GMAT scores, and how to prepare for the test and also includes a link to GMAT Customer Service.

More information on the GRE can be found at [www.ets.org/gre/](http://www.ets.org/gre/).

### WORK EXPERIENCE

Applicants to the MS Programs are considered with less than two years of professional work experience.

There is no work experience requirement for admission to the MBA program except for students with undergraduate degrees in business; these students must demonstrate at least two years of professional work experience before taking courses beyond the MBA Core.

A careful review is made of an applicant's accomplishments and experience in employment, military service and extracurricular activities. For business undergraduate applicants, this requirement is typically met through work experience obtained after completing your bachelor degree. Applicants who wish to have full-time or part-time work experience, cooperative education, or internships that were obtained prior to completing their bachelor degree considered toward fulfilling this experience requirement, must provide a thorough description of job duties, starting and ending dates, and hours worked per week, plus the name and phone number for at least one person who can verify their experience. The burden is upon undergraduate business applicants to provide information sufficient to demonstrate that they possess the equivalent of at least two years of full-time professional work experience. In exceptional cases, the two-year work experience minimum may be waived with strong academic records and GMAT or GRE scores.

### REFERENCES

At least one letter of reference is required, from someone able to evaluate the applicant's academic potential and/or professional work performance.

### APPLICATION DATES

The graduate programs of the UM-D admit part-time students in the fall (September), winter (January), and summer terms (May). Applicants for full-time study in the MS Programs should plan to enter in the fall term, or should confirm with the COB Student Services Office that sufficient courses will be available if they enter in other terms. Applications are reviewed on a rolling basis. Written notification is sent shortly after the decision date.

### FALL TERM ADMISSION

Applications are accepted through August 1. Applications received after August 1st for the fall term are accepted on a space-available basis only.

### WINTER TERM ADMISSION

Applications are accepted through December 1. Applications received after December 1st for the winter term are accepted on a space-available basis only.

### SUMMER TERM ADMISSION

Applications are accepted through April 1. Applications received after April 1st for the summer term are accepted on a space-available basis only.

### APPLICATION FEE

Application for admission is made through the College of Business at the UM-D, Dearborn, Michigan 48126-2638. A non-refundable fee must accompany every application for admission. Fees are subject to approval by the Regents of the University and may be changed at any time. For the current fee, please refer to the application packet or the College of Business Graduate Programs website at [www.cob.umd.umich.edu/grad](http://www.cob.umd.umich.edu/grad).

### TRANSCRIPTS

An official academic transcript from each college and university attended, including the UM-D, must be submitted to the College of Business. All credentials and documents submitted become the property of the UM-D College of Business. To be considered official, transcripts must come directly from one university to another. Transcripts cannot be accepted if sent by the student. When requesting transcripts from one of the three University of Michigan campuses (Ann Arbor, Dearborn, or Flint), inter-office copies are sufficient for admission consideration.

### RECOMMENDATION FORM

At least one letter of recommendation is required for admission. A form is included in the application for this purpose. The reference letter should come from an individual who is familiar with the applicant's academic accomplishments and/or job performance. The form should be sent directly to the College of Business by the evaluator.

### SUBMISSION OF APPLICATION MATERIALS

Applicants are encouraged to apply online at [www.cob.umd.umich.edu](http://www.cob.umd.umich.edu).

The printed paper-copy application form and all supporting documents (for online application or paper-copy application) should be directed to:

Student Services Office  
College of Business  
University of Michigan-Dearborn  
Room 168 Fairlane Center South  
19000 Hubbard Drive  
Dearborn, MI 48126-2638

Direct inquiries on the status of applications to 313-593-5460 or [umd-gradbusiness@umich.edu](mailto:umd-gradbusiness@umich.edu).

In addition, applicants should arrange to have scores on the Graduate Management Admission Test or Graduate Record Exam (and TOEFL, when necessary) sent directly to the College of Business.

## DEFERRED ADMISSION

Admission to a graduate program is good for one year after the term for which admission was granted. If an admitted applicant decides to defer admission, written notification must be sent to the College of Business Graduate Office or email [umd-gradbusiness@umich.edu](mailto:umd-gradbusiness@umich.edu) prior to the start of the term for which initial admission was granted. Students must meet admission and degree requirements in effect for the requested deferred term.

## International Students

The UM-D welcomes applications from qualified international students.

### HOUSING

Students should refer to the following website for housing information at <http://www.umd.umich.edu/housing/>.

### COSTS AND FINANCIAL AID

Because financial aid is unavailable to international students at the UM-D, an international student or his/her sponsor(s) must submit a notarized Affidavit of Support. This form must indicate that the student has access to funds, including living expenses, equaling at least \$34,000 (U.S.), for one academic year of study at the UM-D. Estimated annual expenditures, for two semesters per year, are detailed on the tuition and fees page of the current *Schedule of Classes* or [http://www.umd.umich.edu/rr\\_tuition-fees/](http://www.umd.umich.edu/rr_tuition-fees/).

### TRANSCRIPTS

In addition to the instructions for domestic applicants, international applicants must also provide:

1. Official documentation of all courses taken and grades received (transcripts/records) from each undergraduate and postgraduate institution attended. Transcripts/records should be issued in the original language and be accompanied by English translations prepared by the institution's authorized official, such as a registrar.
2. Official certification of degrees and dates awarded, issued in the original language and accompanied by English translations prepared by the institution's authorized official, such as a registrar. Academic transcripts/records must have a seal and signature in ink from the institution's authorized official, such as a registrar or recorder.

All credentials and documents submitted become the property of the UM-D College of Business.

## APPLICATIONS

In addition to the instructions for domestic applicants, international applicants must:

- Submit with the application, the Affidavit of Financial Support for International Students (available at [www.umd.umich.edu/606](http://www.umd.umich.edu/606)) with supporting documentation. Recommendation for admission cannot be certified without this information.
- Submit official transcripts from all universities attended according to the directions listed in this section under the heading "Transcripts."
- Meet the minimum standards of the English proficiency requirement by taking either the TOEFL or the MELAB and submitting scores to the College of Business. See "English Language Requirements for Admission."
- International students requiring an I-20 upon admission to the School must have a complete application file in the College of Business Office and the application fee must be paid by the following application deadlines:
  - Fall Term:** April 1<sup>st</sup>
  - Winter Term:** August 1<sup>st</sup>
  - Summer Term:** December 1<sup>st</sup>

## ENGLISH LANGUAGE REQUIREMENTS

Since all instruction at the University is in English, international students must demonstrate proficiency in English comprehension, writing, grammar, and vocabulary. The University of Michigan-Dearborn does not offer intensive English language courses; therefore, students must be competent in English before being admitted to the University. The College of Business requires the following minimum test score requirements on ONE of the following tests for admission consideration:

- Internet Based Test IBT TOEFL: 84
- Paper-Pencil TOEFL: 560
- Computer-Based TOEFL: 220
- MELAB: 80
- IELTS: 6.5

The College of Business recommends that you attend a TOEFL administration that includes the Test of Written English (TWE). Information and applications for English proficiency tests may be obtained by contacting the following:

### MELAB

English Language Institute  
Testing and Certification Division  
University of Michigan  
3020 North University Building  
Ann Arbor, MI 48109-1057  
Web site: [www.lsa.umich.edu/eli](http://www.lsa.umich.edu/eli)  
E-mail: [melabelium@umich.edu](mailto:melabelium@umich.edu)

### TOEFL

Educational Testing Service  
P.O. Box 6151  
Princeton, NJ 08541-615  
Web site: [www.toefl.org](http://www.toefl.org)  
E-mail: [toefl@ets.org](mailto:toefl@ets.org)

## Guest Students and Post-Graduate Students

Students currently enrolled in a graduate program at another university (guest students) and persons who have already earned a graduate degree (post-graduate students) may request permission to enroll in COB graduate courses at UM-D as a guest/post-graduate student. Interested students should review the course descriptions, paying particular attention to prerequisites, and determine the course, or courses, they may wish to elect on the UM-D campus. Before permission to register is granted, it will be necessary to provide the College of Business Graduate Office with the following information:

1. Completed guest or post-graduate application form and application fee; the application and application fee is good for one term. When a guest or post-graduate student requests enrollment for two consecutive terms at the time of initial application, the application fee will be waived for the second term of enrollment. The second term of enrollment is contingent on the guest or post-graduate student earning a grade of B or better in each course elected at UM-D. The guest/post-graduate application form is on the COB website or may be requested at [umd-gradbusiness@umich.edu](mailto:umd-gradbusiness@umich.edu) or by telephone to the College of Business Graduate Office at 313-593-5460;
2. Official transcripts, sent directly to the College of Business Graduate Office from the student's undergraduate degree-granting institution, and official transcripts for all graduate coursework completed or in progress; and
3. Guest students only must provide written permission from their home institution verifying enrollment in a graduate program and granting permission to elect the course (or courses) at UM-D.

Upon receipt of the above information, the Graduate Program Director will review the documentation and if approved, the student will be notified of guest/post-graduate registration procedures. Guest and post-graduate students are permitted to elect a maximum of nine semester hours of credit. Approved guest and post-graduate registration is on a space-availability basis. Credits earned as a guest or post-graduate student do not count as credit toward degree in the UM-D COB Graduate Programs.

## GENERAL INFORMATION

### GRADUATE INTERNSHIP PROGRAM

The Internship program is an optional academic program that integrates classroom work and practical experience with cooperating businesses. Up to three non-resident academic credits are granted for the internship. Second and third internships will be offered for additive credit only. A maximum of 3 credit hours of internship course work from BI 500, BI 505 or BI 560 may be applied toward graduation requirements upon approval from the Program Advisor.

Students interested in Graduate Internships should schedule

an appointment with the Internship Director to go over program policies and sign the Student Internship Contract. The Internship Office coordinates resume dissemination, interview scheduling and job offers.

Students must register for the internship before starting work. As part of the internship, students are required to write a report at the end of the semester and participate in the evaluation process. Students may elect two courses along with the internship with the permission of the Internship Director

Master of Science in Accounting students do not need to have completed 6 credit hours and can apply for an internship in their first term of entry.

### DEGREE REQUIREMENTS

The following degree requirements are required of all graduate programs offered by the College of Business.

- **Minimum average grade of B (5.0)**  
A cumulative average grade of B or higher will be required in all graduate courses taken for credit and applied to the credit hour requirements.
- **Diploma Application**  
To be recommended for the degree, the student must file a formal diploma application, which is available online at the Registrar's Office website or in-person at the Registrar's Office by the deadline published on their website.
- **Completion of required courses and program requirements**  
See the requirements for each degree curriculum.

### MINIMUM CREDITS-IN-RESIDENCE

The following are not considered as credits taken in residence. A maximum total of twelve graduate credits may be applied to any COB graduate degree from any combination of:

- Approved graduate level offerings (500-level and above) offered by another UM-D academic unit - maximum three credits.
  - Graduate transfer credit from an AACSB accredited program - maximum six credits.
  - Graduate Business Internships (BI 500 or BI 505 or BI 560) - maximum three credits.
  - COB graduate credits earned through exchanges with international partner universities – maximum twelve credits.

The minimum number of credits- in-residence required for the following graduate degrees are:

- 24 credits for the MBA
- 39 credits Dual MBA and MS in Finance
- 27 credits for the Dual MBA and MSE in Industrial and Systems Engineering
- 24 credits for the Dual MSHA and MBA
- 45 credits for the Dual MS in Accounting and MS in Finance
- 21 credits for the MS in Accounting
- 24 credits for the MS in Business Analytics
- 18 credits for the MS in Finance
- 30 credits for the MS in Information Systems
- 24 credits for the MS in Supply Chain Management



## TRANSFER CREDIT

A maximum of 6 graduate semester credits may be transferred to a student's record. Transfer credits appear on the academic record, but the associated grades received for these credits do not appear and are not computed in the student's cumulative GPA. Credits may be transferred only for approved graduate-level courses and if all of the following conditions are met:

1. The graduate business course must have been completed in an AACSB-accredited business program;
2. The student must submit a written petition requesting transfer credit with proper documentation attached. The documentation must include a description of the course from the college catalogue, the syllabus for the course, and a copy of the title page and table of contents for each textbook used. Petition forms for admitted students are available on the COB website or from the Student Services Office, 168 FCS. Completed petitions are submitted by the student to the Student Services Office. The petition is then reviewed by the appropriate faculty member, department chairperson, and Graduate Program Director. A written response to the student's petition is sent to the student;
3. An official transcript must be received by the COB Student Services Office from the institution offering the courses.

Courses cannot be transferred for credit if:

1. already applied toward a degree or certificate;
2. taken more than five years before enrollment in the COB graduate program;
3. in which a grade lower than a *B* was earned.

## FINANCIAL AID

Refer to [www.umd.umich.edu/financialaid](http://www.umd.umich.edu/financialaid).

## ACADEMIC REGULATIONS

All students enrolled in the graduate program are subject to the University regulations concerning student affairs, conduct and discipline. Additional regulations, or variations, which apply specifically to graduate degree candidates, are given here.

## GRADING SYSTEM

The following (9.0) grading system is used by the College of Business's Graduate Programs:

A+ = 9 pts.    B+ = 6 pts.    C+ = 3 pts.    D, E = 0 pts.

A = 8 pts.    B = 5 pts.    C = 2 pts.

A- = 7 pts.    B- = 4 pts.    C- = 1 pt.

Grade point averages (scholastic averages) are computed by dividing the honor points a student has earned by the hours elected. Grades associated with waivers, exemptions, or transfer credit from colleges, schools, or units other than UM-D are neither recorded nor used in computing grade point averages of students enrolled in the College of Business.

No credit toward satisfaction of degree requirements is granted for courses in which grades below *C-* are received. Courses elected under the pass-fail option are not considered in computing grade average.

## INCOMPLETE COURSEWORK AND ABSENCE FROM FINAL EXAMINATIONS

Refer to this topic at [www.umd.umich.edu/rr\\_records/](http://www.umd.umich.edu/rr_records/)

## ACADEMIC STANDING OF STUDENTS

To be in good standing, a student must have an overall grade point average of 5.0 or better. At the end of each term, the College reviews the standing of each student with a scholastic average below 5.0. Those whose grade point average (GPA) for the term falls below 5.0 will receive a warning regardless of the cumulative average.

If a student's cumulative GPA is below a 5.0 upon reaching a total of 6 credit hours, or at any point thereafter, the student will be placed on academic probation. The student may be allowed to continue on probation for the next 9 credit hours, as long as the GPA for each term on probations is at least 6.0 (B+). If a cumulative average of 5.0 has not been attained after this probationary period, the student will be required to withdraw from the program. Students required to withdraw may petition to be readmitted.

Students pursuing their degrees part-time (i.e., fewer than 8 credits per semester) may not register for more than three credits while on probation. Part-time students may register for one course in Summer Session I and one course in Summer Session II. Enrollment in Summer Session II will be contingent on the student achieving a minimum grade of B+ or other minimum designated grade required per the student's academic standing letter in Summer Session I. Students pursuing their degrees full-time (i.e., eight or more credits per semester) may not register for more than nine credits while on probation. Students on probation may petition to waive the enrollment limit.

## REPEATING COURSES

Courses in which a grade of *C+*, *C* or *C-* has been received may be repeated by students in the graduate programs. Grades and honor points for the original course and the repeated course will both appear on the student's transcript and be used in computing the student's grade point average; however, additional credit toward program will not be awarded for the repeated course. Courses in which grades of *B-* or above have been received may not be repeated by students enrolled in the graduate programs.

## PASS-FAIL OPTION

Graduate students enrolled in the College of Business may elect courses with the pass-fail grading option subject to the following conditions:

1. This option may not be elected by students on academic probation.
2. Courses to be taken under this option must be specified at the time of registration or within the regular period for adding courses.
3. Required MBA core, AIM or concentration courses cannot be elected pass-fail. Only general elective courses that are not used toward an MBA concentration may be taken Pass-fail. Courses used to satisfy MS (Accounting or Business Analytics or Finance or Information Systems or Supply Chain Management) degree requirements cannot be elected pass-fail.
4. 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 *E* (and used in computing grade point average). In a course offered with a pass-fail option, a reported grade of *B-* or above will be recorded as *P*, and a reported grade of below *B-* 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.)

5. A student may elect at most two courses (6 credit hours) on a pass-fail basis, whether at the student's option or not (excluding internship courses).
6. Courses that are elected on a pass-fail basis in a manner that does not conform to items 1) through 5) will not accrue toward the degree requirements of the student.

### CHANGE IN COURSE ELECTION

Refer to this topic at [www.umd.umich.edu/rr\\_registration/](http://www.umd.umich.edu/rr_registration/)

### PETITIONS FOR ACADEMIC ACTION

Each request to the faculty of the College of Business for special academic action relative to credits, requirements, standing, etc., should be entered on the appropriate petition form (available in the Graduate Office) or online at <http://cob.umd.umich.edu/grad-advising/> and forwarded, with appropriate documentation, to the Graduate Office for review by the Academic Standards Committee. A written response, indicating Committee action, will be sent to the student's UM-Dearborn email account.

### STUDENT ACADEMIC CONDUCT

A student in the College of Business or any student enrolled in a College of Business 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. Copies of the Statement are available in the College of Business Office.

### STUDENT PERSONAL CONDUCT

Any conduct that can be the grounds for civil or criminal lawsuit shall be subject to sanctions by the College of Business.

### RIGHT OF APPEAL

Refer to this topic on the University's website or consult with your academic advisor.

### TIME LIMITS FOR COMPLETING DEGREE REQUIREMENTS

Requirements for the degree must be completed within seven (7) years of first enrollment. Students who desire more time must submit, in a written petition to the Academic Standards Committee, reasons for the request and specific plans for the completion of the degree program.

### MAINTENANCE OF ACTIVE DEGREE-SEEKING STATUS AND READMISSION

Admission to the college is granted for a specific term. Students who are admitted, but do not enroll in the appointed term and who have not notified the College of their desire to exercise the deferred admission option, must reapply for admission. Full-time or part-time students lose active degree candidacy if at least one course is not completed within a 12-month period. Readmitted students must comply with current degree requirements. Admission to the College is competitive, and applications for readmission will be decided on the standard for the term in which the former student wishes to enroll.

### APPLICATION FOR THE DEGREE

Each candidate for a degree must file an Application for Diploma in the Registrar's Office. However, the student should check Enrollment Service's Applying to Graduate page at [www.umd.umich.edu/rr\\_apply-graduate/](http://www.umd.umich.edu/rr_apply-graduate/) for the dates specific to each term. 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.

### ADVISING

Responsibility for planning the specific content of the academic program rests with the student. A thorough familiarity and understanding of the regulations contained in the Graduate Programs description material and/or the *Bulletin* are essential for sound planning. All students are encouraged to take advantage of academic advising when they desire it in choosing courses. The College of Business maintains office hours Monday through Friday, and support personnel are available to answer student inquiries regarding course requirements, academic status, course prerequisites, and the like. An advance appointment is suggested for advising discussions. In addition, faculty advice is available and should be sought in planning programs. Members of the faculty are available during their office hours throughout the term. Students are invited to talk with them during faculty office hours or at a time arranged in advance. Students are strongly encouraged to plan their program by utilizing the Course Reference Guide at [www.cob.umd.umich.edu/grad-forms/](http://www.cob.umd.umich.edu/grad-forms/) and working with their program advisor. The Course Reference Guide is subject to change.

### ACADEMIC HONORS

Achievement of various kinds is recognized both prior to graduation and in the granting of degrees.

### DEAN'S HONOR LIST

Each fall and winter term the dean posts an Honor Roll recognizing those students who have taken nine hours or more, and have obtained a *B+* (6.0) or better average.

### 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 graduate business student can achieve based on outstanding scholastic achievement as measured by overall grade point average. Invitation for membership to Beta

Gamma Sigma is extended to College of Business students that are in the top twenty percent of their graduation class.

### **GRADUATION "WITH DISTINCTION"**

Students who have maintained a 7.0 or above cumulative and business administration grade point average will graduate "With Distinction," and it will be recorded on their transcript.

### **GRADUATION "WITH HIGH DISTINCTION"**

Students who have maintained an 8.0 or above cumulative and business administration grade point average will graduate "With High Distinction," and it will be recorded on their transcript.

## **COURSE DESCRIPTIONS**

The courses described here are those regularly offered by the College. All courses give three hours of credit, except as otherwise specified by the numeral(s) in parentheses. Check with your Graduate Program Advisor at [umd-cobgradadvisor@umich.edu](mailto:umd-cobgradadvisor@umich.edu) for applicability of course offerings to your degree program. Students are strongly encouraged to plan their program by utilizing the Course Reference Guide at [www.cob.umd.umich.edu/grad-forms](http://www.cob.umd.umich.edu/grad-forms) and working with their program advisor.

Students enrolled in graduate degree programs from other UM-D schools or colleges cannot elect more than 12 graduate credits offered by the College of Business, unless the COB credits are required as part of the student's graduate degree program.

### **COURSE PREREQUISITES**

The faculty 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. The registration system will not allow students to register for courses without the course prerequisites successfully completed. Students with previous coursework or experience may petition the College of Business for a prerequisite override. Forms and instructions for this process are available at <http://cob.umd.umich.edu/grad-advising/> or from the College of Business Student Services Office, 168 FCS. You must allow 10 working days for your request to be reviewed. Students that are registered for a course without the prerequisites or an approved prerequisite override will be administratively withdrawn from the course.

## **ACCOUNTING (ACC)**

**ACC 505 Devel & Interp Financial Info**  
3.000 Credits

Students learn how financial information is developed, interpreted and utilized in business. This is accomplished by studying financial accounting tools and estimation methods used for interpretation and managers decisions relating to investing, financing, and operating activities. Topics include financial information development and analysis, accounting

estimation techniques, and cash flow analysis. Financial accounting methodology with respect to the sales and receivables cycle, inventory, property, plant and equipment, liabilities, corporate equity and initial public offerings, and investments in other corporate entities are studied. Cases requiring critical analysis and interpretation may be integrated throughout the course.

**ACC 516 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. Students will not receive credit for both ACC 416 and ACC 516.

**ACC 520 Comm for Acct and Tax Prof**  
3.000 Credits  
Prerequisite(s): ACC 360

The ability to communicate effectively is an important skill for the tax professional. This course develops this important skill in tax compliance and tax planning settings through a series of case studies. Emphasis will be placed on effectively communicating technical aspects of the tax law to management, clients, and other professional tax situations. Students cannot receive credit for both ACC 630 and ACC 520.

**ACC 539 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. Student will not receive credit for both ACC 439 and ACC 539.

**ACC 555 Cost Management**  
3.000 Credits  
Prerequisite(s): ACC 505

To introduce how cost and managerial accounting concepts and techniques can be applied to fully utilize information created by contemporary accounting information systems. The theoretical and empirical nature of cost management reports, their structures and contents, are emphasized with the goal of highlighting the relevance and limitations of this information in decision making. The course gives consideration to global and individual responsibility center performance by covering such topics as pro duct costing, control standards, cost allocation, pricing, quality, short-term and long-term budgeting, and performance evaluation. In addition, the reciprocal roles of accounting and technology in enhancing efficiency and effectiveness benchmarks are investigated. Interwoven into course coverage are ethical, diversity, critical

thinking, and global dimensions of business. This course also integrates emerging issues and techniques to assist managers and consultants in the accounting, finance, marketing, and human resources arenas.

**ACC 600 Financial Accounting Theory**  
3.000 Credits  
Prerequisite(s): ACC 356

This course provides an overview of 1) various approaches to accounting theory formulation (including traditional, regulatory, events, behavioral, information processing, predictive, and positive approaches), and 2) alternative asset valuation and income determination models (including historical cost, replacement cost, net realizable value, and present value models, along with the impacts of price level adjustments). Particular attention is directed at how these various approaches impact the state of the art of Accounting and how they influence the future evolution of Accounting. Additionally, the course provides for exploration and critical examination of the evolution and present state of the Financial Accounting Standards Board conceptual framework. The nature of the topics covered will enhance understanding of current and developing generally accepted accounting principles.

**ACC 601 Adv Accounting Info Systems**  
3.000 Credits  
Prerequisite(s): ACC 457 or MIS 525

With the increased capabilities of IT have come new risks for firms and or their auditors. Audit firms are finding that they can no longer audit around the computer. This requires CPAs to understand the types of risk arising in IT-based systems and consider their impact on a clients business and the audit. This course introduces you to these types of risk , the implications these risks have for the traditional audit and the other services public accountants provide to address IT-based risks. IT is also a powerful tool that accountants and auditors must know how to harness. Students will become proficient in applying commonly used electronic audit tools to conduct computer-assisted audit techniques (CAATs).

**ACC 602 Contemporary Accounting Issues**  
3.000 Credits  
Prerequisite(s): ACC 600 and ACC 601

This course provides in-depth exposure to emerging contemporary issues in accounting. Topics in the seminar change to reflect the most relevant professional issues. The issues chosen are designed to be not only timely but to also provide insight into emerging future areas of the profession. In addition to lecture material and readings, the lecturer may incorporate case material, research papers, and other teaching methods as appropriate.

**ACC 603 Controllership**  
3.000 Credits  
Prerequisite(s): ACC 355 or ACC 555

The nature of the control function in business corporations is the focus of this course. Thus, classes cover the characteristics of management planning and control in functional and

divisional organizations, responsibility accounting and the role of efficiency and effectiveness in performance measurement. Coverage also extends to controllers' roles in strategic planning, programming, and budgeting, transfer pricing, and their behavioral, global, ethical, and technological dimensions. Class presentations employ case analysis and emphasize the qualitative nature of controllership.

**ACC 604 Auditing&Forensic Examination**  
3.000 Credits  
Prerequisite(s): ACC 457

To study forensic examination and investigation techniques including typical embezzlement and financial statement fraud scenarios, fraud risk factors, sources and uses of evidence, and interrogation and surveillance techniques. Other course topics may include auditing standards for private and public companies, expanding assurance services, advanced internal control testing, audit objectives and procedures, ethical standards, sampling techniques, auditors report, risk based auditing, and management letters. Special attention will be given to the changing role and services offered by internal and external auditors, auditor responsibility to the public, and the ability of the auditor to offer assurance. Prerequisites: Graduate standing.

**ACC 605 International Accounting**  
3.000 Credits  
Prerequisite(s): ACC 608 or ACC 356 or ACC 357 or ACC 358

To study selected topics in international accounting and taxation. The course will examine accounting principles and practices of the major world economies and consider issues typically encountered by U.S. corporations in accounting for and reporting the financial activities of foreign operations. Students will explore taxation of international operations and tax planning for the U.S. based multinational corporation.

**ACC 608 Financial Statement Analysis**  
3.000 Credits  
Prerequisite(s): ACC 505 and FIN 531\*

The objective of financial statement analysis is to examine the relationship between financial statement information and the measurement of firm value. The analysis merges actual firm value created by economic process and estimating firm value through accounting reporting methods. Students will develop tools to interpret financial statement information for use by investors, creditors, and other third party stakeholders. Topics include, but are not limited to, an overview of financial statements, basic financial analysis, profitability analysis and the quality of earnings, cash flow analysis, asset analysis, liability analysis, and valuation and equity analysis.

## BUSINESS ADMINISTRATION (BA)

**BA 690 Graduate Research**  
1.000 TO 3.000 Credits

To provide masters candidates with the opportunity to undertake a research project under the supervision of a faculty



member. The research topic is chosen by the student, in consultation with a faculty member in the appropriate discipline. Written approval must be obtained at least two weeks prior to registration on a form available in the Graduate Office. The request must include a comprehensive description of the proposed research project, as well as a time line for the project's completion.

**BA 691 Graduate Seminar**  
1.000 TO 3.000 Credits

Topics Course. To provide masters candidates with an opportunity for study of selected advanced topics in particular fields. Topics vary. See Schedule of Classes for current offerings. May be elected more than once **if topics differ**.

## BUSINESS ECONOMICS (BE)

**BE 530 Econ Analysis: Firm & Consumer**  
3.000 Credits  
Prerequisite(s): MATH 104 or MATH 105 or  
MATH 113 or MATH 115

This is a microeconomics course with a managerial emphasis designed for graduate students. Microeconomics is a branch of economics that studies the behavior of individual consumers, producers, and industries. This course emphasizes business applications of economic theories. Among the topics covered are supply and demand, production functions, cost minimization, profit maximization, competitive markets, monopoly and monopsony, monopolistic competition, oligopoly, decision making in uncertain situations, and asymmetric information. The mathematics admission prerequisite must be satisfied prior to electing BE 530.

**BE 580 Econ Analysis: Nat'l & Int'l**  
3.000 Credits  
Prerequisite(s): BE 530

This is a macroeconomics course designed for graduate management students. Macroeconomics is a branch of economics that studies the performance of entire economies. Accordingly, this course develops an understanding of both the domestic economic situation and the importance of global interactions. Topics include analysis of the levels of aggregate output, employment and prices, the roles of aggregate supply and aggregate demand, monetary and fiscal systems and policies; and the impacts of international trade and financial flows.

## BUSINESS INTERNSHIP (BI)

**BI 500 Business Internship**  
3.000 Credits

The internship provides full-time paid experience for students in a professional business environment. Participating employers hire students within parameters set by the internship program. Students are required to submit a report and evaluation documents at the end of each work assignment and participate in an assessment session with the internship staff.

(A maximum of 3 credit hours of internship course work from BI 500, BI 505 or BI 560 may be applied toward graduation requirements upon approval from the Program Advisor.)

**BI 505 Part-Time Business Internship**  
1.000 Credits

The internship provides part-time paid and unpaid experience for students in a professional business environment. Participating employers hire students within parameters set by the internship program. Students are required to submit a report and evaluation documents at the end of each work assignment and participate in an assessment session with the internship staff. This course may be repeated a maximum of three times (A maximum of 3 credit hours of internship course work from BI 500, BI 505 or BI 560 may be applied toward graduation requirements upon approval from the Program Advisor.)

**BI 560 International Business Intern**  
1.000 TO 3.000 Credits

This 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 Program. Students are required to maintain contact with 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 non-resident academic credit, which may be applied to elective credit for the student's degree requirements. (A maximum of 3 credit hours of internship course work from BI 500, BI 505, or BI 560 may be applied toward graduation requirements upon approval from the Program Advisor.)

## BUSINESS POLICY AND STRATEGY (BPS)

**BPS 535 Strategic Plan and Dec Making**  
3.000 Credits  
Prerequisites: OB 510 and MKT 515 and ( OM  
521 or IMSE 580 or EMGT 520 ) and FIN 531

To study management of the business in relationship to its external environment. Emphasis is on strategic analysis, strategy formulation, and strategy implementation. Topics include: the strategic management process; developing a strategic vision; setting objectives; company, industry, and competitive analysis; strategic analysis and competitive advantage; crafting strategy at the functional, business, corporate, and international levels; designing the organizational structure; and designing operational policies and procedures, and reward systems.

**BPS 585 Managing Strat Innov & Change**  
3.000 Credits  
Prerequisites: ACC 505 and OB 510 and MKT  
515 and (DS 520 or IMSE 514) and (OM 521  
or IMSE 580) and BE 530 and FIN 531 and  
BPS 535

Effective managers are able to develop organizational architectures, strategies, cross-functional competencies, and linking systems that produce innovations, and manage organizational changes that accompany innovation. This course will examine how core competencies, career patterns, culture, power and organization structure all interact jointly to determine whether the organization can achieve and maintain a high degree of fit with a fast changing environment. Students will learn, through theoretical readings, practical examples, and extensive case analysis and research, how top managers manage innovation and strategic change and how effective leadership nurtures, sustains, and exploits innovation to build an adaptive organization. Student must have 45 credits toward program completed prior to electing BPS 585.

## DECISION SCIENCES (DS)

### **DS 500 Accelerated Statistics** 2.000 Credits

This course will 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, sample and data analysis, sampling distributions, estimation, confidence intervals and hypothesis testing, introductory regression analysis, and utilization of statistical software packages. The course is designed to fulfill the statistics prerequisite for admission to SOM graduate degree programs, and is open only to those with strong mathematics backgrounds. Prerequisite: By permission of the Graduate Programs Office.

### **DS 503 Managerial Stats and Opt I** 3.000 Credits

To develop basic competence and judgment in the application of quantitative methods for the analysis of probabilistic decision problems. Topics include: structure of probabilistic decision problems, probability theory and applications, statistical estimation and hypothesis testing, data collection and analysis, and applications. Selected software packages are used in homework and laboratory sessions.

### **DS 520 Applied Statistical Modeling** 3.000 Credits Prerequisites: DS 300 or IMSE 510

This course explores statistical modeling and analysis techniques for aiding managerial decision making. Topics include: sampling, distribution, confidence interval estimation, one-sample and two-sample tests, one-way and two-way analysis of variance, Chi-square tests, nonparametric tests, simple and multiple linear and nonlinear regressions, time series forecasting, and statistical applications in quality management. Selected software packages are used in exercises, projects, and business case examples. Satisfaction of the College of Business statistics admission prerequisite is required of students prior to electing this course.

### **DS 553 Managerial Stats and Opt II** 3.000 Credits

Prerequisites: DS 503

To develop basic competence and judgment in the application of quantitative analysis to the solution of decision problems. Topics include: univariate and multivariate regression analysis, one-way analysis of variance (ANOVA), linear programming, integer programming, and network models. Selected software packages are used in homework and laboratory exercises.

### **DS 570 Management Science** 3.000 Credits

To develop basic competence in introductory management science and operations research. Topics include: problem formulation and model development in optimization, linear programming (LP), duality theory, economic interpretation, and sensitivity analysis, introduction to integer programming (IP), special linear programs, network modeling, and introduction to non-linear programming (NLP). Selected software packages are used in laboratory exercises and in optimization project.

### **DS 630 Applied Forecasting** 3.000 Credits Prerequisites: DS 520 or IMSE 514

This course explores various quantitative modeling methods used in forecasting. Topics include: moving averages, various smoothing techniques, trend- and seasonal forecasting, univariate- and multivariate regression based time series analysis (ARMA, ARIMA). Selected software packages are used in laboratory exercises and in an applied forecasting project.

### **DS 631 Decision Analysis** 3.000 Credits Prerequisites: DS 520 or IMSE 514

This course entails study of analytic techniques for rational decision making that address uncertainty, conflicting objectives, and risk attitudes. Topics covered in the course include modeling uncertainty, rational decision making principles, representing decision problems with value trees, decision trees and influence diagrams; solving value hierarchies, decision trees and influence diagrams; defining and calculating the value of information, incorporating risk attitudes into the analysis and conducting sensitivity analysis.

### **DS 632 System Simulation** 3.000 Credits Prerequisites: DS 520 or IMSE 514

In this course students will learn how to design, model, and implement discrete-event computer simulation models of real or conceptual systems. Simulation studies will be conducted using contemporary software such ProModel. Student will learn random number generation, applying distribution sampling, and conducting output analysis.

### **DS 638 Adv Topics in Mgmt Science** 3.000 Credits Prerequisites: DS 570

This is the second in Management Science offering advanced topics beyond the DS 570 course. Among the topics included are algorithms in dynamic programming, nonlinear programming, game theory, goal programming, Markov chains, Markov decision processes, queuing theory, inventory theory, and simulation.

## ENTREPRENEURSHIP (ENT)

### ENT 626 Intro to Entrepreneurship 3.000 Credits

This course focuses on the process of new enterprise creation. It will examine how the interplay of personal and group creativity and market demand provides a basis for the conception, design and launch of new ventures. Although a variety of business options will be considered, emphasis will be placed on the creation of technology-driven growth enterprises.

The course content will familiarize students with the tasks of capital formation, business planning, staffing, systems design, and operations management in the entrepreneurial context. Students taking the course should have an interest in creating a new firm or initiating an entrepreneurial venture within a larger organization. All students will develop a plan for their venture.

### ENT 627 Manag the Entrepreneurial Firm 3.000 Credits

This course addresses the issues of managing an existing enterprise. It gives special emphasis to the challenges associated with growth and maturation of the firm. These include second round and mezzanine financing, market penetration and new market entry, expanding the product lines, building the management team, formulating operating policies and procedures, strengthening the firm's competitive position and establishing market entry barriers, and creating harvest options.

## FINANCE (FIN)

### FIN 531 Fin Fundament & Value Creation 3.000 Credits Prerequisites: ACC 505 and DS 300\*

This course provides the fundamentals of the finance discipline with an emphasis of value creation as the primary objective of a corporation. Capital budgeting analysis and techniques are extensively discussed. Valuation of securities is presented along with an introduction to modern portfolio theory and market efficiency. Issues related to international financial management are also introduced.

### FIN 581 Topics in Corporate Finance 3.000 Credits Prerequisites: FIN 531 and BE 530\*

This course integrates theory and practice for major topics such as capital structure and dividend policy. Additional topics include leasing, corporate governance, mergers and acquisitions, short-term financial management, and risk management. These topics are examined from the perspective of the corporate financial manager.

### FIN 650 Corporate Valuation & Strategy 3.000 Credits Prerequisites: FIN 581

This course examines a variety of financial management topics, such as project and enterprise valuation and risk analysis, corporate restructuring, dividend policy, corporate governance, and current asset management using case studies and readings.

### FIN 651 Invstmnt Proc, Analysis & Mgmt 3.000 Credits Prerequisites: FIN 531 and (DS 520\* or IMSE 514\*)

This course provides an examination of the process of investment analysis and management. Topics include: analysis of fixed income securities, stock valuation, and introduction to derivative securities; discussion of portfolio theory and management; and an overview of investment environment. Wherever it is appropriate, the above topics will also be discussed in a global context.

### FIN 652 Derivatives & Risk Management 3.000 Credits Prerequisites: (MATH 113 or MATH 115 or MPLS 116) and FIN 531

The focus of this course is on understanding the derivative securities and their use in risk management. This course provides an in-depth introduction to options and option pricing as well as an extensive overview of forward, future and swap contracts. This course will draw upon the intuition and analytic tools developed to examine sophisticated financial products or strategies that firms and investors have used in their risk management.

### FIN 653 Topics/Investments & Cap Mkts 3.000 Credits Prerequisites: FIN 651 and DS 520 or FIN 652

This course prepares students for career development and advancement in the challenging investment profession. The course provides an in-depth study of advanced contemporary topics in global investments and capital markets that are selected from the common body of knowledge of the Chartered Financial Analysts (CFA) program. Topics may include a subset of: advanced investment theory and valuation techniques, asset allocation, behavioral finance, hedge fund, emerging markets and global investing, ethics for investment professionals, financial statements and security analysis, market efficiency, market microstructure, portfolio management and performance evaluation, etc. The format and the topics may vary in each offering.

### FIN 654 Financial Intermediation 3.000 Credits Prerequisites: FIN 531

Financial Intermediaries provide services to borrowers and lenders, often creating new securities or providing brokerage services broadly defined. Intermediaries include depository institutions such as commercial banks and non-depository institutions such as security firms, pension funds and insurance

companies. This course studies the functions of intermediaries, the industry regulations, and competition in a deregulated environment. Special emphasis is placed on financial markets and fiscal instruments created by intermediaries, risk of intermediation, risk management, and financial innovations in the industry.

**FIN 655 International Financial Mgt**  
3.000 Credits  
Prerequisites: FIN 531

This course views international finance at the micro level, but of necessity it will cover some aspects of macro-level international finance as well, such as the international financial system and balance of payments mechanism. The following topics will be covered: the international financial system, balance of payments, foreign exchange, exchange risk management, international financial markets, foreign investment, and foreign trade financing.

**FIN 656 Fixed Income Securities**  
3.000 Credits  
Prerequisites: (MATH 113 or MATH 115 or MPLS 116) and (FIN 651\*) and (FIN 581 or FIN 652 or FIN 654 or FIN 655)

The fixed income market, accompanied by the introduction of sophisticated financial engineering techniques, has grown enormously over the last two decades. Today, the fixed income market has been a vital segment of the global financial market. This course covers major topics associated with this market, including bond pricing, yields, and volatility; term structure of interest rates and yield curve; market structure and analytical techniques for Treasury, municipal, corporate bonds, mortgage-backed securities, asset-backed securities, and bond with embedded options. The fundamental objective of this course is to help students develop analytical skills for pricing fixed income securities and managing interest rate risk. In addition, materials covered in this course are compatible with the Common Body of Knowledge in Analysis of Debt Investments that is required by the Chartered Financial Analysts (CFA) examination. Students will not receive credit for both FIN 456 and FIN 656.

## HUMAN RESOURCE MANAGEMENT (HRM)

**HRM 561 Human Resource Management**  
3.000 Credits

This course provides managers from different business functions with the principles, knowledge, and techniques for managing employees. Incidents and cases are used to diagnose human resource problems, and design and implement solutions. Topics include: employment law, job design and analysis, performance evaluation, human resource planning, recruiting, selection and assessment, training, managerial development, compensation and incentives, reductions-in-force, collective bargaining and labor relations, and human resource management for international operations. The course stresses the evaluation of human resource programs, and the need for human resource practices to be compatible with one another and to be supportive of the firm's strategy.

**HRM 611 Staffing Training and Devlpmnt**  
3.000 Credits  
Prerequisites: HRM 561

The course examines the design and management of personnel staffing, selection, training, and development activities as mechanisms for predicting and influencing individual and organizational performance. Key topics to be covered include: staffing strategy and planning; job design and analysis; external and internal recruiting; employee testing and assessment methods; measurement, validation, and decision-making issues in selection; instructional design and delivery; methods for developing employees and managers; career management; laws and regulation affecting staffing and training; evaluation methods for staffing and training activities; and issues in staffing and training of an international workforce.

**HRM 613 Management-Union Relations**  
3.000 Credits  
Prerequisites: OB 510 or EMGT 545

To study the rationale for, and processes of, union-management relations. Topics include: contract negotiation and administration; processes of organizing and collective bargaining; and content and philosophy of labor-management relations law. A major portion of the course is devoted to a bargaining simulation exercise.

## LAW & ENVIRONMENT (LE)

**LE 510 Commercial Transactions**  
3.000 Credits

This course provides both the content and context needed to understand the legal impact of business decisions with particular emphasis on commercial transactions. Topics include law of contracts and sales, commercial paper, secured transactions, and debtor-creditors relationships. Student completing LE 453 or equivalent may waive LE 510.

**LE 523 Legal Environment for Managers**  
3.000 Credits

This course equips the student to develop a logical approach to problem solving based on critical legal thinking, sound business judgment, and ethical considerations. The student will be introduced to the principal ways the law is made and enforced, including the development of the common law, statutory interpretation, and agency processes. The course surveys the impact of regulation on the relationships between the business and its customers, suppliers, products or services, employees, and owners. Graduate standing required.

**LE 556 Business Govt&Regulatory Env**  
3.000 Credits  
Prerequisites: BE 530 or BE 504

This course focuses on an interdisciplinary approach to the evaluation of contemporary business issues utilizing elements of law, political economy, international business, ethics, social responsibility and management. Heavy emphasis is placed on

case analysis and the development of legal research and critical thinking skills. The goals of the course are to enhance student awareness of the societal influences on business; establish the context from which government regulation arises; and, explore the roles of the free market, government intervention, and individual and corporate ethics in affecting business behavior. Credit not given for more than one of: LE 556, LE 649, BA 649. (F,W,S)

## MANAGEMENT INFORMATION SYSTEMS (MIS)

### **MIS 525 Computer and Info Systems** 3.000 Credits

This course focuses on the management concepts and information technology needed to create effective information systems. Topics include: a survey of information technology, information systems and organizations, strategic information systems, management support systems, and ethical and social issues in information systems.

### **MIS 526 IT Services Management** 3.000 Credits Prerequisites: MIS 525\*

Students in IT Services Management will learn how to organize and operate in an IT environment centered on processes and services. Students will learn to use major models like ISO 20000 and the Information Technology Library (ITIL) as tools for managing and controlling the IT function within an organization. Upon completion of the course, students should be prepared for the ITIL Foundations examination.

### **MIS 527 Programming & Data Structures** 3.000 Credits Prerequisites: MIS 525\*

This course introduces the basic concepts of program design, emphasizing an event-driven environment. Students will develop an understanding of fundamental programming logic and learn to use basic programming structures to solve simple business problems. Students are introduced to the program development cycle and programming principles, basic programming logic and structures, and common data types. Topic coverage may include an introduction to object-oriented programming and other next generation programming environments.

### **MIS 575 Information Management** 3.000 Credits Prerequisites: MIS 525

This course examines the basic concepts of information management for business organizations. Database systems are examined as a key tool for managing information. The goal of this course is to provide adequate technical detail while emphasizing the organizational and implementation issues relevant to the management of computerized information in an organizational environment. Topics include data modeling, database design, data definition and manipulation languages, database administration, data standards and policies, data quality, data integration, data warehousing, and data mining.

### **MIS 585 Network App Development** 3.000 Credits Prerequisites: MIS 527

This course is designed for students to explore the unique concerns in developing applications designed to run in a networked environment. The goal of this course is for students to gain proficiency in network-based programming languages, while at the same time understanding concerns specific to networked applications, such as security and latency. Topics include client-server development, distributed object models, training in specific languages such as PHP and PERL, programming and security, and networked application tuning.

### **MIS 640 Info Systems Development** 3.000 Credits Prerequisites: MIS 575\*

This course provides a foundation in systems analysis and design concepts, methodologies, techniques, and tools. Students will learn to analyze an organizational program, define user requirements, design an information system, and plan an implementation. Methodologies covered include the traditional life cycle approach as well as newer methodologies such as an 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 computer-aided software engineering (CASE) tool, a database management system (DBMS), fourth generation language.

### **MIS 641 Computer Networking** 3.000 Credits Prerequisites: MIS 525

This course provides an introduction to data communication, 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. Significant emphasis will be placed on understanding business applications of the Internet and the development of Internet-based information systems. The social and organizational implications of computer networking are also examined.

### **MIS 642 Info Technology Security** 3.000 Credits Prerequisites: MIS 641

This course will provide the students with an exposure to the unique concerns and realities of security in the IT environment today. The course will cover principles of security from a managerial point of view, but will provide the students with enough of a technical focus to actively participate in the process of organizational security. Students will be exposed to the problems and dangers from insecure IS and the means to prevent security breaches, while also learning to respond to a breach when it does happen. Students will take this knowledge to learn to develop security plans and conduct security audits. Coursework will include extensive reading and seminar participation as well as time in the laboratory to explore and reinforce concepts.

**MIS 643 Info Tech Project & Chg Mgmt**  
3.000 Credits  
Prerequisites: MIS 525

This course examines the management of information systems projects in business organizations as well as human and organizational reactions to the changes brought about by new information systems. Topics include project planning, change control, project controls, project reporting, information systems projects and organizational change, factors affecting project success and failure, and project management software.

**MIS 644 IT Policy and Strategy**  
3.000 Credits  
Prerequisites: MIS 525

This course provides an overview and an understanding of the issues involved in the strategic management of the information technology (IT) and information systems (IS) of an organization and the development of organizational strategies and policies considering environmental constraints.

A broad range of issues and problems associated with the information assets of the organization and their alignment with the strategic goals of the organization is examined. An example of topics covered might include: ethical, privacy, and social issues arising within the new information environment; current laws and currently proposed laws and their implications; competition and monopoly in software and hardware markets; and online content and access. Since the course focuses on current issues, the reading each week consists of basic text chapters as well as readings contributed by the professor and class. These readings will change to reflect the dynamic environment of IT/IS. The course prepares students for IT strategy and policy analysis and development. Coursework includes extensive reading, seminar participation, case analysis, research projects, and examinations.

**MIS 645 Global Outsource IS Activities**  
3.000 Credits  
Prerequisites: MIS 525 and (MIS 643 or MIS 644)

This course provides an overview and an understanding of the issues involved in extensive outsourcing in the global environmental. There exists a growing relationship between globalization, outsourcing, and information technology and the technological and social issues that support or inhibit this relationship is the focus of this class. An example of topics covered might include: national culture, the global IT manager, managing a global IT project, cultural diversity, and ethical and social issues. Since the course focuses on current issues, the reading each week consists of basic text chapters as well as current academic and practical articles. These readings will change to reflect the dynamic environment of IT/IS. Coursework will include extensive reading, seminar participation, case analysis, research projects, and examinations.

**MIS 646 HCI Interface & Design**  
3.000 Credits  
Prerequisites: MIS 525

This course introduces students to the fields of human computer interaction (HCI), interface design, and usability engineering. The cognitive aspects of HCI will be explored as well as several methods for usability evaluation/inspection. The course will include an examination of the emerging discipline of information architecture. Topics will include: HCI definitions, theories, and history; interface design principles and interaction methods; usability evaluation techniques; usability heuristics and design guidelines; perspectives of designers versus users; and user centered design.

**MIS 647 Advanced Programming**  
3.000 Credits  
Prerequisites: MIS 527

This course allows students to build on their programming skills learned in MIS 527. Students will be exposed to advanced programming topics, such as multi-threading, multimedia, exception handling, networks, database connections, component-based programming, Web-based applications, and non-technical issues in programming and application development. Students will be introduced to a computer-aided software environment and collaborate on building more complex applications based on business requirements.

**MIS 648 Information Management II**  
3.000 Credits  
Prerequisites: MIS 575

This course examines the processes and tools used to develop and administer database systems in business. Database systems used to support both transactions processing and decision-making in organizations are studied. 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, and complex data retrieval commands.

---

## MARKETING (MKT)

---

**MKT 515 Marketing Management**  
3.000 Credits

This course examines the concepts, problems and techniques associated with the activities of bringing both consumer and industrial products to the marketplace. Topics include: consumer and industrial buyer behavior, market segmentation, target marketing, as well as product, place, promotion and pricing strategies. Particular emphasis is placed on analysis of cases.

**MKT 565 Advanced Marketing Management**  
3.000 Credits  
Prerequisites: MKT 515

This course examines the current challenges facing the marketers, ranging from industry deregulation, Internet revolution to globalizing. Looked at closely are the emerging issues impinging on marketing decision, particularly in regard to focused marketing, relationship marketing, competitive advantage, positioning, and the marketing mix strategies. Term

project and case analyses are important components of the course.

**MKT 620 Understanding Customers**  
3.000 Credits  
Prerequisites: MKT 515

This course introduces students to concepts and theories developed in the behavioral sciences (economics, marketing, psychology, sociology, and anthropology) in relation to their influence on consumer behavior. The course is designed to provide students with an in-depth understanding of consumer markets in order to develop effective marketing strategies.

**MKT 621 Advertising and Promotion**  
3.000 Credits  
Prerequisites: MKT 515

This course approaches advertising and promotional strategies and tactics from an integrated marketing communications perspective. The course is designed to provide students with an understanding of the various marketing mix elements, including advertising, sales promotion, public relations, direct marketing, event sponsorship, and the Internet in order to develop effective marketing communication strategies.

**MKT 622 Global Marketing**  
3.000 Credits  
Prerequisites: MKT 515

This course provides students with an understanding of the various components and functions of international marketing. The course develops a keen appreciation for the international marketing function. The course develops a keen appreciation for the international marketing environment and the complex forces impacting on the international marketing function. The focus is on evolving an integrating and functional framework for international marketing decisions.

**MKT 623 Business to Business Marketing**  
3.000 Credits  
Prerequisites: MKT 515

This course examines the differentiating aspect of industrial (business to business) marketing and the operational and strategic issues associated with them. Covers target marketing, marketing mix and strategic decisions involved in business markets. Case studies are an important feature of the course.

**MKT 624 Service Marketing**  
3.000 Credits  
Prerequisites: MKT 515

This course examines the development and management of services in a changing and growing global marketplace. Among the challenges addressed will be the development of global service marketing strategies, the process for the development of new services, the role of climate and culture within the organization, strategies for customer retention, quality management and measurement in a service organization, and insights into service demand and the structure of the service industry.

**MKT 625 Global Sourcing and Logistics**

3.000 Credits  
Prerequisites: MKT 515

This course examines concepts in international purchasing and logistics to provide an in-depth understanding of the international supply chain. The course will examine how sourcing and logistics activities change and become more complex in the global environment. These aspects will be discussed in terms of the opportunities, challenges, and changing customer requirements presented by trading blocs, emerging markets, and developing countries.

**MKT 626 E-Tailing and Retailing**  
3.000 Credits  
Prerequisites: MKT 515

Increasingly immune to traditional media, shoppers make bulk of their brand decisions in-store. Retailers (brick-and-mortar and Internet) play a vital role in a brand's success in the marketplace. This course provides a comprehensive understanding of the current retail landscape. It introduces students to significant issues and analysis frameworks of 21st century retailing strategy and management, including retailing over the Internet, or "E-tailing." The Internet presents challenges and opportunities to all retailers. Shoppers shape retail success. Retailers, brick-and-mortar and Internet, are challenged to enhance customer experience, customer service and customer satisfaction. The students will learn the complexities and nuances of shopper behavior, shopper demographics, and how shopper decisions are influenced by store design, store environment, store atmosphere and merchandizing, in brick-and mortar and Internet stores. The course will elevate and enhance students' readiness and advancement in retail, brand management and marketing careers. Format: Lecture and discussion, industry reports, group presentations and guest speakers. Regular attendance, class discussions, assignments, written reports and exams.

**MKT 628 MKT Turning Data into Revenue**  
3.000 Credits  
Prerequisites: MKT 515

The objective of this course is to provide a systematic approach to harnessing data to drive more effective marketing decision making and implementation. This course assumes a basic understanding of statistics but does not emphasize the mathematics behind the concepts. Combines with conceptual knowledge about the markets of interest, data is used to build a more profitable marketing practice. Topics covered include segmentation and targeting, positioning, customer value assessment, and new product and service design. By completing this course, you will be well on your way to making the ROI case for expenditures that companies are increasingly asking of the executives.

## OPERATIONS MANAGEMENT (OM)

**OM 521 Operations Management**  
3.000 Credits

Operations Management is concerned with the efficient transformation of inputs that will effectively achieve customer satisfaction. In dynamic, competitive world, a company's



effectiveness depends significantly on how well the firm's resources are managed. This course focuses on managerial tools for understanding the processes that are required for developing and delivering appropriate products and services. It prepares managers to use the results of analysis to constantly improve the firm's operational performance.

**OM 571 Supply Chain Management**  
3.000 Credits  
Prerequisites: OM 521 or IMSE 580 or EMGT 520

This course aims to develop an understanding of key devices of global operations management performance and their interrelationship with the firm's strategy. Special emphasis is given to tools and skills necessary to develop solutions for a variety of supply chain design problems and inter-firm and intra-firm coordination issues. The overarching course objective is to develop and in-depth understanding of integrative managerial issues and challenges related to developing and implementing a firm's operations strategy.

**OM 631 Service Operations Management**  
3.000 Credits  
Prerequisites: OM 521 or IMSE 580 or EMGT 520

This course examines both traditional and new approaches for achieving operational competitiveness in service businesses. Major Service sectors such as health care, banking and financial services, transportation, restaurants, hotels, and resorts are examined. The course addresses both strategic and operational decision making. Among topics covered are: the service concept and operations strategy, design of effective service delivery systems, productivity and quality management, response time (queuing) analysis, capacity planning, yield management, and the impact of information technology.

**OM 660 Analy & Des of Supply Chains**  
3.000 Credits  
Prerequisites: OM 521 or IMSE 580 or EMGT 520

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 661 Supply Chain Logis Mgmt**  
3.000 Credits  
Prerequisites: OM 521 or IMSE 580 or EMGT 520

The overarching course objective is to develop and in-depth understanding of integrative managerial issues and challenges related to developing and implementing a firm's logistics strategy. Attention is directed to the logistical mission confronted by varied types of business organization. Logistics is positioned as a value-added process that achieves time and place synchronization of demand stimulation and operations

fulfillment. Emphasis will be place on challenges related to providing logistical support for procurement, manufacturing and market-distribution.

**OM 662 New Prod Design & Development**  
3.000 Credits  
Prerequisites: OM 521 or IMSE 580 or EMGT 520

The objective of this course is to provide students with an in-depth knowledge of frameworks, policy, and issues that arise in the design and development of new products. In particular, the integration of a development chain with a supply chain forms the basis of knowledge offered in this course. A development chain is the set of activities and processes associated with new product introduction. It includes the product design phase, the associated capabilities and knowledge that need to be developed internally, sourcing decisions, and production plans. Specifically, the development chain includes decisions such as product architecture; what to make internally and what to buy from outside suppliers, that is, make/buy decisions; supplier selection; early supplier involvement; and strategic partnerships. The decisions made in the development chain will have an impact on the supply chain. Similarly, the characteristics of the supply chain must have an impact on the product design strategy and hence on the development chain.

**OM 663 Lean & Six Sigma**  
3.000 Credits  
Prerequisites: DS 520 or IMSE 514

This course covers implementing Total Quality Management (TQM), undertaking Six Sigma Projects, and applying Baldrige National Quality Award criteria and ISO 9000 principles to improve quality performances in an organization. Topics include Definitions and Importance of Quality, Quality Costs, Quality Function Deployment (QFD), Product Specification and Critical-to-quality Measures (CQM), Statistical Quality Control (SQC), Robustness Concepts, Quality System Design and Evaluation. Six Sigma and DMAIC Methodologies, Design for Six Sigma (DFSS) process, IDOV (Identity requirements, Design alternatives, Optimize the design and Verify process capability) Methodology, and several other concepts and tools related to quality are also covered.

**OM 664 Strategic Sourcing**  
3.000 Credits  
Prerequisites: OM 521 or IMSE 580 or EMGT 520

This course presents the integrative role of procurement function within the business organization. Specific topics addressed from strategic, financial, and global perspectives include purchasing process, procurement and commodity strategy, insourcing/outsourcing, supplier evaluation and selection, supplier management and development, global sourcing, cost and price analysis, negotiation and contract management. Both theoretical and quantitative perspectives will be offered in covering these topics. Learning will be emphasized through review of articles published in academic and professional journals; discussion of case studies focusing on problems and issues involving sourcing; formulation of

sourcing models using statistical and optimization software and application of various problem-solving algorithms; and working on a term project focusing on investigating a key sourcing problem.

**OM 665 IT in SCM**  
3.000 Credits  
Prerequisites: ( OM 521 or IMSE 580 or EMGT 520 ) and MIS 525

This course covers concepts in enterprise resource planning (ERP). The main focus of this course is to show how ERP systems integrate business processes across functional areas and support business management and performance analysis. This course will also examine how ERP systems evolved from early computer systems and manufacturing, and will evaluate the benefits and costs of implementing an ERP system. Example software, such as SAP, will be used extensively to illustrate how ERP systems work. Learning will be emphasized through review of articles published in academic and professional journals; discussion of case studies focusing on problems and issues involving enterprise resource planning; application of various problem-solving algorithms such as in forecasting and inventory management; and working on a term project focusing on investigating a key enterprise resource management problem.

**OM 666 Sustainable Supply Chain Mgmt**  
3.000 Credits  
Prerequisites: ( OM 521 or IMSE 580 or EMGT 520 ) and MIS 525

This course describes various issues and problems encountered in designing and maintaining a supply chain that deals with environmental concerns of product disposal, and re-manufacturing. Various types of sustainable supply chains, such as green supply chain, reversible supply chain, closed-loop supply chain etc., will be discussed along with tools and techniques to design and manage them.

## ORGANIZATIONAL BEHAVIOR (OB)

**OB 510 Organization Behavior**  
3.000 Credits

A survey course which provides a basic understanding of individual, inter-personal and group behavior in organizations, and its application in the practice of management. Topics include: personality and attitudes, motivation, groups and teams, leadership, power, ethics, structure and organizational design, culture, and decision-making.

**OB 560 Management Skills Development**  
3.000 Credits  
Prerequisites: OB 510 or EMGT 545

To present 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 of inter-group relationships, and conflict resolution.

**OB 610 Intntl Dimen of OB and HRM**  
3.000 Credits  
Prerequisites: OB 510 and HRM 561

This course aims to provide a systemic review of international environmental forces and their influence on all management areas of corporate entities. Emphasis is placed on the issues confronting managers in international arenas as they attempt to plan, organize, staff and control global operations of multinational companies. The course will offer in-depth coverage of cross-cultural management, especially human resources management and behavioral dimensions of managing organizations in the global context.

**OB 612 Org Change & Development**  
3.000 Credits  
Prerequisites: OB 510 or EMGT 545

To introduce theories, methods, and practice of organizational change and development; to provide a conceptual framework for examples of planned organizational change. Topics include: sub-processes in organizational change, intervention methods, sequencing and integration of change processes, change roles and role relations, change objectives and criteria.

## TAX (TAX)

**TAX 501 Tax Acct Rules & Timing Iss**  
3.000 Credits  
Prerequisites: ACC 360

Course examines in detail the cash and accrual accounting rules for income tax purposes, including inventory accounting, and the uniform capitalization rules. Time value of money principles and imputed interest matters are examined in connection with the original issue discount rules.

**TAX 502 Inc Taxation of Prop Trans I**  
3.000 Credits  
Prerequisites: ACC 360

This course will survey several fundamental areas relating to the income taxation of property transactions. Topics will include noncash receipts and payments, introduction to basis, realization and recognition concepts, transactional losses including bad debt expense, limitations on transactional loss deductions cost recovery procedures, the general effect of debt on basis and amount realized calculations, and characterization issues. The planning and business aspects of these topics are emphasized.

**TAX 510 Fundamentals of Corporate Tax**  
3.000 Credits  
Prerequisites: ACC 360

This course analyzes federal income tax rules relating to the definition, formation, operation, and liquidation of corporations including property distributions, stock redemptions, and tax/book income reconciliations. The planning and business aspects of these corporate items are emphasized. Students may not receive credit for both ACC 633 and TAX 510.

**TAX 603 Inc Taxation of Prop Trans II**

3.000 Credits

Prerequisites: ACC 360

This course will survey several advanced areas relating to the income taxation of property transactions. Topics will include, like kind exchanges, involuntary conversions, effect of nonrecourse debt on basis an amount realized calculations and on various leveraged tax shelter transactions, the passive activity loss limitations, the at-risk rules, the economic substance doctrine, leasing transactions and installment sales. The planning and business aspects of these topics are emphasized.

**TAX 611 Adv Corp Inc Tax**

3.000 Credits

Prerequisites: ACC 633 or TAX 510

This course analyzes federal income tax rules relating to corporations, including taxable acquisitions; tax free acquisitive, divisive, and bankruptcy reorganizations; corporate recapitalizations; and transfers of corporate attributes, including limitations on such transfers. The planning and business aspects of these corporate items are emphasized.

**TAX 615 Flow Through Entities**

3.000 Credits

Prerequisites: ACC 360

A study of advanced income tax problems involving partnerships and S-Corporations, including organization, operation, distributions, liquidations, basis, family partnerships, and sales and exchanges. The planning and business aspects of partnerships and S-Corporations are emphasized.

**TAX 622 Estate and Gift Taxation**

3.000 Credits

Prerequisites: ACC 360

This course covers the basics of estate, trust taxation and tax issues encountered by small businesses. Topics include tax planning techniques to minimize the tax-burden on intergeneration transfers of wealth, tax planning for the closely held business, capital formation and preservation, tax compliance and tax alternatives.

**TAX 627 International Income Taxation**

3.000 Credits

Prerequisites: TAX 510

Course examines in a survey fashion the taxation of business and investment transactions by foreigners in the U.S. (in-bound transactions) and business and investment transactions by U.S. individuals and corporations in foreign countries (out-bound transactions). Topics include residence, source of income and deductions, taxation of foreign persons on U.S. source passive investment income and U.S. source business income, including income from U.S. branches of foreign corporations, and the effect U.S. tax treaties have on these matters. The course also includes a survey analysis of the foreign tax credit, the anti-tax deferral rules of Subpart F, and the intercompany transfer pricing rules. The planning and business aspects of these

international transactions are emphasized.

**TAX 630 State and Local Taxation**

3.000 Credits

Prerequisites: ACC 360

This course studies the basics of state and local taxation and their relationship to the federal tax structure. Topics include state/local income, property, and sales taxation structures.

**TAX 680 Special Topics in Taxation**

1.000 TO 6.000 Credits

Prerequisites: ACC 360

This course provides Master of Science in accounting students an opportunity for study of advanced and/or emerging issues in taxation. Selected topics in the course may include: Consolidated Tax Returns, Transfer Pricing, Accounting for Income Taxes, Deferred Compensation, Income Taxation of Trusts and Estates, Exempt Organizations, and Tax Procedure and Compliance.

# COLLEGE OF EDUCATION, HEALTH AND HUMAN SERVICES



**THE UNIVERSITY OF MICHIGAN – DEARBORN**

# COLLEGE OF EDUCATION, HEALTH AND HUMAN SERVICES

## Administration

---

Edward A. Silver, EdD, Dean  
 Mesut Duran, PhD, Associate Dean  
 Paul Fossum, PhD, Associate Dean, Coordinator, MA in Teaching  
 Martha A. Adler, PhD, Coordinator, MA in Education  
 Bonnie M. Beyer, EdD, Coordinator, Educational Learnership Programs, Coordinator, Education Specialist, Co-Coordinator, Doctorate in Education  
 Christopher J. Burke, PhD, Co-Coordinator, Doctorate in Education  
 Susan Everett, PhD, Coordinator, MS in Science Education  
 Seong Bock Hong, PhD, Coordinator, Early Childhood Program  
 Belinda Lazarus, PhD, Coordinator, Special Ed: LD/EI and Inclusion Specialist Programs  
 Julie Taylor, PhD, Coordinator, Social Studies Education  
 Karen Claiborne, MPA, Administrative Specialist  
 Becky Dresselhouse-Nauss, BA, Budget Analyst  
 Judy Garfield, Customer Service Assistant  
 Elizabeth Morden, Customer Service Assistant  
 Joann Otlewski, Teacher Certification Officer and Director of Student Services Office  
 Catherine Parkins, BA Customer Service Assistant  
 Robert Simpson, III, Computer Specialist  
 Carolyn Williams, Field Placement Coordinator

## Faculty (Full-Time)

---

Martha A. Adler, PhD, University of Michigan, Associate Professor of Education  
 Bonnie M. Beyer, EdD, Vanderbilt University, Professor of Education and Educational Administration  
 Stein Brunvand, PhD, University of Michigan, Associate Professor of Educational Technology  
 Christopher J. Burke, PhD, University of Illinois at Urbana-Champaign, Associate Professor of Science Education  
 Sara E. Byrd, Ph.D., University of Kansas, Assistant Professor of Special Education  
 Danielle DeFauw, PhD, Oakland University, Assistant Professor of Education  
 Mesut Duran, PhD, Ohio University, Associate Professor of Education  
 Susan Everett, PhD, University of Iowa, Associate Professor of Science Education  
 Paul Fossum, PhD, University of Minnesota, Associate Professor of Education  
 Kirsten Dara Hill, PhD, Michigan State University, Assistant Professor of Education  
 Seong Bock Hong, EdD, University of Massachusetts, Amherst, Associate Professor of Education

Kim Killu, PhD, Ohio State University, Associate Professor of Special Education  
 Belinda Lazarus, PhD, Ohio State University, Professor of Special Education  
 Gail R. Luera, PhD, University of Michigan, Associate Professor of Science Education  
 John B. Poster, PhD, University of Chicago, Professor of Public Administration and Education  
 Laura Reynolds-Keefer, PhD, University of South Carolina, Associate Professor of Educational Psychology  
 LaShorage Shaffer, M.Ed. University of Illinois at Urbana-Champaign, Instructor  
 Edward A. Silver, EdD, Columbia University, Professor of Education  
 Julie Taylor, PhD, University of Cambridge, Associate Professor of Education  
 Leslie J. Thornton, II, PhD, University of Michigan, Associate Professor of Education  
 Karen Thomas-Brown, PhD, University of the West Indies, Assistant Professor of Education  
 Maiyoua Vang, PhD, University of California-Davis, Assistant Professor of Education

## Cooperating Faculty

---

Nesrin Cengiz, PhD, Assistant Professor of Mathematics Education  
 Angela Krebs, PhD, Associate Professor of Mathematics Education  
 Judy Nesmith, MS, Senior Lecturer in Natural Sciences  
 Charlotte Otto, PhD, Professor of Chemistry  
 Margaret Rathouz, PhD, Associate Professor of Mathematics Education  
 Rheta N. Rubenstein, PhD, Professor of Mathematics Education  
 Michael Shelly, EdD, Lecturer in Mathematics

## Professors Emeriti

---

Paul Carter, EdD, Professor of Education  
 Joseph Cepuran, PhD, Associate Professor of Public Administration  
 Claudia Collin, PhD, Assistant Professor of Education  
 Grace Kachaturoff, EdD, Professor of Education  
 Raymond P. Kettel, EdD, Associate Professor of Education  
 Greta B. Lipson, EdD, Associate Professor of Education  
 Richard Moyer, EdD, University of Northern Colorado, Professor of Science Education  
 Jane A. Romatowski, EdD, Professor of Education  
 Rosalyn Saltz, PhD, Professor of Education  
 Daniel G. Sayles, PhD, Associate Professor of Education  
 Mary Trepanier-Street, EdD, Professor of Education  
 Darlene Van Tiem, PhD, Associate Professor of Education  
 Roger Verhey, PhD, Professor of Mathematics

## Early Childhood Education Center

---

Seong Bock Hong, PhD, Faculty Director  
 Debbie Jones, MA, Site Director  
 LaShorage Shaffer, M.Ed., Special Needs Consultant  
 Jennifer Bauer, MA, Student Supervisor

Amy Szymaszek, BA, Lead Teacher  
 Tammy Daigneau, BS, Lead Teacher  
 Caryn Finklestein, MA, Lead Teacher  
 Catie Stone MA, Lead Teacher  
 Sarah Kurtjian, BA, Lead Teacher  
 Linda Lapansee, Administrative Assistant  
 Kelly Lenihan, BA, Lead Teacher  
 Cyndi McAuliffe, BA, Lead Teacher  
 Lia Simpson, Secretary Intermediate

## Our Work: Education, Health, and the Human Services

The College of Education, Health, and Human Services aims to prepare and sustain exemplary practitioners and administrators for work in the interrelated fields of education, human health, and human services. We do this through emphasis on scholarship, diverse clinical experiences, and practice in effective service delivery.

The College draws broadly upon institutional resources including faculty and programs in other colleges of the University. Additionally, facilities in local school districts, health-related settings, and other public agencies and private corporations regularly provide students with a spectrum of rich experiences.

The College contributes to the University of Michigan-Dearborn's identity as a dynamic metropolitan university where teaching and research interact to develop leaders and new knowledge in the tradition of the University of Michigan and in pursuit of impact in the metropolitan region.

Students in the College of Education, Health, and Human Services participate in the affairs of the unit in a variety of ways including programmatic advisory committees, student groups such as the Student Michigan Education Association (SMEA), and honor groups like the Phi Lambda Theta.

## History of the School

Shortly after UM-Dearborn opened in 1959, a small teacher certification program was added to the 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, and, soon, the School was granted authority to offer graduate programs, which expanded under subsequent deans John Poster (who served from 1990 to 2005), Paul Zionts (2005 to 2009), and Edward Silver (2010 to 2013). Graduate degree programs in the unit now include a MA in Early Childhood Education, an MA in Education, a MA in Educational Technology, an MA in Teaching, an MS in Science Education, an MA in Educational Leadership, an MEd in Special Education, an Education Specialist and a Doctor of Education. During the 2012-13 academic year, the Regents of the University of Michigan approved a change in the scope and the name of the School of Education, and, since September 1, 2013, the unit has been known as the College of Education, Health, and Human Services

(CEHHS). The CEHHS fosters connectedness among the academic endeavors in the unit, providing a unique focus on the interrelated nature of education, human health, and human services. In this way, the College mirrors the intermingling of these spheres in the lives of the professionals who work within them, and addressing the historically fractured nature of the preparation of professionals in these critically important fields.

## U.S. Department of Education Title II Reports

### Michigan Test for Teacher Certification

#### Title II Annual report: 2010-2011

Test Field/Category	Number Tested	Number Passed	Pass Rate (%)
296-Basic Skills: Math	109	109	100
196-Basic Skills: Reading	109	109	100
396-Basic Skills: Writing	109	109	100
107-Biology	4	--	--
018-Chemistry	4	--	--
020-Earth/Space Science	1	--	--
007-Economics	1	--	--
083-Elementary Education	67	67	100
002-English	15	15	100
086-English as a Second Language	1	--	--
009-History	11	11	100
094-Integrated Science	2	--	--
063-Learning Disabilities	2	--	--
022-Mathematics (Secondary)	9	--	--
019-Physics	4	--	--
010-Political Science	5	--	--
011-Psychology	4	--	--
084-Social Studies	15	15	100
012-Sociology	4	--	--
028-Spanish	1	--	--
004-Speech	1	--	--
<b>Summary Totals and Pass Rate</b>	109	109	100

-- Indicates "Number Passes" and "Pass Rate" not shown because "Number Tested" is less than 10.

## Accreditation

The College of Education, Health and Human Services is a fully accredited professional unit of the University of Michigan-Dearborn. Along with the rest of UM-Dearborn, it carries the approval of the Higher Learning Commission. As a teacher preparation institution, it is a member of the American Association of Colleges for Teacher Education and the Michigan Association of Colleges for Teacher Education. It is approved as a teacher certification institution by the Michigan Department of Education.

On February 29, 2012, the College of Education, Health and Human Service's teacher education activities were accredited by the Teacher Education Accreditation Council (TEAC) for a period of seven years, ending on February 28, 2019. This accreditation certifies that our teacher preparation program meets TEAC's quality principles. In addition, with this accreditation we are in compliance with the state expectation that, by December 31, 2013, all approved Michigan teacher preparation institutions are required to attain national accreditation through one of the two United States Department of Education-approved teacher preparation accrediting bodies--either the National Council for Accreditation of Teacher Education (NCATE) or the Teacher Education Accreditation Council (TEAC).

The College of Education, Health and Human Service's Early Childhood Education Center (ECEC) recently had its accreditation renewed through the National Association for the Education of Young Children. (NAEYC).

## MCOATT

The College of Education, Health and Human Services at the UM-Dearborn is a charter member of the Consortium for Outstanding Achievement in Teaching with Technology. It is also a pioneer in offering the Michigan Certificate for Outstanding Achievement in Teaching with Technology.

## Code of Conduct

The College of Education, Health and Human Services adheres to the University policies regarding the Student Academic and Non-Academic Code of Conduct. Refer to the General Information section of the *Graduate Catalog*, the UM-Dearborn *Undergraduate Catalog*, or the Student Handbook of the Horace H. Rackham School of Graduate Studies for further information.

## Grading for Graduate Degree Programs

The method of grading graduate students is the letter grade system (*A, B, C, D, E*). Courses in which grades of *D, E*, or *U* are earned cannot be used in fulfillment of degree requirements.

Grades of + and - may be given to graduate students whenever such fineness of discrimination is possible. These letter grades are translated into honor points for each hour of credit in a course as follows:

A+ = 9    B+ = 6    C+ = 3    D and E = 0

A = 8    B = 5    C = 2    (failure)  
A- = 7    B- = 4    C- = 1

The honor points earned for a course are calculated by multiplying the number of credit hours for which the course was elected by the number of honor points earned on the above grading scale (e.g., if a grade of *B+* is earned for a three-credit hour course, the total number of honor points for the course is 3 credit hours times 6, or 18 honor points).

To maintain satisfactory academic standing, a student must have a minimum cumulative graduate grade point average (GPA) of 5.0 or *B* for all graduate courses taken for credit and applied toward the degree program.

## Incomplete (I) Grades

An incomplete grade may be assigned to a student only if the unfinished part of the student's work is small, the work is unfinished for reasons acceptable to the instructor and the student's standing in the course is a *B* grade or higher.

The student and the instructor should discuss a schedule for completing the remaining work prior to the conferral of *I*. An incomplete contract form signed by the student and by the instructor must be completed. Grades of incomplete can be changed to a letter grade only if the work is completed. Students should contact the instructor, College of Education, Health and Human Services Student Services Office or the Rackham School of Graduate Studies Student Handbook (if applicable) for the deadline date for completion. If the grade of *I* has not been completed within the allotted time limit, credit can be earned only by re-electing the course, attending classes, and completing all required coursework and examinations.

## Post-Degree Programs

### Certification Only Program

Persons already holding earned degrees may acquire an elementary or secondary provisional teacher's certificate through the post-degree Certification Only Program. Applicants to this program are required to meet the certification requirements in force at the time they are admitted.

### Admission Requirements

To be admitted to the program, an applicant must have:

- 1) A baccalaureate degree from a regionally accredited institution.
- 2) A minimum grade point average of 2.75/4.0 in the undergraduate degree.
- 3) A minimum GPA of 2.75 in the selected teaching major and minor.
- 4) A passing score on the Michigan Test for Teacher Certification Basic Skills Test.

### Professional Education Certificate Program

This program is ideal for the teacher who wants to maintain a valid teaching credential but is not interested in a Master's



degree program. Upon the expiration of the provisional certificate, teachers are required by state law to secure a Professional Education Certificate. This certificate may be earned through either a planned 18-hour program or a program leading to an additional major, minor, or endorsement. Upon completion of the post-degree Professional Education Certificate Program, the University makes the recommendation for certification to the Michigan Department of Education.

The Michigan Professional Education Certificate is issued to teachers who have held a provisional certificate provided they have: 1) taught successfully for three years according to the validity of their provisional certificate, 2) earned 18 semester hours in a planned program applicable to their professional development, 3) met other state requirements, and 4) are recommended for certification by a recommending university.

## Enhancement Program

Through the post-degree Enhancement Program, teachers who already have earned a Michigan Permanent, Continuing, or Professional Education Certificate may add another major, minor, or endorsement to their current teaching certificate.

Six endorsements are available to certified teachers. These are as follows: 1) early childhood (ZS), 2) English as a Second Language (NS), 3) Ed Tech (NP) 4) special education/learning disabilities (SM), 5) special education/emotional impairments (SE), and 6) Reading Specialist K-12 (BR).

## Doctorate in Education

The Doctorate in Education (EdD) degree is designed for working professionals who aspire to be leaders in education. Students will complete 60 credit hours beyond a Master's degree in course and field work that lead to the EdD degree. Coursework can be completed on either a full or part time basis. Eight classes for a total of 24 credits will be in the core areas; an additional 24 credits will be in one of four concentration areas that will specifically target their professional interests. The final 12 credits will focus on dissertation research or an applied studies project. The four concentration areas are: Educational Psychology/Special Education, Educational Leadership, Metropolitan Education, and Curriculum and Practice.

## Admission

Minimum requirements for admission in the EdD program include:

1. A Master's degree from an accredited institution. Official copies of transcripts of all undergraduate and graduate coursework.
2. Foreign students must submit scores on the Test of English as a Foreign Language (TOEFL) of 550 (total) or the Michigan English Language Ability Battery (MELAB) of 80. They must also submit a minimum score of 230 on the Test of Spoken English (TSE). Scores may not be more than five years old.
3. Applicants must submit scores on the analytical, quantitative and verbal tests of the Graduate Record

Examinations (GRE). Scores may not be more than five years old.

4. At least three years teaching experience or the equivalent experience working in a professional setting.
5. Three recommendation letters from faculty and/or employer. Standard questions will be asked of all references and may include:
  - Potential for quality doctoral work
  - Potential for leadership impact in the field upon completion of the program
  - Other areas may be included such as: collegiality, ability to complete quality work on time, work etc.
6. A letter or statement of academic interests, professional goals and the applicant's personal/unique potential for contribution to a doctoral cohort.
7. Applications are due annually on March 1 in order to be considered for admission in the EdD program. Applicants may be interviewed by the EdD committee as part of the selection process.
8. The application fee is \$60.00 USD.

Once applicants have met all of the admissions requirements through step 8 they may be contacted to arrange for a personal interview with a member of the EdD Faculty Advisory Committee. The interview may be conducted over the telephone or via Skype for students traveling from out of state. During the interview, the applicant can be expected to demonstrate evidence of personal commitment to earn a doctoral degree, evidence of personal professional goals that are aligned with the goals of the EdD program and evidence of professional behavior.

Meeting the minimum requirements qualifies an applicant for admissions consideration but does not guarantee admission to the program. Admissions will be granted on a competitive basis.

Individuals who wish to apply for the Doctorate in Education may obtain an application and recommendation forms from the website at [http://www.soe.umd.umich.edu/soe\\_edd/](http://www.soe.umd.umich.edu/soe_edd/)

## Satisfactory Progress Towards Degree

Each doctoral student is expected to maintain satisfactory progress towards the degree by maintaining a "B" average in coursework and passage of all required examinations within two attempts. Students who fall below a "B" grade point average in any one term will be placed on academic probation and notified of this in writing. Students who do not make satisfactory progress may be removed from the program in writing. Policies established by UM-Dearborn, CEHHS and the EdD Faculty Advisory Committee will determine criteria for disqualification from the program.

## Readmission

Students not registered for classes within one calendar year must submit a readmission form to the doctoral program

coordinator. Approval for readmission must be obtained in order to register for classes.

### Residency Requirements

While there will be no formal residency requirement for part time students, it is expected that they will participate in doctoral program activities on campus or through online discussions. This involvement will foster intellectual development and provide a supportive environment for all program participants.

### Normative Time from Matriculation to Degree

The EdD program is designed for completion of the degree requirements at a minimum of three calendar years. However, circumstances may require students to take fewer courses each term. As a result, flexibility is built into the program. Total time to qualifying examination and advancement to candidacy should not normally exceed three years, but students can request additional time. A request for extension needs to be submitted to the EdD Program Faculty.

Total registered time in the program is not expected to exceed six years, but again, an extension can be requested by the student.

### Transfer of Credit

Courses may receive transfer credit if:

- Graduate credits were completed within five years of application to the EdD program at another accredited institution.
- Graduate credits were completed at another University of Michigan School or College (including Flint and Ann Arbor).
- Graduate Extension courses were completed at any of these campuses; the University of Michigan, Wayne State University, Michigan State University, Western Michigan University, Central Michigan University, Eastern Michigan University, Northern Michigan University, and Oakland University.
- Courses were taken at an undergraduate institution, only if students completed the course during their junior or senior year and they were approved for graduate credit by the graduate school of the institution where and when the student took the course; and the courses were not used in whole or in part, in any way, to meet requirements for a degree, and the student's doctoral program adviser approves the transfer of the course.

Up to six credit hours from another (non University of Michigan) accredited university will be accepted as transfer credits; however, the EdD advisor must approve the acceptance of transfer credits. Students may transfer up to one-half (1/2) the minimum number of credit hours required for the EdD degree from the Ann Arbor and Flint University of Michigan campuses.

### Program of Study

The 60 (minimum) credit hour doctoral degree is divided into three parts: 1) Core Courses, 2) Concentration Area Courses, and 3) Dissertation Research or Applied Studies Project. Considerable flexibility is available in the concentration areas to satisfy individual interests and needs.

#### Core Courses.....24 hrs

The core courses are designed to provide students with a global perspective of education in contemporary schools and to prepare them for higher-level courses in the specialization area. The core courses are:

EDK 700	Introduction to Educational Research.....	3 hrs
EDK 823	Quantitative Research.....	3 hrs
EDK 825	Qualitative Research.....	3 hrs
EDC 740	Seminar in Educational Psychology /Special Education.....	3 hrs
EDB 722	Seminar in Educational Administration.....	3 hrs
EDD 717	Seminar in Curriculum and Practice .....	3 hrs
EDA 725	Seminar in Metropolitan Education .....	3 hrs
EDK 850	Research Design and Proposal Development ..	3 hrs

All eight core courses or their equivalent must be completed. Any substitution of course(s) for a core course(s) must be approved in writing by the doctoral program advisor before the qualifying exam.

#### Concentration Area Courses .....24 hrs

Eight doctorate level courses must be selected in the area of concentration with the guidance of the student's respective EdD program advisor. The concentration area courses are offered through the College of Education, Health and Human Services and other units of the University. The student will work with their faculty advisor to determine which concentration area courses are appropriate to the student's needs and professional goals.

### Qualifying Examination

The qualifying examination is generally taken one semester after the completion of course work upon recommendation of the student's advisor. Students must be at a point in their studies where the student's mastery of the core course work and concentration area can be fairly evaluated. The qualifying exam will be a written assessment of student knowledge.

Unanimous agreement of the qualifying examination committee is required for the student to pass the examination. Students who do not pass on the first attempt have only one other opportunity to take the examination. At least three months must pass before the second attempt and no more than one calendar year. The committee may suggest additional coursework to address weak areas.

### Proposal Defense

Proposal Seminar .....	3 hrs
------------------------	-------

The proposal defense is taken after the student has successfully completed their coursework [-3]: The proposal defense is a hearing on the student’s proposal. Typically the same review team for the qualifying examination is used for the entire Dissertation or Applied Studies Committee must be present during the proposal defense and approve the proposal unanimously.

Although the examination is usually an oral hearing, the committee may require that a student respond in writing to questions and/or make revisions in their proposals as a condition of approval. If the student is required to resubmit the proposal, the committee will review the revised proposal and communicate the outcome to the student in writing. The student must receive written approval of the proposal by the committee and written notification by the Institutional Review Board that human subjects review requirements have been met before beginning dissertation or applied studies work.

The proposal must demonstrate a strong scholarly and professional foundation of knowledge and the ability to apply the knowledge to rigorous study of an issue in K-12 or community college, or university level education. The student must submit the dissertation or applied studies proposal for approval following the format and procedures established by the EdD Faculty Advisory Committee. At a minimum, the proposal will contain a description of the problem, a review of the relevant literature, a statement of the question being answered and a description of the research methodology or approach taken to address the question. The proposal must also contain the materials that have been or will be submitted to the Institutional Review Board to meet human subjects requirements.

**Dissertation/Applied Studies**

Following successful completion of the qualifying exam and proposal defense, the focus will be on the preparation for the dissertation research or applied studies project. This culminating work may focus on a wide range of topics and/or research methods. Whether the candidate decides to do a dissertation or applied studies project, the work will focus on a significant professional problem or issue and have the potential to contribute in a general way or in the context of a particular educational setting to the improvement of PK-12, community college, or university level education.

**Candidacy**

A student will become a candidate for the EdD degree after completing the required coursework with a minimum GPA of B and after passing the qualifying examination and proposal defense. At this point, the student will be allowed to pursue the dissertation or applied studies work.

Dissertation/Applied Studies Project..... 9 hrs

The student must submit a written copy of the dissertation or applied studies project to the dissertation/applied studies committee for approval before the oral defense will be scheduled. All members of the dissertation or applied studies committee are responsible for reading the dissertation or applied studies documents and submitting their written

evaluations to the committee chair at least one week prior to the defense.

**Oral Defense of Dissertation/Applied Studies Project**

The final oral examination is the candidate’s defense of the dissertation or applied studies project. The dissertation/applied studies committee members conduct the oral examination. The final oral examination will be open to other faculty, students and interested public. The dissertation/applied studies committee members must be present at the oral defense. Unanimous agreement of the committee is required for approval of the dissertation/applied study and recommendation that the EdD degree be awarded. If the committee requires substantive changes to the written project, the final vote of the committee will be postponed until after the changes are completed.

**Submission of the Written Dissertation/Project**

The dissertation/applied studies project must be submitted to the program director by a specified deadline in the semester in which the degree is conferred.

The dissertation/applied studies project must conform to UM - Dearborn approved dissertation/applied studies manuscript guidelines.

**Advising**

Students must plan their program with their assigned advisor or with the Doctoral Program Coordinator. Contact the College of Education, Health and Human Services at (313) 593-5090 for an advising appointment.

**Petition**

All graduate policies have been formulated by the UM- Dearborn College of Education, Health and Human Services EdD Faculty Advisory Committee with the goal toward academic quality. This goal requires that policies be equitably and uniformly applied. However, there may be an infrequent extenuating circumstance that warrants individual consideration. In such a case, a petition to waive or modify a policy may be filed by the doctoral student. Please see the Doctoral Program Assistant for information and forms regarding the petition process.

**Graduation**

A diploma application must be submitted at the time of registration for the final semester.

**Education Specialist**

The Education Specialist (EdS) degree program is designed to meet a critical need for educational leaders who can transform education at the PK-12 community college and university

levels. The Education Specialist (EdS) degree is an advanced professional degree program that assists veteran educators to enhance their knowledge of theory and best practice, to acquire skills in interpreting and using educational scholarship and research, and to understand processes of change and leadership in education settings. The degree program is ideal for educators who seek new skills and new opportunities for leadership and for those seeking the Michigan Central Office Administrator Certificate.

Coursework can be completed on either a full or part time basis. Three courses for a total of 9 credits will be in the core areas; an additional 18 credits will be in one of four concentration areas that will specifically target their professional interests. The final 6 credits will focus on an applied studies or research project. The four concentration areas are: Educational Psychology/Special Education, Educational Leadership, Metropolitan Education, and Curriculum and Practice.

## Admission

Minimum requirements for admission in the EdS program include:

1. A Master's degree from an accredited institution of higher education with at least an overall 3.3 on a four point scale or equivalent.
2. Official copies of transcripts of all undergraduate and graduate coursework.
3. Foreign students must submit scores on the Test of English as a Foreign Language (TOEFL) of 550 (total) or the Michigan English Language Ability Battery (MELAB) of 80. They must also submit a minimum score of 230 on the Test of Spoken English (TSE). Scores may not be more than five years old.
4. Applicants must submit scores on the analytical, quantitative and verbal tests of the Graduate Record Examinations (GRE). Scores may not be more than five years old.
5. At least three years teaching experience or the equivalent experience working in a professional setting.
6. Three recommendation letters from faculty and/or employer. Standard questions will be asked of all references and may include:
  - Potential for quality doctoral work
  - Potential for leadership impact in the field upon completion of the program
  - Other areas may be included such as: collegiality, ability to complete quality work on time, work etc.
7. A letter or statement of academic interests, professional goals and the applicant's personal/unique potential for contribution to a doctoral cohort.
8. The application fee is \$60.00 USD.

Meeting the minimum requirements qualifies an applicant for admissions consideration but does not guarantee admission to the program. Admissions will be granted on a competitive basis.

Individuals who wish to apply for the Education Specialist may obtain an application and recommendation forms from the website at [http://www.soe.umd.umich.edu/soe\\_eds/](http://www.soe.umd.umich.edu/soe_eds/).

## Satisfactory Progress Towards Degree

Each EdS student is expected to maintain satisfactory progress towards the degree by maintaining a "B" average in coursework and passage of all required examinations within two attempts. Students who fall below a "B" grade point average in any one term will be placed on academic probation and notified of this in writing. Students who do not make satisfactory progress may be removed from the program in writing. Policies established by UM-Dearborn, CEHHS the EdS Program Coordinator will determine criteria for disqualification from the program.

## Readmission

Students not registered for classes within one calendar year must submit a readmission form to the EdS program coordinator. Approval for readmission must be obtained in order to register for classes.

## Residency Requirements

Students seeking an EdS degree fulfill the residency requirement by completing at least one-half of their degree in courses offered by the University of Michigan-Dearborn. All coursework toward the Central Office Administration Certificate must be completed within five consecutive years from the date of first enrollment in the program.

## Normative Time from Matriculation to Degree

Total registered time in the program is not expected to exceed five years, but an extension can be requested by the student.

## Transfer of Credit

Courses may receive transfer credit if:

- Graduate credits were completed within five years of application to the EdS program at another accredited institution.
- Graduate credits were completed at another University of Michigan School or College (including Flint and Ann Arbor).
- Graduate Extension courses were completed at any of these campuses; the University of Michigan, Wayne State University, Michigan State University, Western Michigan University, Central Michigan University, Eastern Michigan University, Northern Michigan University, and Oakland University.
- Courses were taken at an undergraduate institution, only if students completed the course during their junior or senior year and they were approved for graduate credit by the graduate school of the

institution where and when the student took the course; and the courses were not used in whole or in part, in any way, to meet requirements for a degree, and the student's program adviser approves the transfer of the course.

Up to six credit hours from another (non University of Michigan) accredited university will be accepted as transfer credits; however, the EdS program coordinator must approve the acceptance of transfer credits. Students may transfer up to one-half (1/2) the minimum number of credit hours required for the EdS degree from the Ann Arbor and Flint University of Michigan campuses.

## Program of Study

The 30 (minimum) semester hour specialist degree is divided into three parts: 1) Core Courses, 2) Concentration Area Courses, and 3) Research or Applied Studies Project. Considerable flexibility is available in the concentration areas to satisfy individual interests and needs. Courses leading to the Michigan Department of Education Central Office Administrator Certificate are available to students who choose the Educational Leadership concentration.

### **Core Courses** ..... 9 hrs

The core courses are designed to provide students with a global perspective of education in contemporary schools and to prepare them for higher-level courses in the specialization area. The core courses are:

*Required Concentration Area Course Plus Choose One*

*Additional:*

EDC 740	Seminar in Educational Psychology /Special Education .....	3 hrs
EDB 722	Seminar in Educational Administration .....	3 hrs
EDD 717	Seminar in Curriculum and Practice .....	3 hrs
EDA 725	Seminar in Metropolitan Education .....	3 hrs

*Choose One:*

EDK 823	Quantitative Research.....	3 hrs
EDK 825	Qualitative Research.....	3 hrs

Note: An Introduction to Research course must have been completed and credited on graduate transcript to enroll in one of the following courses or must be completed prior to enrolling in a research methods course.

All three core courses or their equivalent must be completed. Any substitution of course(s) for a core course(s) must be approved in writing by the program adviser before the action research courses.

### **Concentration Area Courses**..... 18 hrs

Six specialist level courses must be selected in the area of concentration with the guidance of the student's respective EdS program adviser. The professional studies courses are offered through the College of Education, Health and Human Services and other units of the University. The student will work with their faculty advisor to determine which

concentration area courses are appropriate to the student's needs and professional goals.

### **Action Research Studies**..... 3 hrs

Students will complete an action research project with approval of their advisor following successful completion of the core and concentration area courses.

### **Advising**

Students must plan their program with their assigned advisor or with the EdS Program Coordinator. Contact the College of Education, Health and Human Services at (313) 583-6349 for an advising appointment.

### **Petition**

All graduate policies have been formulated by the UM-Dearborn College of Education, Health and Human Services with the goal toward academic quality. This goal requires that policies be equitably and uniformly applied. However, there may be an infrequent extenuating circumstance that warrants individual consideration. In such a case, a petition to waive or modify a policy may be filed by the specialist student. Please see the EdS Program Secretary for information and forms regarding the petition process.

### **Graduation**

A diploma application must be submitted at the time of registration for the final semester.

## Master of Arts in Early Childhood Education

The Master of Arts in Early Childhood Education includes three program options for teachers, administrators, other service providers and educators who wish to learn how to serve young children and their families. The Early Childhood (ZS) Endorsement and the Early Childhood Special Education Inclusion UM-Dearborn College of Education, Health and Human Services Certificate options are for those who are already certified elementary teachers. The Early Childhood Administration and Leadership option is for non-certified professionals who are interested in early childhood leadership and administration. Courses are offered with the working professional in mind. Most courses required for the master's degree are offered during evening and summer hours and include several online courses.

For additional information visit the College of Education, Health and Human Service's website at [www.soe.umd.umich.edu](http://www.soe.umd.umich.edu).

### **Admission**

Eligibility for regular admission into the program includes completion of a bachelor's degree, a 3.0 (B) undergraduate grade point average or better, and a teaching certificate (with the exception of the Administration & Leadership concentration). One official transcript from the college/university granting the

undergraduate degree, one official transcript from all other colleges and universities attended, three recommendation forms, a statement of purpose, and a copy of a teaching certificate (for only those holding a certificate) must be submitted to the MA in Early Childhood Education Coordinator in the College of Education, Health and Human Services at UM-Dearborn.

Individuals who wish to apply for the Master of Arts in Early Childhood Education may obtain an application from the College of Education, Health and Human Services, University of Michigan-Dearborn 262 Fairlane Center South, 19000 Hubbard Drive, Dearborn, MI 48126-2638, telephone (313) 593-5090, or visit the website at [www.soe.umd.umich.edu](http://www.soe.umd.umich.edu).

## Minimum Grade Point

A cumulative grade point average of 5.0 (B) is required for continuation in the program. Courses in which grades of D, E, or U are earned cannot be used to fulfill degree requirements. Students whose cumulative grade point average falls below a 5.00 (B) will be placed on probation. Continued deficiencies will result in a required withdrawal from the program.

## Readmission

Students not registered for classes within one calendar year must submit a readmission form. Approval for readmission must be obtained in order to register for classes.

## Residency Requirements and Time Limits

Students seeking a master's degree must fulfill the residency requirement by completing at least one-half of the degree in courses offered by the UM-Dearborn. All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the program.

## Transfer of Credit

Students may apply for transfer of credit of a maximum of fifteen semester hours from any University of Michigan campus or six semester hours from another accredited collegiate institution. Only graduate credit hours earned during the last five years that relate to the program and for which a grade of B or better was received can be considered for transfer. Transfer credit can be requested only after admission to the program and completion of eight hours of graduate-level letter graded coursework. Correspondence and extension courses as well as Continuing Education Units (CEU) are not considered for transfer of credit. All courses to be transferred must be approved by the MA in Early Childhood Education Coordinator. A "Request for Transfer of Credit" form and an official copy of the transcript must be submitted. Enrolled students must obtain prior approval of the MA in Early Childhood Education Coordinator to elect classes off campus.

## Program of Study

This 30 (minimum) semester hour master's degree is divided into three parts: 1) Core Courses, 2) Professional Studies, and 3) Electives. Considerable flexibility is available in the elective area to satisfy individual interests and needs.

## Core Courses for all three program Options

.....9 hrs

The core sequence provides continuity and integration for all program options. Ideas of policy, change, growth and diversity are developed in the following courses.

EDC 531	Constructivist Education .....	3 hrs
EDC 540	Advanced Child Development .....	3 hrs
EDK 500	Introduction to Research in Education.....	3 hrs

Students are strongly recommended to elect at least one core class during the first year of work. Completion of all core classes is recommended within the first 20 credit hours. All core classes must be elected on the UM-Dearborn campus.

## The Master of Arts in Early Childhood Education with the Early Childhood (ZS) Endorsement

The Master of Arts in Early Childhood Endorsement (ZS) program is designed for certified elementary teachers wishing to gain competency in the general and special education of young children birth to eight. This program provides an inquiry-based constructivist early childhood curriculum development and an inclusive trans-disciplinary approach to early childhood education. This program requires fieldwork (EDD 594 Internship) at the UM-Dearborn Early Childhood Education Center during a summer semester.

### Professional Studies:

EDB 522	Leadership, Advocacy and Administration in Early Childhood.....	3 hrs
EDC 541	The Child: Birth to Three .....	3 hrs
EDC 542	Early Childhood: Family-School-Community Collaboration ....	3 hrs
EDC 545	Developmental Assessment of Young Child ...	3 hrs
EDD 536	Graduate Seminar in Early Childhood Education.....	3 hrs
EDD 546	Family-Centered Intervention Strategies for Children with Disabilities.....	3 hrs
EDD 594	Graduate Internship .....	3 hrs

### Electives:

ANTH 509	Human Growth and Culture .....	3 hrs
ANTH 521	Education and Culture .....	3 hrs
ANTH 525	Language and Society.....	3 hrs
EDC 512	Social Development and Positive Guidance Techniques.....	3 hrs
EDC 514	Young Child with Special Needs .....	3 hrs
EDC 546	Cognition and Memory .....	3 hrs
EDD 508	Practicum in Early Childhood Education .....	1 hr
EDD 516	Creative Teaching in Early Childhood.....	3 hrs
EDD 519	Early Literacy and Language Development.....	3 hrs
EXPS 507	Inquiry-Based Mathematics and Science for Young Children .....	3 hrs
EXPS 598	Exploring Writing with Children .....	3 hrs

(Other courses as approved by Early Childhood Coordinator)

<sup>1</sup> If an equivalent of EDC 514 or an Exceptional Child course was elected at the undergraduate level, then EDD 546 must be elected instead.

<sup>2</sup> Students who can provide evidence of at least 180 hours of supervised teaching experience with primary aged children (K-3rd grade) will not be required to take EDD 508.

Note: Undergraduate and graduate transcripts will be evaluated for courses relevant to early childhood education.

## Masters of Arts with Early Childhood Special Education Inclusion UMD Certificate

The Master of Arts in Early Childhood Education with Early Childhood Special Education Inclusion UM-Dearborn Certificate is a non-endorsement program for teachers holding an Early Childhood (ZA/ZS) endorsement. The unique internship opportunities offered in partnership with the Early Childhood Education Center and the Oakwood Center for Exceptional Families focus on inclusive early childhood theories and practices. The certificate program provides significant knowledge and skills for teaching children with disabilities using a trans-disciplinary inclusive approach.

### Professional Studies:

EDC 501	Introduction to Learning Disability.....	3 hrs
<sup>1</sup> EDC 514	Young Child with Special Needs.....	3 hrs
EDC 645	Transdisciplinary Approach: Assessment and Collaboration .....	3 hrs
EDD 536	Graduate Seminar in Early Childhood Education.....	3 hrs
EDD 546	Intervention Strategies for Early Childhood Special Education .....	3 hrs
EDD 650	Internship in Early Childhood Special Education .....	3 hrs
PDED 505	Special Education Legislation and Litigation.....	3 hrs

### Electives:

EDA 610	Seminar in Critical Pedagogy .....	3 hrs
EDB 522	Leadership, Advocacy and Administration in Early Childhood .....	3 hrs
EDC 512	Social Development and Positive Guidance Techniques.....	3 hrs
EDC 516	Creative Teaching in Early Childhood Education .....	3 hrs
EDC 541	The Child: Birth to Three .....	3 hrs
EDC 542	Early Childhood: Family-School-Community Collaboration .....	3 hrs
EDC 546	Cognition and Memory.....	3 hrs
EDD 519	Early Literacy and Language Development .....	3 hrs
EDN 501	Strategies for LD.....	3 hrs
EDN 505	Teaching Students with ADD.....	3 hrs
EDN 520	Introduction to Emotional Impairment.....	3 hrs
EXPS 507	Inquiry-Based Mathematics and Science in Young Children .....	3 hrs
EXPS 598	Exploring Writing with Children .....	3 hrs
ANTH 525	Language and Society.....	3 hrs
ANTH 521	Education and Culture .....	3 hrs

(Other courses as approved by Early Childhood Coordinator)

<sup>1</sup>If an equivalent of EDC 514 or an Exceptional Child course was elected at the undergraduate level, then EDD 546 must be elected instead.

### Notes:

• Undergraduate and graduate transcripts will be evaluated for courses relevant to Early Childhood Special Education Inclusion UM-Certificate. All required courses (or their equivalents) listed above must be elected.

## Master of Arts in Early Childhood for Early Childhood Administration and Leadership

The Master of Arts in Early Childhood Education for Early Childhood Administration and Leadership program is designed for non-certified professionals who are interested in early childhood leadership and administration. In the Early Childhood field there is a growing need for administrators and leaders in early childhood. This program will serve professionals (Directors, Education Coordinators and Curriculum Specialists) who need further preparation in supervision, and field experience in administration and leadership.

### Professional Studies:

EDB 522	Leadership, Advocacy and Administration in Early Childhood.....	3 hrs
EDB 540	School Budgeting and Finance.....	3 hrs
EDC 512	Social Development and Positive Guidance Techniques.....	3 hrs
EDC 645	Transdisciplinary Approach: Assessment and Collaboration.....	3 hrs
EDD 536	Graduate Seminar in Early Childhood Education .....	3 hrs
EDD 546	Family-Centered Intervention Strategies for Children with Disabilities .....	3 hrs
EDD 537	Administration Internship in Early Childhood Programs .....	3 hrs

### Electives:

EDA 610	Seminar in Critical Pedagogy .....	3 hrs
EDB 523	Legal and Regulation Issues .....	3 hrs
EDC 542	EC: Family-School-Community Collaboration .....	3 hrs
EDC 546	Cognition and Memory.....	3 hrs
EDD 519	Early Literacy and Language Development ....	3 hrs
EDT 585	Application of Technology for Administrators.....	3 hrs
EXPS 507	Inquiry-based Mathematics and Science for Young Children .....	3 hrs
EXPS 598	Exploring Writing with Children.....	3 hrs
PDED 505	Special Education Legislation and Litigation .	3 hrs

### Notes:

• Courses can be substituted with approval of early childhood coordinator.

• Undergraduate and graduate transcripts will be evaluated for courses relevant to Early Childhood Administration and Leadership.

## Advising

Students must plan their program with their assigned advisor or with the MA in Early Childhood Education Coordinator. Contact the College of Education, Health and Human Services at (313) 593-5090 for an advising appointment.

## Exit Essay

The purpose of the Exit Essay is to provide the College of Education, Health and Human Services with valuable information for program evaluation and program development. The completion of the Exit Essay may provide the students with an opportunity for reflection, synthesis and evaluation of their educational experiences at UM-Dearborn.

The Exit Essay is required for program completion. It is to be completed during the term in which the student is graduating from the program. Essays will not be graded. Forms for the Exit Essay are available from the College of Education, Health and Human Services Student Services Office or from the College of Education, Health and Human Service's website at [www.soe.umd.umich.edu](http://www.soe.umd.umich.edu).

## Graduation

Prior to your last semester in the program, contact the MA in Early Childhood Education Coordinator with your UMID# requesting an Exit Audit. The audit verifies your pending completion of all course requirements and is required for graduation. A diploma application must be submitted at the time of registration for the final semester.

## Master of Arts in Education

In conjunction with the Horace H. Rackham School of Graduate Studies, the College of Education, Health and Human Services of the UM-Dearborn offers a Master of Arts in Education degree. This is a degree, which is designed for educators who desire to fulfill all requirements for a University of Michigan master's degree, including residency, at UM-Dearborn. Courses are offered in the late afternoon, the early evening, and the summer in order to accommodate working students. Classes are taught by the faculty of the College of Education, Health and Human Services and CASL as well as by selected adjunct faculty who are specialists in their field.

The program is designed for educators, enabling them to (a) strengthen their knowledge of established research and best practices in their specific disciplines; (b) to become reflective, caring, and effective leaders within their respective disciplines at the classroom, school, and/or district level; and, (c) continue to develop their knowledge of research and best practices that lead to effective instructional strategies for all student achievement subject specialization. There are six areas of focus within the program: **Education**, in which students can design their own focus area of study, **Mathematics Education Enhancement and Leadership**, **Educational Technology**, **English as a Second Language**, **K-8 Mathematics**, and **Reading Specialist**. The last four can also satisfy the State Of Michigan Specialty Area Endorsements. For additional information visit the website at [http://www.soe.umd.umich.edu/soe\\_masters/](http://www.soe.umd.umich.edu/soe_masters/).

## Rules and Procedures

Since the Master of Arts in Education is authorized through the Horace H. Rackham School of Graduate Studies, it is the responsibility of each graduate student to be thoroughly

familiar with the Rackham academic policies which can be found at <http://www.rackham.umich.edu/policies/>.

## Admission

Eligibility for regular admission into the program includes completion of a bachelor's degree, a 3.0 (*B*) undergraduate grade point average or better, and a teaching certificate.

A completed Rackham application form, three recommendation forms with letters attached, a one-page statement of purpose, official transcripts from all colleges or universities attended, a copy of the applicant's current Michigan Teaching certificate (if seeking a Michigan endorsement), and the application fee must be submitted to the Graduate Coordinator in the College of Education, Health and Human Services at UM-Dearborn.

Individuals who wish to apply for the Master of Arts in Education may obtain an application from the College of Education, Health and Human Services, University of Michigan-Dearborn 262 Fairlane Center South, 19000 Hubbard Drive, Dearborn, MI 48126-2638, telephone (313) 593-5091 or from the website at [www.soe.umd.umich.edu/693073/](http://www.soe.umd.umich.edu/693073/).

## Minimum Grade Point

A cumulative grade point average of 5.0 (*B*) is required for continuation in the program. Courses in which grades of *D*, *E*, or *U* are earned cannot be used to fulfill degree requirements. Students whose cumulative grade point average falls below a 5.00 (*B*) will be placed on probation. Continued deficiencies will result in a required withdrawal from the Rackham program.

## Readmission

Students not registered for classes within one calendar year must submit a readmission form. Approval for readmission must be obtained in order to register for classes.

## Residency Requirements and Time Limits

Students seeking a master's degree must fulfill the residency requirement by completing at least one-half of the degree in courses offered by the UM-Dearborn. All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the Graduate School.

## Transfer of Credit

Students may apply for transfer of credit of a maximum of fifteen semester hours from any University of Michigan campus or six semester hours from another accredited collegiate institution. Only graduate credit hours earned during the last five years that relate to the program and for which a grade of *B* or better was received can be considered for transfer. Transfer credit can be requested only after admission to the program and completion of eight hours of Rackham graduate-level letter graded coursework. Correspondence and extension courses as well as Continuing



Education Units (CEU) are not considered for transfer of credit. All courses to be transferred must be approved by the MA in Education Program Coordinator. A "Request for Transfer of Credit" form and two official copies of the transcript must be submitted. Enrolled students must obtain prior approval of the MA Coordinator to elect classes off campus.

## Program of Study

This 30 (minimum) semester hour master's degree is divided into three parts: 1) Core Themes, 2) Professional Studies, and 3) Cognate Studies. Considerable flexibility is available in the professional and cognate areas to satisfy individual interests and needs.

### Core Themes.....9 hrs

The core sequence provides continuity and integration for all programs. Ideas of policy, change, growth and diversity are developed in the following courses.

EDA 501	Advanced Social Foundations of Ed .....	3 hrs
EDC 556	Learning and Classroom Assessment.....	3 hrs
	OR	
EDC 560	Reading: Diagnosis/Assessment Techniques, K-12 .....	3 hrs

With the exception of the MA in Ed in Reading Specialist, and MA with no endorsement EDC 560 and EDC 556 are both required.

EDK 500	Introduction to Research in Education.....	3 hrs
---------	--	-------

Nine credit hours in the Core are required for all. In some cases, EDC 560 Reading: Diagnosis and Assessment Techniques, K-12, may replace EDC 556.

### Professional Studies

The professional studies courses are offered through the College of Education, Health and Human Services. These courses are to be selected with the advisor's approval in consideration of the student's academic background and/or teaching assignments. The number of credits within this category varies.

### Cognate Studies

Cognate studies are approved graduate courses offered in the College of Arts, Sciences, and Letters, College of Business, or in the Public Administration Program. Courses should be selected with the advisor's approval in consideration of the student's academic background and/or teaching assignment.

Professional studies and cognate studies courses may be selected to enhance the student's current areas of specialty in elementary or secondary education or to obtain an additional area of specialization. These courses may be used to add a major or minor to the certificate. If an additional major or minor is to be added to the certificate, students must meet all the State of Michigan and UM-Dearborn certification requirements for that major or minor. Only courses required for

the major or minor, which are approved for graduate credit may be applied toward the MA program. Professional and cognate studies courses may also be used toward meeting the requirements for State teaching endorsements.

Details concerning the requirements and the appropriate coursework can be secured from the student's assigned advisor, the Master of Arts in Education program secretary, or from the College of Education, Health and Human Services Student Services Office. A more definitive description of the program is available from the College of Education, Health and Human Service's web page at [http://www.soe.umd.umich.edu/soe\\_masters/](http://www.soe.umd.umich.edu/soe_masters/).

## Advising

Students must plan their program with their assigned advisor or with the MA Coordinator. Contact the College of Education, Health and Human Services at (313) 593-5090 for an advising appointment.

## Petition

All graduate policies have been formulated by the Horace H. Rackham Graduate School and by the UM-Dearborn College of Education, Health and Human Services with the goal toward academic quality. This goal requires that policies be equitably and uniformly applied. However, there may be an infrequent extenuating circumstance that warrants individual consideration. In such a case, a petition to waive or modify a policy may be filed by the graduate student. Please see the Rackham Graduate Secretary for information and forms regarding the petition process.

## MA Exit Essay

The purpose of the MA Exit Essay is to provide the College of Education, Health and Human Services with valuable information for program evaluation and program development. The completion of the MA Exit Essay may provide the students with an opportunity for reflection, synthesis and evaluation of their educational experiences at UM-Dearborn

The Exit Essay is required for program completion. It is to be completed during the term in which the student is graduating from the program. Essays will not be graded. Information on how to complete the Exit Essay can be downloaded from the "Program Completion Requirements," on the MA in Education website, [http://www.soe.umd.umich.edu/soe\\_maed/](http://www.soe.umd.umich.edu/soe_maed/)

## Graduation

Students who plan to graduate in a specific semester should meet with their advisor or the Master of Arts in Education program coordinator for a program audit the semester before graduation. A formal graduation audit must be completed early in the last semester with the Master of Arts in Education program secretary or Master of Arts in Education program coordinator. A diploma application must be submitted at the time of registration for the final semester.

Program Options in the Master of Arts in Education

**NO ADDITIONAL ENDORSEMENT**

Core Courses (9 credit hours)

- EDA 501 Advanced Social Foundations of Education...3 hrs
- EDC 556 Learning and Classroom Assessment.....3 hrs
- EDK 500 Introduction to Research in Education.....3 hrs

**Professional Studies (10-16 credit hours)**

(Select graduate level courses from the College of Education, Health and Human Services)

**Electives:**

- EDC 560 Reading: Diagnostic and Assessment Tech K-12.....3 hrs

**Cognates (6-12 credit hours)**

(Select graduate level courses in a discipline other than education that are mainly offered in the College of Arts, Sciences, and Letters or the Public Administration program from one or two focus areas.)

**EDUCATIONAL TECHNOLOGY (NP) ENDORSEMENT**

Entry requirement is an undergraduate educational technology course or EDT 511.

Core Themes (9) credit hours

- EDA 501 Advanced Social Foundations of Education....3 hrs
- EDC 556 Learning and Classroom Assessment.....3 hrs
- OR
- EDC 560 Reading: Diagnostic & Assessment Tech, K-12 .....3 hrs
- EDK 500 Introduction to Research in Education.....3 hrs

Required

- EDT 501 Research, Trends, and Issues in Ed Tech.....3 hrs
- EDT 502 Survey of Prog/Authoring/Basic Tools.....3 hrs
- EDT 510 Teaching with Technology .....3 hrs
- EDT 514 Application of Instructional Design.....3 hrs
- EDT 520 Design of Technology-Based Learning .....3 hrs
- EDT 522 Development of Technology-Based Learning .3 hrs
- EDT 531 Leadership & PD in Educational Technology .3 hrs

**MATHEMATICS EDUCATION ENHANCEMENT AND LEADERSHIP PROGRAM**

Core Courses (9 credit hours):

Required:

- EDA 501 Advanced Social Foundations of Education...3 hrs
- EDC 556 Learning and Classroom Assessment.....3 hrs
- OR
- EDC 560 Reading: Diagnostic & Assessment Tech K-12.....3 hrs
- EDK 500 Introduction to Research in Education .....3 hrs

Professional Studies (12 credit hours):

Required:

- EDMA 511 Learning and Teaching Middle Grades Math ..3 hrs
- EDMA 512 Communication and Assess in Math Learning 3 hrs
- EDMA 521 Leadership in Mathematics Education.....3 hrs
- EDMA 525 Curriculum Dev't & Research in Math Ed .....3 hrs

Cognates (9 credit hours):

Required:

- MATH 545 Number & Proportional Reasoning for Teachers

- .....3 hrs
- MATH 546 Discrete Mathematics & Modeling for Teachers .....3 hrs
- MATH 549 Concepts of Calculus for Teachers.....3 hrs

**MATHEMATICS ENDORSEMENT**

Core Themes (9 credit hours)

Required:

- EDA 501 Advanced Social Foundations of Education....3 hrs
- EDC 556 Learning and Classroom Assessment.....3 hrs
- OR
- EDC 560 Reading: Diagnostic & Assessment Tech K-12 .....3 hrs
- EDK 500 Introduction to Research in Education.....3 hrs

Professional Studies (6-9 credit hours)

Required:

- EDMA 511 Learning and Teaching Middle Grades Math ..3 hrs
- EDMA 512 Communication & Assess in Math Learning..3 hrs

Electives:

- EDMA 521 Leadership in Mathematics Education .....3 hrs
- EDMA 525 Curriculum Development & Research in Math Ed .....3 hrs
- EDMA 590 Topics in Mathematics Education.....3 hrs
- EDT 510 Teaching with Technology .....3 hrs
- EDD 530 Curr & Strategies for Teaching, Middle Level .....3 hrs

Cognates (12-15 credit hours)

Required:

- MATH 542 Geometry for Teachers .....3 hrs
- MATH 543 Algebra for Teachers .....3 hrs
- MATH 544 Probability and Statistics for Teachers .....3 hrs
- MATH 545 Number & Proportional Reasoning for Teachers.....3 hrs

Electives:

- MATH 546 Discrete Math & Math Modeling for Teachers.....3 hrs
- MATH 547 Microcomputers in Mathematics for Teachers.....2 hrs
- MATH 549 Concepts of Calculus for Teachers .....3 hrs
- MATH 591 Topics in Mathematics for Teachers .....3 hrs
- MATH 586 Secondary School Mathematics for Teachers.....3 hrs
- MATH 598 Independent Study in Mathematics Education..... 1-6 hrs

**ENGLISH AS A SECOND LANGUAGE (NS) ENDORSEMENT**

Core Courses (9 credit hours):

Required:

- EDA 501 Advanced Social Foundations of Education ...3 hrs
- EDK 500 Introduction to Research in Education .....3 hrs
- EDC 556 Learning and Classroom Assessment.....3 hrs
- OR
- EDC 560 Reading: Diagnostic & Assessment Tech K-12 .....3 hrs

Professional Studies (6 credit hours):

Required:

- EDD 547 Teaching English as a Second Language .....3 hrs

EDD 548	Practicum: Teaching English as a Sec Lang .....	1 hr
EDC 555	Assessment in Second Language Learning .....	2 hrs

Cognates (15 credit hours):

Required:

ENGL 574	Second Language Acquisition.....	3 hrs
LING 580	Concepts in Linguistics .....	3 hrs
LING 576	Sociolinguistics.....	3 hrs

Choose two from below:

EDA 655	Language, Literacy, Culture & Power in Ed.....	3 hrs
LING 525	Language & Society .....	3 hrs
ENGL 561	Modern English Grammar .....	3 hrs
ENGL 582	History of English Language.....	3 hrs
ENGL 584	World Englishes .....	3 hrs

### READING SPECIALIST K-12 (BR) ENDORSEMENT

Core Courses (9 credit hours):

EDA 501	Advanced Social Foundations of Education.....	3 hrs
EDC 556	Learning and Classroom Assessment.....	3 hrs
EDK 500	Introduction to Research in Education.....	3 hrs

Professional Studies (18 credit hours):

Required:

EDD 519	Early Literacy and Language Development .....	3 hrs
EDB 503	Reading Programs: Organization & Management K-12.....	3 hrs
EDC 560	Reading: Diagnostic & Assessment Techs K-12.....	3 hrs
EDD 560	Reading: Clinical Practice Internship Seminar .....	3 hrs

For Holders of Elementary Teaching Certificates:

EDD 569	Reading in the Content Areas.....	3 hrs
EDC 502	Adolescent Development & Classroom Management .....	3 hrs

For Holders of Secondary Teaching Certificates:

EDD 568	Teaching Reading and Language Arts .....	3 hrs
EDC 540	Psychology of Child Growth and Development .....	3 hrs

Cognates (3 credit hours): To be selected with an advisor

## Master of Arts in Teaching (MAT) (Secondary School Certification)

The Master of Arts in Teaching program is designed for those who have completed a bachelor's degree in non-educational fields and wish to earn the State of Michigan Secondary School certification. Students in the MAT program will bring valuable experience and expertise to assist in their exploration of the practice of teaching. In addition to learning about adolescent learners and how to teach them, MAT coursework spurs students to think about the goals, values, beliefs and assumptions underlying formal schooling, and to consider schools in, social, political and historical context.

The MAT degree will be offered weekdays in the late afternoon and evening hours and/or Saturdays to enable students to earn

the degree through part-time study. Students who are employed will be able to complete the degree through after-work study except for the Directed Teaching requirement. This will occur during the last semester of each student's residency. Students have six years to complete the degree.

## MAT Program of Study Required Courses

The total number of credit hours required for the MAT degree is 36.

EDA 500	Theoretical Foundations of Education .....	3 hrs
EDB 500	Educational Trends in a Multicultural Society.....	3 hrs
EDC 502	Adolescent Devel. & Classrm Mgmt.....	3 hrs
EDC 554	Formal and Informal Evaluation .....	2 hrs
EDC 561	Educating the Exceptional Child .....	3 hrs
EDD 569	Reading in the Content Areas.....	3 hrs
EDT 511	Educational Technology.....	3 hrs
	Methods Course in the Major Area* .....	3 hrs
	Methods Course in the Minor Area*.....	3 hrs
EDD 518	Directed Teaching MAT.....	7-10 hrs

\*Secondary methods courses are as follows:

EDD 501	Teaching English, Secondary .....	3 hrs
EDD 565	Teaching Mathematics, Secondary School .....	3 hrs
EDD 580	Teaching Science, Secondary School .....	3 hrs
EDD 590	Teaching Social Studies, Secondary School .....	3 hrs
EDD 596	Teaching Second Language, Secondary.....	3 hrs

\*\*Secondary practicum courses are as follows:

EDD 554	Pract Adol Dev & Clsrm Mgmt.....	1 hr
EDD 502	Pract Eng Sec Grades.....	1 hr
EDD 566	Pract Math Sec Grades.....	1 hr
EDD 581	Pract Sci Sec Grades.....	1 hr
EDD 589	Pract Soc St Sec Grades.....	1 hr
EDD 596	Pract Sec Lang Tchg.....	1 hr

Prior to directed teaching, students must have compiled 90 hours experience working with groups of children. At least 45 of these hours must be with children in grades 6-12. Also, 45 of the 90 hours must be in an instructional setting. The 90 hours of pre-student teaching experience may consist of volunteer opportunities sometimes available in the College of Education, Health and Human Services and the University or may include similar self-arranged experiences; also, students may complete half or all of this obligation by completing one or two 45-hour graduate level practica (i.e., those associated with the methods courses in the major\* or minor\*, the Adolescent Development and Classroom Management Practicum, etc.; see practica listed at \*\*above). Where practicum experiences are selected as for gaining experiential work, students may be eligible for a reduced load of credit during student teaching.]

## Application

Prospective applicants may contact the MAT Program Coordinator or Graduate Secretary in Room 262 Fairlane

Center South. For more information and an application, telephone the Student Services Office at (313) 593-5090 or visit the web site at [www.soe.umich.edu/mat](http://www.soe.umich.edu/mat).

## Admission Requirements

Those seeking admission must schedule an intake interview with the program coordinator.

1. Applicants must also complete a signed and dated MAT Application.
2. Application with the fee attached. Fee is \$60.00 USD
3. Three letters of recommendation must be mailed on the forms provided.
4. A Statement of Purpose, which is a concise, well-organized discussion of the applicant's academic and career goals, must accompany the application as well as unofficial transcripts with the bachelor's degree posted.
5. Admission requires evidence of a minimum GPA of 3.0, normally demonstrated as the cumulative GPA from the applicant's baccalaureate degree or as the cumulative GPA from a completed graduate degree. Official transcripts will be required for admission to the program.
6. Full admission to the MAT program also requires satisfactory scores on the Michigan Test for Teacher Certification (MTTC) Basic Skills Test as well as satisfactory scores on the MTTC Subject Area Tests in both the major(s) and minor areas of concentration. All MTTC Tests must be passed satisfactorily prior to admission to the MAT Program.

When registering for the MTTC tests, applicants should request that scores be electronically reported to UM-Dearborn by the testing agency.

In addition, all coursework in the major(s) and minor areas must be completed in order to gain full admission to the MAT program. The teaching majors and minors currently available for the State of Michigan Secondary School certification are: Biology, Chemistry, Computer Science (minor only), Earth Science, Economics, English, Environmental Studies, French, General Science, German (minor only) History, Mathematics, Physics, Psychology (minor only) Political Science, Social Studies (major only), Sociology (minor only), Spanish and Speech.

During the period during in which students are completing their major/minor coursework and are preparing for MTTC Subject Area testing, students are typically permitted to progress with a limited amount of the program's professional coursework as "pre-MAT" students. You may learn more about this pre-MAT phase by contacting (313) 593-5091.

All coursework in the major(s) and minor areas must be completed in order to complete the MAT program. The teaching majors and minors currently available for the State of Michigan Secondary School certification are: Biology, Chemistry, Computer Science (minor only), Earth Science, Economics, English, Environmental Studies, French, General Science, German (minor only) History, Mathematics, Physics, Psychology (minor only), Political Science, Social Studies (major only), Sociology (minor only), Spanish, and Speech.

## Minimum Grade Point

A cumulative grade point average of 5.0 (*B*, or 3.0 employing a four-point scale) is required for continuation in the program. Students whose cumulative grade point average falls below this level will be placed on probation. Continued deficiencies will result in a required withdrawal from the MAT Program.

## Time Limits

All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the Graduate School.

## Master of Arts in Educational Leadership (MAEL)

The Master of Arts in Educational Leadership is designed to prepare students for roles in PK-12 school leadership. The program is approved by the Michigan Department of Education and meets MDE Standards for the Preparation of School Principals. Successful program completers are eligible, upon recommendation by the College of Education, Health and Human Services, to apply for the Michigan Department of Education School Administrator Certificate.

The MAEL curriculum emphasizes the knowledge and skill base required to meet the opportunities and challenges of PK-12 school administration. The courses are designed to develop educational leadership competency and skills in organizational administration, curriculum development, instructional leadership, personnel, finance, applications of technology, school community relations, data analysis, legal and regulatory issues, and program evaluation. An internship in educational administration is required in the final year of the program. Courses are offered in the evening, online, and Saturdays to accommodate the working professional.

## Admission Requirements

Eligibility for admission to the MAEL degree program requires a bachelor's degree from an accredited college or university with an undergraduate GPA of 3.0 or better on a 4.0 scale and a valid elementary or secondary teaching certificate. Successful completion of three years classroom teaching is required by the time of program completion to be eligible for recommendation to the Michigan Department of Education for the School Administrator Certificate.

Formal application to the Master of Arts in Educational Leadership program must be submitted on the Application for Graduate Admission-Master of Arts in Educational Administration form. Applications are available on-line at the College of Education, Health and Human Services web site or can be obtained at the College of Education, Health and Human Services Records Office. Applications should be completed and submitted to the College of Education, Health and Human Services Records Office along with the following supporting materials:

1. Official copy of the applicant’s baccalaureate degree transcript.
2. Official transcripts from all other colleges or universities attended.
3. Three letters of recommendation and completed recommendation forms.
4. A one page Statement of Purpose.
5. A copy of the applicant’s current Michigan Teaching Certificate.
6. A \$60.00 non-refundable application fee.

The Statement of Purpose should be a concise, well written essay about your background, your career goals, and how the Master of Arts in Educational Leadership Graduate program will help you meet your career goals. For answers to specific questions regarding the program or application process, applicants are invited to contact the MAEL program office at (313) 583-6333.

## Transfer of Credit

A limit of six (6) credit hours can be transferred from a non-University of Michigan school and 15 credit hours of University of Michigan credit that are applicable to the program of study and approved by the program coordinator. Only graduate course credit hours with a grade of *B* or better (3.0 on a 4.0 point scale) and earned in the five year period prior to acceptance into the program will be considered for transfer. Transfer credits may be requested only after admission to the Master of Arts in Educational Leadership program and successful completion of six (6) credit hours of letter-graded program coursework. A *Request for Transfer of Credit* form and official course descriptions and course syllabi must be submitted. Non-letter grades, e.g. pass-fail or satisfactory/unsatisfactory are not eligible for transfer credit. Courses cannot be transferred for credit if: a) they were not graduate level courses; b) they were already applied in whole or in part toward a degree; c) they were taken more than five years before beginning the MAEL program; or d) a grade below *B* (3.0 on a 4.0 scale) was earned. Enrolled students must obtain prior approval of the program coordinator to elect classes off campus.

## Time Limits

All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the Graduate School.

## Program of Study

The Master of Arts in Educational Leadership (MAEL) is a 33 credit hour degree program. A minimum cumulative GPA of *B* (3.0 on a 4.0 scale) must be maintained to continue enrollment in the program. Candidates must hold a valid elementary or secondary teaching certificate. The MAEL requires successful completion of the following courses:

EDB 505	Introduction to the Educational Administration .....	3 hrs
EDB 501	Leadership and Administration .....	3 hrs
EDB 540	School Budgeting and Finance.....	3 hrs

EDB 560	Administration of Human Resources .....	3 hrs
EDB 583	Program Evaluation .....	3 hrs
EDB 502	School and Community Relations .....	3 hrs
EDB 523	Legal and Regulatory Issues .....	3 hrs
EDB 586	Curriculum Deliberation and Development ....	3 hrs
EDT 585	Application of Technology for Administrators.....	3 hrs
EDB 720	Internship in School Administration .....	6 hrs

This program remains under on-going review to insure quality and compliance with University and Michigan Department of Education standards and requirements. Contact the program office at (313) 583-6333 for additional information or consult the College of Education, Health and Human Services web page at [http://www.soe.umd.umich.edu/soe\\_mael/](http://www.soe.umd.umich.edu/soe_mael/)

## Central Office Administration Certificate Program

### Program Description

The Central Office Administration Certificate Program is designed to prepare students for roles in PK-12 school district central office administration/leadership. The program is approved by the Michigan Department of Education and meets MDE Standards for the Preparation of Central Office Administrators. Upon successful completion of the program, students will be eligible for recommendation to the Michigan Department of Education for the Central Office Administration Certificate.

The program curriculum emphasizes the knowledge and skill base required to meet the opportunities and challenges of central office leadership in PK-12 school systems. The courses are designed to develop educational leadership competency and skills in organizational development, labor relations, human resource development, strategic planning, applications of technology, policy development, school community relations, data analysis, legal and regulatory issues, and evaluation of programs. An internship in central office administration is required in the final year of the program. Courses are offered in the evening, on-line, and Saturdays to accommodate the working professional.

### Admission Requirements

Eligibility for admission to the Central Office Administration Certificate program requires a bachelor’s degree from an accredited college or university with an undergraduate GPA of 3.0 or better on a 4.0 scale, submitted scores on the Graduate Record Exam (GRE), a valid elementary or secondary teaching certificate, a minimum of three years classroom teaching experience, completion of a master’s degree in educational administration/leadership with a GPA of 3.3 or better on a 4.0 scale, and a valid K-12 school administration certificate. Upon successful completion of the program, students will be eligible for recommendation to the Michigan Department of Education for the Michigan Department of Education Central Office Administrator Certificate.

### Application Process

Formal application to the Central Office Administration Certificate Program must be submitted to the College of Education, Health and Human Services Educational Leadership Program. Applications are available on-line at the College of Education, Health and Human Services web site or can be obtained at the College of Education, Health and Human Services Records Office. Applications should be completed and submitted to the College of Education, Health and Human Services Records Office along with the following supporting materials:

1. Official copy of the applicant's baccalaureate degree transcript;
2. Official copy of the applicant's master's degree transcript;
3. Official transcripts from all other colleges or universities attended;
4. Submission of Graduate Record Exam (GRE) test score results on the analytical, quantitative, and verbal tests;
5. A copy of the applicant's current Michigan Teaching Certificate;
6. A copy of the applicant's current Michigan School Administrator Certificate;
7. Three letters of recommendation attesting to the applicant's quality level of graduate work, potential for leadership impact in the field upon completion of the program, and other area related to ability to complete the program;
8. A one page Statement of Purpose including academic interests, professional goals, and personal/unique potential for contribution to the field of central office administration;
9. A \$60.00 non-refundable application fee.

The Statement of Purpose should be a concise, well written essay about your educational background, academic interests, and how the Central Office Administration Certificate will help you meet your career goals and service to PK-12 schools. For answers to specific questions regarding the program or application process, applicants are invited to contact the program office at 313-583-6333.

## Transfer of Credit

A limit of six (6) credit hours that are applicable to the program of study and approved by the program coordinator can be transferred from a non-University of Michigan accredited college or university. Only graduate course credit hours with a grade of *B* or better (3.0 on a 4.0 point scale) and earned in the five year period prior to acceptance into the program will be considered for transfer. Transfer credits may be requested only after admission to the Central Office Administration Certificate program and successful completion of six (6) credit hours of letter-graded program coursework. A *Request for Transfer of Credit* form and official course descriptions and course syllabi must be submitted. Non-letter grades, e.g. pass-fail or satisfactory/unsatisfactory are not eligible for transfer credit. Courses cannot be transferred for credit if: a) they were not graduate level courses; b) they were already applied in whole or in part toward a degree; c) they were taken more than five years before beginning the certificate program; or d) a grade below *B* (3.0 on a 4.0 scale) was earned. Enrolled students

must obtain prior approval of the program coordinator to elect classes off campus.

## Residency Requirements and Time Limits

Students seeking a Central Office Administration Certificate fulfill the residency requirement by completing at least one-half of their degree in courses offered by the University of Michigan-Dearborn. All coursework toward the Central Office Administration Certificate must be completed within six consecutive years from the date of first enrollment in the program. Students whose grade point average falls below a *B* (3.0 on a 4.0 scale) will be placed on probation. Grades of *D+* or lower do not count toward graduation but are calculated as 0 for GPA purposes. Continued deficiencies will result in a required withdrawal from the program.

## The Central Office Administration Certificate Program of Study

The Central Office Administration Certificate program of study is part of the 36 credit hour Education Specialist degree program or Doctor of Education degree program beyond an earned master's degree in educational administration/leadership. A minimum cumulative GPA of *B* (3.0 on a 4.0 scale) must be maintained to continue enrollment in the program. Candidates must hold a valid and current elementary or secondary teaching certificate and a valid and current school administrator certificate. The program requires successful completion of the following courses:

EDB 721	Internship in Central Office Administration ....	3 hrs
EDB 722	Seminar in Educational Leadership .....	3 hrs
EDB 724	Superintendency .....	3 hrs
EDB 725	Ethical Leadership .....	3 hrs
EDB 762	Labor Relations in School Settings .....	3 hrs
EDB 807	Strategic Communication for Administrators .....	3 hrs
EDB 861	Organizational Development.....	3 hrs
EDB 881	Strategic Planning and Needs Assessment.....	3 hrs
EDB 882	Policy Analysis and Development .....	3 hrs
EDT 785	Technology for Administrators .....	3 hrs

The Internship in Central Office Administration requires sustained practice in multiple central office positions under the mentorship of a practicing central office administrator. This program remains under on-going review to insure quality and compliance with University and Michigan Department of Education standards and requirements. Contact the program office at (313) 583-6333 for additional information or consult the College of Education, Health and Human Services web page at [www.soe.umd.umich.edu](http://www.soe.umd.umich.edu)

## School Principal Certificate Program

### Program Description

The School Principal Certificate is part of the 33 credit hour MAEL degree program. A minimum cumulative GPA of *B* (3.0 on a 4.0 scale) must be maintained to continue enrollment in the program. Candidates must hold a valid elementary or

secondary teaching certificate. The certificate program requires successful completion of the following courses:

EDB 505	Introduction to the Educational Administration .....	3 hrs
EDB 501	Leadership and Administration .....	3 hrs
EDB 540	School Budgeting and Finance.....	3 hrs
EDB 560	Administration of Human Resources .....	3 hrs
EDB 581	Program Evaluation .....	3 hrs
EDB 502	School and Community Relations.....	3 hrs
EDB 523	Legal and Regulatory Issues.....	3 hrs
EDB 586	Curriculum Deliberation and Development .....	3 hrs
EDT 585	Application of Technology for Administrators .....	3 hrs
EDB 720	Internship in School Administration .....	6 hrs

This program remains under on-going review to insure quality and compliance with University and Michigan Department of Education standards and requirements. Contact the program office at (313) 583-6333 for additional information or consult the College of Education, Health and Human Services web page at [www.soe.umich.edu](http://www.soe.umich.edu)

## Admission Requirements

The School of Principal Certificate program of study is part of the 33 credit hour Master of Arts in Educational Leadership. Eligibility for admission to the School Principal Certificate program requires a master's degree from an accredited college or university with a graduate GPA of 3.0 or better on a 4.0 scale and a valid elementary or secondary teaching certificate. Successful completion of three years classroom teaching is required by the time of program completion to be eligible for recommendation to the Michigan Department of Education for the school administrator certificate.

## Application Process

Formal application to the School Principal Certificate program must be submitted on the Application for Graduate Admission-Master of Arts in Educational Administration form. Applications are available on-line at the College of Education, Health and Human Services web site or can be obtained at the College of Education, Health and Human Services Records Office. Applications should be completed and submitted to the College of Education, Health and Human Services Records Office along with the following supporting materials:

1. Official copy of the applicant's baccalaureate degree transcript.
2. Official transcripts from all other colleges or universities attended.
3. Three letters of recommendation.
4. A one page Statement of Purpose.
5. A copy of the applicant's current Michigan Teaching Certificate.
6. A \$60.00 non-refundable application fee.

The Statement of Purpose should be a concise, well written essay about your background, your career goals, and how the School Principal Certificate program will help you meet your career goals. For answers to specific questions regarding the

program or application process, applicants are invited to contact the MAEL program office at (313) 583-6333.

## Transfer of Credit

A limit of six (6) credit hours can be transferred from a non-University of Michigan school and 15 credit hours of University of Michigan credit that are applicable to the program of study and approved by the program coordinator. Only graduate course credit hours with a grade of *B* or better (3.0 on a 4.0 point scale) and earned in the five year period prior to acceptance into the program will be considered for transfer. Transfer credits may be requested only after admission to the School Principal Certificate program and successful completion of six (6) credit hours of letter-graded program coursework. A *Request for Transfer of Credit* form and official course descriptions and course syllabi must be submitted. Non-letter grades, e.g. pass-fail or satisfactory/unsatisfactory are not eligible for transfer credit. Courses cannot be transferred for credit if: a) they were not graduate level courses; b) they were already applied in whole or in part toward a degree; c) they were taken more than five years before beginning the School Principal Certificate program; or d) a grade below *B* (3.0 on a 4.0 scale) was earned. Enrolled students must obtain prior approval of the program coordinator to elect classes off campus.

## Residency Requirements and Time Limits

Students seeking a School Principal Certificate must fulfill the residency requirement by completing at least one-half of their degree in courses offered by the University of Michigan-Dearborn. All coursework toward the School Principal Certificate must be completed within five consecutive years from the date of first enrollment in the graduate program. Students whose grade point average falls below a *B* (3.0 on a 4.0 scale) will be placed on probation. Grades below *C-* do not count toward graduation but are calculated as 0 for GPA purposes. Continued deficiencies will result in a required withdrawal from the certificate program.

## Master of Arts in Educational Technology (EDET)

The Masters of Arts in Educational Technology program is designed for educators interested in developing expertise in the effective use of various forms of educational technology in teaching and learning. The program can be completed fully online and offers professionals advanced knowledge in a broad range of educational technologies. In addition, students will learn how to integrate technology across the curriculum in face-to-face, hybrid and online settings. Individuals who teach in k-12 schools, colleges and universities, private industry and other instructional settings will find this program useful for increasing their overall effectiveness in the field of educational technology and their ability to utilize proven pedagogical practices.

## Admission Requirements



Eligibility for admission to the EDET degree program requires a bachelor's degree from an accredited college or university with an undergraduate GPA of 3.0 or better on a 4.0 scale.

Formal application to the Master of Arts in Educational Technology program can be submitted on the Application for Graduate Admission-Master of Arts in Educational Technology form or online. Applications are available on-line at the College of Education, Health and Human Services web site or can be obtained at the College of Education, Health and Human Services Records Office. Applications should be completed and submitted to the College of Education, Health and Human Services Records Office along with the following supporting materials:

1. Official copy of the applicant's baccalaureate degree transcript.
2. Official transcripts from all other colleges or universities attended.
3. Three letters of recommendation and completed recommendation forms.
4. A \$60.00 non-refundable application fee.

For answers to specific questions regarding the program or application process, applicants are invited to contact the EDET program office at (313) 593-5090.

## Transfer of Credit

A limit of six (6) credit hours can be transferred from a non-University of Michigan school and 15 credit hours of University of Michigan credit that are applicable to the program of study and approved by the program coordinator. Only graduate course credit hours with a grade of *B* or better (3.0 on a 4.0 point scale) and earned in the five year period prior to acceptance into the program will be considered for transfer. Transfer credits may be requested only after admission to the Master of Arts in Educational Technology program and successful completion of eight (8) credit hours of letter-graded program coursework. A *Request for Transfer of Credit* form and official course descriptions and course syllabi must be submitted. Non-letter grades, e.g. pass-fail or satisfactory/unsatisfactory are not eligible for transfer credit. Courses cannot be transferred for credit if: a) they were not graduate level courses; b) they were already applied in whole or in part toward a degree; c) they were taken more than five years before beginning the EDET program; or d) a grade below *B* (3.0 on a 4.0 scale) was earned. Enrolled students must obtain prior approval of the program coordinator to elect classes off campus.

## Time Limits

All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the Graduate School.

## Program of Study

The Master of Arts in Educational Technology (EDET) is a 30 credit hour degree program. A minimum cumulative GPA of *B* (3.0 on a 4.0 scale) must be maintained to continue enrollment

in the program. The EDET requires successful completion of the following courses:

### *Educational Technology Required Coursework*

EDT 501	Research, Trends and Issues in Educational Technology .....	3 hrs
EDT 502	Survey of Programming/Authoring/Basic Tools .....	3 hrs
EDT 510	Teaching with Technology .....	3 hrs
EDT 514	Application of Instructional Design .....	3 hrs
EDT 520	Design of Technology-Based Learning.....	3 hrs
EDT 522	Development of Technology-Based Learning.....	3 hrs
EDT 531	Leadership and Professional Development in Educational Technology.....	3 hrs

### Foundational Masters Classes: Select 3 courses

EDA 501	Advanced Social Foundations of Education.....	3 hrs
EDC 505	Adult Learning Process .....	3 hrs
EDC 531	Constructivist Education .....	3 hrs
EDC 556	Learning and Classroom Assessment.....	3 hrs
EDC 560	Reading: Diagnostic and Assessment Techniques K-12.....	3 hrs
EDC 554	Formal and Informal Testing & Evaluation.....	3 hrs
EDK 500	Introduction to Research in Education.....	3 hrs

This program remains under on-going review to insure quality and compliance with University standards and requirements. Contact the program office at (313) 593-5090 for additional information or consult the College of Education, Health and Human Services web page at [http://www.so.e.umich.edu/soe\\_ma\\_ed\\_tech/](http://www.so.e.umich.edu/soe_ma_ed_tech/).

## Online Teaching Certificate Program

### Program Description

This certificate program is designed to help individuals learn how to design, develop, and implement online instructional modules for a broad range of learners. The program consists of four classes for a total of 12 credits and would be suitable for anyone interested in becoming more proficient in the area of online teaching. Students will learn how to use a wide-range of technologies to facilitate online learning and have the opportunity to implement many of the online modules they create in order to increase their confidence and competence in web-based instruction. Coursework also emphasizes research-based pedagogical practices and instructional design. This certificate is granted by the College of Education, Health and Human Services and is not a university or state administered certification.

### Admission Requirements

Eligibility for admission to the Online Teaching Certificate program requires a bachelor's degree from an accredited college or university with an undergraduate GPA of 2.75 or better on a 4.0 scale.

### Application Process



Formal application to the Online Teaching Certificate Program must be submitted to the College of Education, Health and Human Services Educational Technology Program. Applications are available on-line at the College of Education, Health and Human Services web site or can be obtained at the College of Education, Health and Human Services Records Office. Applications should be completed and submitted to the College of Education, Health and Human Services Records Office along with the following supporting materials:

1. Official copy of the applicant's baccalaureate degree transcript;
2. Official transcripts from all other colleges or universities attended;

For answers to specific questions regarding the program or application process, applicants are invited to contact the program office at 313-593-5090.

## Transfer of Credit

Transfer credit is not accepted for the Online Teaching Certificate Program.

## Time Limits

All coursework toward the Online Teaching Certificate must be completed within 3 consecutive years from the date of first enrollment in the program. Students whose grade point average falls below a *B* (3.0 on a 4.0 scale) will be placed on probation.

## The Online Teaching Certificate Program of Study

The Online Teaching Certificate program of study is 12 credit hours. A minimum cumulative GPA of *B* (3.0 on a 4.0 scale) must be maintained to continue enrollment in the program. The program requires successful completion of the following courses:

EDT 502	Survey of Programming/Authoring/ Basic Tools .....	3 hrs
EDT 514	Application of Instructional Design .....	3 hrs
EDT 520	Design of Technology-Based Learning.....	3 hrs
EDT 522	Development of Technology-Based Learning.....	3 hrs

Contact the program office at (313) 593-5090 for additional information or consult the College of Education, Health and Human Services web page at <http://www.soe.umich.edu/695317/>.

## Master of Education in Special Education

The Master of Education in Special Education provides students with advanced training in special education. The MEd-SPED offers three possible concentrations:

**1) Learning Disabilities.** The Learning Disabilities concentration includes all of the coursework needed to earn the master's degree and the State of Michigan, Learning Disabilities Endorsement.

Candidates must pass the MTTC and hold a Michigan teaching certificate.

**2) Emotional Impairments.** The Emotional Impairments concentration includes all of the coursework needed to earn the master's degree and State of Michigan, Emotional Impairments Endorsement. Candidates must pass the MTTC and hold a Michigan teaching certificate.

**3) Inclusion Specialist.** The Inclusion Specialist concentration includes all of the coursework needed to serve students with disabilities in inclusive environments. In addition to the master's degree, graduates receive a UM-Dearborn Inclusion Specialist Certificate.

## Objectives

The College of Education, Health and Human Services offers an endorsement program in K-12 learning disabilities and K-12 emotional impairments for certified teachers. These endorsements may be earned in the context of a 30-credit Master of Education in Special Education degree. The program is a local program that is designed for working educators and offers evening coursework and summer internship placements.

The College of Education, Health and Human Services also offers a Master of Education in Special Education degree with an UM-Dearborn Inclusion Specialist Certificate. This program is a 30-credit hour online degree program that provides K-12 general-education teachers, administrators, social workers and other professionals an opportunity to gain the skills needed to teach students with disabilities in general education classrooms and mainstream settings. The Master of Education degree with an Inclusion Specialist Certificate program does not require a teaching certificate; furthermore, this program does not lead to teaching certification nor will it lead to an endorsement.

The Special Education Program enhances educational and career options by:

- a) extending job opportunities from general education to learning disabilities or emotional impairments resource, consulting, and tutoring positions;
- b) addressing the competencies needed for graduates to teach and serve students with disabilities in a variety of inclusive settings;
- c) providing the background for graduates to seek special education administrative endorsements;
- d) preparing graduates to work collaboratively with various educators and parents; and
- e) providing the requisite skills needed for graduates to pursue doctoral studies in special education.

## Admission

Eligibility for entrance into the program includes completion of a bachelor's degree with a 3.0 (*B*) grade point average, and a Michigan Teaching Certificate (except for the Inclusion Specialist Certificate program).

For educational purposes, a wide mix of administrative activities and skills are desirable. All potential students, regardless of background or specialization, are encouraged to apply. Arrangements for completing any deficiencies will be made at the initial advising session.

Formal application will be made on the "Application for Graduate Admission, Master of Education - Special Education Degree Program". Since enrollment to the program is limited, applicants should pay special attention to the "Statement of Purpose" in the application.

## Application

Applications should be completed and include one official copy of the applicant's undergraduate transcript with the degree posted, official transcripts from all other colleges or universities attended, two letters of recommendation, a statement of purpose, a copy of the Michigan Teaching Certificate (except for those applying for the Inclusion Specialist Certificate program), and the \$60.00 USD non-refundable application fee attached.

For answers to specific questions, applicants may either telephone (313) 436-9135 or contact the Program Coordinator, Dr. Belinda Lazarus, at (313) 436-9136.

## Graduate Non-Candidate for Degree (GNCFD)

Graduate Non-Candidate for Degree (GNCFD) are for those students who have missed the application deadline date to apply for the program or for those who would like to take a course to see what the program is like. GNCFD status allows you to take some graduate-level courses for graduate credit, but does not admit you to the Master of Education in Special Education Program. Further, GNCFD status does not guarantee admission to the Master in Special Education Program. Once the student has been accepted to the Master of Education in Special Education Program, those courses taken as a GNCFD can be transferred into the program. Six hours as a GNCFD are the maximum allowed to transfer, and the student must achieve a B or better in each course that transfers.

For further information regarding the GNCFD status, please contact the Special Education Office, 262 Fairlane Center South, 19000 Hubbard Drive, Dearborn, MI 48126-2638, or telephone (313) 436-9135.

## Transfer of Credit

For transfer courses, whether they are University of Michigan or non-University of Michigan, certain criteria must be met before the transfer application is made and in order for courses to transfer. There is a limit of six hours that can transfer from a non-University of Michigan school and 15 hours of University of Michigan credit as long as the courses apply to this program. Students are fully responsible for accurately planning their degree program. For additional information, please consult the program coordinator, the current *Schedule of Classes*, the Special Education secretary, or the UM-Dearborn *Graduate Catalog*.

## Time Limits

All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the Graduate School.

## Program Requirements

### Master of Education in Special Education with a K-12 Learning Disabilities Endorsement (Michigan)

Candidates for the K-12 Learning Disabilities Endorsement must have a bachelor's degree from an accredited college or university and a Michigan teaching certificate. The Learning Disabilities endorsement requires a total of 30 credit hours of coursework. These courses are also applied toward the completion of the Master of Education in Special Education.

EDC 501	Introduction to Learning Disabilities .....	3 hrs
EDC 517	Classroom Management .....	3 hrs
EDD 513	Internship - Elementary .....	2 hrs
EDD 515	Internship – Secondary .....	2 hrs
EDK 680	Individual Research in Education .....	3 hrs
EDN 501	Strategies for Learning Disabilities .....	3 hrs
EDN 502	Social and Vocational Transitions .....	3 hrs
EDN 503	Assessment of the Learner.....	3 hrs
EDN 504	Assessment Practicum .....	1 hr
EDN 506	Collaboration in the Classroom.....	3 hrs
EDN 508	Internship Seminar.....	1 hr
PDED 505	Special Education Legislation and Litigation .....	3 hrs

### Second-Area Special Education Learning Disabilities Endorsement-Only Requirements

Candidates desiring a second-area special education endorsement in Learning Disabilities must have a bachelor's degree from an accredited college or university and a full Michigan teaching certificate in any other special education category (emotional impairments, mental impairments, visual or hearing impairments, etc.). The second-area endorsement requires 15 semester hours.

EDC 501	Introduction to Learning Disabilities .....	3 hrs
EDN 501	Strategies for Learning Disabilities .....	3 hrs
EDN 503	Assessment of the Learner.....	3 hrs
EDN 504	Assessment Practicum .....	1 hr
EDN 508	Internship Seminar: LD.....	1 hr
EDD 513	Internship-Elementary .....	2 hrs
EDD 515	Internship-Secondary.....	2 hrs

### Master of Education in Special Education and Full K-12 Emotional Impairments Endorsement (Michigan)

Candidates for the K-12 Emotional Impairments Endorsement must have a bachelor's degree from an accredited college or university and a Michigan teaching certificate. The Emotional Impairments full endorsement requires a total of 30 credit hours

of coursework. These courses are also applied toward the completion of the Master of Education in Special Education.

EDC 517	Classroom Management .....	3 hrs
EDK 680	Individual Research in Education .....	2 hrs
EDN 502	Social and Vocational Transitions.....	3 hrs
EDN 506	Collaboration in the Classroom.....	3 hrs
EDN 520	Introduction to Emotional Impairments .....	3 hrs
EDN 521	Practicum at Psychiatric Facility .....	1 hr
EDN 522	Emotional Impairments Internship .....	3 hrs
EDN 523	Strategies: Emotional Impairments .....	3 hrs
EDN 524	Counseling Families of Students with Emotional Impairments .....	2 hrs
EDN 525	Eco-Behavioral Assessment .....	3 hrs
EDN 526	Eco-Behavioral Assessment Practicum .....	1 hr
PDED 505	Special Education Legislation and Litigation.....	3 hrs

### Master of Education in Special Education and Inclusion Specialist Certificate

The Inclusion Specialist Certificate enables K-12, general-education teachers, administrators, social workers, and other professionals to gain the skills needed to teach and support students with disabilities in general education classrooms and the community. A teaching certificate is not required for the Inclusion Specialist program. The 30-credit-hour master’s degree requires coursework in the following areas:

EDC 501	Introduction to Learning Disabilities .....	3 hrs
EDC 517	Classroom Management .....	3 hrs
EDN 501	Strategies: Learning Disabilities.....	3 hrs
EDN 523	Strategies: Emotional Impairments .....	3 hrs
EDN 502	Social and Vocational Transitions.....	3 hrs
EDN 503	Assessment of the Learner.....	3 hrs
EDN 525	Eco-Behavioral Assessment .....	3 hrs
EDN 506	Collaboration in the Classroom.....	3 hrs
EDN 520	Introduction to Emotional Impairments .....	3 hrs
PDED 505	Special Education Legislation and Litigation.....	3 hrs

### Second-Area Special Education Emotional Impairments Endorsement Only

Candidates desiring a second-area special education endorsement in Emotional Impairments must have a bachelor’s degree from an accredited college or university and a full Michigan teaching certificate in any other special education category (learning disabilities, mental impairments, visual or hearing impairments, etc.). The second-area endorsement requires 15 semester hours.

EDN 520	Introduction to Emotional Impairments .....	3 hrs
EDN 521	Practicum at Psychiatric Facility .....	1 hr
EDN 522	Emotional Impairments Internship.....	3 hrs
EDN 523	Strategies: Emotional Impairments .....	3 hrs
EDN 524	Counseling Families of Students with Emotional Impairments .....	2 hrs
EDN 525	Eco-Behavioral Assessment .....	3 hrs
EDN 526	Eco-Behavioral Assessment Practicum.....	1 hr

Michigan teacher endorsement requirements in special education, learning disabilities, or emotional impairments may change. It is the applicant’s or student’s responsibility to ascertain current requirements. The College of Education, Health and Human Services reserves the right to revise the learning disabilities and emotional impairments program without notice should state endorsement standards change. The College of Education, Health and Human Services will endeavor to provide students with a state-approved program leading to the appropriate state endorsements.

For transfer courses, whether they are University of Michigan or non-University of Michigan, certain criteria must be met before the transfer application is made and in order for courses to transfer. There is a limit of six hours that can transfer from a non-University of Michigan school and 15 hours of University of Michigan credit as long as the courses apply to this program.

Students are fully responsible for accurately planning their degree program. For additional information, please consult the Program Secretary, the Program Coordinator, the current *Schedule of Classes*, or the *UM-Dearborn Graduate Catalog*.

### Master of Science in Science Education (MSSE)

The Master of Science in Science Education (MSSE) is designed for teachers at all levels who wish to further their knowledge of science as well as science pedagogy. The MSSE is based on the research underlying the *National Science Education Standards*.

The program is designed for professionals who possess either an elementary or secondary teaching certificate. MSSE students can elect to integrate studies of either literacy or the environment into their curriculum. To accommodate the different science content background of teachers with elementary or secondary certificates, this degree program has two tracks: one for K-8 teachers (Track I) and one for 6-12 teachers with BS or BA degrees in a science discipline (Track II). Depending on a student’s background, a combination of the Tracks may be appropriate at the discretion of the MSSE Coordinator. The degree consists of 30 semester hours, available to both full and part-time students although courses will be primarily offered during the late afternoon and evening sessions or in the summer to accommodate the working professional.

### Time Limits

All coursework toward the master's degree must be completed within five (5) consecutive years from the date of first enrollment in the Graduate School.

### MSSE Requirements

**Track I** ..... 30 hrs

**Science Content** ..... 9 hrs

NSCI 531    Advanced Learning by Inquiry:

	Physical Sciences .....	3 hrs
NSCI 532	Advanced Learning by Inquiry: Earth Sciences .....	3 hrs
NSCI 533	Advanced Learning by Inquiry: Life Sciences .....	3 hrs

**Pedagogy** ..... 9 hrs

EDD 575	Integrating Science and Literacy .....	3 hrs
EDD 685	Advanced Teaching of Elementary Science ...	3 hrs
EDT 510	Teaching With Technology .....	3 hrs

**Assessment** ..... 8-9 hrs

EDC 554	Evaluation of Classroom Learning.....	2 hrs
or		
EDC 556	Learning and Classroom Assessment.....	3 hrs
EDK 500	Introduction to Research in Education .....	3 hrs
EXPS 520	Science Education Action Research .....	3 hrs

**Electives** ..... 3-4 hrs

Consult with the program advisor for eligible electives.

**Track II** ..... 30 hrs

**Science Content** ..... 9 hrs

Science content as advised

**Pedagogy** ..... 9 hrs

EDD 574	Environmental Education.....	3 hrs
or		
EDD 586	Environmental Interpretation .....	3 hrs
EDD 680	Advance Teaching of Secondary Science.....	3 hrs
EDT 510	Teaching with Technology.....	3 hrs

**Assessment** ..... 8-9 hrs

EDC 554	Evaluation of Classroom Learning.....	2 hrs
or		
EDC 556	Learning and Classroom Assessment.....	3 hrs

EDK 500	Introduction to Research in Education.....	3 hrs
EXPS 520	Science Education Action Research .....	3 hrs

**Electives** ..... 3-4 hrs

Consult with the program advisor for eligible electives.

## Transfer of Credit

Students may apply for transfer of credit of a maximum of 15 semester hours from applicable University of Michigan graduate courses. Students may apply to transfer six semester hours from another accredited graduate institution. Only graduate course credit hours earned during the last five years for which a grade of *B* or better was received will be considered for transfer. Transfer credit may be requested only after admission to the Master of Science in Science Education program and successful completion of eight credit hours of

graduate-level letter-graded coursework. All courses to be transferred must be approved by the Coordinator of the Master of Science in Science Education program. A "Request for Transfer of Credit" form and official course descriptions and course syllabi must be submitted. Enrolled students must obtain prior approval of the Coordinator to elect classes off campus.

## Admission Requirements

All applicants must submit evidence of each of the following to the MSSE Program Coordinator:

- 1) A baccalaureate degree and a teaching certificate.
- 2) A 3.0 (*B*) or higher grade point average (GPA is based on a 4.0).
- 3) An official transcript from college or university granting the undergraduate degree and one from each college or university attended.
- 4) Two recommendations from supervisors or university faculty.
- 5) A one-page statement of philosophy of teaching science.
- 6) A one-page statement of educational and career goals.
- 7) A \$60.00 non-refundable application fee.

## Track I

Evidence of passing the Integrated Science section of the Michigan Test for Teacher Certification (MTTC) at the elementary level. (Students may be provisionally admitted to Track I without the MTTC. Additional coursework may be required in that case.)

## Track II

Evidence of passing the appropriate science sections of the MTTC (for major and/or minor)

For more information, visit

[http://www.soe.umich.edu/soe\\_msse/](http://www.soe.umich.edu/soe_msse/) or call 313-583-6333.

## Center for Mathematics Education

The Center for Mathematics Education provides professional development for classroom teachers (K-12) of mathematics that is long-term, sustained, collaborative, school-based, linked to curricula, and focused on student learning. The professional development sessions emphasize a deeper understanding of the mathematics the teachers teach and best practices for teaching that mathematics.

Much of the Center's work is in collaboration with intermediate school districts (ISD). The Center partners with mathematics consultants at the ISD on the content and delivery of the professional development and the sessions are often held at the ISD. Sessions are frequently delivered as courses that may be elected for credit or for Michigan state board continuing education units (SB-CEUs). Typically the courses meet for five 6-hour school days spread out over three to five months. The calendar is designed to accommodate school districts and teachers. In this format, the courses carry two

hours of graduate credit. Tuition for these courses is at a reduced rate. Thanks to the efforts of the Center and its partners, it is meeting its goal of being a primary source for teachers and districts, and impacting classroom learning environments and student achievement. Many teachers with an elementary certificate have been able to obtain an endorsement in mathematics on their certificate through the credit courses offered by the Center.

The Center also collaborates with the mathematics education faculty at the University of Michigan-Dearborn as they provide an undergraduate program for people working to obtain a teaching certificate and a graduate program for certified K-12 teachers. The latter is part of a Master of Arts in Education degree with a specialty in Mathematics Education Enhancement and Leadership.

## Master of Arts in Education: Mathematics Education Enhancement and Leadership

### Mathematics Education Enhancement and Leadership Program

This program welcomes teachers who are certified at the elementary or secondary level with a mathematics endorsement (EX), who are interested in becoming more learned in the teaching and learning of mathematics across all levels, K-12, and who may in the future seek mathematics education leadership roles in schools or school districts. The program is 30 credit hours (ten 3-hour courses) and provides stimulating, collegial, research- and practice-based learning centered on national and state frameworks.

#### I. Core Component Studies ..... 9 hrs

The core sequence provides continuity and integration for all programs. Ideas of policy, change, growth and diversity are developed in the following courses.

EDA 501	Advanced Social Foundations of Ed .....	3 hrs
EDC 556	Learning and Classroom Assessment .....	3 hrs
or		
EDC 560	Reading Diagnostic and Assessment Techniques K-12 .....	3 hrs
EDK 500	Introduction to Research in Education .....	3 hrs

Students are strongly recommended to elect at least one core class during the first year of work. Completion of all core classes is recommended within the first 20 credit hours. All core classes must be elected on the UM-Dearborn campus.

#### II. Professional Studies ..... 12 hrs

##### Required

EDMA 511	Learning and Teaching Middle Grade Mathematics .....	3 hrs
EDMA 512	Communication and Assessment in Mathematics Learning .....	3 hrs
EDMA 521	Leadership in Mathematics Education .....	3 hrs

EDMA 525	Curriculum Development & Research in Mathematics Education .....	3 hrs
----------	---	-------

##### Electives

EDMA 590	Topics in Mathematics Education .....	3 hrs
EDT 510	Teaching with Technology .....	3 hrs
EDD552	Methods of Teaching Mathematics K-8 .....	3 hrs
EDD565	Methods of Teaching Mathematics in Secondary Schools .....	3 hrs
EDD 530	Curriculum and Strategies for Teaching in the Middle Level .....	3 hrs

#### III. Cognates ..... 9 hrs

##### Required

MATH 545	Number and Proportional Reasoning for Teachers .....	3 hrs
MATH 546	Discrete Mathematics and Mathematical Modeling for Teachers .....	3 hrs
MATH 549	Concepts of Calculus for Teachers .....	3 hrs

##### Electives

MATH 544	Probability and Statistics for Teachers .....	3 hrs
MATH 547	Microcomputer in Mathematics for Teachers .....	3 hrs
MATH 586	Secondary School Mathematics for Teachers .....	3 hrs
MATH 591	Topics in Mathematics for Teachers .....	3 hrs
MATH 598	Independent Study in Mathematics Education .....	1-6 hrs

### Endorsement Program

This program welcomes teachers certified at the elementary level who seek but do not already hold an endorsement in mathematics (EX) that certifies them to teach mathematics through grade 8. The program is 30 credit hours (ten 3-hour courses) and provides stimulating, collegial, research- and practice-based learning centered on national and state frameworks. Endorsement requires passing the MTTC Test for Elementary Mathematics. Candidates need to be knowledgeable in mathematics through precalculus.

#### I. Core Component Studies ..... 9 hrs

The core sequence provides continuity and integration for all programs. Ideas of policy, change, growth and diversity are developed in the following courses.

EDA 501	Advanced Social Foundations of Ed .....	3 hrs
EDC 556	Learning and Classroom Assessment .....	3 hrs
or		
EDC 560	Reading Diagnostic and Assessment Techniques K-12 .....	3 hrs
EDK 500	Introduction to Research in Education .....	3 hrs

Students are strongly recommended to elect at least one core class during the first year of work. Completion of all core classes is recommended within the first 20 credit hours. All core classes must be elected on the UM-Dearborn campus.

**II. Professional Studies ..... 6-9 hrs**

**Required**

- EDMA 511 Learning and Teaching Middle Grades Mathematics.....3 hrs
- EDMA 512 Communication and Assessment in Mathematics Learning.....3 hrs

**Electives**

- EDMA 521 Leadership in Mathematics Education.....3 hrs
- EDMA 590 Topics in Mathematics Education.....3 hrs
- EDT 510 Teaching with Technology.....3 hrs
- EDD 530 Curriculum and Strategies for Teaching in the Middle Level .....3 hrs

**III. Cognates ..... 12-15 hrs**

**Required**

- MATH 542 Geometry for Teachers .....3 hrs
- MATH 543 Algebra for Teachers .....3 hrs
- MATH 544 Probability and Statistics for Teachers.....3 hrs
- MATH 545 Number and Proportional Reasoning for Teachers.....3 hrs

**Electives**

- MATH 546 Discrete Mathematics and Mathematical Modeling for Teachers .....3 hrs
- MATH 547 Microcomputers in Mathematics for Teachers.....2 hrs
- MATH 549 Concepts of Calculus for Teachers .....3 hrs
- MATH 586 Secondary School Mathematics for Teachers.....3 hrs
- MATH 591 Topics in Mathematics for Teachers ..... 1-3 hrs
- MATH 598 Independent Study in Mathematics Education..... 1-6 hrs

Candidates who have not completed a college level precalculus or calculus course must do so.

To be recommended for the EX endorsement (teaching middle school mathematics), candidates must provide documentation that they have passed the elementary mathematics portion of the Michigan Teacher Test for Certification (MTTC).

**COURSE DESCRIPTIONS**

The following lists include all courses normally offered at UM-Dearborn. However, not all courses are offered every year and periodically courses are added and deleted. For details, students should consult the *Schedule of Classes* for each term.

**THEORETICAL FOUNDATIONS (EDA)**

**EDA 500 Theoretical Foundations of Ed**  
3.000 Credits

This is an advanced seminar course in educational theory. It involves a systematic examination of numerous theories that

have played a major role in shaping American education. Among these are: 1) ideologies, 2) ethical theories, 3) learning theories, 4) instructional theories, and 5) theories of study. These have provided education with different moral outlooks, different social objectives, different curricula, and different teaching methods.

**EDA 501 Adv Social Fndations of Ed**  
3.000 Credits

This advanced seminar will investigate various aspects of formal education taking into account historical, philosophical, political, social, cultural, religious and economic contexts. Within these contexts, the course will identify and examine school reform and change issues and trends as they relate to complex and rapidly changing local, national and global society.

**EDA 519 Early Literacy/Language Devel**  
3.000 Credits

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.

**EDA 530 Loc Govt for Teach/Admin**  
1.000 TO 3.000 Credits

At the seminar, teachers participate in interactive learning activities with local government staff members. Officials serve as resource people, not lecturers. Teachers experience each lesson through the eyes of their students. All participants provide complete lesson plans for each activity, making it easy to share favorites from the course/academy with colleagues. Teachers work on developing coordinated learning experiences in local government including field trips, case studies and class visitations drawn from both school district and local government resource-bases.

**EDA 550 Hist/Theory of Bilingual Educ**  
2.000 TO 3.000 Credits

This course provides an extensive background on bilingual education (programs where two languages are used as media of instruction) in the United States, and 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. (OC)

**EDA 555 Lang,Clture,Litrcy&Power in Ed**  
3.000 Credits

During this course we will examine the social/cultural functions of language with an emphasis on schools and other applied educational settings. Through our readings, discussions, and class activities, students will gains a greater appreciation for the ways in which language varies across cultures, social settings, and situations.

**EDA 610 Seminar in Critical Pedagogy**

3.000 Credits

This course will engage students in an in-depth study of pedagogy and will allow for the examination their own disciplines through a critical theory lens. Students will be expected to problematize their disciplines core tenets and consider teaching for today's urban/metropolitan schools and curriculum.

**EDA 655 Lang,Cultre,Litrcy&Power in Ed**  
3.000 Credits

During this course we will examine the social/cultural functions of language with an emphasis on schools and other applied educational settings. Through our readings, discussions, and class activities, students will gains a greater appreciation for the ways in which language varies across cultures, social settings, and situations.

**EDA 701 Adv Social Founds of Educ**  
3.000 Credits

This advanced seminar will investigate various aspects of formal education taking into account historical, philosophical, political, social, cultural, religious and economic contexts. Within these contexts, the course will identify and examine school reform and change issues and trends as they relate to complex and rapidly changing local, national and global society.

**EDA 725 Seminar in Metropolitan Educ**  
3.000 Credits

This seminar will take a social justice approach and systems analysis in viewing educational issues relevant to Metropolitan/Urban areas. It aims to understand education and schooling through a critical examination of the unequal power dynamics in society and offers alternatives.

**EDA 750 History/Theory Bilingual Ed**  
2.000 OR 3.000 Credits

This course provides an extensive background on bilingual education (programs where two languages are used as media of instruction) in the United States, and 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. (OC)

**EDA 810 Seminar in Critical Pedagogy**  
3.000 Credits

This course will engage students in an in-depth study of pedagogy and will allow for the examination their own disciplines through a critical theory lens. Students will be expected to problematize their disciplines core tenets and consider teaching for today's urban/metropolitan schools and curriculum.

**EDA 820 Public Pedagogy**  
3.000 Credits  
Prerequisites: EDK 823 and EDK 825 and EDK 820

This course examines the out-of-school spaces and experiences in an effort to revision our understanding of what counts as education. Participants will complete case studies of the physical, social, and political places inhabited by the people in Detroit and the surrounding communities as a source for reimagining teaching and learning in ways that connect the school and the community to empower students, teachers and the community to create educative experiences that cultivate their own agency in the community.

**EDA 855 Lang,Cultre,Litrcy,Power in Ed**  
3.000 Credits

During this course we will examine the social/cultural functions of language with an emphasis on schools and other applied educational settings. Through our readings, discussions, and class activities, students will gains a greater appreciation for the ways in which language varies across cultures, social settings, and situations.

---

## EDUCATIONAL ADMIN (EDB)

---

**EDB 500 Multicult Ed in US Classroom**  
3.000 Credits

The theoretical concepts from the history of education, educational research, and the social sciences will form a base for studying educational trends, issues, and reforms in our society of diverse origins and outlooks. Topics for discussion may include: issues in reform movements; social, economic, pedagogical, and ethical problems related to education; and problems and prospects in international educational competition. The focus will be on institutional problems and processes related to quality education for pupils in our multicultural society.

**EDB 501 Leadership and Administration**  
3.000 Credits

Administration and supervision of elementary, middle, and secondary school entails the analysis of organizational arrangements at both the classroom and school level. This course will deal with applications and practices that develop competencies and behaviors that educators need to supervise, evaluate, and lead organizational and instructional improvement efforts for school, staff, and students.

**EDB 502 School and Community Relations**  
2.000 OR 3.000 Credits

Examines interactions of schools and their communities: citizens' role/involvement in governance of education, internal and external communication concepts and practices, politics of education, community power and pressure groups, and organizational culture and climate.

**EDB 503 Reading Programs: K-12**  
3.000 Credits  
Prerequisites: EDD 519

Overview of K-12 reading programs. Examines district, building, and classroom models, program development, implementation, and assessment/evaluation. Analysis of

supervisory roles and leadership alternatives. Writing and technology connections will be explored.

**EDB 505 Intro to Educ Administration**  
3.000 Credits

The course will provide an overview of educational administration and cover basic issues facing school administrators. It provides an introduction to the role of the school leader in contemporary educational programs and services. Students will examine opportunities in school administration and begin to develop a knowledge base for leadership in a variety of educational settings.

**EDB 507 Strategic Comm for Admin**  
3.000 Credits

This Internet course addresses three levels of administrative communications - individual, group and organization - and examines the concepts and skills needed to be an effective communicator. Students will develop applications emphasizing goal-oriented communications and making strategic choices in content, structure, style and delivery. An emphasis is given to the design and best use of computer technologies such as Word and PowerPoint applications. The course also covers basic ethical and legal issues of work-place communications.

**EDB 521 Current Issues in Early Ed**  
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 522 Lead Advoc Admin Early Child**  
3.000 Credits  
Prerequisites: EDC 240

This course promotes the role of the early childhood educator as a leader and advocate for young children and families. It is designed for present and future teachers, administrators and other professionals who participate in decisions relating to public policy legislation, state licensing, teacher certification, funding resources, parental involvement and other issues affecting young children and families.

**EDB 523 Legal and Reg Issues in Ed**  
2.000 OR 3.000 Credits

This class will focus on important legal and regulatory issues related to public, education, and nonprofit organizations. It will consider the various court and administrative decisions which affect these. Numerous case situations will be used to facilitate the student's learning.

**EDB 524 Site-Based Management**  
2.000 Credits

Site-based management in organizations is an evolving type of organizational improvement effort. Shared planning and participative decision-making are other related vehicles for enabling local organizational units to plan and execute their own processes, goals, and outcomes. An examination of the policies, practices, evolving research, impediments, and promoters of site-based management will be reviewed, along with case studies of success stories.

**EDB 540 School Budgeting and Finance**  
3.000 Credits

Basic principles and actual practices of financial administration and accounting for state/local governments, public school systems, and non-profit organizations, particularly budgeting and financial reporting within the context of other organizational processes and political demands and/or requirements. As one of the required seminars for the Educational Administration Certification, the case method will be employed to illustrate issues and problems of school financial administration.

**EDB 560 Admin of Human Resources**  
3.000 Credits

This seminar will examine human resource administration activities in public, educational and nonprofit settings. Issues such as recruiting, selection, planning, performance appraisal, contracting and collective bargaining will be related to the overall administrative activities. Emphasis will be placed on the connections between human resource issues in public, education, and nonprofit organizations.

**EDB 561 Organizational Dev and Theory**  
2.000 OR 3.000 Credits

Students will learn how organizations are structured and shaped, know what features of organizations vary and the parameters on which they vary, and be able to analyze, synthesize, and apply concepts to reduce organizational uncertainty, and to improve and regulate organization behaviors and outcomes. Attention will also focus on top down and participatory administration in organizations, and change in public, educational, and nonprofit organizations and agencies.

**EDB 562 Labor Relat in School Settings**  
2.000 OR 3.000 Credits

The seminar will consider the impact of collective bargaining on traditional human resource administration in public, education, and nonprofit settings. It also will focus on developing an initial competency in the various activities associated with collective bargaining situations.

**EDB 580 Info Sys and Stats for Admin**  
3.000 Credits

This course will introduce Educational Administration students to descriptive and basic inferential statistics. Participants will use micro-computers and software to perform elementary statistical analyses, and to prepare presentation quality reports and graphics making use of statistical information.



**EDB 581 Strategic Plng/Needs Assess**  
2.000 OR 3.000 Credits

This course develops the strategic planning and needs assessment competencies of participants. Emphasized in the course is the "cascade" process of information gathering involving interviewing, focus groups, and surveys as applied in strategic planning.

**EDB 582 Policy Analysis & Development**  
2.000 OR 3.000 Credits

Policy formulation involves two different activities: 1) identifying and assessing alternative courses of action, i.e., deciding what, if anything, needs to be done about a problem; and 2) developing the policy, regulation or law that will carry an agreement in principle into effect. Both aspects of policy development will be covered in the course. (AY).

**EDB 583 Program Evaluation**  
2.000 OR 3.000 Credits

This class will examine procedures for evaluating programs in public, education, and nonprofit settings. The concern will be to examine the various techniques available to determine whether a program is doing what it was intended to do. Students will utilize various techniques in examining a variety of case situations.

**EDB 586 Curriculum Delib and Develop**  
2.000 OR 3.000 Credits

Study of teaching, learning, evaluation, and outcomes of education in relation to curriculum study and development. Focus on policy issues, utilization of research and current effective practices related to the successful articulation and implementation of curricula.

**EDB 650 Assessment Seminar**  
1.000 TO 3.000 Credits

This class will focus on assessing the performance of individuals in administrative settings. There will be a variety of exercises which will provide an assessment of the students with regard to different administrative circumstances. Students will also evaluate their career plans and situation.

**EDB 700 Multicult Educ in U.S. Classrm**  
3.000 Credits

The theoretical concepts from the history of education, educational research, and the social sciences will form a base for studying educational trends, issues, and reforms in our society of diverse origins and outlooks. Topics for discussion may include: issues in reform movements; social, economic, pedagogical, and ethical problems related to education; and problems and prospects in international educational competition. The focus will be on institutional problems and processes related to quality education for pupils in our multicultural society.

**EDB 701 Leadership and Administration**  
3.000 Credits

Administration and supervision of elementary, middle, and secondary school entails the analysis of organizational arrangements at both the classroom and school level. This course will deal with applications and practices that develop competencies and behaviors that educators need to supervise, evaluate, and lead organizational and instructional improvement efforts for school, staff, and students.

**EDB 702 School and Community Relations**  
2.000 TO 3.000 Credits

Examines interactions of schools and their communities: citizens' role/involvement in governance of education, internal and external communication concepts and practices, politics of education, community power and pressure groups, and organizational culture and climate.

**EDB 705 Intro to Educ Administration**  
3.000 Credits

The course will provide an overview of educational administration and cover basic issues facing school administrators. It provides an introduction to the role of the school leader in contemporary educational programs and services. Students will examine opportunities in school administration and begin to develop a knowledge base for leadership in a variety of educational settings.

**EDB 720 Internship**  
1.000 TO 3.000 Credits

Students who lack the necessary experience in responsible administration will be afforded the opportunity to gain the experience in an internship. The class and the number of hours will be arranged to fit the needs of the students as determined by the program coordinator.

**EDB 721 Central Office Internship**  
2.000 TO 3.000 Credits

Students who lack the necessary experience in central office administration will be afforded the opportunity to gain the experience in an internship. The class and the number of hours will be arranged to fit the needs of the students as determined by the program coordinator.

**EDB 722 Seminar in Educ Leadership**  
3.000 Credits

This course provides an examination of the theoretical background, current practices and applications associated with transformational leadership and futures-oriented management in a variety of educational and nonprofit organizations. The course addressed leadership theory, application, and practices to develop competencies and behaviors required of organizational leaders to lead, supervise, implement, and evaluate performance and practices in a variety of organizational settings.

**EDB 723 Legal & Reg Issues in Educ**  
2.000 TO 3.000 Credits

This class will focus on important legal and regulatory issues

related to public, education, and nonprofit organizations. It will consider the various court and administrative decisions which affect these. Numerous case situations will be used to facilitate the student's learning.

**EDB 724     Superintendency**  
3.000 Credits

This course is designed to explore the role of the public school superintendent, the challenges and conflict of the position, and the educational, political, cultural, and social influences of the superintendent. The course examines the basic functions, duties, and responsibilities facing the modern superintendent, while effectively responding to instructional leadership needs, fiscal affairs, government legislation, labor relations, and evaluation and accountability of and by the superintendent.

**EDB 725     Leadership Ethics**  
3.000 Credits

This course examines concepts and skills required by organizational leaders in ethical decision-making and professional behavior. The course will cover ethical issues that leaders encounter and will analyze means by which they can respond ethically and professionally to difficult situations. The course will explore strategies for influencing a culture of high ethical and professional standards within organizations.

**EDB 740     School Budgeting & Finance**  
3.000 Credits

Basic principles and actual practices of financial administration and accounting for state/local governments, public school systems, and non-profit organizations, particularly budgeting and financial reporting within the context of other organizational processes and political demands and/or requirements. As one of the required seminars for the Educational Administration Certification, the case method will be employed to illustrate issues and problems of school financial administration.

**EDB 750     Assessment Seminar**  
1.000 TO 3.000 Credits

This class will focus on assessing the performance of individuals in administrative settings. There will be a variety of exercises which will provide an assessment of the students with regard to different administrative circumstances. Students will also evaluate their career plans and situation.

**EDB 760     Admin of Human Resources**  
3.000 Credits

This seminar will examine human resource administration activities in public, educational and nonprofit settings. Issues such as recruiting, selection, planning, performance appraisal, contracting and collective bargaining will be related to the overall administrative activities. Emphasis will be placed on the connections between human resource issues in public, education, and nonprofit organizations.

**EDB 762     Labor Rel in School Setting**

2.000 TO 3.000 Credits

The seminar will consider the impact of collective bargaining on traditional human resource administration in public, education, and nonprofit settings. It also will focus on developing an initial competency in the various activities associated with collective bargaining situations.

**EDB 783     Program Evaluation**  
2.000 OR 3.000 Credits

This class will examine procedures for evaluating programs in public, education, and nonprofit settings. The concern will be to examine the various techniques available to determine whether a program is doing what it was intended to do. Students will utilize various techniques in examining a variety of case situations.

**EDB 807     Strategic Comm for Admin**  
3.000 Credits

This Internet course addresses three levels of administrative communications - individual, group and organization - and examines the concepts and skills needed to be an effective communicator. Students will develop applications emphasizing goal-oriented communications and making strategic choices in content, structure, style and delivery. An emphasis is given to the design and best use of computer technologies such as Word and PowerPoint applications. The course also covers basic ethical and legal issues of work-place communications.

**EDB 861     Organization Dev & Theory**  
2.000 TO 3.000 Credits

Students will learn how organizations are structured and shaped, know what features of organizations vary and the parameters on which they vary, and be able to analyze, synthesize, and apply concepts to reduce organizational uncertainty, and to improve and regulate organization behaviors and outcomes. Attention will also focus on top down and participatory administration in organizations, and change in public, educational, and nonprofit organizations and agencies.

**EDB 881     Strategic Plng/Needs Assess**  
2.000 OR 3.000 Credits

This course develops the strategic planning and needs assessment competencies of participants. Emphasized in the course is the "cascade" process of information gathering involving interviewing, focus groups, and surveys as applied in strategic planning.

**EDB 882     Policy Analysis & Development**  
2.000 OR 3.000 Credits

Policy formulation involves two different activities: 1) identifying and assessing alternative courses of action, i.e., deciding what, if anything, needs to be done about a problem; and 2) developing the policy, regulation or law that will carry an agreement in principle into effect. Both aspects of policy development will be covered in the course. (AY).

## PSYCHOLOGICAL FOUNDATIONS (EDC)

### EDC 500 The Human Learner 2.000 Credits

The growth and development of the human learner is studied, with stress upon teaching and learning from preschool through adulthood. Consideration will be given to theories of learning, development, and motivation, with the goal of identifying the implications of theory for educational practice.

### EDC 501 Intro to Learning Disabilities 3.000 Credits

Overview of characteristics, identification, service delivery models, and issues pertaining to persons from preschool to adulthood with learning disabilities. Required course for Special Education-Learning Disabilities Certification.

### EDC 502 Adol Devl & Classroom Mgmt 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. Course includes significant material addressing classroom management of the middle school and high school classroom using simulations, case studies and videos of actual classrooms.

### EDC 503 LD Practicum K-12 1.000 Credits Co-requisites: EDC 501

The K-12 LD Practica will provide beginning students with initial exposure to the practical aspects of teaching LD students in a variety of general and special education settings. Students will be required to observe and actively participate in instructional planning, teaching, managing, and monitoring LD students in K-12 settings. Students will also observe a variety of service delivery models including the resource room, inclusive settings, and tutorial situations. Graduate standing or permission of the instructor; concurrent enrollment in C501.

### EDC 504 Pract Adol Devl&Clstrm Mgmt 1.000 Credits

This one credit practicum consists of 45 clock hours of observation over the course of the semester in a secondary classroom. Reflective journals and guided assignments will focus the observations on an understanding of developmental concepts and classroom management policies. Active participation with secondary students will ensure the application and critique of these concepts in an educational setting.

### EDC 505 Adult Learning Process 3.000 Credits

This course will consider adult learning theory. Students will learn to write educational objectives in the cognitive, affective,

and psycho motor domains. Sample lessons will demonstrate the use of objectives in instruction and assessment.

### EDC 511 Dev Peer/Social Relationships 2.000 Credits Prerequisites: 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. (OC)

### EDC 512 Soc Devl & Pos Guidnce Techn 3.000 Credits

This course will examine the process of social and emotional development in childhood through adolescence. Positive strategies to promote and guide this development in the classroom will be explored using behaviorist and constructivist frameworks. Topics will include character education, discipline models, conflict resolution and family collaboration. Guiding the development of emotional regulation, perspective taking and peer relationships in children including children with special needs will be investigated.

### EDC 514 Early Child Ed Special Needs 3.000 Credits Prerequisites: EDC 540 or (EDC 340 or EDC 240 and (EDC 341) or EDC 241)

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 needs. Suitable for classroom teachers, child care directors, and teachers in training.

### EDC 517 Mgmt of Classroom Behavior 3.000 Credits Prerequisites: EDC 300

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. Will focus on classroom management in early childhood and elementary environments, allowing a more focused examination of topics and case studies geared to those grade levels.

### EDC 520 Hum Sexuality:Psyc-Ed 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. Teachers who complete this program will meet the state requirements for certification in sex education/reproductive health.

**EDC 531 Constructivist Education**

3.000 Credits

Prerequisites: (EDC 340 or EDC 240 and (EDC 341 or EDC 241)

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. A major focus will be the application of constructivist theory to educational goals, teaching strategies and curriculum.

**EDC 540 Advanced Child Development**

3.000 Credits

An advanced study of the development of the child from conception through adolescence. Research on physical, cognitive, and psychosocial development will be explored and analyzed. Current applications of knowledge in this field will be examined as well as new innovations in both research and practice.

**EDC 541 The Child: Birth to Three**

2.000 TO 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 542 EC:Fam/Sch/Com Collab Mult Soc**

3.000 Credits

Prerequisites: (EDC 340 or EDC 240) and (EDC 341 or EDC 241)

FULL COURSE TITLE: Early Childhood: Family School Community Collaboration in a Multicultural Society. Focuses on factors which 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 which promote family involvement and community outreach are practiced through discussion and role play.

**EDC 543 Family/School/Community Collab**

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 545 Develop Assess of Young Child**

3.000 Credits

Prerequisites: EDC 340 or EDC 240

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. Students cannot receive credit for both EDC 545 and EDC 445.

**EDC 546 Cog/Memory Dev in Children**

3.000 Credits

Prerequisites: EDC 340 or EDC 540

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 554 Formal & Informal Testing&Eval**

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 555 Assmt: Sec Lang Learning K-12**

2.000 Credits

Prerequisites: EDD 596 and EDD 597 and EDD 547 and EDD 548

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 assessment instruments 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. (W).

**EDC 556 Learning & Classrm Assessment**

3.000 Credits

In this course students will examine the relationship between curriculum, instruction and assessment. Students will review different forms of assessment and evaluate the strengths and weaknesses of each format. Students gain experience in 1) selection of assessment formats based on curricular focus and student developmental levels; 2) development of assessments; and 3) decision-making based on the results of the assessments.

**EDC 560 Rdg:Diag/Assessment Tech K-12**

3.000 Credits

Overview of K-12 reading diagnostic and assessment techniques. Review of state-mandated tests. Use of criterion referenced tests, norm-referenced tests, and informal inventories to develop individual reading profile. Results of diagnostic instruments will be interpreted to suggest appropriate instructional strategies. (YR).

**EDC 561 Educating the Exceptional Child**  
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.

**EDC 620 Survey Research and Design**  
3.000 Credits  
Prerequisites: EDK 500 and EDC 556

This course provides an advanced focus on the theories, methods, and procedures for conducting survey research in education. Topics explored include advanced design of survey instruments, interview and focus group protocols, planning and budgeting survey research, and survey data analysis techniques. Sampling and mixed method design will be addressed.

**EDC 630 Portfolio and Performance**  
3.000 Credits  
Prerequisites: EDK 500 and EDC 556

This course is an introduction to the theory and practice of performance and portfolio assessment. It examines the theory behind both forms of assessment including issues of validity, scoring, and the relationship to standards-based objectives. Topics include portfolio types, structures, contents and uses, as well as visual, written, oral, electronic and performance assessment. Students will create both a performance and a portfolio task, associated rubrics, and gain an understanding of how these types of assessments can impact teaching and learning.

**EDC 645 Transdisc Appr: Assess/Collab**  
3.000 Credits  
Prerequisites: EDC 545

Culturally sensitive and family-centered approaches to assessing infants, toddlers, and young children with a variety of disabilities as well as determining family resources, needs and priorities will be the focus. Selecting and using assessment instruments and procedures in order to guide decision-making about determining eligibility for services, planning intervention goals and objectives, monitoring progress, and evaluating program effectiveness will be included. (YR).

**EDC 701 Intro to Learning Disabilities**  
3.000 Credits

Overview of characteristics, identification, service delivery models, and issues pertaining to persons from preschool to adulthood with learning disabilities. Required course for Special Education-Learning Disabilities Certification.

**EDC 714 Early Child Ed Special Needs**  
3.000 Credits

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 needs. Suitable for classroom teachers, child care directors, and teachers in training.

**EDC 731 Constructivist Education**  
3.000 Credits

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. A major focus will be the application of constructivist theory to educational goals, teaching strategies and curriculum. Additional course work differentiates this course from the master's level course.

**EDC 740 Seminar in Ed Psych/Spec Educ**  
3.000 Credits

This course will focus on contemporary topics related to the development of knowledge of current theories in the areas of cognitive development, language, motor, and social development, in particular as they relate to issues in special education.

**EDC 756 Learning & Classrm Assessment**  
3.000 Credits

In this course students will examine the relationship between curriculum, instruction and assessment. Students will review different forms of assessment and evaluate the strengths and weaknesses of each format. Students gain experience in 1) selection of assessment formats based on curricular focus and student developmental levels; 2) development of assessments; and 3) decision-making based on the results of the assessments.

**EDC 845 Transdisc Appr: Assess/Collab**  
3.000 Credits  
Prerequisites: EDC 545

Culturally sensitive and family-centered approaches to assessing infants, toddlers, and young children with a variety of disabilities as well as determining family resources, needs and priorities will be the focus. Selecting and using assessment instruments and procedures in order to guide decision-making about determining eligibility for services, planning intervention goals and objectives, monitoring progress, and evaluating program effectiveness will be included. (YR).

**CURRICULUM & INSTRUCTION (EDD)**

**EDD 501 Teach English in Second Grds**  
3.000 Credits

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 502 Practicum: English Second Grd**  
1.000 Credits  
Co-requisites: EDD 501

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. Credit cannot be given for both EDD 502 and EDD 441.

**EDD 503 Wksp: Art in the Elementary Sch**  
2.000 Credits

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. (OC)

**EDD 504 Inquiry Based Curr Prim Grades**  
3.000 Credits

This course examines how teachers can apply inquiry method to all curriculum areas in the primary grades. Major focus will be designing curriculum to meet state and professional guidelines within a developmentally appropriate context.

**EDD 508 Practicum in Early Child Ed**  
1.000 Credits

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, physician's statement of good health, and criminal background check are required. Students cannot receive credit for both EDD 410 and EDD 508. (F,W)

**EDD 509 Workshop in Secnd Sci Educ**  
1.000 TO 6.000 Credits

Provides an opportunity for experienced professionals in junior and senior high schools to work on problems and topics related to the teaching of natural science.

**EDD 513 Internship Elementary LD**  
2.000 OR 3.000 Credits  
Prerequisites: EDC 501 and EDN 501 and EDN 503 and EDN 504  
Co-requisites: EDN 508

Field experience with elementary students with learning disabilities in regular and resource classrooms. Experiences include delivery of direct instruction through observation, tutoring, small and large group instruction, small and large group assessment, curriculum development, participation in the IEP process, collaboration with regular classroom teachers, and other activities under the on-site supervision of a certified teacher of LD and LD-certified university field supervisor.

**EDD 515 Internship - Secondary LD**  
2.000 Credits  
Prerequisites: EDC 501 and EDN 501 and EDN 503 and EDN 504  
Co-requisites: EDN 508

Field experience with secondary students with learning disabilities in secondary-general and special education classrooms. Experiences include delivery of direct instruction through observation, tutoring, small and large group instruction, curriculum development and adaptations for secondary settings, participation in the IEP and ITP process, collaboration and co-teaching with regular classroom teachers in various academic content areas, and other activities under the on-site supervision of a certified teacher of LD and LD certified university field supervisor.

**EDD 516 Creativ/Crit Thnk Yng Childr**  
3.000 Credits  
Prerequisites: EDC 340

This course intends to study the processes and products of creativity for both adults and young children. Strategies for promoting the emerging creative disposition of the young child, birth to eight years, will be explored. Areas of focus will include art, music, movement, dramatic play, improvisation, storytelling, and problem-solving. The importance of understanding and encouraging the young child's capacity for representation skills will be emphasized.

**EDD 517 Sem: Teaching Secondary MAT**  
1.000 Credits  
Co-requisites: EDD 518

Draws upon the resources found in the directed teaching environment. Considers problems and issues in four broad areas: students in the school, teacher's professional responsibilities, curriculum understandings, and administrative/organizational problems. Open only to students enrolled in EDD 518.

**EDD 518 Directed Tchg (MAT) Second Sch**  
7.000 TO 12.000 Credits  
Prerequisites: EDA 500 and EDB 500 and EDC 502 and EDC 561 and EDC 554 and EDC 517 and EDT 511 and EDD 569  
Co-requisites: EDD 517

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 observation followed by several weeks of responsible teaching. (F, W).

**EDD 519 Early Literacy/Language Develop**

3.000 Credits

Prerequisites: 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. (YR)

**EDD 530 Concepts & Strat/Tchg:Mdl Lev**

3.000 Credits

FULL TITLE: Concepts and Strategies for Teaching at the Middle Level. Introduces current curricular trends and various teaching strategies for use at the middle school level to stimulate inquiry in the classroom. Opportunity will be provided to experiment with these strategies in videotaped, microteaching situations.

**EDD 534 ML Curriculum & Instruction**

3.000 Credits

Co-requisites: EDD 535

This course addresses curriculum development and instruction adapted to meet the unique needs and characteristics of the middle level student. Attention is given to instructional planning, presentation, and assessment of learning.

**EDD 535 Field Exploration: ML**

1.000 Credits

Co-requisites: EDD 534

Field exploration involving a minimum of 45 clock hours research activities related to the study of middle level curriculum development, instruction and students.

**EDD 536 Grad Sem in Early Childhood Ed**

3.000 Credits

Prerequisites: EDC 540

This course examines the theories, research, and educational practices developmentally appropriate for children: infancy through primary grades. The seminar provides the theoretical foundation for the field placement (EDD 594). Strategies for planning effective curricular activities, arranging a learning environment, communicating and working with families and staff, and administering early childhood programs will be discussed. The issues of multiculturalism, family centered approaches, addressing the inclusion of children with special needs and professional development will be addressed. Open only to graduate students seeking an early childhood endorsement and approved by the program coordinator. TB test, physician's statement of good health, and criminal background check are required. (W).

**EDD 537 Administrative Intern in EC**

3.000 Credits

Prerequisites: EDD 412 or EDD 536

This internship will focus on providing experience in central early childhood office administration. Recruitment, communication skills, financial administration, grant writing,

leadership, program evaluation and program development and other topics related to the administration of Early Childhood programs will be developed and practiced. This course studies the procedures for evaluating early childhood programs and for continual program development in their leadership.

**EDD 542 Differentiating Inst K-12 Clrm**

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 543 Tchng Writing at the Scnd Lvl**

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 546 Intervention Strat EC Spec Ed**

3.000 Credits

Course Title: Family-Centered Intervention Strategies for Early Intervention and Early Childhood Special Education. 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 (IFSP) or Individual Educational Plan (IEP) using activity-based intervention, adapting materials, modifying environments and using assistive technology. (W, YR)

**EDD 547 Tchng English as Second Lang**

3.000 Credits

Co-requisites: EDD 548

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. (F).

**EDD 548 Pract: Tch Engl as Scnd Lang**

1.000 Credits

Co-requisites: EDD 547

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. (F).

**EDD 552 Methods of Teaching Math K-8**

3.000 Credits

Prerequisites: 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 meeting the special needs of every child in grades K-8. Required for all preservice elementary teachers. Official admission to and good standing in teacher education program required.

**EDD 554 Wrkshp:Nwspaper in Educ**

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 560 Reading:Clinical Pract Int/Sem**

3.000 Credits

Prerequisites: EDD 519 and PADM 502 and EDC 560

A supervised field experience in which students will work in a reading program. In this internship students will acquire experience in selecting students for the program, assessing students, working with students to develop reading and writing skills, and in reporting functions. In addition, a weekly seminar to explore issues related to reading programs will be held. (S)

**EDD 563 Tchng Giftd Stdnt Reglr Classr**

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 565 Teach Math in Second Grades**

2.000 TO 3.000 Credits

Prerequisites: MATH 412 and MATH 331

This course discusses: 1) the 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 program are required.

**EDD 566 Practicum: Math Second School**

1.000 Credits

Co-requisites: EDD 565

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. Students cannot receive credit for both EDD 451 and EDD 566.

**EDD 567 Practicum in Reading Instruct**

1.000 Credits

Co-requisites: EDD 568

A required supervised field experience related to the teaching of reading in the elementary and/or K-8. Involves a minimum of 45 clock hours of work and observation in a supervised classroom setting. Techniques learned in EDD 568 will be applied directly to increase the reading competence of elementary school children. Must be elected concurrently with EDD 568. TB test and criminal background check required.

**EDD 568 Teach Read/Lang Arts- Elem Grd**

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 K-8. 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 569 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. Students cannot receive credit for both EDD 469 and EDD 569.

**EDD 571 Reading Instr: Models and Meth**

2.000 TO 3.000 Credits

The impact of psycholinguistic research on reading instruction will be examined especially as it relates to: reading comprehension, the teaching of phonetic skills, the teaching of reading/study skills in content areas, and in testing. Various approaches to reading instruction will be reviewed. Students electing this course for three credit hours will be required to complete a reading tutorial suitable 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 the School of Education certification program are



required.

**EDD 574 Environmental Education**  
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 575 Integrating Science & Literacy**  
3.000 Credits

Students will enhance their understanding of and ability to integrate multiple literacy skills into the science classroom. Students will create integrated classroom activities and lessons based on State of Michigan benchmarks in language arts and science. (F,W).

**EDD 580 Teach of Sci in the Second Grd**  
2.000 TO 3.000 Credits

A 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 581 Practicum in Science:Secnd Grd**  
1.000 Credits  
Co-requisites: EDD 580

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 582 Tch Sci in Secondary Grds II**  
3.000 Credits  
Prerequisites: EDD 480 and EDD 481

This course builds upon the concepts and skills developed in EDD 480 as students learn to become effective, reflective science teachers. Students will learn multiple strategies for effective lesson planning, teaching, and assessment in science. Science, technology, engineering and mathematics (STEM) and integration of reading/writing strategies will be emphasized throughout the course. Students cannot receive credit for both EDD 482 and EDD 582. EDD 582 will be distinguished from EDD 482 by additional readings and assignments for the enrolled students.

**EDD 583 Wkshp:Sci Teach Elem/Midd Schl**  
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 middle level science. Centers on a laboratory approach. May be elected twice for a total of six hours.

**EDD 585 Teach Science in the Elem Grd**  
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. Students cannot receive credit for both EDD 485 and EDD 585.

**EDD 586 Environmental Interpretation**  
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-Dearborn Environmental Study Area.

**EDD 589 Practicum in Soc Stud:Sec Sch**  
1.000 Credits  
Co-requisites: EDD 590

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 590 Tch of the Soc Stud in Sec Sch**  
2.000 TO 3.000 Credits

This course examines theoretical and practical approaches to teaching social studies at the secondary level. Students explore, develop, and evaluate instructional methods. In light of professional standards, they consider diverse strategies for teaching and assessing middle and high school students.

**EDD 593 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 594 Early Childhood Ed Internship**  
2.000 TO 3.000 Credits  
Prerequisites: EDD 536

Supervised observation and teaching in early childhood programs under the joint direction of university and school personnel. Open only to students in the M.A. in Education Program (Early Childhood Endorsement) who have been approved for the course by the program director. TB clearance, physician's statement of good health, and criminal background check required. Replaces EDD 494 as the graduate level Early Childhood Internship.

**EDD 595 Wkshp:Social Studies Educ**  
2.000 TO 3.000 Credits

The workshop is planned to acquaint elementary and secondary teachers with specific trends and/or problems in social studies education. The theme of each workshop will vary according to the needs and interests of the teachers to reflect current interests in social studies education. Teachers will be directly involved in problem definition, literature review, research, and the collection and creation of strategies for classroom use. Students may repeat the course as topics vary up to a maximum of three hours of credit.

**EDD 596 Second Lang Tchg: Sec Level**  
3.000 Credits  
Prerequisites: FREN 301 or GER 301 or SPAN 301

An examination of current methodologies and techniques for instruction in foreign languages 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 597 Practicum in Second Lang Tchg**  
1.000 Credits  
Prerequisites: FREN 301 or GER 301 or SPAN 301  
Co-requisites: EDD 596

A required supervised field experience related to the teaching of a foreign 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 598 Writing Meth: Formal&Informal**  
3.000 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 which facilitate the writing of prose and poetry will be emphasized. (OC)

**EDD 599 Social Studies in the Elem Grd**  
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 631 Junior High/Middle Sch Currelm**  
2.000 Credits

Relates the junior high and middle school curriculum to the

unique needs and characteristics of early adolescence. Gives attention to the scope, organization, and interrelationships of instructional programs as well as trends, experimentation, innovations and reports of research in this field. Designed for pre-service and in-service teachers.

**EDD 650 Internship ECSE**  
1.000 TO 3.000 Credits  
Prerequisites: EDC 645 and EDD 546  
Co-requisites: EDD 651

Supervised observation and teaching in Early Childhood Special Education setting under the joint direction of university and program personnel. Open only to graduate students in the Early Childhood Special Education Inclusion program who have been approved for the course by the program director. (YR).

**EDD 651 Seminar in ECSE**  
1.000 Credits  
Prerequisites: EDC 645 and EDD 546  
Co-requisites: EDD 650

The seminar provides a theoretical foundation and support for the Internship in Early Childhood Special Education. Focus is on understanding the supports and barriers to implementing recommended practices in early childhood special education and early intervention as well as the changing roles of professionals working in early care and education settings. Skills in family-centered service delivery, collaborative consultation, problem-solving, teaming, advocacy and supervising paraprofessionals will be included. (YR).

**EDD 680 Adv Science Meth: Secondary**  
3.000 Credits  
Prerequisites: EDD 485 or EDD 585

This course is designed for students interested in utilizing the research in science education at the secondary level. Students will study historical and philosophical perspectives that have shaped thinking and research related to science education. They will also be involved in the latest methods and techniques for science teaching and learning. Topics will include the use of inquiry methodologies, science education research, integration of science and other core subject areas, and current science education reform efforts. (F)

**EDD 685 Adv Science Meth: Elem & MS**  
3.000 Credits  
Prerequisites: EDD 485 or EDD 585

This course is designed for students interested in utilizing the research in science education at the elementary and middle school levels. Students will study historical and philosophical perspectives that have shaped thinking and research related to science education. They will also be involved in the latest methods and techniques for science teaching and learning. Topics will include the use of inquiry methodologies, science education research, integration of science and other core subject areas, and current science education reform efforts. (F)

**EDD 717 Sem in Curriculum and Practice**  
3.000 Credits

This course will prepare doctoral candidates a framework from which to focus on in their particular field of study. During this course we will review major curriculum theories past and present within U.S. education and work toward applying these models in the practice of developing curriculum and reforming instructional practice. Emphasis is given to considering ways in which teachers and administrators might inquire into curriculum selection and teaching practice at the PK-12 or community college levels.

**EDD 719 Review of Research on Teaching**

3.000 Credits

Prerequisites: EDD 717

The goal of this course is to review the historical and current literature for Research on Teaching. Students will develop an understanding of the critical issues and best practices for teaching and learning. They will also critically analyze the different methods of conducting research on teaching.

## PHYSICAL EDUCATION (EDF)

**EDF 550 Hlth, Nutr, & PE/Clsrm Tchrs**

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 555 Principles of Coaching**

2.000 Credits

Introduction 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 athletics/sports, the qualities and qualifications of coaches, and the administration of programs and organized practices. Students cannot receive credit for both EDF 455 and EDF 555. (YR)

## INDEPENDENT STUDY (EDK)

**EDK 500 Intro to Research in Education**

3.000 Credits

An introduction for classroom teachers to the process of reviewing, evaluating, conducting, and disseminating educational research. Designed to help teachers evaluate research findings and their applications to classroom practice.

**EDK 680 Individual Res in Education**

1.000 TO 3.000 Credits

Requires the student to initiate and carry to completion a research project under the supervision of a staff member. May be elected more than once for a total of not more than three credits as approved by an advisor

**EDK 690 Internship/Directed Field Exp**

1.000 TO 3.000 Credits

Allows the student to practice skills in the field in which the student has been trained. Develops greater competence in skill use. The staff member under whose direction the work is to be done, or a program coordinator, will make arrangements with the field supervisor who will furnish a report of the student's work. May be elected more than once for a total of not more than three credits as approved by an advisor.

**EDK 700 Intro to Research in Education**

3.000 Credits

An introduction for classroom teachers to the process of reviewing, evaluating, conducting, and disseminating educational research. Designed to help teachers evaluate research findings and their applications to classroom practice.

**EDK 810 Scholarly Writing**

1.000 Credits

This seminar is designed to enhance the capacity of doctoral students in education to write for academic and professional purposes. It guides students through the process of academic writing including: editing, developing their academic voice, following the APA style manual, writing for a specific purpose, developing audience awareness, and using feedback and editing to improve writing. The course will use a writers workshop model where students will share their writing and provide constructive feedback to each other.

**EDK 823 Quantitative Research Methods**

3.000 Credits

Prerequisites: EDK 500 or EDK 700

This course provides an introduction to quantitative methods for research in education. Topics explored include the logic of research design, using SPSS, graphical displays of both univariate and bivariate distributions, statistical inference and significance testing, contingency tables, t-tests, ANOVA, and regression.

**EDK 825 Qualitative Research Seminar**

3.000 Credits

Prerequisites: EDK 500 or EDK 700

This course introduces students to qualitative research in education. Using qualitative research in educational settings places the lived experiences of individuals and/or communities as the core of analysis and is grounded in a theoretical framework that relies on multiple perspectives of the same setting. During this course students will be introduced to the key tools used for qualitative research, through readings, discussions, and application.

**EDK 850 Resrch Dsgn & Proposal Dvlpmnt**

3.000 Credits

Prerequisites: EDK 823 and EDK 825

This course will provide an introduction and overview of proposal development in preparation for writing a dissertation or applied studies project. It addresses basic proposal development stages faced by pre-doctoral candidates. The course provides an introduction and guidance to the

appropriate selection of research design. This is a computer assisted course.

**EDK 880 Individual Res in Education**  
1.000 TO 3.000 Credits

Requires the student to initiate and carry to completion a research project under the supervision of a staff member. May be elected more than once for a total of not more than three credits as approved by an advisor.

**EDK 890 Intern/Direct Field Experience**  
1.000 TO 3.000 Credits

Allows the student to practice skills in the field in which the student has been trained. Develops greater competence in skill use. The staff member under whose direction the work is to be done, or a program coordinator, will make arrangements with the field supervisor who will furnish a report of the student's work. May be elected more than once for a total of not more than three credits as approved by an advisor.

**EDK 990 Ed.D. Prelim Exam/Proposal**  
3.000 TO 6.000 Credits

EDK 990 is for students planning to complete their preliminary examinations and submit and defend their dissertations or applied studies project proposals. The preliminary examination includes two parts that need to be completed in a one-week period. Students will write a paper that demonstrates the depth of their knowledge in the four concentration areas of the doctoral program and their ability to apply that knowledge in a thoughtful analysis of a case study selected by their Doctoral Committee. Students will write a paper that demonstrates the depth and breadth of their knowledge of the theoretical issues and empirical research related to their area of concentration and the relationship between their area of concentration and the broader field of education. Their Doctoral Committee will establish the goals and guidelines for the paper. To successfully complete the proposal for a dissertation, students will submit and orally defend a paper of sufficient length, depth, and complexity that demonstrates their ability to identify a significant and worthwhile problem, select a method or methods of research, apply these methods properly and present the entire effort in writing that is clear and cogent. To successfully complete the proposal for an applied studies project, students will submit and orally defend a paper of sufficient length and complexity that demonstrates their ability to identify a significant and worthwhile problem, use appropriate theoretical and empirical studies to develop a response to the problem and assess the effectiveness of the response, and present the entire effort in writing that is clear and cogent.

**EDK 995 Ed.D. Dissertation/Appl Study**  
3.000 TO 9.000 Credits

Course for dissertation or applied studies work for students who have been approved for candidacy.

---

**COMMUNITY & BILINGUAL (EDM)**

**EDM 505 ESL Strategies for the Classrm**

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.

---

**EDUCATION MATHEMATICS (EDMA)**

**EDMA 511 Lrng & Tchg Middle Gr Math**  
3.000 Credits

Prerequisites: MATH 443 or MATH 543

This course addresses issues central to teaching and learning mathematics in middle grades; building learning communities, how students learn mathematics, use of worthwhile mathematical tasks, instructional modes, technology options, assessment to inform instruction, and professional perspectives. (Y).

**EDMA 512 Comm and Assmt in Math Lrng**  
3.000 Credits

Prerequisites: (MATH 442) or MATH 542 and (MATH 443 or MATH 543)

Problems and strategies for making effective the reading, symbolizing, graphing, diagramming, explaining, and writing of mathematical concepts and solutions: multiple uses and forms of assessment.(W)

**EDMA 521 Leadership in Mathematics Educ**  
3.000 Credits

Prerequisites: EDMA 512

This course focuses on leadership concerns in mathematics education at the middle grades level. Topics may include school reform; staff development; program review; communicating with the community; new teacher induction; proposal writing. Open only to graduate students or by permission of the instructor. (Y).

**EDMA 525 Currm Devt & Rsch in Math Ed**  
3.000 Credits

Prerequisites: EDMA 512 and EDMA 521

Curriculum Development and Research in Mathematics Education is a capstone course for leadership in mathematics education. It addresses recent research in mathematics education and the design, implementation, and evaluation of research-based curriculum development; action research methods; and applications.

**EDMA 590 Topics in Math Education**  
1.000 TO 3.000 Credits

This course focuses on mathematics education topics of current or emerging interest, such as current research; current curriculum development; issues related to school organization; new technologies; new national, state, or local initiatives;

focused fieldwork; and equity concerns. Open only to graduate students or by permission of instructor. Course may be repeated for up to six hours when specific topics differ. (OC).

**EDMA 598 Independent Study in Math Ed**  
1.000 TO 6.000 Credits

Independent study in Mathematics Education under the supervision of a faculty member.

**EDMA 721 Leadership in Mathematics Educ**  
3.000 Credits  
Prerequisites: EDMA 512

This course focuses on leadership concerns in mathematics education at the middle grades level. Topics may include school reform; staff development; program review; communicating with the community; new teacher induction; proposal writing. Open only to graduate students or by permission of the instructor. (Y).

**EDMA 725 Curric Devl&Rsch in Math Ed**  
3.000 Credits  
Prerequisites: EDMA 512 and EDMA 521

Curriculum Development and Research in Mathematics Education is a capstone course for leadership in mathematics education. It addresses recent research in mathematics education and the design, implementation, and evaluation of research-based curriculum development; action research methods; and applications.

**EDMA 798 Independent Study in Math Ed**  
1.000 TO 6.000 Credits

Independent study in Mathematics Education under the supervision of a faculty member.

## SPECIAL EDUCATION (EDN)

**EDN 501 Strategies for LD**  
3.000 Credits  
Prerequisites: EDC 501

Content includes strategies for teaching 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 and instruction, inclusion, and generality of behavior change will also be included.

**EDN 502 Social/Vocational Transitions**  
3.000 Credits  
Prerequisites: EDC 501 or EDN 520

Course includes strategies that teach age-appropriate social skills to elementary students with learning disabilities. Topics include interactive skills, self-management skills, self-concept, attitude, communication skills particularly pragmatics, assessing social skills, and differential responding in a variety of social settings found in the school, home, and community.

**EDN 503 Assessment of the Learner**  
3.000 Credits  
Prerequisites: EDC 501

Formal and informal assessment strategies used in the identification and service of students with handicaps are described. Technical and operations aspects of standardized testing, curriculum-based assessment, and informal strategies are described.

**EDN 504 Assessment Practicum**  
1.000 Credits  
Prerequisites: EDC 501

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.

**EDN 505 Teaching Students with ADD**  
2.000 TO 3.000 Credits

Identification of the behavioral characteristics and instructional needs of students with attention deficit disorders and/or hyperactivity will be discussed. Conducting and interpreting assessment, promoting academic skill gains, sustained attention, task involvement, self-management and functional social skills, and managing hyperactive and hypoactive behaviors will be addressed. Strategies to support and promote family involvement and self-esteem will be described.

**EDN 506 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.

**EDN 507 Ed of the Emotionally Impaired**  
2.000 Credits  
Prerequisites: EDC 561

Explores educational strategies for the emotionally disturbed and behaviorally disordered. Emphasis is given to etiological factors and prescriptive approaches to teaching. The role of the teacher as a consultant, a modifier of behavior, and a learning strategist is explored.

**EDN 508 Internship Seminar - LD**  
1.000 Credits  
Prerequisites: EDC 501 and EDN 501 and EDN 503 and EDN 504

Seminar will focus on the discussion, development, and evaluation of Individualized Educational Programs, Individualized Transition Plans, and Behavior Intervention Plans for students with learning disabilities at a variety of

internship sites. Topics will include academic and behavior assessment and strategies, curriculum, child study teaming, service delivery options and inclusion strategies.

**EDN 520 Intro to Emotional Impairments**  
3.000 Credits

Identification of the behavioral characteristics and instructional needs of children with emotional impairments/behavior disorders will be discussed. Causes of emotional impairments and environmental influences on behavior will also be discussed. Strategies for identification, assessment, and interpreting such instruments will be addressed. Finally, instructional strategies for students with emotional impairments will be described and practiced through classroom activities. (YR).

**EDN 521 Practicum at Psych Facility**  
1.000 Credits

Experience in a clinical setting with emotionally impaired individuals, for no less than 45 clock hours. Activities include working with cooperating teacher on tasks such as individual tutoring, data collection, informal assessment, and program implementation and evaluation. Also included will be the development of goals and objectives relevant for emotionally impaired students. (YR).

**EDN 522 Emotional Impairments Intrnshp**  
3.000 Credits  
Prerequisites: EDN 520 and EDN 525 and EDN 526 and EDN 523

Field experience with elementary/secondary students with emotional impairments in classroom setting. Experiences include delivery of direct instruction, observations, tutoring, small and large group instruction, curriculum development, program development, and implementation and participation in the IEP process. Collaboration with regular classroom teachers, and other activities under the on-site supervision of an EI certified teacher and an EI-certified university field supervisor. Internship also includes weekly seminar. This course has EDN 520, EDN 525, EDN 526, EDN 523 with a "B" or better as prerequisites. (YR).

**EDN 523 Strat: Emotional Impairments**  
3.000 Credits  
Prerequisites: EDN 520 or EDC 501

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 is included. The Individualized Educational Program, development of goals and objectives, linking assessment with instruction, and integrating students with emotional impairments into the regular classroom will also be covered. EDN 520 or EDC 501 is a prerequisite. (YR).

**EDN 524 Couns Fam of Studts Emo Impair**

2.000 Credits  
Prerequisites: EDN 520

Course content focuses on preparing teachers to work with parents and families, to meet the academic, emotional, social and behavioral needs of students with emotional impairments. Issues concerning counseling families and students in educational settings will be discussed. Strategies for individual and group counseling will also be addressed and practiced through classroom activities. (YR).

**EDN 525 Eco-Behavioral Assessment**  
2.000 OR 3.000 Credits  
Prerequisites: EDN 520 or EDC 501

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 tests, and curriculum based assessment. Technical aspects of assessment, interpretation of data, and diagnostic strategies are also addressed, as well as using assessment instruments to facilitate more effective teaching for students with emotional impairments. To be taken concurrently with EDN 526. (YR).

**EDN 526 Eco-Behav Assessment Practicum**  
1.000 Credits  
Prerequisites: EDN 520  
Co-requisites: EDN 525

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, 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. To be taken concurrently with EDN 525. (YR).

**EDN 527 Inclusion:Multisen/Direct Inst**  
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. (F,W,S).

**EDN 580 Mentally Impaired Child**  
2.000 TO 3.000 Credits

A course specially designed for regular classroom teachers to better equip them for effectively teaching children with mental impairments.

**EDN 701 Strategies for LD**  
3.000 Credits

Prerequisites: EDC 501

Content includes strategies for teaching 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 and instruction, inclusion, and generality of behavior change will also be included.

**EDN 702 Social/Vocational Transitions**

3.000 Credits

Prerequisites: EDC 501 or EDN 520

Course includes strategies that teach age-appropriate social skills to elementary students with learning disabilities. Topics include interactive skills, self-management skills, self-concept, attitude, communication skills particularly pragmatics, assessing social skills, and differential responding in a variety of social settings found in the school, home, and community.

**EDN 703 Assessment of the Learner**

3.000 Credits

Prerequisites: EDC 501

Formal and informal assessment strategies used in the identification and service of students with handicaps are described. Technical and operations aspects of standardized testing, curriculum-based assessment, and informal strategies are described.

**EDN 706 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.

**EDN 720 Intro to Emotional Impairments**

3.000 Credits

Identification of the behavioral characteristics and instructional needs of children with emotional impairments/behavior disorders will be discussed. Causes of emotional impairments and environmental influences on behavior will also be discussed. Strategies for identification, assessment, and interpreting such instruments will be addressed. Finally, instructional strategies for students with emotional impairments will be described and practiced through classroom activities. (YR).

**EDN 723 Strat: Emotional Impairments**

3.000 Credits

Prerequisites: EDC 501 or EDN 520

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 is included. The Individualized Educational Program, development of goals and objectives, linking assessment with instruction, and integrating students with emotional impairments into the regular classroom will also be covered. EDN 520 or EDC 501 is a prerequisite. (YR).

**EDN 725 Eco-Behavioral Assessment**

2.000 TO 3.000 Credits

Prerequisites: EDC 501 or EDN 520

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 tests, and curriculum based assessment. Technical aspects of assessment, interpretation of data, and diagnostic strategies are also addressed, as well as using assessment instruments to facilitate more effective teaching for students with emotional impairments. To be taken concurrently with EDN 526. (YR).

## EDUCATION TECHNOLOGY (EDT)

**EDT 500 Instrl Media Meth and Matrsl**

1.000 TO 2.000 Credits

Explores the technology, the production, and the effective use of audiovisual media instructional purposes in a variety of settings.

**EDT 501 Rsrch, Trnds&Iss in Ed Tchnlgy**

3.000 Credits

This course is designed to acquaint the students with research and issues facing education in the digital era. This course will look at the wide range of developments in technology and investigate the trends that are impacting the field of educational technology. Students explore and analyze key issues related to technology in the classroom of the twenty-first century. (F)

**EDT 502 Surv Prog, Auth, Basic Tools**

3.000 Credits

This course provides students with a general overview of various software packages that can be used to create multimedia and hypermedia for use in educational modules. The students will create several projects using various basic tools, programming and authoring environments to develop interactive multimedia, computer-based instructional products. (W)

**EDT 510 Teaching with Technology**

3.000 Credits

Prerequisites: EDT 501 and EDT 502 and EDT 514

Introduces students to the management and integration of technology in education. Students experience and become familiar with technologically based teaching and learning materials; learn methodologies for using technology in specific

teaching situations including audiovisual and media methods; develop skills in effectively evaluating educational software; explore how technology can be used as a problem-solving tool within the classroom environment; and become familiar with application programs, telecommunications and multimedia. (F, W, S).

**EDT 511 Technology in Second Educ: MAT**  
3.000 Credits

This course focuses on teaching technology 6-12. The course will focus on understanding technology literacy at the secondary school level. Additionally, the course will provide opportunities to develop teaching activities that provide 6-12 learners with the ability to utilize productivity, Internet, and multimedia tools and understand ethical and safety issues related to the use of technology in education.

**EDT 512 Human Performance Improvement**  
3.000 Credits

This course addresses organizational and human behaviors that affect performance. Causes of performance deficits will be examined and possible solutions linking business goals to interventions will be considered.

**EDT 513 Analyzing Human Performance**  
3.000 Credits  
Prerequisites: EDT 512

Students will practice research design, sampling, surveys, and statistical analysis in the analysis of performance problems in local companies. Different modes of performance analysis will be demonstrated. (F, W).

**EDT 514 Application of Instrl Design**  
3.000 Credits  
Prerequisites: EDT 501 and EDT 502

The course provides students with necessary skills to apply Technological Pedagogical Content Knowledge (TPCK) instructional design process in a specific subject area.

**EDT 516 Application of Distance Learn**  
3.000 Credits  
Prerequisites: EDT 505 and EDT 512 and EDT 514

Students will use cameras, microphones, VCRs, computers, and other equipment to manage video conferences and other forms of distance education. Students will research distance learners' satisfaction and retention of distance learning applications.

**EDT 517 Evaluating PI Interventions**  
3.000 Credits  
Prerequisites: EDT 512

Students will learn several models for evaluating performance interventions. Concepts of validity, reliability, item analysis and culture bias will be included.

**EDT 519 Select & Design Interventions**

3.000 Credits  
Prerequisites: EDT 512 and EDT 513 and EDT 517

Students will learn appropriate interventions for remedying typical performance problems. Students will also learn to manage and monitor the implementation process. (F, W).

**EDT 520 Desn of Tech-Based Learning**  
3.000 Credits  
Prerequisites: EDT 501 and EDT 502

Students learn how to design instructional materials to be delivered in an online environment. Students plan for each stage of the design process by selecting several performance problems and creating appropriate technology-based solutions for those problems.

**EDT 521 Transitioning to HPI**  
3.000 Credits  
Prerequisites: EDT 512 and EDT 513 and EDT 517 and EDT 519

Students will learn tools for analyzing organizational readiness for change. Students will plan an intervention cycle including preparing for change, designing the intervention, and comparing anticipated and actual results.

**EDT 522 Dev of Tech-Based Learning**  
3.000 Credits  
Prerequisites: EDT 520 and EDT 501 and EDT 502

Students will learn how to develop instructional materials to be delivered in a technology enhanced and/or web-based environment. Design documents created in EDT 520 will be used to inform the creation of a series of online learning modules and activities.

**EDT 530 Assistive Technology**  
3.000 Credits

This course will discuss how individuals learn about and use technology to assist people with disabilities. Discussions and project work will focus on ergonomics, transparency, controls, computer screens, age factors, and associated costs. (F).

**EDT 531 Lead. & Prof. devel in Ed Tech**  
3.000 Credits  
Prerequisites: EDT 510 and EDT 501 and EDT 502 and EDT 514 and EDT 520 and EDT 522

This field-based course provides students with necessary skills to design and practice methods and strategies for providing effective professional development programs for teachers and to demonstrate leadership in technology learning practices and techniques in K-12 environment. This course is designed as a capstone course and should be taken in the final semester of the program.

**EDT 562 EDT Internship/Seminar**  
3.000 Credits



A supervised field experience in which students will work in a K-12 technology program for 120 clock hours. In this internship students will serve as instructional staff, developing knowledge of and experience in managing resources, assessing students, working with students to develop technology literacy, and assisting another teacher in integrating technology into the classroom. In addition, a weekly seminar to explore issues related to K-12 technology programs will be held. (F, W).

**EDT 580 Appl of Tech for Organ Admin**  
2.000 OR 3.000 Credits

FULL TITLE: Applications of Technology for Organizational Administrators. This course will focus on the role of organizational administrators in the applications of technology within an organization, including policy development, personnel management, financial planning and budgeting, program planning and evaluation, training, and strategic planning.

**EDT 585 Technology for Administrators**  
3.000 Credits

This course will focus on the role of educational administrators in the applications of technology within a school, including policy development, personnel/student management, financial planning and budgeting, curricular planning and evaluation and professional development.

**EDT 714 Application of Instrl Design**  
3.000 Credits

The course provides students with necessary skills to apply Technological Pedagogical Content Knowledge (TPCK) instructional design process in a specific subject area.

**EDT 720 Desn of Tech-Based Learning**  
3.000 Credits  
Prerequisites: EDT 505 or EDT 514

Students learn how to design instructional materials to be delivered in an online environment. Students plan for each stage of the design process by selecting several performance problems and creating appropriate technology-based solutions for those problems.

**EDT 722 Dev of Tech-Based Learning**  
3.000 Credits  
Prerequisites: EDT 720

Students will learn how to develop instructional materials to be delivered in a technology enhanced and/or web-based environment. Design documents created in EDT 520 will be used to inform the creation of a series of online learning modules and activities.

**EDT 731 Lead. & Prof. devel in Ed Tech**  
3.000 Credits  
Prerequisites: EDT 510

This field-based course provides students with necessary skills to design and practice methods and strategies for providing effective professional development programs for teachers and to demonstrate leadership in technology learning practices and

techniques in K-12 environment. This course is designed as a capstone course and should be taken in the final semester of the program.

**EDT 785 Technology for Administrators**  
3.000 Credits

This course will focus on the role of educational administrators in the applications of technology within a school, including policy development, personnel/student management, financial planning and budgeting, curricular planning and evaluation and professional development.

## EXPLORATORY STUDIES (EXPS)

**EXPS 507 Inquiry-based Math and Science**  
3.000 Credits

This inquiry-based laboratory course intends to support the learning of early childhood educators (birth to grade 2) in foundations of science and mathematics. The course integrates concepts and processes that arise in both disciplines, such as classification; units and measurements; shapes and structures and their properties; patterns; problem solving; representation; cause and effect; use of evidence (three credits). Required for Early Childhood Comprehensive Major. Elective for elementary Education Certification Students. Students cannot receive credit for both EXPS 407 and 507. Students seeking graduate credit should elect EXPS 507. The required lab fee is to cover course materials.

**EXPS 515 Evolution for Teachers**  
1.000 TO 3.000 Credits

Course is designed to meet the needs of grade K-12 teachers teaching about evolution. The Michigan Department of Education requires students to be able explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species.

**EXPS 520 Science Ed Action Research**  
3.000 Credits  
Prerequisites: EDK 500

This is the culminating course that integrates prior experiences in the MSSE program. Each student will identify a research question related to his/her own classroom practice, review relevant literature, collect and analyze data, and complete a scholarly report.

**EXPS 543 Family/School/Community Collab**  
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 593 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.

**EXPS 598 Exploring Writing/Chld&Yng Ad**  
3.000 Credits

This course provides a theoretical foundation for writing instruction of children/adolescents in grades K-8. Emphasis is placed on modeling, instructional strategies, and assessment for supporting student writers that pre-service and in-service teachers can use to facilitate students development of written language across various genres. TB clearance, criminal background check, and blood borne pathogens/infectious diseases training required.

**EXPS 599 Individ Res in Lit in Educatio**  
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 three credits as approved by advisor.

**EXPS 620 Action Research**  
3.000 Credits  
Prerequisites: EDK 500

Students will learn about action research as a means to become a reflective practitioner to make improvements in an educational setting. Students will identify a research question related to his/her own professional practice, review relevant literature, collect and analyze data, develop and implement an action plan, and complete a scholarly report.

**EXPS 715 Evolution for Teachers**  
3.000 Credits

Course is designed to meet the needs of grade K-12 teachers teaching about evolution. The Michigan Department of Education requires students to be able explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species.

**EXPS 720 Science Ed Action Research**  
3.000 Credits

This is the culminating course that integrates prior experiences in the MSSE program. Each student will identify a research question related to his/her own classroom practice, review relevant literature, collect and analyze data, and complete a scholarly report.

**EXPS 799 Ind. Res. in Lit 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 three credits as approved by advisor.

**EXPS 820 Action Research**  
3.000 Credits  
Prerequisites: EDK 500

Students will learn about action research as a means to become a reflective practitioner to make improvements in an educational setting. Students will identify a research question related to his/her own professional practice, review relevant literature, collect and analyze data, develop and implement an action plan, and complete a scholarly report.

## LIBRARY SCIENCE (LIBR)

**LIBR 575 Issues Lit Child/Yng 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. (F, YR)

## PROFESSIONAL EDUCATION (PDED)

**PDED 505 Sp Ed Legisln and Litigation**  
2.000 OR 3.000 Credits  
Prerequisites: EDC 501 or EDN 520

Content traces the historical development of special education through landmark litigation and legislation, 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 515 Museum Resources for Teaching**  
3.000 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.

**PDED 516 Internship in Museum Education**  
2.000 OR 3.000 Credits

The museum education internship will prepare students with the knowledge and skills they need to plan, implement, and evaluate educational and interpretive programs in the context of museums. The educational functions of museums will be explored. The students will apply their knowledge and

experiences to K-12 instruction in the core content areas.

**PDED 518 Tchg Mid Sch Math/Spec Needs**  
1.000 TO 3.000 Credits  
Prerequisites: EDD 512

This course is intended to introduce students to the characteristics and assessment of persons with ASD, as well as the best practices related to educating students with Autism Spectrum Disorders (ASD). Specifically, students will learn evidence based practices for: assessing students with ASD, creating an appropriate educational environment for students with ASD, and providing academic instruction and behavioral interventions to students with ASD in special education and general education settings. Instruction will emphasize specific assessment and teaching tools and behavior management principles and practices associated with educating K-12 student with ASD.

**PDED 525 The 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.

**PDED 705 SpEd Legislatn and Litigation**  
3.000 Credits

Content traces the historical development of special education through landmark litigation and legislation, 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. Additional course work differentiates this course from the masters level.

# COLLEGE OF ENGINEERING & COMPUTER SCIENCE



**THE UNIVERSITY OF MICHIGAN - DEARBORN**

# COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

## Administration

Tony England, PhD, Interim Dean, College of Engineering and Computer Science  
 Keshav S. Varde, PhD, Associate Dean, College of Engineering and Computer Science  
 William I. Grosky, PhD, Chair, Department of Computer and Information Science  
 Ben Q. Li, PhD, Chair, Department of Mechanical Engineering  
 Pankaj K. Mallick, PhD, Director, Interdisciplinary Programs  
 Yi Lu Murphey, PhD, Chair, Department of Electrical and Computer Engineering  
 Armen Zakarian, PhD, Chair, Department of Industrial and Manufacturing Systems Engineering  
 Anthony DeLarosa, Cooperative Education Office  
 M. Jeanne Girard, Director, Engineering Professional Development  
 Lisa Remsing, Director of Academic Services

## Faculty (Full-Time)

### Computer and Information Science

Kiumi Akingbehin, PhD, Wayne State University, Professor of Computer and Information Science  
 Bruce Elenbogen, PhD, Northwestern University, Associate Professor of Computer and Information Science  
 William I. Grosky, PhD, Yale University, Professor Computer and Information Science  
 Jinhua Guo, PhD, University of Georgia, Assistant Professor of Computer and Information Science  
 Roberto Kampfner, PhD, University of Michigan, Associate Professor of Computer and Information Science  
 Marouane Kessentini, PhD, University of Montreal, Assistant Professor of Computer and Information Science  
 Di Ma, PhD, University of California, Irvine, Assistant Professor of Computer and Information Science  
 Bruce Maxim, PhD, University of Michigan, Associate Professor of Computer and Information Science  
 Brahim Medjahed, PhD, Virginia Tech, Assistant Professor of Computer and Information Science  
 Jie Shen, PhD, Beijing University of Agricultural Engineering and University of Saskatchewan, Assistant Professor of Computer and Information Science  
 Louis Tsui, PhD, University of Michigan, Associate Professor of Computer and Information Science  
 Shenquan Wang, PhD, Texas A&M University, Assistant Professor of Computer and Information Science  
 Zhiwei Xu, PhD, Atlantic University, Assistant Professor of Computer and Information Science  
 David Yoon, PhD, Wayne State University, Associate Professor of Computer and Information Science  
 Qiang Zhu, PhD, University of Waterloo, Professor of Computer and Information Science

### Electrical and Computer Engineering

Selim Saad Awad, PhD, Polytechnic Institute of Grenoble, Professor of Electrical and Computer Engineering  
 Ali ElKateeb, PhD, Concordia University, Associate Professor of Electrical and Computer Engineering  
 Sergey Gladyshev, PhD, Chelyabinsk Polytechnical Institute, Assistant Research Scientist of Electrical and Computer Engineering  
 Taejung Kim, PhD, Texas A & M, Associate Professor of Electrical and Computer Engineering  
 Sridhar Lakshmanan, PhD, University of Massachusetts, Amherst, Associate Professor of Electrical and Computer Engineering  
 Hafiz Malik, PhD, University of Illinois At Chicago, Assistant Professor of Electrical and Computer Engineering  
 Chunting "Chris" Mi, PhD, University of Toronto, Professor of Electrical and Computer Engineering  
 John Miller, PhD, University of Toledo, Associate Professor of Electrical and Computer Engineering  
 Yi Lu Murphey, PhD, University of Michigan, Chair and Professor of Electrical and Computer Engineering  
 Narasimhamurthi "Natu" Natarajan, PhD, University of California-Berkeley, Associate Professor of Electrical and Computer Engineering  
 Paul Richardson, PhD, Oakland University, Professor of Electrical and Computer Engineering  
 Adnan Shaout, PhD, Syracuse University, Professor of Electrical and Computer Engineering  
 Malayappan Shridhar, PhD, University of Aston in Birmingham, England, Professor of Electrical and Computer Engineering  
 Paul Watta, PhD, Wayne State University, Associate Professor of Electrical and Computer Engineering  
 Weidong Xiang, PhD, Tsinghua University, Associate Professor of Electrical and Computer Engineering  
 Dongming Zhao, PhD, Rutgers University, Professor of Electrical and Computer Engineering

### Industrial and Manufacturing Systems Engineering

Chia-hao Chang, PhD, Oregon State University, Professor of Industrial and Manufacturing Systems Engineering  
 Yubao Chen, PhD, University of Wisconsin-Madison, Professor of Industrial and Manufacturing Systems Engineering  
 Jian Hu, PhD, Northwestern University, Assistant Professor of Industrial and Manufacturing Systems Engineering  
 Swatantra K. Kachhal, PhD, University of Minnesota, Professor of Industrial and Manufacturing Systems Engineering  
 Sang-Hwan Kim, PhD, North Carolina State University, Assistant Professor of Industrial and Manufacturing Systems Engineering  
 James W. Knight, PhD, Ohio State University, Associate Professor of Industrial and Manufacturing Systems Engineering  
 Ghassan Kridli, PhD, University of Missouri-Columbia, Associate Professor of Industrial and Manufacturing Systems Engineering  
 Choel Lee, PhD, Purdue University, Associate Professor of Industrial and Manufacturing Systems Engineering  
 Yung-wen Liu, PhD, University of Washington, Associate Professor of Industrial and Manufacturing Systems Engineering  
 Elsayed A. Orady, PhD, McMaster University, Professor of Industrial and Manufacturing Systems Engineering  
 David Rodrick, PhD, University of Louisville, Assistant Professor of Industrial and Manufacturing Systems Engineering

Onur Ulgen, PhD, Texas Technological University, Professor of Industrial and Manufacturing Systems Engineering  
 Armen Zakarian, PhD, University of Iowa, Professor of Industrial and Manufacturing Systems Engineering

## Mechanical Engineering

Alan Argento, PhD, University of Michigan, Professor of Mechanical Engineering  
 Nilay Chakraborty, PhD, University of North Carolina, Assistant Professor of Bioengineering  
 John G. Cherng, PhD, University of Tennessee, Professor of Mechanical Engineering  
 Chi L. Chow, PhD, DSc, University of London, Professor of Mechanical Engineering  
 Gargi Ghosh, PhD, University of Kentucky, Assistant Professor of Bioengineering  
 Hugh Huntley, PhD, University of Michigan, Associate Professor of Mechanical Engineering  
 Dohoy Jung, PhD, University of Michigan, Assistant Professor of Mechanical Engineering  
 Hong Tae Kang, PhD, University of Alabama, Associate Professor of Mechanical Engineering  
 Ben Q. Li, PhD, University of California at Berkeley, Professor of Mechanical Engineering  
 Robert E. Little, PhD, University of Michigan, Professor of Mechanical Engineering  
 Joe Fu-Jiou Lo, PhD, University of Southern California, Assistant Professor of Bioengineering  
 Pankaj K. Mallick, PhD, Illinois Institute of Technology, William E. Stirton Professor  
 Carole Mei, PhD, University of Auckland, Associate Professor of Mechanical Engineering  
 Pravansu Mohanty, PhD, McGill University, Paul K. Trojan Collegiate Professor of Engineering  
 Eric Ratts, PhD, Massachusetts Institute of Technology, Associate Professor of Mechanical Engineering  
 German Reyes-Villanueva, PhD, University of Liverpool, UK, Associate Professor of Mechanical Engineering  
 Subrata Sengupta, PhD, Case Western Reserve University, Professor of Mechanical Engineering  
 Taehyun Shim, PhD, University of California-Davis, Associate Professor of Mechanical Engineering  
 Keshav S. Varde, PhD, University of Rochester, Professor of Mechanical Engineering  
 Yi Zhang, PhD, University of Illinois at Chicago, Professor of Mechanical Engineering  
 Oleg Zikanov, PhD, Moscow State University, Professor of Mechanical Engineering

## Professors Emeriti

A. Adnan Aswad, PhD, University of Michigan, Professor of Industrial and Manufacturing Systems Engineering  
 G. Fredric Bolling, PhD, University of Toronto, Professor of Mechanical Engineering  
 Luiz V. Boffi, ScD, Massachusetts Institute of Technology, Professor of Electrical and Computer Engineering  
 J. Robert Cairns, PhD, University of Michigan, Professor of Mechanical Engineering  
 Howard E. Conlon, MSME, Associate Professor of Mechanical Engineering

Thomas A. Despres, PhD, University of Michigan, Professor of Mechanical Engineering  
 Izzeddin S. Habib, PhD, University of California-Berkeley, Professor of Mechanical Engineering  
 Dwight S. Heim, PhD, Professor of Electrical Engineering  
 George M. Kurajian, MSME, University of Michigan, Professor of Mechanical Engineering  
 Murray H. Miller, PhD, University of Michigan, Professor of Electrical and Computer Engineering  
 William J. Mitchell, MS, University of Michigan, Assistant Professor of Mechanical Engineering  
 Syed Murtuza, PhD, Purdue University, Professor of Electrical and Computer Engineering  
 Tsung Y. Na, PhD, University of Michigan, William E. Stirton Professor of Mechanical Engineering  
 John Riordan, BS, University of Michigan, Professor of Computer and Information Science  
 Joseph E. Sullivan, MS, University of Michigan, Associate Professor of Electrical and Computer Engineering  
 Paul K. Trojan, PhD, University of Michigan, Professor of Metallurgical Engineering  
 Louis W. Wolf, PhD, University of Michigan, Associate Professor of Mechanical Engineering

## Post-Baccalaureate Programs

The post-baccalaureate programs in engineering at the UM-Dearborn are geared to the demands of the student and the desires of society to further the technical background of the practicing engineer. Working students are accommodated by course offerings late in the afternoon and evening. Master's level study is offered in automotive systems engineering, computer and information science, computer engineering, electrical engineering, energy systems engineering, engineering management, industrial and systems engineering, mechanical engineering, manufacturing systems engineering, program and project management and software engineering. Each of these programs and their specific requirements are discussed in the sections that follow.

## Graduate Programs

While the undergraduate program in engineering offers a challenging basic education, a program of graduate studies provides the opportunity for advanced or special studies in particular areas of interest. Particularly in an era of rapid technological and scientific advancement, many students find continued study a decided advantage. It offers an attractive opportunity to pursue their special interests and to acquire a more thorough preparation for their professional careers.

The graduate faculty at UM-Dearborn is authorized by the Rackham School of Graduate Studies to conduct approved programs leading to master's degrees. Presently, Master of Science in Engineering degree programs, with specialization in automotive systems engineering, computer engineering, mechanical, electrical, industrial and systems engineering, and manufacturing systems engineering, are offered. Master of Science degrees in Computer and Information Science, Engineering Management, Information Systems and Technology, and Software Engineering are also offered. A dual degree program leading to both a Master of Business Administration and

a Master of Science in Engineering-Industrial and Systems Engineering is also available. Students admitted to the Rackham School of Graduate Studies, pursuing degree programs elsewhere in the University (i.e., at another campus), may elect to take a portion of their coursework at UM-Dearborn.

Many graduate programs and courses are offered using distance learning technologies. Students interested in this flexible and convenient course option should visit <http://dln.engin.umd.umich.edu> or call 313-593-4000 for additional information.

## Rules and Procedures

Since all master degree programs in graduate studies in engineering at the University of Michigan-Dearborn are offered through the Rackham School of Graduate Studies, Ann Arbor, and all graduate students in engineering are registered in the graduate school, it is the responsibility of each graduate student to read the rules and procedures that are available on the Rackham School of Graduate Studies website: [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/).

## PhD in Automotive Systems Engineering and Information Systems Engineering

The College of Engineering and Computer Science at the University of Michigan-Dearborn offers two Ph.D. programs: Automotive Systems Engineering and Information Systems Engineering. These are 50-credit-hour programs that feature:

- Full- or part-time enrollment
- An interdisciplinary curriculum
- A wide range of specialization courses and research topics
- Convenient evening classes

In order to compete globally, technology industries are encouraging their work forces to pursue advanced degrees and gain research experience. Both programs are designed to meet the requirements of engineers who intend to follow a career of research and technical specialization and serve as technical leaders, innovators, and research mentors.

## Admission

The following are the minimum requirements for admission in the Ph.D. program.

- 1) A master's degree in engineering or computer science from an accredited program.
- 2) Master's GPA: 3.5 minimum out of 4 for regular admission.
- 3) GRE taken within 5 years of application.
- 4) TOEFL for international students (minimum score of 84).
- 5) At least one advanced mathematics course at the master's level.
- 6) Three recommendation letters from faculty and/or employer

indicating the applicant's research potential.

Applications are accepted for both Fall and Winter terms.

## Degree Requirements

A student must complete a minimum of 50 credit hours (beyond master's) for graduation. Out of the 50 credit hours, 24 credit hours will be based on coursework (beyond master's) and 26 credit hours will be based on Ph.D. dissertation. For good academic standing, the student must maintain a minimum GPA of 6 out of 9.

## Course Requirements

The course curriculum will consist of one required core course, four specialization courses, three elective courses, and a seminar course. Each student must submit a course plan with specified specialization area within one semester after starting the program. All Ph.D. courses must be 500 level and above. However, not all 500-level courses may be accepted in the Ph.D. program. Up to nine credit hours of courses from another university will be accepted as transfer credits; however, the Doctoral Program Council must approve the acceptance of transfer credits.

### *Core Course (3 credit hours)*

The student must complete the core course titled "Modeling of Automotive Systems" in the Automotive Systems Engineering program or "Information Engineering" in the Information Systems Engineering program.

### *Specialization Courses (12 credit hours)*

Four courses must be selected in an area of specialization with prior approval from the director of the doctoral program.

### *Elective Courses (9 credit hours)*

The student must take three elective courses, at least two of which must be from outside the student's specialization area.

### *Seminar Course (0 credit hours)*

The student must register for and participate in the seminar course each semester after attaining candidacy and until the completion of the dissertation. The seminar course will be of pass/fail type and will not carry any credits.

## Qualifying Examination

The Qualifying Examination must be taken in one major area and two minor areas. The proposed three examination areas must be approved by the Doctoral Program Council. The major area will require both a written and an oral examination. The other two areas, designated as minor areas, will require only written examinations.

- 1) The qualifying examination must be taken within 24 months after admission in the program. This will typically occur after finishing the core course, at least two specialization courses, and two courses outside the specialization area.
- 2) The student must be in good academic standing at the time of the qualifying examination.
- 3) The student must select three areas for the qualifying examination and declare one of the areas as the specialization

area, typically the area of the student's research. There will typically be two examiners in the major area (in the area of student's research). The other two areas will be minor areas (of the student's choice, but approved by the Doctoral Program Council) and will have one examiner each.

- 4) The major area will require both written and oral examinations. Examination in minor areas will be written only.
- 5) The student will select the examination areas, which must then be approved by the Doctoral Program Council. The Doctoral Program Council will assign the examiners for each of the areas selected.
- 6) The Doctoral Program Council will review and approve the examination results.
- 7) A student failing the qualifying examination the first time will be allowed to take it again; however, if the student fails it the second time, he/she will be terminated from the program.

## Preliminary Examination

Following successful completion of the required coursework and the qualifying examination, the student is required to take a Preliminary Examination to test his/her knowledge of the research area. The Preliminary Examination will typically be an oral examination administered by the dissertation committee following a presentation (in both written and oral forms) of the student's dissertation proposal. A student is not permitted to take the Preliminary Examination before he/she passes the Qualifying Examination. The student must also be in good academic standing with a cumulative GPA of 6.0/9.0 (*B+* or better) in order to be able to take the Preliminary Examination.

- 1) The student must submit a written dissertation proposal (which will be prepared in consultation with the dissertation advisor) to the Doctoral Program Council at least 15 days and the dissertation committee at least 10 days in advance of open oral presentation in defense of the proposal.
- 2) The Doctoral Program Council must approve the dissertation topic, the proposal outline, and the dissertation committee prior to the preliminary examination.
- 3) The entire dissertation committee must be present during the preliminary examination and approve the dissertation proposal. The oral presentation will be open to other interested faculty and students.

## Candidacy

A student will become a candidate for the Ph.D. degree after completing the required coursework with a minimum GPA 6 out of 9 and after passing both qualifying and preliminary examinations. At this point, the student will be allowed to pursue the dissertation work.

## Dissertation

### Dissertation Committee

The dissertation committee will include a minimum of four faculty members. One of these members must be from outside the department of the dissertation faculty advisor. The faculty advisor will serve as the chair of the dissertation committee. Depending on the dissertation topic, other members, including a

qualified industry member, may be added to the dissertation committee. The industry member's curriculum vitae must be submitted to the Doctoral Program Council for approval.

All members of the dissertation committee are responsible for reading the dissertation and submitting their written evaluations on the dissertation to the Doctoral Program Council at least one week prior to the oral dissertation defense.

## Dissertation and Dissertation Defense

The dissertation must include original research work of archival quality. The student must submit a written copy of the dissertation to the dissertation committee for review and approval at least a month before the oral defense. Conformity with format will be checked by the Office of the Graduate Board in the Provost's office. The work must be defended at a final oral examination open to other faculty, students, and interested public. The dissertation committee members must be present at the dissertation defense.

## Other Requirements

While there will be no formal residency requirements for the part time students, it is expected that they will spend sufficient time on campus for conducting research, interacting with other graduate students, and fostering intellectual activities. All students in the Ph.D. program will be required to attend graduate seminars in the College of Engineering and Computer Science. After attaining candidacy, each Ph.D. student will be required to present at least one seminar per year on his/her research until the dissertation is completed. All Ph.D. students will be required to attend these research seminars. After attaining candidacy, each Ph.D. student must spend at least 12 hours per week on campus working on his/her research and discussing research issues with faculty and fellow students.

## Additional Information

Additional information on Ph.D. programs can be requested from the Office of Interdisciplinary Programs, College of Engineering and Computer Science, University of Michigan-Dearborn, 116 MSEL, 4901 Evergreen Road, Dearborn, MI 48128-2406. Detailed information on courses offered in each program is given at [www.engin.umd.umich.edu/PhD](http://www.engin.umd.umich.edu/PhD)

## Master of Science in Engineering (MSE) and Master of Science (MS) Programs

The programs in industrial systems, information systems and technology, computer and information science, automotive systems, energy systems, electrical, computer, mechanical, manufacturing systems engineering, software, program and project management, as well as engineering management, are designed to provide a thorough and vigorous educational experience both for the student who plans to enter the engineering profession after completing the requirements and for the student who wishes to pursue the PhD. This is accomplished by the curricula, which provides appropriate breadth, while at the same time permitting the students considerable freedom in the



selection of both engineering science and professionally oriented courses in their special interests, and through an environment in which faculty and graduate students may work together on a broad spectrum of research projects.

At the present time, the size of the student body, together with the breadth and depth of the instructional programs to be given, require that specific course offerings be spaced appropriately throughout the three-term year on which UM-Dearborn operates. The present schedule of courses in the four engineering disciplines and CIS provides opportunity for both full-time and part-time students.

Students who wish to pursue engineering or CIS programs on a full-time basis may enter in fall, winter, or summer terms. The usual full load program of graduate studies varies from none to 12 credit hours each term. For mechanical, electrical and computer, industrial and systems, manufacturing systems, or automotive systems engineering, qualified students entering in the fall for continuous study can plan to complete their studies in one year. Normally they will complete an average of 24 credit hours in the first two terms, and can satisfy the remaining credit hours of the minimum 30-hour requirement on a part-time basis through courses that span the complete spring-summer term, or in some cases on a full-time basis during the spring half-term. Students in the engineering management program must complete 36 credit hours. Students in the automotive systems engineering program must undertake a capstone project or a master's thesis, which will span two terms. Full-time students should be able to complete their automotive systems engineering degree program in four terms.

Students planning part-time study can begin their work during any of the three terms. Class schedules are arranged to accommodate part-time, later afternoon, and evening students from local industrial firms. Information on this kind of program, which provides many advantages to both employer and student, can be obtained from the graduate program advisor.

Students may also pursue an alternative type of participation (similar in timing to a cooperative program but without University control over the work periods) when continuous participation is not feasible for financial or other reasons.

This degree program is available both on campus and via the Internet.

## Requirements for the MSE in Automotive Systems Engineering

The Automotive Systems Engineering degree program aims to achieve the following educational goals:

- 1) Provide depth in the area of automotive systems engineering.
- 2) Provide breadth across the engineering disciplines of electrical, industrial, mechanical, materials, and manufacturing engineering and provide this breadth from an engineering systems perspective.
- 3) Provide a significant and industrially relevant engineering design experience through a capstone project or a master's thesis.

A candidate for the Master of Science in Engineering in Automotive Systems Engineering must meet the requirements for the Bachelor of Science degree at this campus or the equivalent of these requirements. Undergraduate degrees must be from an accredited program, and for regular admission must be with an average of *B* or better. Each applicant should present at least two complete, official transcripts of all prior college work.

The candidate must then complete at least 30 semester hours of graduate work approved by the program advisor/graduate advisory committee with a grade of at least a *B* covering all courses elected. Further, a grade below *B* in any course will not be accepted for graduate credit unless, after review of the credit circumstances, the acceptance of the credit is recommended by the program director. No more than one *B-* will be allowed under any circumstances. These 30 hours must include six hours of a capstone project or a master's thesis. Applicants who meet the general admission criteria but do not have adequate preparation in required areas of engineering would be asked to take appropriate undergraduate courses as a condition for full admission to the program. Such courses, when elected, will not count towards the degree requirements.

The automotive systems engineering degree program is made up of three components:

- 1) Core courses of 12 credit hours.
- 2) Concentration courses of 12 credit hours.
- 3) Capstone project or master's thesis of 6 hours.

### Core courses

The core is intended to provide a unified graduate-level preparation in interdisciplinary topics that will allow students to elect courses in departmental, systems, or general concentrations. It consists of six credit hours of required courses and six credit hours of electives based on the applicant's background.

#### Required Core Courses

AENG 500	The Automobile-An Integrated System.....	3 hrs
AENG 587	Automotive Manufacturing Processes.....	3 hrs

#### Elective Core Courses

AENG 502	Automotive Systems Modeling .....	3 hrs
AENG 505	Digital Systems and Microprocessors .....	3 hrs
	(not open to students with EE/CE degree)	
AENG 510	Vehicle Electronics I.....	3 hrs
	(not open to students with EE/CE degree)	
AENG 545	Vehicle Ergonomics I.....	3 hrs
AENG 547	Automotive Powertrains I.....	3 hrs
AENG 581	Materials Selection in Automotive Design.....	3 hrs
AENG 583	Project Management and Concurrent Engineering .....	3 hrs
AENG 596	Internal Combustion Engines I.....	3 hrs

### Concentration courses

The program offers several concentration areas to meet the needs of individual students. The student may select the concentration based on his/her interest and background. The following concentrations are currently offered. Each student is required to

take at least four courses (12 credit hours) in the concentration area.

### Electrical

ECE 515	Vehicle Electronics II.....	3 hrs
ECE 531	Intelligent Vehicle Systems.....	3 hrs
ECE 532	Automotive Sensors and Actuators.....	3 hrs
ECE 533	Active Automotive Safety Systems.....	3 hrs
ECE 5462	Electric Aspects of Hybrid Electric Vehicles.....	3 hrs
ECE 565	Digital Control Systems.....	3 hrs
ECE 580	Digital Signal Processing.....	3 hrs

### Industrial and Manufacturing

IMSE 538	Intelligent Manufacturing Systems.....	3 hrs
IMSE 561	Total Quality Management.....	3 hrs
IMSE 593	Vehicle Package Engineering.....	3 hrs
AENG 546	Vehicle Ergonomics II.....	3 hrs

### Mechanical

ME 537	Automotive Air Conditioning Systems.....	3 hrs
ME 543	Vehicle Dynamics.....	3 hrs
ME 545	Acoustics and Noise Control Systems.....	3 hrs
ME 548	Automotive Powertrains II.....	3 hrs
ME 597	Internal Combustion Engines II.....	3 hrs
ME 598	Automotive Emissions.....	3 hrs
AENG 550	Design of Automotive Chassis and Body Systems.....	3 hrs
AENG 551	Finite Element Methods in Automotive Structure Design.....	3 hrs
AENG 555	Vehicle Stability and Control.....	3 hrs
AENG 598	Energy Systems for Automotive Vehicles.....	3 hrs
AENG 650	Vehicle Crashworthiness.....	3 hrs

### Materials

AENG 584	Lightweight Automotive Alloys.....	3 hrs
AENG 586	Design and Manufacturing with Lightweight Automotive Materials.....	3 hrs
AENG 588	Design and Manufacturing for Environment.....	3 hrs
ME 582	Injection Molding.....	3 hrs
ME 583	Mechanical Behavior of Materials.....	3 hrs
ME 584	Mechanical Behavior of Polymers.....	3 hrs
ME 587	Automotive Composites.....	3 hrs
ME 589	Composite Materials.....	3 hrs
ME 591	Environmental Degradation of Materials.....	3 hrs

### General

With the approval of the advisor, a general concentration of twelve credit hours may be satisfied by selecting courses in more than one concentration.

### Capstone Project or Thesis..... 6 hrs

All students are required to elect either a capstone project or a thesis option. Capstone projects are designed to be team oriented

which further emphasizes the interdisciplinary nature of the program.

All students admitted into the program will be required to meet with the program director/advisor to plan for their concentrations and program of study.

## Requirements for the MS in Computer and Information Science

Students pursuing the MS degree in Computer and Information Science must meet the general requirements of the Rackham School of Graduate Studies. Additional requirements for the program are described below.

### Admission

In addition to meeting Rackham requirements for admission, applicants for the MS in Computer and Information Science are required to meet the following requirements:

- 1) A bachelor's degree from an accredited institution with a grade point average of *B* or better. Applicants with lower GPAs may be granted conditional or probationary admission consistent with Rackham guidelines. Preference will be given to students with a background in Computer and Information Science, engineering, math and science.
- 2) Satisfactory completion of the following:
  - Calculus (1 year)
  - Probability and Statistics (1 course)
  - Data Structures with Algorithm Analysis (1 course)
  - Computer Architecture (1 course)
  - Operating Systems (1 course)
  - Programming Language (preferably C/C++)

**Note:** Students may be admitted provisionally to make up the deficiencies in item 2. In this case, the applicant will be required to complete appropriate courses within two years from the date of entrance. These courses may not be used to satisfy degree requirements.
- 3) Three letters of recommendation, with at least one from a person familiar with the candidate's academic performance, are required. Copies of the applicant's undergraduate transcripts and degree must be submitted.

### Degree Requirements

To satisfy the requirements for the MS degree in CIS, all students admitted to the program are expected to complete 30 semester hours of graduate coursework, with a cumulative grade point average of *B* or better. The program of study consists of core courses, electives and the project/thesis option.

### Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half the minimum number of credit hours

required for their master's or professional degree from U-M/non-Rackham departments and programs (including Dearborn and Flint).

## Specific Course Requirements

The 30 semester hours of required graduate work are as follows:

### Project Option

Core Courses .....	9 hrs
Two Concentration Areas .....	12 hrs
Cognate Courses .....	6 hrs
Project.....	3 hrs

### Thesis Option

Core Courses .....	9 hrs
One Concentration Area .....	6 hrs
Cognate Courses .....	6 hrs
CIS elective .....	3 hrs
Thesis.....	6 hrs

### Core

All students are required to take one course from each of the following three categories:

#### Category 1

CIS 505	Algorithm Design and Analysis .....	3 hrs
CIS 535	Programmable Mobile/Wireless Technologies And Pervasive Computing.....	3 hrs

#### Category 2

CIS 527	Computer Networking .....	3 hrs
CIS 544	Computer and Network Security .....	3 hrs

#### Category 3

CIS 574	Compiler Design .....	3 hrs
CIS 578	Advanced Operating Systems.....	3 hrs

### Concentration

Each student is required to take at least four courses from two of the following concentration areas:

#### Computer Graphics, Geometric Modeling, and Game Design

CIS 515	Computer Graphics .....	3 hrs
CIS 551	Advanced Computer Graphics .....	3 hrs
CIS 552	Information Visualization for Multimedia and Gaming.....	3 hrs
CIS 579	Artificial Intelligence .....	3 hrs
CIS 587	Computer Game Des. & Implementation I .....	3 hrs
CIS 588	Computer Game Des. & Implementation II .....	3 hrs

#### Computer Networks and Security

CIS 527*	Computer Networks.....	3 hrs
----------	------------------------	-------

CIS 537	Advanced Networking .....	3 hrs
CIS 544*	Computer and Network Security .....	3 hrs
CIS 546	Wireless Network Security and Privacy .....	3 hrs
CIS 548	Security and privacy in Cloud Computing.....	3 hrs
CIS 557	Wireless Sensor Networks .....	3 hrs
CIS 559	Principles of Social Network Science .....	3 hrs
CIS 584	Advanced Computer and Network Security....	3 hrs
CIS 629	Research Advances in Computer and Network Security .....	3 hrs
CIS 647	Research Advances in Networking and Distributed Systems .....	3 hrs

### Data Management

CIS 534	The Semantic Web .....	3 hrs
CIS 536	Information Retrieval.....	3 hrs
CIS 548	Security and privacy in Cloud Computing .....	3 hrs
CIS 556	Database Systems.....	3 hrs
CIS 559	Principles of Social Network Science .....	3 hrs
CIS 562	Web Information Management.....	3 hrs
CIS 568	Data Mining .....	3 hrs
CIS 586	Advanced Data Management.....	3 hrs
CIS 658	Research Advances in Data Management Systems .....	3 hrs

### Information Systems

CIS 536	Information Retrieval.....	3 hrs
CIS 544*	Computer and Network Security .....	3 hrs
CIS 553	Software Engineering .....	3 hrs
CIS 554	Information Systems Analysis and Design.....	3 hrs
CIS 555	Decision Support and Expert Systems .....	3 hrs
CIS 556	Database Systems.....	3 hrs
CIS 559	Principles of Social Network Science .....	3 hrs
CIS 564	Principles of Organizational Information Systems .....	3 hrs
CIS 571	Web Services .....	3 hrs
CIS 572	Object-Oriented Systems Design.....	3 hrs
CIS 579	Artificial Intelligence .....	3 hrs

### Software Engineering

CIS 525	Web Technology .....	3 hrs
CIS 535*	Programmable Mobile/Wireless Technologies and Pervasive Computing .....	3 hrs
CIS 537	Advanced Networking .....	3 hrs
CIS 550	Object-Oriented Programming and Its Applications .....	3 hrs
CIS 553	Software Engineering .....	3 hrs
CIS 563	Advanced Software Engineering .....	3 hrs
CIS 565	Software Quality Assurance .....	3 hrs
CIS 566	Software Architecture and Design Patterns.....	3 hrs
CIS 575	Software Engineering Management .....	3 hrs
CIS 577	Software User Interface Design and Analysis.....	3 hrs
CIS 587	Computer Game Design I .....	3 hrs
CIS 588	Computer Game Design II.....	3 hrs

### System Software

CIS 505*	Algorithm Analysis and Design.....	3 hrs
CIS 527*	Computer Networks.....	3 hrs
CIS 535*	Programmable Mobile/Wireless Technologies	

	and Pervasive Computing .....	3 hrs
CIS 544*	Computer and Network Security.....	3 hrs
CIS 548	Security and privacy in Cloud Computing.....	3 hrs
CIS 550	Object-Oriented Programming and its Applications.....	3 hrs
CIS 557	Wireless Sensor Networks .....	3 hrs
CIS 571	Web Services .....	3 hrs
CIS 574*	Compiler Design.....	3 hrs
CIS 578*	Advanced Operating Systems .....	3 hrs
ECE 554	Embedded Systems.....	3 hrs

### Web Computing

CIS 525	Web Technology .....	3 hrs
CIS 534	The Semantic Web .....	3 hrs
CIS 535*	Programmable Mobile/Wireless Technologies and Pervasive Computing .....	3 hrs
CIS 536	Information Retrieval .....	3 hrs
CIS 544*	Computer and Network Security.....	3 hrs
CIS 548	Security and privacy in Cloud Computing.....	3 hrs
CIS 559	Principles of Social Network Science.....	3 hrs
CIS 562	Web Information Management .....	3 hrs
CIS 571	Web Services .....	3 hrs

\*May not be used as concentration course if counted as core course

**Cognate**.....6 hrs

Students can take any graduate- level courses approved by the student's advisor, as described the Rackham requirements for graduation.

### Project Option

Students must take CIS 695, Master's Project for 3 credit hours.

### Thesis Option

Students must take a CIS elective course for 3 credit hours and CIS 699, Master's Thesis for 6 credit hours.

### Master's Thesis Committee

A Master's Thesis committee consists of three full-time CIS faculty members, one of whom is the thesis advisor, and requires the approval of the CIS graduate committee. When deemed appropriate, the chair of the graduate committee may request, in the committee, the presence of an additional member from outside the department.

## Requirements for the MSE in Computer Engineering

The ECE Department offers, through the Rackham School of Graduate Studies, an evening program of 30 credit hours, leading to the degree of Master of Science in Engineering (Computer Engineering). Students desiring admission to the program must have earned a Bachelor's degree in Electrical

and/or Computer Engineering with an overall GPA of 3.0 or higher. Students whose undergraduate background is in a field other than Electrical or Computer Engineering may be given conditional admission and would be required to take preparatory courses in electrical and/or computer engineering as described in section V. Students admitted to the program are required to take courses as specified below. Students must earn a B or better in every graduate course to be credited toward the degree requirements. However, a maximum of two grades of B- will be accepted. In addition, students must maintain a cumulative GPA of 5.0 or higher in every semester. Students may be placed on probation if their cumulative GPA falls below 5.0. Finally, a cumulative GPA of 5.0 or higher is required in order to be eligible to receive the MSE (CE) degree. All students should be familiar with the Rackham School of Graduate Studies Handbook.

Specific course requirements are described next.

This degree program is available both on campus and via the Internet.

## Specific Course Requirements

### Core Courses (9 credit hours)

Required:

ECE 554 Embedded Systems (Required) ..... 3 hrs

Two Courses from the following list :

ECE 570 Computer Networks..... 3 hrs

ECE 575 Computer Architecture I..... 3 hrs

ECE 5752 Reconfigurable Computing ..... 3 hrs

ECE 578 Advanced Operating Systems..... 3 hrs

### Concentration Courses

Select three courses from one or more of the concentrations areas (9 to 11 credit hours).

#### 1. Computer Architecture and Design\*

ECE 514 VLSI Design..... 3 hrs

ECE 528 Cloud Computing .....

ECE 575 Computer Architecture (Required) .....

ECE 5751 Advanced Computer Design .....

ECE 5752 Reconfigurable Computing .....

ECE 574 Adv. Software Tech. in Engineering  
Applications..... 3 hrs

ECE 675 Advanced Computer Architecture..... 3 hrs

#### 2. Networks and Communications\*

ECE 526 Multimedia Communication Systems..... 3 hrs

ECE 535 Mobile Dev & Ubiq Comp Systems .....

ECE 550 Communication Systems..... 3 hrs

ECE 570 Computer Networks (Required) .....

ECE 5701 Wireless Communications..... 3 hrs

ECE 5702 High-Speed and Advanced Networks..... 3 hrs

#### 3. Intelligent Systems

ECE 531 Intelligent Vehicle Systems..... 3 hrs

ECE 537 Data Mining..... 3 hrs

ECE 552	Fuzzy Systems .....	3 hrs
ECE 579	Intelligent Systems (Required) .....	3 hrs
ECE 583	Neural Networks .....	3 hrs
ECE 585	Pattern Recognition .....	3 hrs

#### 4. Multimedia Engineering

ECE 525	Multimedia Data Storage & Retrieval .....	3 hrs
ECE 5251	Multimedia Design Tools (Required) .....	3 hrs
ECE 5252	Multimedia Design Tools II .....	3 hrs
ECE 526	Multimedia Communication Systems .....	3 hrs
ECE 527	Multimedia Security & Forensics.....	3 hrs
ECE 529	Introduction to Computer Music.....	3 hrs
ECE 537	Data Mining.....	3 hrs
ECE 576	Information Engineering.....	3 hrs

**\*These are partial lists and will be expanded and updated from time to time.**

Professional Electives .....	6 hrs
------------------------------	-------

Students may complete the professional elective in several ways: (1) Elect the thesis ECE 699 (6 hours) to work under the supervision of a faculty advisor, (2) Take direct study by ECE 591 (3 credits), and one CE course from the lists above, (3) take two CE courses from the lists above.

Cognate Courses .....	4 to 6 hrs
-----------------------	------------

Students should select a minimum of 4 and a maximum of 6 credit hours of courses from other disciplines. Some courses from outside ECE may not meet cognate requirement. Please check with the ECE Department prior to registering.

#### Preparatory Courses

Students with inadequate background in Electrical or Computer Engineering may be required to meet with the department graduate advisor to determine the need for preparatory courses.

**For further information please contact:**

Department of Electrical and Computer Engineering,  
University of Michigan-Dearborn, 4901 Evergreen Road,  
Room 206 ELB, Dearborn, MI 48128-2406 Tel: (313) 593-  
5420 Fax: (313) 583-6336 E-mail: [ece-grad@umd.umich.edu](mailto:ece-grad@umd.umich.edu)

## Requirements for the MSE in Electrical Engineering

The ECE Department offers, through the Rackham School of Graduate Studies, an evening program of 30 credit hours, leading to the degree of Master of Science in Engineering (Electrical Engineering). Students desiring admission to the program must have earned a Bachelor's degree in Electrical and/or Computer Engineering with an overall GPA of 3.0 or higher. Students whose undergraduate background is in a field other than Electrical or Computer Engineering may be given conditional admission and would be required to take preparatory courses in electrical and/or computer engineering

as described in section V. Students admitted to the program are required to take courses as specified below. Students must earn a B or better in every graduate course to be credited toward the degree requirements. However, a maximum of two grades of B- will be accepted. In addition, students must maintain a cumulative GPA of 5.0 or higher in every semester. Students may be placed on probation, if their cumulative GPA falls below 5.0. Finally, a cumulative GPA of 5.0 or higher is required, in order to be eligible to receive the MSE (CE) degree. All students should be familiar with the Rackham School of Graduate Studies Handbook.

This degree program is available both on campus and via the Internet.

## Specific Course Requirements

### Core Courses

Three Courses from the following list (9 credit hours).

ECE 500	Mathematical Methods in EE and CE* .....	3 hrs
ECE 550	Communication Systems .....	3 hrs
ECE 560	Modern Control Theory.....	3 hrs
ECE 580	Digital Signal Processing.....	3 hrs

\*Required unless waived. Must be taken in the first year

### Concentration Courses

Select three courses from one or more of the concentration areas below (9 to 11 credit hours).

#### 1. Control Systems

ECE 519	Advanced Topics in EMC .....	3 hrs
ECE 552	Fuzzy Systems.....	3 hrs
ECE 560	Modern Control Theory (Required) .....	3 hrs
ECE 565	Digital Controller Design .....	3 hrs
ECE 567	Nonlinear Control Systems.....	3 hrs
ECE 579	Intelligent Systems .....	3 hrs
ECE 661	Sys Ident and Adaptive Control.....	3 hrs
ECE 665	Optimal Control.....	3 hrs

#### 2. Digital Signal Processing

ECE 512	Active Filter Design.....	3 hrs
ECE 529	Introduction to Computer Music .....	3 hrs
ECE 580	Digital Signal Processing (Required).....	3 hrs
ECE 5802	Multirate Sig. Proc w/Apl.....	3 hrs
ECE 582	Statistical Signal Processing.....	3 hrs
ECE 583	Neural Networks .....	3 hrs
ECE 584	Speech Processes .....	3 hrs

#### 3. Intelligent Systems

ECE 5251	Multimedia Design Tools I.....	3 hrs
ECE 537	Data Mining.....	3 hrs
ECE 552	Fuzzy Systems.....	3 hrs
ECE 576	Information Engineering.....	3 hrs
ECE 579	Intelligent Systems (Required) .....	3 hrs
ECE 580	Digital Signal Processing.....	3 hrs
ECE 583	Neural Networks .....	3 hrs
ECE 585	Pattern Recognition .....	3 hrs

#### 4. Vehicle Electronics

ECE 5121	Modeling & Design of Elec. Cir. & Sys .....	3 hrs
ECE 515	Vehicle Electronics-II (Required).....	3 hrs
ECE 519	Advanced Topics in EMC.....	3 hrs
ECE 531	Intelligent Vehicles.....	3 hrs
ECE 532	Auto Sensors and Actuators.....	3 hrs
ECE 533	Active Automotive Safety Systems.....	3 hrs
ECE 5462	Hybrid Electric Vehicles .....	3 hrs

\*These are partial lists and will be expanded and updated from time to time. For a complete list of ECE courses please view the “Course Descriptions” later in this *Catalog*.

**Professional Electives**..... 6 hrs

Students may complete the professional elective in several ways: (1) Elect the thesis ECE 699 (6 hours) to work under the supervision of a faculty advisor, (2) Take direct study by ECE 591 (3 credits), and one EE course listed above, (3) take any two EE courses listed above.

**Cognates** ..... 4-6 hrs

Students should select a minimum of 4 and a maximum of 6 credit hours of courses from other disciplines. Some courses from outside ECE may not meet cognate requirement. Please check with the ECE Department prior to registering.

#### Preparatory Courses

Students with inadequate background in Electrical/Computer Engineering may be required to meet with the department graduate advisor to determine the need for preparatory courses.

#### For further information contact:

Department of Electrical and Computer Engineering,  
University of Michigan-Dearborn, 4901 Evergreen Road,  
Room 206 ELB, Dearborn, MI 48128-2406 Tel: (313) 593-  
5420 Fax: (313) 583-6336 E-mail: [ece-grad@umd.umich.edu](mailto:ece-grad@umd.umich.edu)

## Requirements for the MSE in Energy Systems Engineering

Energy Systems Engineering is a 30-credit hour interdisciplinary master’s program, designed to provide systems-based knowledge in sustainable energy through four core courses and in-depth knowledge in vehicular energy and distributed energy through six elective courses.

Students entering the program should have an undergraduate degree in an engineering discipline from an accredited engineering program. Students with undergraduate degree in physics and chemistry may also be admitted in the program after completion of selected undergraduate engineering courses determined upon evaluation of their educational background. The undergraduate cumulative GPA required is B (3.0/4.0) or better to be accepted as a regular graduate student in the program. An applicant with a lower GPA may be considered

for conditional/probationary admission consistent with the Rackham guidelines. Each applicant must present at least two complete, official transcripts of all prior college work.

The student must then complete at least 30 semester hours of graduate work approved by the program advisor/graduate advisory committee with a grade of at least a *B* covering all courses elected. Further, a grade below *B* in any course will not be accepted for graduate credit unless, after review of the credit circumstances, the acceptance of the credit is recommended by the program director. No more than one *B-* will be allowed under any circumstances.

## Curriculum

### Core courses (12 credit hours):

**All 4 courses are required.**

ESE 500	Sustainable Energy Systems.....	3 hrs
ESE 501	Energy Conversion .....	3 hrs
or ESE 502	Energy Storage .....	3 hrs
ESE 503	Energy Policy, Economics an Environment ....	3 hrs
ESE 504	Energy Evaluation, Risk Analysis and Optimization.....	3 hrs

### Elective Courses (18 credit hours):

**Select any 6 courses from the following list.**

AE 596	Internal Combustion Engines I.....	3 hrs
AE 547	Powertrains I.....	3 hrs
AE 588	Design and Manufacturing for Environment ...	3 hrs
AE 598	Energy Systems for Automotive Vehicles .....	3 hrs
ECE 5462	Electrical Aspects for Hybrid Electric Vehicles .....	3 hrs
ME 548	Powertrains II .....	3 hrs
ME 597	Internal Combustion Engine II.....	3 hrs
ME 598	Engine Emissions .....	3 hrs
ECE 517	Industrial Drives and Motor Control.....	3 hrs
ECE 519	Advanced Topics in EMC.....	3 hrs
ME 512	Structural Analysis .....	3 hrs
ME 514	Advanced Stress Analysis .....	3 hrs
ME 558	Fracture and Fatigue Considerations in Design .....	3 hrs
ME 591	Environmental Degradation of Materials.....	3 hrs
ME 522	Advanced Fluid Mechanics.....	3 hrs
ME 525	Computational Thermo-Fluids.....	3 hrs
ME 532	Combustion Processes.....	3 hrs
ME 571	Conduction Heat Transfer .....	3 hrs
ME 572	Convection Heat Transfer.....	3 hrs
ECE 560	Modern Control Theory .....	3 hrs
ECE 665	Optimal Control Systems .....	3 hrs
IMSE 515	Fundamentals of Program Management .....	3 hrs
IMSE 516	Project Management and Control .....	3 hrs
IMSE 561	Total Quality Management .....	3 hrs
IMSE 567	Reliability Analysis .....	3 hrs
IMSE 5205	Engineering Risk-Benefit Analysis .....	3 hrs
IMSE 5655	Supply Chain Management .....	3 hrs

Additional elective courses from other units in UM-Dearborn may also be considered with the ESE program director’s approval.

This option may be elected with the approval of the graduate program director. It will count for six (6) credit hours of graduate coursework replacing two courses in the Elective area.

## Requirements for the MS in Engineering Management

For general master's degree requirements at the Rackham School of Graduate Studies, see [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/).

This degree program is available both on campus and via the Internet.

### Admission

Admission to the program as a regular student requires a BS degree in engineering, or a degree in math, computer science, or a physical science earned from an accredited program with an average of *B* or better coupled with extensive experience in engineering. Each applicant will be required to present official, complete transcripts of prior college work. Two letters of recommendation are required for admission. At least one letter must be from someone familiar with the candidate's academic performance. An entering student should have completed one course in probability and statistics. Deficiencies in prerequisites may be made up after entrance to the Graduate School; however, credits received in courses elected to make up the deficiencies do not count toward the degree.

### Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from U-M/non-Rackham departments and programs (including Dearborn and Flint).

### Degree Requirements

The Master of Science in Engineering Management requires a minimum of 36 graduate credit hours.

### Specific Course Requirements

The program of study must satisfy the following distribution and course requirements:

- 1) 31 credit hours of the following engineering management core courses, designed primarily for graduate students:

EMGT 500	Managing the Engineering Function .....	2 hrs
EMGT 505	Systems Engineering .....	3 hrs
EMGT 510	Managerial Finance and Economics .....	2 hrs
EMGT 515	Strategic Technology Management .....	2 hrs
EMGT 520	Production and Operations Management I .....	3 hrs
EMGT 525	Total Quality Management and Six Sigma .....	3 hrs

EMGT 530	Information Systems for Engineering Management.....	3 hrs
EMGT 535	Marketing Management and Policy.....	2 hrs
EMGT 541	Managerial Accounting .....	3 hrs
EMGT 545	Organization Behavior and Human Resource Management.....	2 hrs
EMGT 550	Business Ethics/Law .....	2 hrs
EMGT 560	Engineering Management at Upper Levels .....	1 hr
EMGT 580	Management of Product and Process Design .....	3 hrs

- 2) A master's thesis for five credit hours or Project Seminar, EMGT 591 (2 hrs), and three hours of elective coursework with the approval of the graduate advisor.
- 3) Work Experience requirement—minimum of five years in an engineering job function for students with an undergraduate degree in a field other than engineering.
- 4) Thesis or Research Essay—students, with the approval of their graduate advisor, may elect a master's thesis for no more than five credit hours.
- 5) There is no foreign language requirement and no final exam.

## Requirements for the MSE in Industrial and Systems Engineering

For general master's degree requirements at the Rackham School of Graduate Studies, see [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/). Specific requirements of the program are described below.

This degree program is available both on campus and via the Internet.

### Admission

Admission to the program as a regular student requires a BS degree in Engineering, a physical science, computer science, or applied mathematics earned from an accredited program with an average of *B* or better. Each applicant will be required to present a complete transcript of prior college work. An entering student should have already completed at least one course in probability and statistics, one course in operations research, and one course related to human factors and ergonomics. Deficiencies in prerequisites may be made up after entering the graduate school; however, credits received in courses elected to make up the deficiencies do not count toward a degree. Students who have not fulfilled the requirements of the BS in Industrial and Systems Engineering should communicate with the program advisor regarding the requirements to be met.

Two letters of recommendation are required for admission. At least one letter of recommendation must be from the applicant's undergraduate academic institution.

### Degree Requirements

The degree MSE in I&SE requires a minimum of 30 credit hours. No comprehensive final examination is required.



## Advanced Standing Provision

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from U-M/non-Rackham departments and programs (including Dearborn and Flint).

## Degree Requirements

The MSE in Industrial and Systems Engineering requires a minimum of 30 credit hours.

## Specific Course Requirements

The program of study must satisfy the following distribution and course requirements:

**Core** ..... 9 hrs

IMSE 511 Design and Analysis of Experiments ..... 3 hrs  
 IMSE 554 Management Information Systems ..... 3 hrs  
 IMSE 580 Production and Operations Management I ..... 3 hrs

**Concentration** ..... 12 hrs

A minimum of 12 credit hours from the three concentration areas. All four courses can be taken from one concentration area or any combination of the three concentration areas.

### 1) Industrial Systems Engineering Concentration

#### Human Factors and Ergonomics

IMSE 543 Industrial Ergonomics ..... 3 hrs  
 IMSE 545 Vehicle Ergonomics I ..... 3 hrs  
 IMSE 546 Safety Engineering ..... 3 hrs  
 IMSE 548 Human Factors ..... 3 hrs  
 IMSE 577 User Interface Design and Analysis ..... 3 hrs  
 IMSE 593 Vehicle Packaging Engineering ..... 3 hrs  
 AENG 546 Vehicle Ergonomics II ..... 3 hrs

#### Operations Research & Management Science

IMSE 505 Applied Optimization ..... 3 hrs  
 IMSE 514 Multivariate Statistics ..... 3 hrs  
 IMSE 5205 Engineering Risk-Benefit Analysis ..... 3 hrs  
 IMSE 5215 Program Budget, Cost Estimation &  
 Control ..... 3 hrs  
 IMSE 559 System Simulation ..... 3 hrs  
 IMSE 605 Advanced Optimization ..... 3 hrs  
 IMSE 606 Advanced Stochastic Processes ..... 3 hrs

### 2) Integrated Design and Manufacturing Engineering Concentration

#### Quality Systems Design

IMSE 513 Robust Design ..... 3 hrs  
 IMSE 519 Quantitative Methods in Quality  
 Engineering ..... 3 hrs  
 IMSE 561 Total Quality Management and Six Sigma ..... 3 hrs  
 IMSE 567 Reliability Analysis ..... 3 hrs

#### Advanced Manufacturing & Automation

IMSE 502 Computer-Integrated Manufacturing ..... 3 hrs  
 IMSE 538 Intelligent Manufacturing ..... 3 hrs  
 IMSE 5655 Supply Chain Management ..... 3 hrs  
 IMSE 581 Production and Operations Management II ..... 3 hrs

### 3) Information Systems Concentration

#### Information Systems Management

IMSE 553 Software Engineering ..... 3 hrs  
 IMSE 556 Database Systems ..... 3 hrs  
 IMSE 557 Computing Networks and Communication ..... 3 hrs

#### Enterprise Information Systems

IMSE 555 Decision Support and Expert Systems ..... 3 hrs  
 IMSE 5585 Electronic Commerce ..... 3 hrs  
 IMSE 564 ABAP/4 Programming ..... 3 hrs  
 IMSE 570 Enterprise Information Systems ..... 3 hrs  
 IMSE 5715 Modeling of Integrated Information  
 Systems ..... 3 hrs  
 IMSE 5725 Object Oriented Systems Design ..... 3 hrs  
 IMSE 574 IS Based Production Planning and Control ..... 3 hrs  
 IMSE 579 Software Integrated Manufacturing  
 and Logistics Management ..... 3 hrs

### 4) Program Management & Product Development

EMGT 580 Management of Product and Process Design... 3 hrs  
 IMSE 515 Fundamentals of Program Management ..... 3 hrs  
 IMSE 516 Project Management and Control ..... 3 hrs  
 IMSE 517 Managing Global Programs ..... 3 hrs

At least two graduate-level cognate courses for a minimum of six credit hours each in departments other than IMSE must be elected.

The remaining credit hours may be selected with the approval of the graduate advisor.

With the approval of their graduate advisor, students may substitute a master's thesis for no more than six credit hours of graduate coursework. Students choosing the thesis option are required to elect a minimum of 9 credit hours from the concentration electives, rather than the 12 credit hours stipulated above for the concentration areas. Students must complete 2 of the courses from one of the concentration areas.

## Requirements for the Dual Program for the MSE in



# Industrial and Systems Engineering and the Master of Business Administration

The College of Business and the College of Engineering and Computer Science, through the Rackham School of Graduate Studies, offers an innovative dual degree program awarding both an MBA and a Master of Science in Engineering in Industrial and Systems Engineering degree (MBA & MSE-IS&E). The dual program requires 66 credit hours of specified coursework to earn both degrees.

This unique dual degree program has been carefully developed in direct response to an increasing need among employers in southeast Michigan, for professionals who are prepared for careers that require expertise in both technology and management.

This degree program is available both on campus and via the Internet.

Students who wish to pursue the dual MBA/MSE-I&SE degree must meet the entrance requirements of, and gain admission to, each unit independently-both Industrial and Systems Engineering (see Admission section under Requirements for the MSE in Industrial and Systems Engineering) and the College of Business (see College of Business Admission section in this *Catalog*). For further information, contact each department.

## Specific Course Requirements

### MBA Core Courses.....27 hrs

Dual degree students may receive exemptions for required MBA core courses if they have had prior equivalent coursework, but must make up the credits by taking additional MBA Managerial Applications courses.

ACC 505	Developing and Interpreting Financial Information .....	3 hrs
OB 510	Organizational Behavior.....	3 hrs
MKT 515	Marketing Management.....	3 hrs
MIS 525	Computer and Information Systems.....	3 hrs
LE 523	Legal Environment of Business.....	3 hrs
BE 530	Economic Analysis: Firm and Consumer.....	3 hrs
BE 580	Economic Analysis: National and International.....	3 hrs
FIN 531	Financial Management I.....	3 hrs
BPS 535	Strategic Planning and Decision Making.....	3 hrs

Dual degree students may receive exemptions for required MBA core courses if they have had prior equivalent coursework, but must make up the credits by taking additional MBA Managerial Applications courses.

### MBA Managerial Applications Courses ...6 hrs

Dual degree students are required to complete one course each from Group A and Group B.

#### Group A (choose one course)

ACC 555	Cost Management .....	3 hrs
OM 571	Global Operations Management.....	3 hrs
FIN 581	Financial Management II.....	3 hrs

#### Group B (choose one course)

OB 560	Management Skills Development.....	3 hrs
HRM 561	Human Resource Management.....	3 hrs
MKT 565	Advanced Marketing Management .....	3 hrs
MIS 575	Information Management .....	3 hrs

### MBA Capstone Course ..... 3 hrs

BPS 585	Managing Strategic Information and Change .	3 hrs
---------	---	-------

Industrial & Systems Engineering Requirements	.....	24 hrs
---	-------	--------

### Core .....12 hrs

IMSE 505	Optimization .....	3 hrs
IMSE 511	Design and Analysis of Experiments .....	3 hrs
IMSE 514	Multivariate Statistics .....	3 hrs
IMSE 580	Production and Operations Management I.....	3 hrs

### Concentration ..... 12 hrs

The four required courses may be taken from one concentration area, or any combination of the following three areas:

#### Area 1: Industrial and Systems Engineering Concentration

##### Human Performance and Ergonomics

IMSE 543	Industrial Ergonomics.....	3 hrs
IMSE 545	Vehicle Ergonomics I.....	3 hrs
IMSE 546	Safety Engineering.....	3 hrs
IMSE 548	Human Factors.....	3 hrs
IMSE 577	User Interface Design and Analysis .....	3 hrs
IMSE 593	Vehicle Packaging Engineering.....	3 hrs
AENG 546	Vehicle Ergonomics II.....	3 hrs

##### Operations Research & Management Science

IMSE 5205	Engineering Risk-Benefit Analysis .....	3 hrs
IMSE 5215	Program Budget, Cost Estimation and Control .....	3 hrs
IMSE 559	System Simulation .....	3 hrs
IMSE 605	Advanced Optimization .....	3 hrs
IMSE 606	Advanced Stochastic Processes .....	3 hrs

#### Area 2: Integrated Design and Manufacturing & Engineering Concentration

##### Quality Systems Design

IMSE 513	Robust Design.....	3 hrs
IMSE 519	Quantitative Methods in Quality Engineering.....	3 hrs

IMSE 561	Total Quality Management and Six Sigma.....	3 hrs
IMSE 567	Reliability Analysis .....	3 hrs

### Advanced Manufacturing & Automation

IMSE 502	Computer-Integrated Manufacturing .....	3 hrs
IMSE 538	Intelligent Manufacturing.....	3 hrs
IMSE 5655	Supply Chain Management .....	3 hrs
IMSE 581	Production and Operations Management II.....	3 hrs

### **Area 3: Information Systems Concentration**

#### Information Systems Management

IMSE 553	Software Engineering .....	3 hrs
IMSE 556	Database Systems .....	3 hrs
IMSE 557	Computing Networks and Communication .....	3 hrs

#### Enterprise Information Systems

IMSE 532	Information for Manufacturing .....	3 hrs
IMSE 555	Decision Support and Expert Systems .....	3 hrs
IMSE 5585	Electronic Commerce .....	3 hrs
IMSE 564	ABAP/4 Programming .....	3 hrs
IMSE 570	Enterprise Information Systems .....	3 hrs
IMSE 5715	Modeling of Integrated Information Systems ..	3 hrs
IMSE 5725	Object Oriented System Design .....	3 hrs
IMSE 574	IS Based Production Planning and Control .....	3 hrs
IMSE 579	Software Integrated Manufacturing and Logistics Management .....	3 hrs

### **Area 4: Program Management & Product Development**

EMGT 580	Management of Product and Process Design ..	3 hrs
IMSE 515	Fundamentals of Program Management .....	3hrs
IMSE 516	Project Management and Control .....	3hrs
IMSE 517	Managing Global Programs .....	3hrs

**Electives**..... 6 hrs

At least two graduate-level cognate courses for a minimum of six credit hours from departments other than IMSE must be elected.

The remaining credit hours may be selected with the approval of the graduate advisor.

With the approval of their graduate advisor, students may substitute a master's thesis for no more than six credit hours. Students choosing the thesis option are required to elect a minimum of 9 credit hours from the concentration electives, rather than the 12 credit hours stipulated above for the concentration areas. Students must complete 2 of the courses from one of the concentration areas.

## **Requirements for the MSE in Information Systems and Technology**

For general master's degree requirements at the Rackham School of Graduate Studies, see [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/). Specific requirements of the program are described below.

### **Admission**

Admission to the program as a regular student requires a BS in engineering, a physical science, computer science, applied mathematics, business administration, or liberal arts earned from an accredited program with an average of *B* or better. An applicant with a lower GPA may be granted conditional/probationary admission consistent with Rackham guidelines. Each applicant will be required to present a complete transcript of prior college work. An entering student should have already completed at least a course each in computer programming, such as C++ or Java and data structures. Deficiencies in prerequisites may be made up after entering the graduate school; however, credits received in courses elected to make up the deficiencies do not count towards a degree.

Two letters of recommendation with at least one from someone familiar with the candidate's academic performance are also required for admission.

### **Degree Requirements**

The degree MS in IS&T requires a minimum of 30 credit hours.

### **Advanced Standing**

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from U-M/non-Rackham departments and programs (including Dearborn and Flint).

### **Specific Course Requirements**

The program of study must satisfy the following distribution and course requirements:

<b>Core courses</b> .....	9 hrs
IMSE 556 Database Management Systems .....	3 hrs
or	
CIS 556 Database Management System.....	3 hrs
IMSE 570 Enterprise Information Systems .....	3 hrs

IMSE 5725	Object-Oriented Systems Design.....	3 hrs
or		
CIS 572	Object-Oriented Systems Design.....	3 hrs

**Concentration..... 15 hrs**

Six concentration areas exist in the program. Five of the concentration areas are identified below while the sixth is an individual concentration that student develops jointly with the Program Advisor. Each concentration area includes one concentration core course (3 hrs), one cognate course (3 hrs) selected from one of the four remaining concentration areas in the program, and three concentration electives (9 hrs)

**Area 1: Information Management Applications**

**Concentration Core**

IMSE 5715	Modeling of Integrated Information Systems...	3 hrs
-----------	---	-------

**Concentration Electives**

IMSE 5585	Electronic Commerce .....	3 hrs
or		
CIS 560	Electronic Commerce .....	3 hrs
IMSE 564	ABAP4/Programming .....	3 hrs
EMGT 510	Managerial Finance and Economics .....	2 hrs
and		
IMSE 525	Finance and Economics Software Appl. ....	1 hr
EMGT 535	Marketing Management and Policy .....	2 hrs
and		
IMSE 526	Marketing Software Application .....	1 hr
EMGT 541	Managerial Accounting .....	3 hrs
and		
IMSE 5275	Managerial Accounting Software Application..	1 hr
EMGT 545	Organization Behavior and Human Resource Management .....	2 hrs
and		
IMSE 5285	Human Resource Software Application .....	1 hr
IMSE 555	Decision Support and Expert Systems .....	3 hrs
or		
CIS 555	Decision Support and Expert Systems .....	3 hrs

**Area 2: Supply Chain and Information Systems Design**

**Concentration Core**

IMSE 5655	Supply Chain Management .....	3 hrs
-----------	-------------------------------	-------

**Concentration Electives**

IMSE 538	Intelligent Manufacturing .....	3 hrs
IMSE 555	Decision Support and Expert Systems .....	3 hrs

or		
CIS 555	Decision Support & Expert Systems .....	3 hrs
IMSE 5585	Electronic Commerce .....	3 hrs
or		
CIS 560	Electronic Commerce .....	3 hrs
IMSE 559	System Simulation .....	3 hrs
IMSE 5715	Modeling of Integrated Information Systems .....	3 hrs
IMSE 574	IS Based Production and Control .....	3 hrs
IMSE 579	Software Integrated Manufacturing and Logistics Management .....	3 hrs
CIS 544	Computer and Network Security .....	3 hrs

**Area 3: Information Security and Quality**

**Concentration Core**

CIS 544	Computer and Network Security .....	3 hrs
---------	-------------------------------------	-------

**Concentration Electives**

CIS 553	Software Engineering .....	3 hrs
or		
IMSE 553	Software Engineering .....	3 hrs
CIS 565	Software Quality Assurance .....	3 hrs
IMSE 555	Decision Support and Expert Systems .....	3 hrs
or		
CIS 555	Decision Support & Expert Systems .....	3 hrs
CIS 527	Computer Networks .....	3 hrs
IMSE 5715	Modeling of Integrated Information Systems..	3 hrs
IMSE 560	Data Warehousing and Data Mining .....	3 hrs
or		
CIS 568	Data Mining .....	3 hrs
or		
ECE 537	Data Mining .....	3 hrs

**Area 4: Web Information Management**

**Concentration Core**

CIS 562	Web Information Management.....	3 hrs
---------	---------------------------------	-------

**Concentration Electives**

CIS 525	Web Technology.....	3 hrs
CIS 527	Computer Networks.....	3 hrs
IMSE 5585	Electronic Commerce .....	3 hrs
or		
CIS 560	Electronic Commerce .....	3 hrs
IMSE 560	Data Warehousing and Data Mining .....	3 hrs
or		
CIS 568	Data Mining .....	3 hrs

or ECE 537	Data Mining.....	3 hrs
IMSE 577	User Interface Design and Analysis .....	3 hrs
or CIS 577	Software User Interface Design and Analysis .....	3 hrs
CIS 550	Object-Oriented Programming and Its Applications .....	3 hrs

## Area 5: Information Systems Engineering

### Concentration Core

CIS 586	Advanced Data Management .....	3 hrs
---------	--------------------------------	-------

### Concentration Electives

CIS 527	Computer Networks .....	3 hrs
IMSE 555	Decision Support and Expert Systems .....	3 hrs
or CIS 555	Decision Support & Expert Systems.....	3 hrs
IMSE 560	Data Warehousing and Data Mining.....	3 hrs
or CIS 568	Data Mining.....	3 hrs
or ECE 537	Data Mining.....	3 hrs
CIS 544	Computer and Network Security.....	3 hrs
IMSE 5715	Modeling of Integrated Information Systems ..	3 hrs
IMSE 577	User Interface Design and Analysis .....	3 hrs
or CIS 577	Software User Interface Design and Analysis .....	3 hrs
CIS 578	Advanced Operating Systems .....	3 hrs
CIS 562	Web Information Management .....	3 hrs
CIS 550	Object-Oriented Programming and Its Applications .....	3 hrs

**Electives**..... 6 hrs

Other CIS, ECE, IMSE and business graduate courses may be taken per advisor approval.

A thesis may be substituted for six hours of electives, on approval by the program director.

## Requirements for the MSE in Manufacturing Systems Engineering

### Admission

Admission to the program as a regular student requires a BS degree in Engineering or a physical science. Students with a degree in computer science or engineering can be admitted provisionally and must take certain undergraduate courses to pave the way for graduate work. Undergraduate degrees must be from an accredited program, and for regular admission must be with an average of *B* or better. Each applicant should present two complete, official transcripts of all prior college work. In special cases, it may be necessary for applicants to schedule an interview with the program director to review completeness of undergraduate preparation and other qualifications.

In addition to the above admissions requirements, the following are also required.

- 1) The entering student must have a background in probability and statistics. Otherwise, a student will be required to take an undergraduate-level statistics course (equivalent to IMSE 317) within the two semesters after his admission. No credit will be given for this course.
- 2) The entering student must have a background in engineering materials. Otherwise, a student will be required to take either ENGR 250 (or equivalent) as a prerequisite to AENG 587 or ECE 385 (or equivalent) as a prerequisite to ECE 539. No credit will be given for the undergraduate courses.

### Degree Requirements

The MSE in Manufacturing Systems Engineering requires a minimum of 30 credit hours.

The accumulated grade point average in the program must be at least a *B* to receive the degree. Further, a grade below *B* in any course will not be accepted for graduate credit unless, after review of the credit circumstances, the acceptance of the credit is recommended by the program director. No more than one *B-* will be allowed under any circumstances.

### Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from U-M/non-Rackham departments and programs (including Ann Arbor, Dearborn and Flint).

### Course Requirements

**Core**..... 15 hrs

The following courses are required:

AENG 587	Automotive Manufacturing Processes .....	3 hrs
or ECE 539	Production of Electrical Products .....	3 hrs
IMSE 580	Production Management .....	3 hrs
EM 580	Management of Product and Process	

	Design .....	3 hrs
IMSE 561	Total Quality Management and Six Sigma .....	3 hrs
IMSE 5215	Program Budget, Cost Estimation and Control .....	3 hrs

**Electives** ..... 15 hrs

Select any five courses from the list below:

AENG 586	Design and Manufacturing with Lightweight Automotive Materials .....	3 hrs
AENG 588	Design and Manufacturing for Environment ...	3 hrs
ECE 516	Electronic Materials and Processing .....	3 hrs
EM 541	Financial and Managerial Accounting .....	3 hrs
IMSE 511	Design and Analysis of Experiments.....	3 hrs
IMSE 517	Managing Global Systems.....	3 hrs
IMSE 538	Intelligent Manufacturing.....	3 hrs
IMSE 5655	Supply Chain Management .....	3 hrs
ME 582	Injection Molding .....	3 hrs
ME 585	Cast Metals in Engineering Design .....	3 hrs
ME 586	Materials Consideration in Manufacturing .....	3 hrs
ME 587	Automotive Composites .....	3 hrs
HRM 561	Human Resource Management .....	3 hrs
OB 510	Organization Behavior.....	3 hrs

A thesis may be submitted in lieu for six hours of electives, on approval by the program director. The thesis work may be a company project if it meets certain requirements.

## Requirements for the MSE in Mechanical Engineering

A candidate for the Master of Science in Engineering (Mechanical Engineering) must meet the requirements for the Bachelor of Science in Engineering (Mechanical Engineering) degree at this campus, or the essential equivalent to these requirements. The candidate must then complete at least 30 credit hours of graduate work approved by the program advisor/graduate advisory committee with an average grade of at least *B* covering all courses elected. These 30 credit hours must include two graduate-level cognate courses for a minimum of three credit hours each in a department other than Mechanical Engineering. Students are not permitted to elect more than two courses outside Mechanical Engineering.

Students who have not fulfilled the requirements of the bachelor's degree in Mechanical Engineering should communicate with the department graduate committee regarding the requirements to be met.

Within the broad framework given above, the student must elect courses to fulfill the following distribution requirements:

- 1) ME 518, Advanced Engineering Analysis (must be taken by the second semester after enrollment), 3 credit hours
- 2) Two courses (6 hrs) from Group A
- 3) Two courses (6 hrs) from Group B
- 4) One mathematics or math-related cognate course (3 hrs) (i.e. IMSE 510, IMSE 511, or any 500 level MATH or STAT course)
- 5) One Non-ME 500 level cognate course (3 hrs)
- 6) Three ME graduate courses as Electives (9 hrs)

7) Thesis is optional. Maximum 6 hrs in lieu of two ME electives

### Group A: Mechanical Sciences

ME 510	Finite Element Methods.....	3 hrs
ME 512	Structural Analysis.....	3 hrs
ME 514	Advanced Stress Analysis.....	3 hrs
ME 515	Advanced Mechanics of Solids .....	3 hrs
ME 516	Special Topics in Mechanical Engineering-....	3 hrs
ME 519	Basic Computer Methods in Engineering .....	3 hrs
ME 540	Mechanical Vibrations.....	3 hrs
ME 542	Advanced Dynamics .....	3 hrs
ME 543	Vehicle Dynamics.....	3 hrs
ME 545	Acoustics and Noise Control.....	3 hrs
ME 547	Automotive Power Train Systems I.....	3 hrs
ME 548	Automotive Power Train Systems II .....	3 hrs
ME 554	Theory of Gearing and Applications .....	3 hrs
ME 556	Stress and Strength Considerations in Design .....	3 hrs
ME 558	Fracture and Fatigue Considerations in Design .....	3 hrs
ME 560	Experimental Methods in Design .....	3 hrs
ME 563	Advanced Instrumentation and Control .....	3 hrs
ME 565	Mechatronics.....	3 hrs
ME 567	Reliability Consideration in Design .....	3 hrs
ME 580	Advanced Engineering Materials .....	3 hrs
ME 581	Materials for Manufacturing.....	3 hrs
ME 582	Injection Molding .....	3 hrs
ME 583	Mechanical Behavior of Materials .....	3 hrs
ME 584	Mechanical Behavior of Polymers and Ceramics.....	3 hrs
ME 585	Cast Metals in Engineering Design .....	3 hrs
ME 586	Materials Consideration in Manufacturing.....	3 hrs
ME 587	Automotive Composites .....	3 hrs
ME 588	Production of Mechanical Products .....	3 hrs
ME 589	Composite Materials .....	3 hrs
ME 591	Degradation of Materials .....	3 hrs
ME 600	Study or Research in Selected Mechanical Engineering Topics.....	1-3 hrs
ME 601	Experimental Research in Mechanical Engineering.....	1-3 hrs
ME 602	Guided Study in Mechanical Engineering....	1-3 hrs
ME 699	Master's Thesis.....	1-6 hrs

### Group B: Thermal/Fluid Science Courses

ME 516	Special Topics in Mechanical Engineering..	1-3 hrs
ME 521	Dynamics and Thermodynamics of Compressible Flow .....	3 hrs
ME 522	Advanced Fluid Mechanics .....	3 hrs
ME 525	Computational Fluid Mechanics and Heat Transfer .....	3 hrs
ME 528	Fundamentals of Boiling and Condensation .....	3 hrs
ME 531	Statistical Thermodynamics.....	3 hrs
ME 532	Combustion Processes .....	3 hrs
ME 535	Advanced Thermodynamics .....	3 hrs
ME 537	Automotive Air Conditioning.....	3 hrs
ME 538	Vehicle Thermal Management .....	3 hrs
ME 552	Sustainable Energy Systems .....	3 hrs
ME 571	Conduction Heat Transfer.....	3 hrs
ME 572	Convection Heat Transfer.....	3 hrs

ME 573	Radiative Transport of Heat .....	3 hrs
ME 575	Energy: Sources, Conversion, and Utilization .....	3 hrs
ME 577	Energy Conversion.....	3 hrs
ME 592	Fundamentals of Fuel Cells.....	3 hrs
ME 596	Internal Combustion Engines I .....	3 hrs
ME 597	Internal Combustion Engines II.....	3 hrs
ME 598	Engine Emissions .....	3 hrs
ME 600	Study or Research in Selected Mechanical Engineering .....	1-3 hrs
ME 601	Experimental Research in Mechanical Engineering .....	1-3 hrs
ME 602	Guided Study in Mechanical Engineering ..	1-3 hrs
ME 622	Advanced Topics in Fluid Mechanics.....	3 hrs
ME 699	Master's Thesis .....	1-6 hrs

The accumulated grade average in the master's program must be at least a *B* to receive the degree. Further, a grade below *B* in any course will not be accepted for graduate credit unless, after review of the credit circumstances, the acceptance of the credit is recommended by the graduate committee.

In order to be admitted as an applicant for the master's degree, students must satisfy the graduate committee of the department that they have completed preparation equivalent to the undergraduate degree requirements in this department and that they are prepared to undertake the advanced courses. In general, the applicants must have maintained *B* averages as undergraduates. Students will not be given graduate credit for courses equivalent to any which they have been required to take for the bachelor's degree or for courses required in the undergraduate curriculum of this department.

## Requirements for the MS in Program and Project Management

For general master's degree requirements at the Rackham School of Graduate Studies, see [http://www.rackham.umich.edu/policies/academic\\_policies/](http://www.rackham.umich.edu/policies/academic_policies/).

This degree program is available both on campus and via the Internet.

### Admission

Admission to the program as a regular student requires a BS in engineering, business, economics, math, computer science or other physical sciences and at least two years of practical work experience. The prerequisite for the program is the course work in probability and statistics that can be satisfied by completing IMSE 510 as part of approved electives within the first two semesters of the admission into the program. Two letters of recommendation, with at least one from a person familiar with the candidate's academic performance, are also required.

The undergraduate cumulative GPA required is B (3.0/4.0) or better to be accepted as a regular graduate student to the program. An applicant with a lower GPA may be granted conditional/probationary admission consistent with Rackham guidelines.

### Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from U-M/non-Rackham departments and programs (including Dearborn and Flint).

### Degree Requirements

The Master of Science in Program and Project Management requires a minimum of 30 graduate credit hours.

### Specific Course Requirements

The program of study must satisfy the following distribution and course requirements:

#### Core.....21 hrs

IMSE 515	Fundamentals of Program Management .....	3 hrs
IMSE 516	Project Management and Control .....	3 hrs
IMSE 517	Managing Global Programs .....	3 hrs
IMSE 5205	Engineering Risk-Benefit Analysis .....	3 hrs
IMSE 5215	Program Budget, Cost Estimation & Control .....	3 hrs
EMGT 590	Capstone Project.....	3 hrs
OB 510	Organization Behavior .....	3 hrs

#### Electives.....9 hrs

Approved Electives

IMSE 510	Probability and Statistical Models .....	3 hrs
EMGT 525	Total Quality Management and Six Sigma .....	3 hrs
EMGT 541	Accounting Fundamentals for Decision Making .....	3 hrs
EMGT 520	Production and Operations Management.....	3 hrs
EMGT 580	Product and Process Design .....	3 hrs
EMGT 530	Inf. Systems for Engineering Management.....	3 hrs
IMSE 5655	Supply Chain Management .....	3 hrs
HRM 561	Human Resource Management .....	3 hrs
OM 571	Global Operations Management.....	3 hrs
OB 612	Organization Change and Management.....	3 hrs
CIS 575	Software Engineering Management .....	3 hrs

Additional elective courses from other units in UM-Dearborn could also be considered with advisor's approval.

Thesis option may be elected with the approval of the graduate advisor which will count for six (6) credit hours of graduate coursework replacing capstone project (EM 590) and three (3) credit hours of elective coursework. Students electing a thesis option must elect at least one more graduate level cognate course in the place of EM 590 for a minimum of three credit hours from departments other than IMSE to satisfy.

## Requirements for the MS in Software Engineering

Students pursuing the MS degree in Software Engineering must meet the general requirements of the Rackham School of Graduate Studies. Additional requirements for the program are described below.

This degree program is available both on campus and via the Internet.

### Admission

In addition to meeting the Rackham requirements for admission, applicants for the MS in Software Engineering are required to meet the following requirements:

- 1) A bachelor's degree from an accredited institution with a grade point average of *B* or better. An applicant with a lower GPA may be granted conditional or probationary admission consistent with Rackham guidelines. Preference will be given to applicants with backgrounds in computing, engineering, mathematics, or science.
- 2) Satisfactory completion of the following:
  - a) General Prerequisites:
    - Calculus (1 year)
    - Linear Algebra (1 course)
  - b) Software Engineering Prerequisites:
    - Probability and Statistics, (1 course)
    - Programming Language, (preferably C/C++ or Visual Basic)
    - Computer Architecture
    - Computer Networks
    - Databases
    - Operating Systems

Note: Students may be admitted provisionally to make up deficiencies in items 2a or 2b. The software engineering prerequisites may be completed after admission into the program on a "conditional lack of preparation" basis or substituted by two or more years of full-time professional experience in sizeable software development projects. The program committee will determine any decision on substitutions. The applicant will be required to complete the appropriate courses within two years from the date of entrance. Prerequisite courses will not earn credit towards the MS – Software Engineering degree.

- 3) Three letters of recommendation, with at least one from a person familiar with the candidate's academic performance, are required. Copies of the applicant's undergraduate transcripts and degree must be submitted.

### Degree Requirements

The MS degree in Software Engineering is a 30-credit hour graduate program. Students admitted to the program are required to complete the approved graduate courses with an average of *B* (5/9) or better. The program of study consists of core courses, elective concentrations, a thesis/project requirement (part of which may be satisfied by additional coursework), and electives.

### Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution as specified in the Rackham School of Graduate Studies regulations. Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from U-M/non-Rackham departments and programs (including Dearborn and Flint).

### Specific Course Requirements

The 30 semester hours of required coursework are distributed as follows:

Core Courses	15 hrs
Application courses .....	9 hrs
Project/Thesis option .....	6 hrs

#### Core Courses ..... 15 hrs

All of the following ECE courses:

ECE 554	Embedded Systems .....	3 hrs
ECE 574	Advanced Software Techniques in Engineering Applications .....	3 hrs

Three (3) out of the following four (4) CIS courses:

CIS 553	Software Engineering .....	3 hrs
or		
IMSE 553	Software Engineering .....	3 hrs
CIS 565	Software Quality Assurance .....	3 hrs
CIS 575	Software Engineering Management .....	3 hrs
CIS 566	Software Architecture and Design Patterns.....	3 hrs

#### Application Courses ..... 9 hrs

Choose three courses from one of the following application areas.

#### Web Technology

CIS 525	Web Technology .....	3 hrs
CIS 562	Web Information Management.....	3 hrs
CIS 571	Web Services .....	3 hrs
CIS 577	Software User Interface Design & Analysis....	3 hrs

#### Game Design

CIS 515	Computer Graphics .....	3 hrs
CIS 552	Computer Animation .....	3 hrs
CIS 577	Software User Interface Design & Analysis....	3 hrs
CIS 579	Artificial Intelligence .....	3 hrs
CIS 587	Game Design I .....	3 hrs
CIS 588	Game Design II .....	3 hrs

#### Databases

CIS 556	Database Systems.....	3 hrs
CIS 562	Web Information Management.....	3 hrs
CIS 586	Advanced Data Management.....	3 hrs

ECE 537	Data Mining.....	3 hrs
or		
CIS 568	Data Mining.....	3 hrs

### Information and Knowledge Engineering

ECE 5251	Multimedia Tools I.....	3 hrs
ECE 537	Data Mining.....	3 hrs
or		
CIS 568	Data Mining.....	3 hrs
ECE 552	Fuzzy Systems.....	3 hrs
ECE 576	Information Engineering.....	3 hrs
ECE 579	Intelligent Systems.....	3 hrs
ECE 583	Neural Networks.....	3 hrs

A student may elect the application area of his or her choice from CIS or ECE courses with the approval of the advisor.

### Professional Electives..... 6 hrs

A student must choose one of the two options:

(i) **Project:** Students desiring to obtain project experience are encouraged to elect the directed studies ECE/CIS 591 (3 credit hours), or Project Course ECE/CIS 695 (3 credit hours) to work under the supervision of a faculty advisor, and take one additional 3-credit course listed in Sections I and II, or any other CIS/ECE course related to the students' project and approved by the graduate program advisor.

(ii) **Thesis:** Students desiring to obtain research experience are encouraged to elect the thesis ECE/CIS 699 (6 hours) and work under the supervision of a faculty advisor.

## Master's Thesis Committee

A Master's thesis committee consists of three full-time CIS or ECE faculty members, one of whom is the thesis advisor and requires the approval of the Software Engineering graduate committee. When deemed appropriate, the chair of the graduate committee may request the presence of an additional member from outside CIS or ECE.

## Preparatory Courses

Students with inadequate background in CIS or CE may be required to meet with the department graduate advisor to determine the need for preparatory courses and to determine what courses to take prior to consideration into the Masters program.

For further information contact:

Department of Electrical and Computer Engineering,  
University of Michigan-Dearborn, 4901 Evergreen Road,  
Room 206 ELB, Dearborn, MI 48128-2406 Tel: (313) 593-  
5420 Fax: (313) 583-6336 E-mail: [ece-grad@umd.umich.edu](mailto:ece-grad@umd.umich.edu)

## Engineering Professional Development (EPD)

Engineering Professional Development provides programs and technical seminars designed for engineering and computer science professionals interested in continuing education opportunities.

Many offerings can be customized to accommodate both individual and organizational requirements. Programs are available in face-to-face (F2F) or online formats. F2F courses may be offered in the college's Professional Education Center (PEC), or at a corporate location. EPD's various programming areas currently include:

### Distance Learning Network (DLN)

Most CECS graduate courses are available via distance learning, making it possible to complete an entire degree or certificate program online. Presently, all DLN courses are offered asynchronously, providing students with the flexibility to learn anytime, anywhere. Each online course has a companion campus-based course and both are taught by the same instructor. Campus-based courses are recorded and posted to course websites so that distance learning students can view recorded lectures at their convenience. Distance learning students have opportunities to interact with their instructors and with other students throughout the semester. A shared course website increases opportunities for broader interaction, intellectual exchanges, and networking.

### Onsite Degree Programs

With sufficient industry interest, complete undergraduate and graduate degree programs can be offered at the corporate location.

### Graduate Certificate Programs

The college's Graduate Certificate Programs are designed to provide specialization in a particular topic area. Each certificate requires the completion of twelve graduate credit hours. Certificate courses provide students with the opportunity to complement an already acquired degree, or transfer the credits to one of the college's graduate degree programs (upon admission). Students can also customize their certificates in particular interest areas by choosing courses from several elective options. Many certificate program courses are available via distance learning.

### Technical Seminars and Short Courses (Non Credit Topics)

EPD's technical seminars and short courses are designed for engineering and computer science professionals wishing to explore particular areas of interest without committing to semester-long credit courses. All offerings are designed and taught by UM-Dearborn faculty or industry experts. Courses are offered in online or F2F formats (on campus or at corporate locations). Continuing Education Units (CEU's) or Professional Development Hours (PDH's) are awarded to participants successfully completing course requirements. With sufficient interest, courses may also be customized to meet organizational training needs.

### Project Management Professional—Preparation for Certification

EPD's PMP seminar provides participants with a thorough understanding of Project Management as they simultaneously prepare for PMP certification.



**For Further Information**

To request additional information about any of the EPD programs mentioned here, please contact the department at (313)593-4000 or visit <http://www.engin.umd.umich.edu/EPD>.

## Additional Academic Information

### Academic Advising

The graduate student's program of study is arranged through individual counseling to meet career objectives based on prior preparation. The student will be given an opportunity to indicate an area of interest and will be advised by a graduate advisor.

New and continuing students are encouraged to take advantage of scheduled early registration days.

### Admission to the Programs at UM-Dearborn

In general, admission to the graduate degree programs is limited to students who have completed their undergraduate work in an ABET-accredited institution with an average grade not less than B. However, in order that each qualified student be granted admission, each application is considered individually by the graduate committee of the program. Specific deficiencies in undergraduate preparation do not necessarily prevent enrollment in the programs, but the work necessary to fill such deficiencies cannot be used to meet the credit hour requirements for the graduate degree.

Students admitted to graduate school and contemplating a master's degree should at the earliest opportunity, certainly before registering for their first course, apply to the graduate advisor for assistance in planning their programs.

Application for admission forms may be obtained from the respective departments of the College of Engineering and Computer Science, University of Michigan-Dearborn, Dearborn, Michigan 48128-2406 or at [http://www.engin.umd.umich.edu/pros\\_students/forms.php](http://www.engin.umd.umich.edu/pros_students/forms.php). Such applications are individually reviewed by the departmental graduate committee in question. The resulting recommendation is transmitted to the graduate school, which communicates with the applicant. General admission requirements are available at: [http://www.umd.umich.edu/grad\\_admissionreq/](http://www.umd.umich.edu/grad_admissionreq/). The applicant should arrange for certified copies of previous academic records to be sent directly to the department. The completed application form, and official transcripts showing all the college and university work completed should be received in the department not later than the following dates:

For	By
Fall Semester (beginning approximately September 1)	August 1
Winter Semester (beginning approximately January 1)	November 15
Spring-Summer Semester (beginning approximately May 1)	April 1

International students should apply four to six months before the term begins.

## Grading

The method of grading graduate students conforms in general to that used in undergraduate colleges. No student will be given a higher grade in a course because of the fact that the student is a graduate student. Although a *B* average is required, no greater leniency in grading on that account is expected, even in courses taken only by graduate students. Hours of *D* and *E* grades are used to determine the average grade for each student, but are not included in the number of hours required for the degree. Whenever such fineness of discrimination is possible, plus and minus signs are affixed to the letter grades.

If at the end of a term the student's work in a course is not complete, a grade of *I* (for incomplete) may be used. All incomplete (*I*) grades must be accompanied by an Incomplete contract that specifies the time given to the student to complete the necessary assignments. Any extension beyond 12 months requires approval by the CECS Executive Committee. If the incomplete (*I*) grade is not resolved within the allowed time, a grade of *IE* will be assigned.

Because of the greater maturity and generally shorter programs of graduate students, it is assumed that their performance in mixed classes will on the average be better than that of undergraduates. Instructors also should expect more substantial work from graduate students. The process of grading graduate students in mixed classes should not, however, reflect these assumptions, i.e., these students should be given marks that indicate their standing in the class as a whole. No marks below *C-* carry credit points for graduate students.

Grade averages are computed according to the numerical table of honor points below:

<i>A+</i> = 9 pts.	<i>B+</i> = 6 pts.	<i>C+</i> = 3 pts.	<i>D, E</i> = 0 pts.
<i>A</i> = 8 pts.	<i>B</i> = 5 pts.	<i>C</i> = 2 pts.	
<i>A-</i> = 7 pts.	<i>B-</i> = 4 pts.	<i>C-</i> = 1 pt.	

## Tentative Admission

Applicants deficient in some of the admission requirements of the graduate school or of the department or program of specialization, who nevertheless show promise of being able to satisfy these requirements, may be granted tentative admission for a limited period to enable them to make up these deficiencies. Any credits earned under tentative admission will be considered for possible use as graduate credits only when the student has achieved regular admission status.

- 1) Graduates of an unaccredited institution may be granted tentative admission on the condition that they complete one semester of 12 credit hours of additional qualifying work at the University of Michigan before completing the normal degree requirements.
- 2) Graduates of foreign or American institutions whose previous preparation cannot be adequately evaluated, and graduates who received any part of their qualifying education more than seven years before their application to the graduate school, may be granted tentative admission. Such applicants

are permitted one semester of study before regular admission and may be required to complete additional qualifying work beyond the normal degree requirements. A second semester of study may be approved for these applicants by the department or program chairperson (or designate).

- 4) Undergraduate students in their final year of work toward a bachelor's degree may be granted tentative admission on the basis of academic credentials to date and pending the receipt of official transcripts indicating satisfactory completion of all coursework and award of the bachelor's degree.
- 5) Undergraduate students at the University of Michigan who at the beginning of a full semester are within six credit hours or at the beginning of a half-semester are within four credit hours of graduation may be granted tentative admission to the graduate school for that term or half-term.

## Course Descriptions

The following lists include all courses normally offered at UM-Dearborn. However, not all courses are offered every year and periodically courses are added and deleted. For details, students should consult the *Schedule of Classes* for each term.

### AUTOMOTIVE ENGINEERING (AENG)

#### **AENG 500 Automobile: An Integrated Syst** 3.000 Credits

Factors external to engineering such as markets, financing, and sales; the customers and their perceptions as influenced by marketing and performance; volume markets; international. An abc of engineering factors in all the components and sub-systems areas and in the plant, labor, and supplies area. Vehicle characteristics and dynamic interactions.

#### **AENG 502 Modeling of Automotive Systems** 3.000 Credits Prerequisites: ME 265 or ME 345

This course will first introduce systems modeling approach and then develop mathematical models for ride, vibration, handling control, etc. of automobiles. The models will then be used to examine the design and performance of an automobile from a systems point of view. (F, YR).

#### **AENG 505 Digital Systems & Microprocess** 3.000 Credits

Introduction to modern digital computer logic. Numbers and coding systems; Boolean algebra with applications to logic systems; combinational and sequential logic design; examples of digital logic circuits; simple machine language programming; microprocessors-programming, input/output, interrupts, and system design. (Not open to students with EE degree.)

#### **AENG 510 Vehicle Electronics I** 3.000 Credits Prerequisites: ECE 305

Semiconductor diodes, junction transistors, FETS, rectifiers and power supplies, small signal amplifiers, biasing

considerations, gain-bandwidth limitations, circuits models, automotive applications and case studies. (Not open to students with EE degree.)

#### **AENG 534 Fundmntls of Thermal/Fluid Sci** 3.000 Credits

Thermodynamics with emphasis on first and second laws; gas mixtures; introduction to cycles. Kinetics and dynamics of fluid flow; conservation laws of momentum and energy; flow and friction in conduits. Mechanism of heat transfer; introduction to convection and radiative heat transfer. (Not open to students with ME degree.)

#### **AENG 541 Intro to Automotive Dynamics** 3.000 Credits

An introduction to dynamics and vibrations. Overview of dynamics and vibration of automotive components and suspension systems. Automotive maneuvering and vehicle response. (Not open to students with ME degree.)

#### **AENG 545 Vehicle Ergonomics I** 3.000 Credits Prerequisites: IMSE 442

Overview of drive characteristics, capabilities, and limitations. Human variability and driver demographics, driver performance measurements. Driver information processing models, driver errors and response time. Driver sensory capabilities: vision, audition, and other inputs. Vehicle controls and displays. Driver anthropometry, biomechanical considerations.

#### **AENG 546 Vehicle Ergonomics II** 3.000 Credits Prerequisites: AENG 545

This course covers advanced human factors engineering and ergonomics topics related to incorporation and integration of new display, information, lighting and sensor technologies to improve driver convenience, performance, safety, and to reduce driver distractions. The students will learn new evaluation methodologies, driver performance models, and use research equipment to measure driver performance, and evaluate usability issues. Some advanced topics to be covered include: driver workload, evaluation and design of new in-vehicle devices, advanced vehicle lighting, and driver vision systems, models to predict and evaluate field of view, target detection, disability and discomfort glare, legibility, etc. Three lecture hours including laboratory projects and demonstrations. Prerequisite: Graduate standing. (W).

#### **AENG 547 Automotive Powertrains I** 3.000 Credits Prerequisites: ME 265

Topics in kinematics and dynamics including engine output and balance; mechanisms and machine theory. Force analysis and design of gears and shaft systems. Analysis of planetary gear trains. Design and analysis of automotive gear boxes.

#### **AENG 550 Design of Automotive Chassis**

3.000 Credits

This course provides a systems approach to the design of automotive chassis and body components and examines the influence of their design on the overall structural performance of the automobile. Design issues related to structural rigidity, ride comfort, safety and crash-worthiness, durability and assembly are covered. Applications of advanced materials and joining techniques are discussed. Analytical tools used in automotive structural design are also discussed.

**AENG 551 FEM in Auto Structure Design**

3.000 Credits

Prerequisites: ME 345 and ME 3601

This course is designed to introduce the applications of finite element method in automotive structure design. It includes specific design examples of vehicle NVH and durability with commercial pre-processor and FEA solver. The course also provides theoretical knowledge of FEA and vehicle design.

**AENG 555 Vehicle Stability & Control**

3.000 Credits

Prerequisites: ME 345 and ME 442

Introduction to static and dynamic stability characteristics of vehicles. Study on directional vehicle responses and stability in small disturbance maneuver. Design, numerical simulation, and analysis of vehicle control systems (ABS, active suspension, and yaw stability). Prerequisite: Dynamics (ME 345), Control Systems Design and Analysis (ME 442) or equivalent.

**AENG 566 Vehicle Thermal Management**

3.000 Credits

This course covers fundamental thermo-fluid principles and advanced topics in thermal management of conventional and electric drive vehicles (EDVs). The topics include: principles of energy conservation, heat transfer, and fluid mechanics; vehicle thermal management system and components; electrification of vehicle thermal management system; EDV thermal management; battery thermal management in EDVs; and waste energy recovery.

**AENG 581 Materials Sel in Auto Design**

3.000 Credits

This course develops an understanding of the properties of modern engineering materials and explains the role of the materials selection process in product design, development, and manufacturing. Materials selection/design problems and case studies involving automotive and other commercial products are discussed. The role of environmental regulations, societal pressures and customer wants on the selection of alternate materials is discussed. (YR)

**AENG 582 Materials I**

3.000 Credits

Mechanical behavior of engineering materials such as metals, ceramics, glasses, polymers, and composites. In the metals area, emphasis will be on phase diagrams, transformations, light alloys, carbon steels, alloy steels, and forming and joining of metals.

**AENG 583 Project Mgmt and Concurr Eng**

3.000 Credits

Prerequisites: IMSE 317

Project management emphasis including project scope management, time management, cost management, quality management, human resource management, etc. Concurrent engineering and project leadership. Applications to automotive projects using Superproject computer package.

**AENG 584 Lightweight Automotive Alloys**

3.000 Credits

This course introduces structure-processing-property relationships in the lightweight automotive alloys that are candidates for automotive applications such as aluminum, titanium, and magnesium. Metal matrix composite and intermetallic materials are also discussed. Emphasis will be placed on the processing and design of these materials in future automotive applications. (YR).

**AENG 585 Ceramics for Auto Applications**

3.000 Credits

This course will present physical, thermal and mechanical properties of structural ceramics, ceramic coatings and ceramic matrix composites. Design and processing issues for these materials are emphasized. Automotive applications of ceramics are discussed. Thermoelectric and other propulsion materials are also discussed. (YR).

**AENG 586 Design & Mfg: Ltwt Auto Mat**

3.000 Credits

Prerequisites: AENG 581 and AENG 587

This course will address the design issues and manufacturing considerations for various lightweight automotive structural materials. Design issues will include stiffness, fatigue, vibrations, dent resistance, crush resistance, etc. Methods of producing lightweight automotive structures are discussed. Design for manufacturing, assembly, disassembly and recycling are emphasized. (YR).

**AENG 587 Automotive Manuf Processes**

3.000 Credits

Manufacturing processes, including casting, forging, forming, machining, molding, etc., are examined specifically in the context of their applications in the automotive industry. Quality control and techniques, process selection and methods are emphasized.

**AENG 588 Design&Manufac for Environment**

3.000 Credits

This is a course focused on the effects of product design and manufacturing on the environment, with special emphasis on automobiles. The fundamental principles of life cycle engineering will be introduced. The importance of environmental improvement will be considered. Design and material selection for recycling, reuse and disposal will be illustrated. Furthermore, it will cover the elementary relationships between design and manufacturing for the

development of future environmentally friendly vehicles.

**AENG 589 Auto Assembly Systems**  
3.000 Credits

This course deals with in-depth analysis of automotive assembly systems. Design, analysis and economics of manual and automatic assembly of automotive components are to be emphasized. It includes design of assembly stations for manual assembly; automatic assembly stations; design for assembly and disassembly; analysis of automatic feeding and orientation techniques of small parts; assembly of large parts; application of robotics in assembly; and economics of assembly for automotive systems as well as electronic systems.

**AENG 590 Selected Topics**  
1.000 TO 3.000 Credits

Individual or group study of an automotive systems engineering topic of contemporary interest.

**AENG 591 Guided Study in Automotive Sys**  
1.000 TO 3.000 Credits

Individual or group study of an automotive systems engineering topic of contemporary interest.

**AENG 596 Internal Combustion Engines I**  
3.000 Credits  
Prerequisites: ME 330

Comparison of several forms of internal combustion engines including Otto and diesel-type piston engines; performance parameters and testing; thermodynamic cycles and fuel-air cycles; combustion in SI and Diesel engines; charge formation and handling; ignition; elements of exhaust emissions. (Not available to students with ME 496 or equivalent background.)

**AENG 598 Energy Sys for Auto Vehicles**  
3.000 Credits  
Prerequisites: ME 496 or AENG 596

This course will discuss the current and future energy systems for automotive vehicles. Topics include liquid and gaseous fuels, direct energy conversion systems and fuel cells. Characteristics of various energy systems are discussed with respect to their performance, cost, reliability and environmental concerns. Fuel cell analysis and design is covered in detail. (W, AY).

**AENG 650 Anyls&Des for Veh Crshwrthnss**  
3.000 Credits  
Prerequisites: ME 510 or AENG 551

This course aims to provide knowledge on vehicle crash mechanics, structural design to improve crashworthiness and crash energy management. Finite element techniques for vehicle crash analysis are also covered.

**AENG 687 Adv Auto Mfg Processes**  
3.000 Credits  
Prerequisites: AENG 587

This course deals with in-depth analysis of select manufacturing processes used for the fabrication and assembly of automotive vehicles. Modeling and simulation of selected classes of manufacturing processes using numerical methods; such as finite difference and finite element methods, will be studied. Process optimization approaches will be introduced and applied to selected processes.

**AENG 698 Capstone Proj(Case Stud/Dsn)**  
3.000 TO 6.000 Credits

Individual or team design or case study of interest to the students. Topics may be chosen from any of the areas of automotive engineering. The student (or the team) will submit a project report and give an oral presentation at the end of the second term. The project spans two terms. (Permission of advisor required before registration.)

**AENG 699 Master's Thesis**  
3.000 TO 6.000 Credits

Research for master's thesis under the direction of a faculty member. (Permission of advisor required.)

**AENG 798 Doctoral Seminar**  
.000 Credits  
Co-requisites: ASE 990

After attaining candidacy every Ph.D. student is required to attend and actively participate in seminars each semester until graduation. In addition, each Ph.D. student is required to present a one hour seminar about his/her research or an pre assigned research topic, and lead a follow-up discussion on the future trends in his/her field.

**AENG 990 Doctoral Dissertation**  
1.000 TO 9.000 Credits

Dissertation work by a Ph.D. student who has been admitted to the candidacy status. The student must be registered during the semester of the dissertation defense. (1 to 9 credit hours per semester)

## COMPUTER & INFORMATION SCIENCE (CIS)

**CIS 505 Algorithm Analysis and Design**  
3.000 Credits  
Prerequisites: CIS 350

This course investigates how to design efficient algorithms. Topics covered include: asymptotic analysis, average-case and worst-case analysis, recurrence analysis, amortized analysis, classical algorithms, computational complexity analysis, NP-completeness, and approximation algorithms. In addition, the course investigates approaches to algorithm design including: greedy algorithms, divide and conquer, dynamic programming, randomization, and branch and bound.

**CIS 510 Computer Interfacing**  
3.000 Credits  
Prerequisites: CIS 310

This course covers fundamentals of computer interfacing to the external world through the following: parallel and serial interfaces, timers, interrupts, Uart, and Duart. Programming aspects will be emphasized. Knowledge of an assembly language required. (YR).

**CIS 515 Computer Graphics**  
3.000 Credits  
Prerequisites: (CIS 350 or IMSE 350 or CCM 350) and (MATH 217 or MATH 227) and (MATH 205 or MATH 215)

Basic geometrical concepts, graphics primitives, two-dimensional transformations, segmented files, windowing and clipping, camera models, and 3-D viewing transformations. (F).

**CIS 525 Web Technology**  
3.000 Credits  
Prerequisites: CIS 553\*

This course deals with the study of the 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, web services, .NET, semantic web. (YR).

**CIS 527 Computer Networks**  
3.000 Credits  
Prerequisites: CIS 450 or IMSE 450 or ECE 478

To study the technical and management aspects of computer networks and distributed systems. Topics include: communication hardware, communication protocols, network architectures, local area networks, distributed database systems. Case studies and research project will be assigned for additional insight.

**CIS 535 Wireless Tech/Pervasive Cmpgt**  
3.000 Credits

This course covers contemporary technologies for programmable mobile and wireless intelligent hand-held devices. Students will get an overview of mobile operating system concepts/techniques and will learn how to develop software for mobile/smart devices, with particular emphasis on the constraints intrinsic to such devices. Topics in location-based services and pervasive computing will also be covered. Participation in a project is a requirement in this course. This class requires knowledge in computer programming.

**CIS 537 Advanced Networking**  
3.000 Credits  
Prerequisites: CIS 427 or CIS 527

Performance models in networking, analysis of ARQ and MAC protocols, routing algorithms, flow and congestion control. All of the above topics should be covered in depth. The approach should be rigorous.

**CIS 544 Computer and Network Security**  
3.000 Credits  
Prerequisites: CIS 450 or IMSE 450 or ECE

478

The course will provide a broad spectrum introduction of the fundamental principles of computer and network security. Topics will include security policies, models and mechanism for confidentiality, integrity and availability, access control, authorization, cryptography and applications, threats and vulnerabilities in computer networks, key management, fire walls and security services in computer networks.

**CIS 546 Security&Privacy Wireless Ntwk**  
3.000 Credits  
Prerequisites: CIS 527 or CIS 427 or CIS 544 or CIS 447

This course focuses on security issues in wireless networks, such as cellular networks, wireless LANs, mobile ad-hoc networks, vehicular networks, sensor networks, and RFID. The course will first present an overview of wireless networks, then focus on attacks and discuss proposed solutions and their limitations.

**CIS 548 Sec and Priv in Cloud Comp**  
3.000 Credits  
Prerequisites: (CIS 477 or CIS 544) and ECE 528

This course covers the major security and privacy topics in cloud computing. The goals of this course are to familiarize students with the major security and privacy issues and challenges associated with cloud computing, and to show them how to address them. Topics include outsourced storage security and privacy, outsourced computation security and privacy, secure virtualization and cloud platform security, trusted cloud computing technology, key management in the cloud, cloud forensics, cloud-related regulatory and compliance issues, and business and security risk models.

**CIS 550 Obj-Oriet Prog and Its Applic**  
3.000 Credits  
Prerequisites: CIS 350

This course covers advanced programming techniques using objects and classes, including programming windows, menus, toolbars, and drawing in windows. Further applications include distributed computing in which client and server communicate with each other by sending messages.

**CIS 551 Advanced Computer Graphics**  
3.000 Credits  
Prerequisites: CIS 451 or CIS 515

Introduction to curves, surfaces, and solids. Bezier and B-spline curves, spline surfaces, intersections of curves and surfaces, blending methods. Illumination models and surface rendering. Solid modeling-wireframe, constructive solid geometry.

**CIS 552 Inf Vis & Multimedia Gaming**  
3.000 Credits  
Prerequisites: CIS 451

This course introduces basic techniques for digital animation,

computer and video games, and web multimedia. Topics include the process of creating animated video clips from start to finish, including story creation, storyboarding, modeling, animation, and post-production; several key techniques for video editing and motion generation, including keyframe, motion capture editing, collision detection, particle systems, physical simulation, and real-time rendering; techniques for web animation and multimedia; and internet gaming.

**CIS 553      Software Engineering**  
3.000 Credits  
Prerequisites: CIS 375

Program design methodologies; control flow and data flow in programs; program measurement. Software life cycle; large program design, development, testing, and maintenance. Software reliability and fault tolerance. Evolution dynamics of software. (YR).

**CIS 554      Info Sys Analysis and Design**  
3.000 Credits  
Prerequisites: CIS 350

To analyze the information needs of organizations and design suitable information systems to meet their needs. Topics include: systems analysis and design techniques related to analyzing and determining information needs, feasibility studies, designing input/processing/output systems, and hardware/software development and evaluation.

**CIS 555      Dec Support and Expert System**  
3.000 Credits  
Prerequisites: CIS 350 or IMSE 350 or CCM 350

To study the application of artificial intelligence in building decision support and expert systems for management and other applications. Topics include: fundamentals of artificial intelligence, knowledge representation and knowledge processing, tools for building expert systems and decision support system design. (YR).

**CIS 556      Database Systems**  
3.000 Credits  
Prerequisites: CIS 350 or IMSE 350 or CCM 350

An examination of the database approach to data management in computer systems. Topics include database fundamentals, the relational, network, and hierarchical database models, normalization of data, distributed databases, and current trends and issues. (YR).

**CIS 559      Prin of Social Netwk Science**  
Prerequisites: CIS 505

This course presents an in-depth study of various types of information networks, which range from the structure and behavior of the world-wide web, to the structure and behavior of various collaboration networks, such as bibliographic citations, viral marketing, and online social networks. Using concepts from graph theory and game theory, topics include small-world networks, scale-free networks, the structure of the

web, link analysis and web search, and influence networks.

**CIS 560      Electronic Commerce**  
3.000 Credits

This course examines how new information technologies and networks affect the exchange of goods and services between buyers and sellers in firms. What are economics of different electronic commerce models for firms? The course combines critical evaluation of business strategies with hands-on experience in building supporting electronic commerce systems utilizing electronic data interchange (EDI) software. (YR).

**CIS 562      Web Information Management**  
3.000 Credits  
Prerequisites: CIS 556 or CIS 421

This course provides an in-depth examination of advances in web information management, retrieval and applications. Topics covered include: web interfaces to databases, XML standards, web database design, web database architectures, web query languages, web data restructuring, web information integration, semantic web and ontologies, and web mining. (YR)

**CIS 563      Modeling of Computer-based Sys**  
3.000 Credits

The purpose is to expose the students to modeling and simulation concepts and methodologies to use modeling and simulation as a tool for both the analysis of systems and the development of their information systems support.

**CIS 564      Prin of Organizational Inf Sys**  
3.000 Credits

The purpose of this course is to provide a foundation for the analysis, design and implementation of enterprise information systems. Topics include systems and organization theories, and information systems planning and evaluation. Students will be also introduced to various systems development life cycle phases of an enterprise information system. Students will acquire an understanding of the flow of information (forecasts, financial, accounting and operational data) within an enterprise and the factors that should be considered in designing an integrated enterprise information system. This includes all systems in the business cycle from revenue forecasts, production planning, inventory management, logistics, manufacturing, accounts payable, sales, accounts receivable, payroll, general ledger and report generation. Specifications for some of these systems will be developed utilizing ERP software such as SAP R/3 applications development software suite. (YR).

**CIS 565      Software Quality Assurance**  
3.000 Credits  
Prerequisites: CIS 553

This course focuses on the processes, methods, and techniques for developing quality software, and maintaining quality software. Software testing processes at the unit, module, subsystem, and systems levels are discussed. Testing methods covered include: automatic and manual generation of test data,

static vs. dynamic analysis, functional testing, inspections, and reliability assessment.

**CIS 566      Software Arch and Des Patterns**  
3.000 Credits  
Prerequisites: CIS 375\*

A design pattern is a catalogued solution that has been applied and tested in multiple situations to produce well-designed reusable object-oriented software. This course covers both architectural and software design patterns in theory and in practice, with various applications. The course will end with a case study and design exercise demonstrating identification and utilization of architectural design patterns in real world application. The students will test their understanding by completing three projects utilizing popular design patterns and a term project utilizing multitude of patterns. Class presentation of published advanced patterns may be required.

**CIS 568      Data Mining**  
3.000 Credits  
Prerequisites: ECE 479 or CIS 479

Advances in computer information systems, machine learning, statistics, and intelligent systems and methodologies for the automatic discovery of knowledge from large high-dimensional databases. This course also uses engineering development tools such as neural networks, fuzzy logic, and genetic algorithms.

**CIS 571      Web Services**  
3.000 Credits  
Prerequisites: CIS 350 or ECE 370

A study of the major concepts and techniques for enabling web service-based interactions on the web. The objective is to familiarize students with the recent trends in industry and academia to address web service research issues. The course will address various aspects of web services, including the reference model for web services (UUDI, SOAP, WSDL), web service composition, semantic web services, security/privacy issues in web services and an overview of web service standards (BPEL4WS, WS-Security, etc). Students will participate in a major project.

**CIS 572      Object Oriented Systems Design**  
3.000 Credits

Students will be introduced to fundamental concepts and methods of object design and development. Topics that will be covered include object database concepts, data models, schema design (conceptual schema and physical schemas), query languages, physical storage of objects and indexes on objects, version management, schema evolution and systems issues such as concurrent control and recovery from failure. For application programming, a programming language such as C++ will be used for database design and query language. (YR).

**CIS 574      Compiler Design**  
3.000 Credits  
Prerequisites: CIS 350 or CIS 3501 or IMSE 350 or (ECE 370 and MATH 276)

Lexical analysis and symbol table; syntactical analysis of expressions and statements; error detection; translation into intermediate code and its correctness. (YR).

**CIS 575      Software Engineering Mgmt**  
3.000 Credits  
Prerequisites: CIS 553

Quantitative models of the software lifecycle; cost-effectiveness; uncertainty and risk analysis; planning and modeling a software project; software cost estimation (COCOMO, Function points); software engineering metrics; software project documentation. Special emphasis on emerging software process standards such as the Capability Maturity Model of the Software Engineering Institute, and other international ones.

**CIS 577      S/W User Interface Dsgn&Analys**  
3.000 Credits  
Prerequisites: CIS 553\*

Current theory and design techniques concerning how user interfaces for computer systems should be designed to be easy to learn and use. Focus on cognitive factors, such as the amount of learning required, and the information-processing load imposed on the user. Emphasis will be on integrating multimedia in the user interface.

**CIS 578      Advanced Operating Systems**  
3.000 Credits  
Prerequisites: CIS 450 or IMSE 450 or ECE 478

Advanced techniques used in operating system design. Distributed operating systems. Message-based operating systems. Operating systems for parallel architectures. Layered techniques in operating systems. Formal models of operating systems. Current trends in operating system design. (YR).

**CIS 579      Artificial Intelligence**  
3.000 Credits  
Prerequisites: CIS 350 or CIS 3501 or IMSE 350 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. A student project may be required. (YR).

**CIS 587      Computer Game Design and Impl**  
3.000 Credits  
Prerequisites: CIS 553\*

This course deals with the study of the technology, science, and art involved 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 and discussion 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. (YR)

**CIS 588 Computer Game Design II**

3.000 Credits

Prerequisites: CIS 587

This course is a continuation of the material studied in CIS 587. The focus of the course will be hands-on development of computer game development tools (e.g. game engines). Students will study a variety of software technologies relevant to computer game design, including: 3D graphics, computer animation, data-driven game design, multiplayer game programming, and game AI. Lecture topics will be taken from several areas of computer science: simulation and modeling, computer graphics, artificial intelligence, game theory, software engineering, human computer interaction, and game content development, and game aesthetics.

**CIS 590 Selected Topics**

1.000 TO 3.000 Credits

In-depth study of a CIS topic of contemporary interest. Topic varies from semester to semester.

**CIS 591 Directed Research Project**

1.000 TO 3.000 Credits

Special projects for laboratory or library investigation with the intent of developing initiative and resourcefulness. The student will submit a report of the project and give an oral presentation to a panel of faculty members at the close of the term.

**CIS 627 Adv Net and Dist Sys**

3.000 Credits

Prerequisites: CIS 527

The course focuses on the design, implementation, analysis, and evaluation of large-scale networked systems. Specific networking topics include congestion/flow control, traffic analysis, routing, internetworking, multicast, mobile and wireless networks, quality of service, and security. Fundamental distributed systems topics include domain name service, global routing protocols, content delivery networks, and peer-to-peer systems. Three lecture hours per week.

**CIS 628 Adv Comp and Netwk Security**

3.000 Credits

Prerequisites: CIS 544

This course consists of an in-depth examination of current technological advancements in computer and network security. Topics will include secure group communication (key generation, distribution, and management), secure routing and multicasting, identity-based encryption, digital signatures, broadcast authentication, device pairing, and malware/intrusion detection and mitigation.

**CIS 634 The Semantic Web**

3.000 Credits

Prerequisites: CIS 556

The aim of this course is to investigate the fundamental concepts, techniques, and technologies for enabling the envisioned semantic Web. The topics to be covered in this course include ontologies, domain modeling, logic, reasoning and inference techniques, semantic Web services, and ontology interoperation/mapping. We will review major research semantic Web projects as well as current technologies for enabling the semantic Web.

**CIS 637 Information Retrieval**

3.000 Credits

Prerequisites: CIS 505

This course covers techniques for locating relevant semi-structured or unstructured documents, residing in a large document repository, satisfying various information needs. Particular attention will be paid to repositories of text documents or web pages. Participation in a project is a requirement in this course.

**CIS 647 Advances Ntwkng&Dist Sys Res**

3.000 Credits

Prerequisites: CIS 627

This course presents an in-depth study of such topics as Internet analysis, approaches for network performance enhancements, multimedia applications, network coding, routing techniques, congestion control, wireless and sensor networks, vehicular networks, social networks, network science, and other emerging networking technologies and applications.

**CIS 652 Info Vsualzatr & Comp Anim**

3.000 Credits

Prerequisites: CIS 551

This course introduces algorithms for three-dimensional imaging, geometric modeling, geometric processing, information visualization, and computer animation. Particular research topics include volume graphics, point-based graphics, surface reconstruction, wavelet and subdivision methods, level of details, and physics-based animation. Students will study state-of-the-art papers in the above areas and be involved in a course project.

**CIS 656 Advanced Database Systems**

3.000 Credits

Prerequisites: CIS 556

An in-depth examination of some advanced database technologies. Topics will be selected from object-relational databases, active databases, distributed databases, parallel databases, deductive databases, fuzzy databases, data warehousing and data mining, spatial and temporal databases, multimedia databases, advanced transaction processing, and database security.

**CIS 657 Wireless Sensor Networks**

3.000 Credits

Prerequisites: CIS 527



This is a research-oriented course that provides graduate students with an overview of wireless sensor networks and the challenging issues related to their design and implementation. It introduces students to the state-of-the-art in wireless sensor networking and helps them solve problems in designing and deploying resource-limited sensor networks for real-world sensing applications. During this course, students are required to work in teams to design and implement some primitive sensing applications. Students are also required to write research/survey papers on topics related to wireless sensor networks.

**CIS 658      Advances in DB Sys Res**  
3.000 Credits  
Prerequisites: CIS 656

An in-depth study of special topics of current interest in database systems. Selected topics will be from areas such as query optimization for emerging database systems, indexing for non-traditional data, data provenance for scientific databases, databases on modern hardware, self-managing databases, information integration and retrieval, bioinformatics, or other emerging database areas/applications.

**CIS 676      Soft Arch Des & Analysis**  
3.000 Credits  
Prerequisites: CIS 553

This course provides in-depth coverage of the concepts needed to effectively design and analyze software architectures. It introduces major architectural styles and design patterns and illustrates their application in designing and analyzing modern software architectures such as wireless, service-oriented, and security-based systems. The course also studies software architecture documentation practices that meet the needs of the entire architecture stakeholder community.

**CIS 678      Advances in Soft Eng Res**  
3.000 Credits  
Prerequisites: CIS 553

This course consists of an in-depth coverage of one or more advanced topics in software engineering. Examples of possible topics are automated software specification, design, and testing, reverse engineering, software process modeling, software engineering decision support, software security, computational intelligence in software engineering, software quality models and maintenance, and software model-driven engineering.

**CIS 695      Master's Project**  
3.000 Credits  
Prerequisites: CIS 553

Application of the methodologies, tools and theory of software engineering to produce a specific validated software product. Projects can be faculty-generated, self-generated, and/or work related. All projects must be undertaken with one or more students under the supervision of the instructor. Prior to enrollment, a project proposal must be prepared and approved by the instructor and department chair. Standard software engineering documents must be prepared and approved at each phase of the project, and an oral presentation of the project is

required. Course includes lectures and case studies. Permission of instructor required.

**CIS 699      Master's Thesis**  
1.000 TO 6.000 Credits

Graduate students electing this course, while working under the general supervision of a member of the department faculty, are expected to plan and carry out the work themselves and submit a thesis for review and approval, and also present an oral defense of the thesis.

## **ELECTRICAL & COMPUTER ENGINEERING (ECE)**

**ECE 500      Math Mthds for Elec & Comp Eng**  
3.000 Credits

Topics include: Transform Techniques using Fourier series, Fourier transforms, Laplace transforms and Sampling Theorem. Linear Algebra using eigen expansions, polynomial functions and matrices and determinants. Random Variables using probability density and distribution functions, functions of a random variable, and conditional and joint probabilities.

**ECE 502      Electromag Theory & Simul**  
3.000 Credits

The course will cover basic problems in Electromagnetism, employing vector calculus and Finite Element Analysis. The course will use examples of electromagnetic devices that operate at low frequency, (e.g. coils and motors), and others that operate at high frequency (e.g. a dipole antenna). The course will develop analytical solutions for the behavior of these devices, and then compare those solutions with ones developed using electromagnetic Finite Element Analysis (FEA). Three lecture hours per week.

**ECE 505      Dig Sys and Microprocessors**  
3.000 Credits

Introduction to modern digital computer logic. Numbers and coding systems; Boolean algebra with application to logic systems; examples of digital logic circuits; simple machine language programming and Assembly and C/C+ programming language; microprocessors programming (both assembly and C/C+) for input/output, interrupts, and system design. (May not be available to students with EE or CE degrees) Three lecture hours per week.

**ECE 507      Intro to Multimedia Sys**  
3.000 Credits

This course is designed to provide a broad overview of the engineering, art, and business of developing multimedia systems. In terms of technical and engineering issues, students will learn basic data analysis techniques and computer programming tools. In terms of art and media, students will learn the basics of human perception, communication, and aesthetics. In terms of business, students will learn how to identify customer needs and think like an entrepreneur. By learning and understanding the working vocabulary of each of these three fields, students will be able to contribute creative

and effective multimedia-based solutions to interesting real-world problems. Three lecture hours per week.

**ECE 510 Vehicle Electronics I**  
3.000 Credits

This course discusses the principles of electrical engineering and applications of electrical and electronic systems in automobiles, including resistive, inductive, and capacitive circuit analysis, semiconductor diodes, junction transistors, FETS, rectifiers, and power supplies, small signal amplifiers, biasing considerations, gain-bandwidth limitations, circuit models. Some automotive EE applications are used for case study. Three lecture hours per week. (Not open to students with EE degree.)

**ECE 512 Analog Filter Design**  
3.000 Credits

This course addresses the analysis and design of continuous time (analog) and switched-capacitor filters. Students will analyze and design filters. Effect of tolerances of circuit elements on the performance of the circuit behavior will be analyzed. Students will use simulation tools to design filters and verify circuit performance. Three lecture hours per week.

**ECE 5121 Mod & Des of Electronic Cir&Sys**  
3.000 Credits

Review semiconductor circuit elements in detail to model devices for circuit analysis. Devices include diodes, bipolar junction transistors, MOSFETs and operational amplifiers. Discussion of large signal and small signal (ac) models, frequency effects and non-ideal models. Design circuits such as switching circuits, power supplies, amplifiers, oscillators, non-linear circuits. Students will gain experience in terms of designing, simulating and implementing electronic circuits and systems. Three lecture hours per week.

**ECE 513 Computer-Aided Network Design**  
3.000 Credits  
Prerequisites: ECE 410

Numerical methods required for circuit analysis and design using digital computers are investigated. These techniques include matrix analysis of linear systems; network graphic theory, tolerance analysis, transient analysis, numerical integration, nonlinear circuit analysis, network optimization, and device modeling. Practical examples are given requiring the construction of computer subroutines and use of general analysis programs such as ECAP and CIRAN. Three lecture hours.

**ECE 514 VLSI Design**  
3.000 Credits

Topics relevant to the design and analysis of VLSI circuits are investigated. These include an introduction to CMOS circuits, their characterization and performance estimation. Logic design and testing of VLSI circuits. Analysis of layout and the design of subsystems. VHDL and commercial CAD packages for VLSI design.

**ECE 515 Vehicle Electronics II**  
3.000 Credits  
Prerequisites: AENG 510

This course discusses advanced topics in electronics with an emphasis on vehicle applications. It will include ignition systems and controls, amplifiers, frequency characteristics of electronic circuits, feedback in electronic systems and stability, power electronics and motor drive controls (DC/DC and DC/AC converters) and EMC issues. Selected examples include applications such as voltage regulators and battery chargers. Three lecture hours per week.

**ECE 516 Electronic Materials & IC Proc**  
3.000 Credits

Review of representative electronic devices and illustrative applications. Properties of electronic materials. Semiconductors. PN junctions, bi-polar and field-effect transistors. Integrated circuit processing, bonding and packaging. Failure mechanisms and interconnect lifetime prediction. Case studies and applications.

**ECE 517 Adv Pwr Electronics & Motor Drvs**  
3.000 Credits

This is an advanced course on power electronics and electric drives. Example topics include DC, induction, synchronous and reluctance drives; industrial and residential application of power electronics; practical aspects of design of power electronics devices including heat sink and magnetic components designs. Three lecture hours per week.

**ECE 518 Mat Selec for Commercial Prod**  
3.000 Credits

Impact of modern materials on commercial product performance; representative illustrations from product areas such as automotive vehicles, commercial aircraft, recreational equipment, and electronic products.

**ECE 519 Adv Topics in EMC**  
3.000 Credits

This course covers the EMC requirements and EMC test methods for large systems. Examples involving various types of applications (automotive, communications, computers) will be discussed. Discussion of design practices used in large installation, including component segregation, cable routing, connectors, grounding, shielding, common impedance coupling, ground planes, screening and suppression. Classification of electromagnetic environments will also be discussed. Three lecture hours per week.

**ECE 524 Interactive Media**  
3.000 Credits

This course will provide an introduction to computer and human interface and AI, user-interface design from design principles and cognitive perspectives. The course covers such topics innovative multimedia interfaces, design ethics, psychological principles, cognitive models, interaction principles, requirements analysis, project management, I/O

devices, standards and styles guides, and visual design principles. This is a project-based class. Three lecture hours per week.

**ECE 525     Multimedia Data Stor & Retr**  
3.000 Credits

This course will cover the fundamental concepts and techniques used in multimedia data, storage and retrieval including storage and retrieval images, videos, audio and text documents. Selected multimedia applications will be discussed and students will be required to work on a project related to multimedia applications such as advertising and marketing, education and training, entertainment, medicine, surveillance, wearable computing, biometrics, and remote sensing. Three lecture hours per week.

**ECE 5251    MM Design Tools I**  
3.000 Credits

This course will introduce students to design tools for multimedia systems. Basic concepts, algorithms, and standards will be covered for systems that process digital images, vector graphics, and text. Models and relevant parameters of display technologies (video and printer) will be discussed. Part of the coursework involves a project concerning the analysis and design of a multimedia-based system. Three lecture hours per week.

**ECE 5252    MM Design Tools II**  
3.000 Credits

This course will introduce students to multimedia design tools for dynamic media (video and audio). Basic concepts of digital video will be reviewed, such as resolution and compression standards. Algorithms and methods for video and audio processing and effects will be reviewed. Part of the coursework involves a project concerning the analysis and design of multimedia-based system. Three lecture hours per week.

**ECE 526     Multimedia Comm Sys**  
3.000 Credits

Object of this course is to introduce current techniques in multimedia communications. This course will cover in-depth study of existing multimedia compression standards such as, MPEG, MJEG, JPEG2000, etc. The course will introduce the basic issues in multimedia communications and networking and is designed to give the student hands-on experience in various aspects of multimedia communications through the various assignments and projects.

**ECE 527     Multimedia Secur & Forensics**  
3.000 Credits

Object of this course is to introduce current techniques information security in general and multimedia security in particular. This course will cover existing information hiding techniques such as digital watermarking, steganography, and fingerprinting. The course will also cover basics of cryptography and coding theory. This course will cover the basic issues in multimedia security and forensics and is designed to give the student hands-on experience in various aspects of information security and forensic analysis through

the various assignments and projects. Three lecture hours per week.

**ECE 528     Cloud Computing**  
3.000 Credits

Cloud computing represents the emerging Internet-based services/platforms with elastic and scalable computation powers operating at costs associated with service. Topics of the course include advanced web technologies, distributed computing models and technologies, software as a service (SaaS), virtualization, parallelization, security/privacy and the advance in cloud computing. Course work includes building up a SaaS project. Students cannot take both ECE 428 and ECE 528 for degree credit. Three lecture hours per week.

**ECE 529     Intro to Computer Music**  
3.000 Credits

This course will introduce students to methods and technologies of computer music. The basics of digital audio will be covered, including sampling, quantization, and compression standards. Various analysis tools will be covered, including the Fourier transform and windowing techniques. Mathematical models of physical instruments will be introduced. Various sound synthesis strategies will be introduced: wave tables, additive synthesis, subtractive synthesis, frequency modulation, and granular synthesis. Three lecture hours per week.

**ECE 530     Energy Storage Systems**  
3.000 Credits

This course introduces the basics of energy storage systems for EDV. It will cover battery basics, ultra capacitors, flywheels, and hybrid energy storage concepts. Battery management, battery charging, and battery safety will be covered. Finally, the requirements of EDV and renewable energy application examples will be explained. Lead acid, nickel metal hydride, and lithium ion batteries will be covered. Other energy storage systems such as super conducting magnetic, hydraulic, compressed air, and integrated (hybrid) energy storage systems, will be discussed as well.

**ECE 531     Intelligent Vehicle Systems**  
3.000 Credits

The course covers important technologies relevant to intelligent vehicle systems including systems architecture, in-vehicle electronic sensors, traffic modeling and simulation. Students will design and implement algorithms and simulate driver-highway interactions.

**ECE 532     Auto Sensors and Actuators**  
3.000 Credits

Study of automotive sensory requirements; types of sensors; available sensors and future needs. Study of functions and types of actuators in automotive systems. Dynamic models of sensors and actuators. Integrated smart sensors and actuators. Term project.

**ECE 533     Active Automotive Safety Sys**  
3.000 Credits

The course addresses enabling technologies relevant to active automotive safety systems. The study of intelligent vehicle systems includes system architectures, sensors, and algorithms. Modeling and simulation will also be covered. Students will design and simulate systems encompassing important concepts presented in the course. Three lecture hours per week.

**ECE 535    Mob Dev & Ubiqys Comp Sys**  
3.000 Credits

This class will introduce students to the technology used in mobile/smart devices and mobile communication networks. Various hardware and software aspects will be introduced, with particular emphasis on the constraints intrinsic to such system. Students will get an overview of various mobile operating systems and will learn how to develop software for mobile devices. The topics of ubiquitous and pervasive computing will be introduced and discussed. Three lecture hours per week.

**ECE 536    All Weather Automotive Vision**  
3.000 Credits

Coverage of the next generation of active automotive safety systems including intelligent cruise control, lane departure warning, virtual camber, and back-up and blind spot warning systems. Topics include active safety system architecture, enabling technologies for such systems, and future directions. Three lecture hours per week.

**ECE 537    Data Mining**  
3.000 Credits  
Prerequisites: ECE 479 or CIS 479

Introduction to the fundamental concepts of data mining including data exploration, pre-and post-processing, OLAP, predictive modeling, association analysis, and clustering. This course also focuses on the analysis of algorithms commonly used for of data mining applications, mining structured, semi-structured and unstructured data, stream data, and web data. Team oriented course project to provide hands-on experience may be required. Three lecture hours per week.

**ECE 539    Production of Elec Prods**  
3.000 Credits

The course discussed the manufacturing of discrete components, integrated circuits, hybrid circuits and modules, advances packages, printed circuit boards, optical components, and MEMS products. Special topics on product testing, reliability assurance, accelerated reliability testing, product lifetime models, and automotive environments will also be addressed. The course will be organized as a combination of conventional lectures, workshops-style discussion, and design review sessions. Three lectures hours per week.

**ECE 541    Intro to Electrical Energy Sys**  
3.000 Credits

The course will cover the sources of energy including coal, nuclear, solar, wind; their impact on the climate; and their technological characteristics in terms of availability, cost and reliability. Three lecture hours per week.

**ECE 542    Intr to Pwr Mgmt & Reliability**  
3.000 Credits

**ECE 546    Electric Vehicles**  
3.000 Credits

To introduce fundamental concepts and specifications of electric and hybrid vehicles; vehicle design fundamentals; motors for electric vehicles; controllers and power electronics; energy sources; engineering impact of electric vehicles and practical design considerations. Three lecture hours per week.

**ECE 5462    Elec Aspects of Hybrid Vehicle**  
3.000 Credits

To introduce fundamental concepts and the electrical aspects of HEV, including the design, control, modeling, battery and other energy storage devices, and electric propulsion systems. It covers vehicle dynamics, energy sources, electric propulsion systems, regenerative braking, parallel and series HEV design, practical design considerations, and specifications of hybrid vehicles. Three lecture hours per week.

**ECE 550    Communication Theory**  
3.000 Credits

The basic limitations and alternatives for communications signaling are studied, using appropriate mathematical tools. The topics include: review of information measure; random process and vector description of signals and noise; optimum receiver principles; signaling alternatives; channel capacity; block and convolutional coding; waveform estimation concepts. Practical system examples are stressed.

**ECE 552    Fuzzy Systems**  
3.000 Credits

A study of the concept of fuzzy set theory including operations on fuzzy sets, fuzzy relations, fuzzy measures, fuzzy logic, with an emphasis on engineering application. Topics include fuzzy set theory, applications to image processing, pattern recognition, artificial intelligence, computer hardware design, and control systems.

**ECE 553    Sftware/Hrdware Rapid Protyp**  
3.000 Credits

Rapid prototyping technology is primarily aimed at reducing the lead times and costs associated with new product development. Rapid prototyping requires a good quality 3D CAD system. This course will cover the software and hardware widely used in the rapid prototyping, including Stereolithography (SLA) and virtual reality software and hardware used for rapid prototyping. (YR)

**ECE 554    Embedded Systems**  
3.000 Credits

Survey of real time, sampled data systems and embedded applications, e.g. digital controllers, diagnostic systems. Principles and characteristics of embedded micro-processors:

processor/device interfaces; time critical I/O handling; data communications in embedded environments. Overview of embedded operating systems, cross-development techniques & tools. Design of real time systems. The software life Cycle. Embedded specification and design techniques. Real Time Kernels. Multi-tasking. Real Time Memory management. Performance Analysis. Reliability & Fault Tolerance. Project oriented course. (YR)

**ECE 555 Stochastic Processes**  
3.000 Credits

Review of probability and random variables. Introduction to stochastic processes; stationarity, ergodicity; auto correlation and cross correlation, linear systems with random inputs, spectral analysis, Wiener filtering, Kalman filtering. Applications to smoothing, parameters estimation, prediction, system identification.

**ECE 560 Modern Control Theory**  
3.000 Credits

Introduction to linear spaces and operators; mathematical description of multiple input-output systems; state variables and state transition matrix; controllability and observability and its application to irreducible realization of transfer function matrices; state variable estimation; controller synthesis by state feedback; stability of linear systems; analysis of composite systems.

**ECE 565 Digital Control Systems**  
3.000 Credits

Mathematical representation of digital control systems; z-transform and difference equations; classical and state space methods of analysis and design; direct digital control of industrial processes.

**ECE 566 Mechatronics**  
3.000 Credits  
Prerequisites: ME 442 or ECE 365

Mechatronics, as an engineering discipline, is the synergistic combination of mechanical engineering, electrical engineering, control engineering, and computer science, all integrated through the design process. The course is to establish a working familiarity with the key engineering elements in the design and control of electro-mechanical systems in general and automotive systems in particular. The key engineering elements include microprocessor technology, electronics, sensors and actuators, data communication and interface, control algorithms, and mechanisms of machine elements. The course is to introduce a design methodology in an integrated system environment through case studies and design projects. (AY).

**ECE 567 Nonlinear Control Systems**  
3.000 Credits

Nonlinearities in control systems; phase plane analysis; isoclines, equilibrium points, limit cycles, optimum systems; heuristic methods; harmonic balance, describing function, frequency response and jump phenomena, oscillations in relay systems; state space; optimum relay controls; stability;

Liapunov's method.

**ECE 569 Computer-Based Automation**  
3.000 Credits  
Prerequisites: ME 588 or ECE 539

Using interactive graphics in process system design. Modeling machine and process dynamics. Simulating machine and process operations. Computer control of machines and processes. Machine sensing and diagnostic systems.

**ECE 570 Computer Networks**  
3.000 Credits

A study of data communications and network architecture fundamentals. Topics include signals and data transmission, modulation, encoding, and public carriers and network architectures; data link network layer, and transport layer protocols; case studies of existing and emerging networks; wireless, embedded, and conventional wired systems. Three lectures hours per week.

**ECE 5701 Intro to Wireless Comm**  
3.000 Credits

A basic introduction to modern wireless communication principles and architectures. Channel models, signal generation and reception are explored. Examples of current protocols and architectures of wireless data and voice networks are studied. Self-guided lab assignments. A project is required. Three lecture hours per week.

**ECE 5702 High-Speed and Adv Networks**  
3.000 Credits

The course introduces concepts in protocols and architecture of high-speed and advanced networks with an emphasis on Internet, ATM networks, wireless local area networks, cellular systems and wireless sensor networks. Three lecture hours per week.

**ECE 571 Switching Theory**  
3.000 Credits

Combinational and sequential logic design, minimization of combinational and sequential circuits, functional decomposition, reliable design and fault diagnosis; incompletely specified sequential machine design, asynchronous sequential circuits and interactive methods.

**ECE 572 Sequential Machines**  
3.000 Credits  
Prerequisites: ECE 571

Theoretical aspects and algebraic structure of sequential machines. Characterization of complete and incomplete machines, decomposition and state assignment problems. Deterministic and nondeterministic finite state machine identification. State-identification and fault-detection experiments.

**ECE 574 Adv Sftwr Technq in Eng Appl**  
3.000 Credits

Topics relating to Software Development for engineering applications will be discussed. These may include data structures, algorithm complexity, personal software development process, team software process, Six sigma, DFSS, software techniques, software engineering application, and software design. Three lecture hours per week.

**ECE 575 Computer Architecture**  
3.000 Credits

This course addresses the basics of computer architecture including central processing architecture, instruction set design, input/output and RAID, main memory, Cache, and virtual memory. Three lecture hours per week.

**ECE 5752 Reconfigurable Computing**  
3.000 Credits  
Prerequisites: ECE 475

This course addresses advances in reconfigurable computing techniques, design, and research. The course topics include introduction to RC, Hardware Description Language (HDL) such as VHDL and Verilog HDL, System-On-Chip (SOC), and Network-On-Chip (NOC). Three lecture hours per week.

**ECE 576 Information Engineering**  
3.000 Credits

This course will cover fundamental concepts of information engineering, including theoretical concepts of how information is measured and transmitted, how information is structured and stored, how information can be compressed and decompressed, and information networks such as social networks, affiliation networks and online networks, mathematical theories of information networks. Information engineering applications will be discussed. Three lecture hours per week.

**ECE 577 Engineering in Virtual World**  
3.000 Credits

An in-depth study of selected topics in design and development of virtual systems in industrial environments. Topics include cyberspaces, techniques for generating virtual worlds in engineering applications, building blocks of virtual environments including hardware and software. Case studies.

**ECE 578 Advanced Operating Systems**  
3.000 Credits  
Prerequisites: ECE 478 or CIS 450 or IMSE 450

Advanced techniques and uses in operating system design. Distributed operating systems. Message-based operating systems. Operating systems for parallel architectures. Layered techniques in operating systems. Formal models of operating systems. Current trends in operating system design.

**ECE 579 Intelligent Systems**  
3.000 Credits

Representative topics include: Intelligent systems design, training and evaluation, decision trees, Bayesian learning, reinforcement learning. A project will be required.

**ECE 580 Digital Signal Processing**  
3.000 Credits

This course addresses the analysis and design of discrete time signals and systems. Students will become familiar with the mathematical tools needed for digital signal processing such as the Fourier transform, frequency response, the sampling theorem, and z-transform method. Topics covered will include the design of digital filters (IIR and FIR filters), characteristics of analog-to-digital and digital-to-analog converters, the spectral analysis of signals, and discrete filters. Three lecture hours per week.

**ECE 5802 Multirate Sig Proc w/App**  
3.000 Credits  
Prerequisites: ECE 580

This course provides an introduction to multirate digital signal processing with application in different fields of engineering, with a focus on the presentation of the theoretical foundation for all aspects of multirate digital signal processing. The course examines modern applications of multirate digital signal processing including the design of multirate filter banks, using the wavelets transforms to efficiently encode signals for compression purposes, spectral analysis and synthesis of signals. Students will apply software tools to analyze, design and simulate multirate digital signal processing systems. Three lecture hours per week.

**ECE 581 Arch for Digital Signal Proc**  
3.000 Credits  
Prerequisites: ECE 580

This course introduces the architectural fundamentals and features of programmable digital signal processors. Numeric representations and arithmetic concepts are discussed, which include fixed-point and floating-point representation of numbers, native data word width, and IEEE-754 floating-point representation. Memory architecture and memory structures of digital signal processors are examined. Programming concepts for DSP processors such as addressing, instruction set, execution control, pipelining, parallel processing and peripherals are discussed. Finally, students will work on related applications employing digital signal processors such as speech processing, instrumentation, and image processing. Three lecture hours per week.

**ECE 582 Intro to Statistical DSP**  
3.000 Credits  
Prerequisites: ECE 580\*

Review of discrete-time signals and systems, introduction of discrete-time random signals and variables, linear signal models, nonparametric power spectrum estimation, least-squares filtering and prediction, signal modeling and parametric spectral estimation, selected topics. (W).

**ECE 583 Artificial Neural Networks**  
3.000 Credits

Students will gain an understanding of the language, formalism, and methods of artificial neural networks. The

student will learn how to mathematically pose the machine learning problems of function approximation/supervised learning, associative memory and self-organization, and analytically derive some well-known learning rules, including backprop. The course will cover computer simulations of various neural network models and simulations. Three lecture hours per week.

**ECE 584    Speech Processes**  
3.000 Credits

The course introduces the fundamentals of speech processing using digital signal processing methods and techniques. How speech is produced from the human vocal system and the different types of basic speech sound components is addressed, followed by methods to analyze speech signals in both the time domain and frequency domain. Applications of speech processing are also presented. Possible applications covered include speech synthesis, speech coding and speech recognition. A team-based term project may be required. Three lecture hours per week.

**ECE 585    Pattern Recognition**  
3.000 Credits  
Prerequisites: IMSE 317

Introduction to pattern recognition (PR) as a process of data analysis. Representation of features in multidimensional space as random vectors. Similarity and dissimilarity measures in feature space. Bayesian decision theory, discriminant functions and supervised learning. Clustering analysis and unsupervised learning. Estimation and learning. Feature extraction and selection. Introduction to interactive techniques in PR. Applications of PR.

**ECE 586    Digital Image Processing**  
3.000 Credits

Monochrome and color vision in man and machines, image quantization edge detection, image enhancement, image restoration, color analysis and processing, multispectral image processing, texture analysis, image coding and compression, morphology, geometrical image modifications.

**ECE 587    Sel Top:Image Proc/Mach Vision**  
3.000 Credits  
Prerequisites: ECE 586

A special topics course providing an in-depth examination of one or several areas in image processing and/or machine vision. Possible areas include medical imaging, advanced concepts in morphology, stereovision, shape form shading, and active vision.

**ECE 588    Robot Vision**  
3.000 Credits

This course introduces important theory and modern technology in robot vision. Representative topics are sensors and image formation, advanced algorithms in object feature filtering, extraction and recognition, texture and colors, motion, 3D vision, and applications. Students cannot receive credit for both ECE 4881 and ECE 588. Three lecture hours per week.

**ECE 589    Multidimen Digital Signal Proc**  
3.000 Credits  
Prerequisites: ECE 580

Topics include multidimensional signal analysis methodologies, signal representation, 2-D FIR filter, 2-D recursive systems and IIR filters, spectral estimation and methods, multidimensional signal restoration applications in 2-D and 3-D image processing, reconstruction, and feature estimation. Three lecture hours per week.

**ECE 590    Selected Topics**  
1.000 TO 3.000 Credits

Individual or group study, design, or laboratory research in a field of interest to the students. Topics may be chosen from any of the areas of electrical engineering. The student will submit a report on the project and give an oral presentation to a panel of faculty members at the close of the term.

**591 - Directed Studies**  
1.000 TO 3.000 Credits

Special projects for laboratory or library investigation with the intent of developing initiative and resourcefulness. The student will submit a report of the project and give an oral presentation to a panel of faculty members at the close of the term.

**592 - Directed Research**  
1.000 TO 3.000 Credits

Special problems centered on developing experimental skills. In consultation with a faculty advisor a student will prepare a proposal describing the work to be performed for approval by the department. An oral presentation and a final report on the research effort are required for completion. (F,W,S)

**ECE 610    Analog I C**  
3.000 Credits

\*\*\*\*NO DESCRIPTION AVAILABLE\*\*\*\*

**ECE 612    Wireless Sensor Networks**  
3.000 Credits  
Prerequisites: ECE 570

Advanced data communications, sensor nodes, systems architecture and design, wireless communications standards and protocols, routing, security, operating systems, language support, and applications. Three lecture hours per week.

**ECE 614    Ctrl Networks for Embedded Sys**  
3.000 Credits  
Prerequisites: ECE 570

Networks have emerged in a wide range of embedded applications (e.g. aerospace, maritime, vehicular, industrial) as an enabler of flexible and robust system design. These embedded control networks differ from information technology (IT) networks in that the primary users are not humans, but sensors, actuators, and embedded processors. Thus, the data sets, performance requirements, operational environment, and

need for reliability and robustness necessitate a different approach to network design. As the complexity of the systems grows, developers will be presented with significant challenges. It is important that engineers are acquainted with fundamental tools and strategies for designing and building such networks. Three lecture hours per week.

**ECE 615     Advanced Power Electronics**  
3.000 Credits  
Prerequisites: ECE 515

This course covers advanced technologies in power electronics with emphasis on hybrid vehicle and renewable applications. The course will cover topics such as resonant converters, vector control, field oriented control, battery chargers, vehicle to grid management, power factor correction and harmonic control, model predictive control, renewable energy systems (solar, wind and ocean) and their requirement for power converters, electric drive transportation components, silicon carbide power devices. Three hours per week.

**ECE 646     Adv Elec Drive Transportation**  
3.000 Credits  
Prerequisites: ECE 5462

This course gives in depth study in advanced technologies in the electrified vehicle powertrain. The course will cover topics such as hybrid powertrain architectures, dynamics of hybrid transmissions, battery management systems, battery control electronics, PHEV and HEV power management, survivability of military hybrid vehicles, packaging of PHEV electric drive components, optimization of PHEV components, optimization of electric drive efficiency through power management, vehicle to grid technology, emerging technology in electric drive transportation. Three hours per week.

**ECE 650     Info Theory in Elec Comm**  
3.000 Credits  
Prerequisites: ECE 555

Source models and source coding, channel and channel models, information measure, mutual information and entropy, coding for discrete sources such as variable-length codes and optimum variable-length encoding procedure, discrete memory less channels and capacity, techniques for coding and decoding such as parity-check codes, cyclic codes, and Hamming codes, quantization and error analysis, coding techniques such as DPCM, run-length coding, sub-band coding, transform coding.

**ECE 661     Sys Ident and Adaptive Control**  
3.000 Credits  
Prerequisites: ECE 560

Minimal state space models, on-line estimation schemes, parameter convergence for SISO and MIMO systems, direct and indirect adaptive prediction, minimum prediction error controllers (one-step ahead and model reference control), minimum prediction error adaptive controllers (direct and indirect approach), adaptive control algorithms for close-loop pole assignment, Kalman filter, extended Kalman filter.

**ECE 665     Optimal Control Systems**  
3.000 Credits

Prerequisites: ECE 560

Parameter optimization; optimization problems for deterministic systems; calculus of variations on optimal control; maximum principle of Pontryagin; dynamic programming; numerical solution of optimal programming and control problems; singular solutions.

**ECE 670     Adv Comp Netwk&WL Comm**  
3.000 Credits  
Prerequisites: (ECE 570 and ECE 5701) or CIS 627

In depth study of advanced technologies in computer networks and wireless communications. The course will cover topics such as advances in Internet, wireless communications and sensor networks, wireless networked control systems, vehicular networks, smart grid, cloud computing, multimedia networking, and network security. Three lecture hours per week.

**ECE 675     Computer Architecture II**  
3.000 Credits  
Prerequisites: ECE 575

Parallel and non-Von Neumann architectures. Supercomputers. SIMD and MIMD structures. Pipelining, vector processing, and array processing techniques. Associate processors. Data flow computers. RISC computers. VLSI computer structures. Advances in computer architecture.

**ECE 679     Adv Intelligent Sys**  
3.000 Credits  
Prerequisites: ECE 579 or CIS 579

This is a research seminar on advanced topics in intelligent systems. The course will focus on intelligent systems in solving complex problems. Topics include ensemble techniques, multi-objective optimization, and intelligent agents. The course will require student presentations and a substantial term project. Three lecture hours per week.

**ECE 681     Adv Digital Sig Processing**  
3.000 Credits  
Prerequisites: ECE 580

Topics include statistical signal processing, multi-rate systems, bank of filter design, multi-resolution formation of wavelet, the discrete wavelet transform, wavelet-based digital signal processing. The course has substantial computer simulation and research project components. Three lecture hours per week.

**ECE 695     Master's Project**  
3.000 Credits

Application of the methodologies, tools and theory of software engineering to produce a specific validated software product. Projects can be faculty-generated, self-generated, and/or work related. All projects must be undertaken with one or more students under the supervision of the instructor. Prior to enrollment, a project proposal must be prepared and approved by the instructor and department chair. Standard software



engineering documents must be prepared and approved at each phase of the project, and an oral presentation of the project is required. Course includes lectures and case studies. Permission of instructor required.

**ECE 699 Master's Thesis**  
3.000 OR 6.000 Credits

Graduate students electing the thesis option, working under the general supervision of a member of the department faculty, are expected to plan and carry out the work themselves. The student will submit a report on the project and give an oral presentation to a panel of faculty members at the close of the term.

## ENERGY SYSTEMS ENGINEERING (ESE)

**ESE 500 Sustainable Energy Systems**  
3.000 Credits

The course provides an overview of energy technology from a broad perspective that encompasses technical and environmental aspects. It covers a wide range of traditional and alternative energy sources and presents assessments of their availability, sustainability, and environmental impacts as well as evaluation of their potential role in solving the global energy problem. Course work includes project.

**ESE 501 Energy Conversion**  
3.000 Credits

This course covers fundamental engineering principles for converting available energy sources, renewable and nonrenewable, into other energy forms of direct utility. It may include such topics as steam and gas based power plants as well as devices for solar, wind, and hydraulic energy conversion.

**ESE 502 Energy Storage Systems**  
3.000 Credits

This course introduces the basics of energy storage systems for EDV. It will cover battery basics, ultracapacitors, flywheels, and hybrid energy storage concepts. Battery management, battery charging, and battery safety will be covered. Finally, the requirements of EDV and renewable energy application examples will be explained. Lead acid, nickel metal hydride, and lithium ion batteries will be covered. Other energy storage systems such as super conducting magnetic, hydraulic, compressed air, and integrated (hybrid) energy storage systems, will be discussed as well.

**ESE 503 Energy Policy, Econ & Environ**  
3.000 Credits

This course will give an overview of the current energy and environment policies, their origin and implementation, and the process of developing such policies. It will consider the public policy issues related to alternative and renewable energy systems at both national and international levels. The roles of government, industry and consumers in making these policies will be discussed. The economics of various alternative

energies will be considered and trade-offs between them will be discussed from the viewpoint of availability, safety, environmental impact and related issues.

**ESE 504 Energy Eval/Risk&Optimization**  
3.000 Credits

Formulation of economically efficient strategies and development plans for energy systems requires a sound understanding of energy supply, demand and allocation options as well as the interrelationships between the energy sector, environment, and the economy. Analysis of these energy policy decisions requires evaluation of investment decisions on potential energy projects (and programs) in terms of selected project viability indicators and comparison against a set of decision criteria. This course will provide students the knowledge and skills to identify, analyze, assess, and manage the risks inherent in selecting various energy sources, projects and portfolios of projects. The tools and techniques explored in this class will be applied to energy, environment and resource management policy and investment decisions which are multi-criteria including societal cost and environmental impacts.

**ESE 591 Guided Stud in Energy Systems**  
1.000 TO 3.000 Credits

Individual or group study of an energy systems engineering topic of contemporary interest.

**ESE 699 Master's Thesis**  
3.000 TO 6.000 Credits

Research for master's thesis under the direction of a faculty adviser.

## ENGINEERING MANAGEMENT (EMGT)

**EMGT 500 Managing the Engin Function**  
2.000 Credits

This course provides the knowledge and skills required to manage an efficient and productive engineering organization within the company. Topics include: starting a new department; missions; planning; organizing the department; integrating and coordinating functions and projects; measuring performance; components of the engineering operation; technical forecasts; state-of-the-art surveys; proposals; managing innovation; ethics and leadership. (College of Engineering and Computer Science).

**EMGT 505 Systems Engineering**  
3.000 Credits

Introduction to systems and systems engineering, tools in systems analysis, the system design process, design for operational feasibility and systems engineering management. (College of Engineering and Computer Science).

**EMGT 510 Managerial Finance and Econ**  
2.000 Credits  
Prerequisites: EMGT 540 or EMGT 541

This course covers foundation concepts in Financial

Management, with emphasis on project evaluation. Topics include financial statement use and analysis, time value of money, valuation of stocks and bonds, capital budgeting and risk/return analysis. (College of Business).

**EMGT 515 Corporate Strategy**

2.000 Credits

Prerequisites: EMGT 510 and EMGT 535 and (EMGT 541 or EMGT 540)

This course seeks to develop an understanding of the management of technology as a strategic organization resource. Implementation policies are discussed within the context of personal, technological and social frames of values. Strategy topics include: the process of strategy development and integration of technological, functional, and corporate strategies. Implementation policies include organization design, and planning and control at the short-term and longer-term levels. (College of Business).

**EMGT 520 Prod & Oper Management I**

3.000 Credits

Prerequisites: EMGT 505

Production and operations management techniques including forecasting, inventory control, MRP, detailed scheduling, aggregate planning, process variability and its effects on throughput and inventory, factory physics principles, and lean methods.

**EMGT 525 Tot Qua Mgmt and Six Sigma**

3.000 Credits

This course covers implementing Total Quality Management (TQM), undertaking Six Sigma Projects, and applying Baldrige National Quality Award criteria and ISO 9000 principles to improve quality performances in an organization. Topics include Definitions and Importance of Quality, Quality Costs, Quality Function Deployment (QFD), Product Specification and Critical-to-quality Measures (CQM), Statistical Quality Control (SQC), Robustness Concepts, Quality System Design and Evaluation. Six Sigma and DMAIC Methodologies, Design for Six Sigma (DFSS) process, IDOV (Identity requirements, Design alternatives, Optimize the design and Verify process capability) Methodology, and several other concepts and tools related to quality are also covered.

**EMGT 530 Info Sys for Engin Management**

3.000 Credits

This course covers the organizational foundations of information systems, their emerging strategic role, and the technical foundation for understanding computers and information systems. Topics include: introduction to management information systems; decision support systems; artificial intelligence and expert systems; end-user computing; data vs. information; data communication and connectivity; data management. (College of Engineering and Computer Science).

**EMGT 535 Marketing Mgt and Policy**

2.000 Credits

This course studies the salient features of technology-driven marketing and distinguishes technology-push from market-pull marketing. Highlights the technology-marketing interface in the context of strategy planning, market segmentation, product innovation, channels of distribution, promotional and pricing decisions. Particular attention will be paid to technology inventor-user interactions, process of adoption, and technological innovation. (College of Business).

**EMGT 541 Acct Fund for Decision Making**

3.000 Credits

This course introduces fundamental accounting concepts and applications that are useful in the evaluation of financial information and decision tools relevant to project planning. Students will achieve an understanding of basic accounting and cost management tools that are essential to decision making. Emphasis will be placed on assessing financial statement information through an understanding of accounting practice, the relationship between business activities and an organization's cash flows.

**EMGT 545 Org Beh and Hum Res Mgt**

2.000 Credits

Prerequisites: EMGT 500

This course encompasses key areas of human resources management and organization behavior as they relate to technical work environments. Organization design and theory will be discussed, along with motivation, leadership, employee selection skills, group and team processes, and managing diversity. Techniques for devising a personal career development plan are covered. (College of Business).

**EMGT 550 Business Ethics/Law**

2.000 Credits

This course provides students with an overview of the legal environment of business. Concepts including product liability, intellectual property, and contracts are introduced within the context of the legal system. Ethical consideration in personal, professional, and organizational decision making are integrated throughout this course. (College of Business).

**EMGT 560 Engin Mgt at Upper Levels**

1.000 Credits

Prerequisites: EMGT 520 and EMGT 530 and EMGT 545

This course provides the knowledge and skills in leadership and management required to build and manage the company's technical resources toward the attainment of corporate objectives. Topics covered include: technological forecasts; corporate strategic planning; corporate portfolios of technical programs; group and strategic planning; project collection; management of institutional time; corporate computer facilities; proposals; introducing new products and processes; inventorying and upgrading; engineering audits; and the role of engineering in joint ventures. (College of Engineering and Computer Science).

**EMGT 580 Mgt of Prod and Proc Design**

3.000 Credits

Prerequisites: EMGT 510 and EMGT 520 and EMGT 525

This course provides the knowledge and skills needed to manage the design of a product or process. Topics covered include: creativity, types of products, types of processes, generalized design process, identification and translation of customer needs into engineering specifications, designing for function and quality factors, design for manufacturability, life-testing, cost estimating, reporting on design projects, and concurrent engineering. (College of Engineering and Computer Science).

**EMGT 590 Capstone Project**

3.000 Credits

Prerequisites: IMSE 5215 and IMSE 5205 and IMSE 517

Students will receive the opportunity and training to integrate and apply both the technical and program management aspects acquired in various courses to an engineering project or problem.

**EMGT 591 Capstone Project in EMGT**

2.000 Credits

Prerequisites: EMGT 580 and EMGT 560\* and EMGT 515\*

Students will receive the opportunity and training to integrate and apply both technical and managerial aspects acquired in various courses to an engineering project or problem.

**EMGT 699 Master's Thesis**

1.000 TO 6.000 Credits

Graduate students electing this course, while working under the general supervision of a member of the program faculty, are expected to plan and conduct the work themselves, to submit a thesis for review and approval, and to present an oral defense of the thesis.

## INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING (IMSE)

**IMSE 500 Models of Oper Research**

3.000 Credits

The method of mathematical modeling and its application to decision-making problems in organizations. Some widely used models and techniques: linear programming, queuing, inventory, and simulation.

**IMSE 501 Human Factors & Ergonomics**

3.000 Credits

Prerequisites: IMSE 317\* or IMSE 510\*

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. Lecture and laboratory. Cannot receive credit for both IMSE 442, and IMSE 501. This class may be scheduled at the same time as the undergraduate course IMSE 442. Graduate students will be

required to do additional research paper and/or project.

**IMSE 501 Fundamentals of Program Mgt**

3.000 Credits

Prerequisites: IMSE 510

An overview of the project/program management framework and knowledge areas including plan development and execution; management of scope, time, cost, quality, human resource, communications, risk, and procurement. Typical program phases and life cycles observed in defense, construction, automobile, and software industries. Program organizational structures, program management processes, international project management, role of software tools for program management, product development, applications of Lean Product Development techniques, cutting waste and lead time in program management.

**IMSE 502 Computer-Integrated Mfg**

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. Credit cannot be given for both IMSE 483 and IMSE 502. This class may be scheduled at the same time as the undergraduate course IMSE 483. Graduate students will be required to do additional research paper and/or project.

**IMSE 503 Computer-Aided M/C & Tool Desg**

3.000 Credits

Prerequisites: IMSE 382 or ME 381

Study of the fundamentals of machine tool design, cutting tools, metal 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 exercise and projects are required using computer-aided design software. Two lecture hours and three laboratory hours. Credit cannot be given for both IMSE 484 and IMSE 503. This class may be scheduled at the same time as the undergraduate course IMSE 484. Graduate students will be required to do additional research paper and/or project.

**IMSE 504 Metal Forming Processes**

3.000 Credits

Prerequisites: IMSE 382 or IMSE 381

This course focus is on fundamentals of metal forming processes; mechanics of metal forming; formability of 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. Credit cannot be given for both IMSE 488 and IMSE 504. This class may be scheduled at the same time as the undergraduate course IMSE 488. Graduate students will be required to do additional research paper and/or project.

**IMSE 505 Optimization**

3.000 Credits  
Prerequisites: IMSE 300 or IMSE 500

Theory of linear and nonlinear programming. Language multipliers and Kuhn-Tucker conditions. Convex programming. Combinatorial and integer programming. Dynamics programming. Heuristic and search optimization techniques. Theory and emphasis on applications using various computer codes.

**IMSE 508 Modeling of Large-Scale Sys**  
3.000 Credits  
Prerequisites: IMSE 505 and IMSE 506

The modern and classical concepts and tools required for modeling, analysis and synthesis of large-scale dynamic systems. Topics include system dynamics, interpretive structural modeling, cross-impact analysis, information theory, theory of hierarchical systems. Emphasis is on constructing models of real world problems taken from urban, industrial, transportation, and health care systems. Students are asked to select problems of interest and present final project reports.

**IMSE 510 Probability & Statistical Mod**  
3.000 Credits  
Prerequisites: IMSE 317

Review of basic concepts in probability and statistics. Multivariate distributions. Estimation and order statistics. General hypothesis testing, and non-parametric tests. Linear, multiple-linear, and nonlinear regression models. Analysis of variance. Introduction to the design of experiments.

**IMSE 511 Design and Analysis of Exp**  
3.000 Credits  
Prerequisites: IMSE 510

One factor, two factor, and multifactor experiments. Fixed random and mixed models. Blocked confounding, incomplete blocks, factorial experiments, fractional factorial experiments. Introduction to response surface analysis.

**IMSE 512 Taguchi Method of Quality Eng**  
3.000 Credits  
Prerequisites: IMSE 510

Quality engineering methodology developed by Genichi Taguchi. Design and analysis of experiments using orthogonal arrays and linear graphs. Accumulation analysis for categorized data. Signal-to-noise ratio as a measure of quality characteristics. Simulation using orthogonal arrays. Parameter design for reducing variability around the target without cost increase. Tolerance design for reducing variability with minimum cost increase. Evaluation and improvement of measurement.

**IMSE 513 Robust Design**  
3.000 Credits  
Prerequisites: IMSE 510

Students will learn models and methods in the context of overall strategies to empirically study the design of products and manufacturing processes to reduce variability and to

reduce sensitivity to parameter variation. Topics include: process capability studies and measures, basic DOE concepts, factorial experiments, evaluating sources of variation, evolutionary operation and adaptive statistical process control.

**IMSE 514 Multivariate Statistics**  
3.000 Credits  
Prerequisites: IMSE 510

Linear statistical models used in simple and multiple regression, and analysis of variation. Principles and techniques of principle component analysis are studied and applied to business and engineering problems using statistical computer software. (YR)

**IMSE 515 Fundamentals of Program Mgt**  
3.000 Credits  
Prerequisites: IMSE 510

An overview of the project/program management framework and knowledge areas including plan development and execution, scope management, time management, cost management, quality management, human resource management, communications management, risk management, and procurement management. Typical Program Phases and Life Cycles observed in Defense, Construction, Automobile, and Software Industries. Program Organizational Structures, Program Management Processes, and International Project Management are covered. Role of software tools for Program Management and Product Development are discussed. Applications of Lean Product Development Techniques are considered. Cutting waste and lead time in program management are covered. Case studies are used extensively throughout the course.

**IMSE 516 Project Management and Control**  
3.000 Credits  
Prerequisites: IMSE 510

Project Planning, Scheduling, and Controlling functions are discussed in detail including work breakdown structure, CPM and PERT methods, resource allocation and leveling techniques, cost control and minimization, trade-off analysis, learning curves overlapping relationships and concurrent engineering, multiple project execution and optimization. Applications of Lean Techniques in program management are discussed as well as the role of IT in accelerating the product development and reducing the program time. The importance of integrating the Supply Chain in the Product Development is also considered. Case studies and project management software are used throughout the course.

**IMSE 517 Managing Global Programs**  
3.000 Credits  
Prerequisites: IMSE 515

This course focuses on some of the central strategic and organizational problems that arise in managing global programs, including cultural conflicts, developing and managing international managers, global and local brands, and organizing to resolve global-local conflicts. The course uses a combination of case studies, problems, lectures and discussion, over a wide variety of companies and countries.

**IMSE 519 Quan Meth in Quality Engin**

3.000 Credits

Prerequisites: IMSE 510

This course introduces the advanced quantitative and analytical methods used in quality measurement, prediction, control and improvement. The topics include sampling design and plan, control charts, statistical quality control, time series, process capability analysis and quality cost analysis. Quality related topics in robust and tolerance design are also included.

**IMSE 520 Managerial Decision Analysis**

3.000 Credits

Prerequisites: IMSE 510

Normative decision analysis, decisions, structures, and trees. Utility theory, game theory, and statistical decision theory are introduced. Applications of the theories to management studies in capital investment, bidding, purchasing, and risk analysis are discussed.

**IMSE 5205 Eng Risk-Benefit Analysis**

3.000 Credits

Prerequisites: IMSE 510

Analysis risk assessment, decision and cost-benefit analysis, and fault-tree methods for describing and making decisions about societal risks associated with large engineering projects. Balancing risks and benefits in situations involving human safety, environmental risks, and financial uncertainties. Presentations of major risk assessment and the public decision processed associated with them.

**IMSE 521 Mfg Cost Estimation & Control**

3.000 Credits

In this course, concepts of strategic costing in product development and manufacturing are introduced. Engineering economy techniques are used in the study of life cycle cost elements. Equipment acquisition and replacement justification methods under risk and uncertainty are presented.

**IMSE 5215 Program Budget, Cost Est & Con**

3.000 Credits

Prerequisites: IMSE 510

This course focuses on cost estimation and control for program managers and engineers. The course introduces a systematic approach for applying engineering economy techniques in cost estimating, resource planning, cost planning, cost management and control, and the study of life cycle cost elements. An introduction to decisions under risk and uncertainty as well as an introduction to project crashing are also presented.

**IMSE 525 Fin & Econ Software Appl**

1.000 Credits

Prerequisites: IMSE 570 and IMSE 571

Co-requisites: EMGT 510

This course applies concepts and techniques of financial management to business and engineering systems case studies. Specifications for some of these systems will be developed utilizing ERP software such as SAP R/3/application

development software suite. (YR).

**IMSE 526 Marketing Software Application**

1.000 Credits

Prerequisites: IMSE 570 and IMSE 571

Co-requisites: EMGT 535

This course applies concepts and techniques of marketing management to business and engineering systems case studies. Specifications for some of these systems will be developed utilizing ERP software such as SAP R/3/application development software suite. (YR).

**IMSE 5275 Managerial Acct Software Appl**

1.000 Credits

Prerequisites: IMSE 570 and IMSE 571

Co-requisites: EMGT 540

This course applies concepts and techniques of managerial accounting to business and engineering systems case studies. Specifications for some of these systems will be developed utilizing ERP software such as SAP R/3 application development software suite. (YR).

**IMSE 5285 Human Resource Software Appl**

1.000 Credits

Prerequisites: IMSE 570 and IMSE 571

Co-requisites: EMGT 545

This course applies concepts and techniques of human resource management to business and engineering systems case studies. Specifications for some of these systems will be developed utilizing ERP software such as SAP R/3 application development software. (YR).

**IMSE 532 Information for Manufacturing**

3.000 Credits

Acquiring and organizing design and manufacturing information (including geometric modeling, group technology, and automated data acquisition). Identifying kinds needed, sources, and recipients. Ensuring information quality; establishing criteria for selecting processing modes and media. Designing, installing, commissioning, and operating information-handling systems. Handling information in production systems.

**IMSE 533 Manufacturing Systems**

3.000 Credits

This course introduces methodologies and tools for modeling, design and operations planning of manufacturing systems. Topics include introduction to integrated manufacturing systems, manufacturing system and data modeling methodologies, process planning, group technology, manufacturing system layout, scheduling, push and pull production systems. Industrial case studies are presented and discussed.

**IMSE 534 Human Performance Engin in Mfg**

3.000 Credits

Prerequisites: IMSE 530

The human as a systems component in an information

processing context emphasizing capabilities and limitations. The roles of sensing, perception, decision making, short term memory, long term memory, motivation, expectations and attention. An overview of Learning Organization concepts emphasizing personal mastery, mental models, and team learning. A strategy for design of the user-system interface. Analysis methods including functional analysis, traditional and object-oriented task analysis, and cognitive walk-through. Team design project and individual exercises. Emphasis on experiential learning.

**IMSE 536 Machinery Diagnostics**  
3.000 Credits  
Prerequisites: IMSE 510

Introduction to diagnostic system design. Fundamentals of mechanical vibration and noise. Vibration-generating sources in machinery. Sensing and data acquisition methods. Data interpretation by statistical and spectral analysis methods. Fault classifications methods. Computer implementation.

**IMSE 537 Metal Machining Processes**  
3.000 Credits  
Prerequisites: ME 381 or IMSE 382 or AENG 587

Detailed study of the principles of conventional and non-traditional metal removing processes, machine tools accuracy, cutting fluids, and cutting tools. The course emphasis will be on the mechanics of metal cutting, machining processes, cutting tool materials and tool geometry, selection of cutting conditions, planning for machining and optimization of manufacturing process. Role of numerical control in improving machining process and productivity of manufacturing system.

**IMSE 538 Intelligent Manufacturing**  
3.000 Credits  
Prerequisites: IMSE 317

A comprehensive and integrated approach to topics associated with the science of artificial intelligence and their role in today's manufacturing environments. Design and management issues including information systems in an automated and integrated manufacturing environment.

**IMSE 543 Industrial Ergonomics**  
3.000 Credits  
Prerequisites: IMSE 442

Effective ergonomic interventions in industrial environment enhance productivity, safety and job satisfaction. This course introduces engineers and engineering students how to apply ergonomic principles in designing industrial and manufacturing operations in which people play a significant role, so that human capabilities are maximized, physical fatigue is minimized, and performance is optimized. Case studies and topics emphasize industrial applications.

**IMSE 544 Industrial Biomechanics**  
3.000 Credits  
Prerequisites: IMSE 442

This course introduces the mechanical behavior of the

musculoskeletal systems as related to physical work activities. Fundamentals of human body mechanics (Kinetic and Kinematic aspects of locomotion, body link systems, muscle strength and performance), muscle fatigue and musculoskeletal injury mechanism are covered with application to design of physical work activities and equipment. (YR).

**IMSE 545 Vehicle Ergonomics I**  
3.000 Credits  
Prerequisites: IMSE 442

Overview of drive characteristics, capabilities, and limitations. Human variability and driver demographics, driver performance measurements. Driver information processing models, driver errors and response time. Drive sensory capabilities: vision, audition, and other inputs. Vehicle controls and displays. Driver anthropometry, biomechanical consideration.

**IMSE 546 Safety Engineering**  
3.000 Credits  
Prerequisites: IMSE 442

Safety requirements for production processes, equipment, and plants; organization and administration of safety programs, current safety laws, current occupational safety research.

**IMSE 548 Human Factors**  
3.000 Credits  
Prerequisites: IMSE 442

Applying information about the capabilities and limitations of men and women to the design of man-machine systems.

**IMSE 549 Product Design and Evaluation**  
3.000 Credits  
Prerequisites: IMSE 442

Design approaches and processes used in developing customer/user-oriented products. Study of widely used product evaluation techniques: methods of observation, communication and experimentation; subjective (e.g. psychological scaling) and objective measurement methods. Review of product design and evaluation case studies. Laboratory projects to evaluate several products.

**IMSE 550 Data Management**  
3.000 Credits

Topics in computer organization; principle data structures (stacks, trees, linked lists) and their use; searching and sorting; algorithm specification, and recursion. Programming assignments will deal with applications of these subjects.

**IMSE 551 Compiler Construction**  
3.000 Credits  
Prerequisites: IMSE 550

The design and construction of compilers and programming systems. Lexical scan; parsing techniques; code generation and optimization; storage allocation. Applications of formal language theory in compiler design. Translator writing systems; XPL.

**IMSE 552 Design/Analysis of Algorithms**  
3.000 Credits  
Prerequisites: IMSE 550

Design, evaluation, and communication of algorithms for solving problems using a digital computer. Topics include problem-solving approaches, algorithm notation, determination of algorithm correctness, measures of efficiency, improvement of algorithms. Examples and homework in designing algorithms for data processing, scheduling, combinatorial optimization, and elementary computer graphics, and numerical analysis.

**IMSE 553 Software Engineering**  
3.000 Credits  
Prerequisites: IMSE 550

Program design methodologies; control flow and data flow in programs; program measurement. Software life cycle; large program design, development, testing, and maintenance. Software reliability and fault-tolerance. Evolution dynamics of software.

**IMSE 554 Management Info Systems**  
3.000 Credits  
Prerequisites: IMSE 454

Basic systems concepts, role of a system analyst in an information system, systems investigation, feasibility study, output/input design, hardware/software evaluation and selection, data management, security considerations, systems implementation, information systems documentations, systems projects estimation and control. Students will be asked to develop a complete information system from case studies.

**IMSE 555 Decision Support/Expert Sys**  
3.000 Credits  
Prerequisites: IMSE 350

Decision support process and decision support systems, development tools, executive support systems, expert systems and their development processes, expert shells, integration of decision support and expert systems.

**IMSE 556 Database Systems**  
3.000 Credits

Data structures and file processing; GUIDE and CODASYL reports; comparisons among the database management systems, relational, hierarchical, and network approaches; system design guidelines; DDL and Schema/Subschema; DML and Query language.

**IMSE 557 Comp Networks and Comm**  
3.000 Credits  
Prerequisites: IMSE 454

To study the nature of computing communication and distributing processing techniques, compare networking options, introduce specific business applications that require data communication and networks, and examine the role of communication software in the system, and discuss the related management issues.

**IMSE 5585 Electronic Commerce**  
3.000 Credits

This course examines how new information technologies and networks affect the exchange of goods and services between buyers and sellers in firms. What are economics of different electronic commerce models for firms? The course combines critical evaluation of business strategies with hands-on experience in building supporting electronic commerce systems utilizing electronic data interchange (EDI) software. (YR).

**IMSE 559 System Simulation**  
3.000 Credits  
Prerequisites: IMSE 510

The modeling and simulation of discrete-change, continuous-change and combined-change stochastic systems. Conducting simulation studies using contemporary software such as SLAM II or random number generation, distribution sampling, and output analysis. Comparisons with analytical queuing models.

**IMSE 561 Tot Qual Mgmt and Six Sigma**  
3.000 Credits  
Prerequisites: IMSE 510

This course covers implementing Total Quality Management (TQM), undertaking Six Sigma Projects, and applying Baldrige National Quality Award criteria and ISO 9000 principles to improve quality performances in an organization. Topics include Definitions and Importance of Quality, Quality Costs, Quality Function Deployment (QFD), Product Specification and Critical-to-quality Measures (CQM), Statistical Quality Control (SQC), Robustness Concepts, Quality System Design and Evaluation. Six Sigma and DMAIC Methodologies, Design for Six Sigma (DFSS) process, IDOV (Identity requirements, Design alternatives, Optimize the design and Verify process capability) Methodology, and several other concepts and tools related to quality are also covered.

**IMSE 564 ABAP/4 Programming**  
3.000 Credits  
Prerequisites: IMSE 570 and (IMSE 556 or CIS 556)

Students will be introduced to programming concepts for building applications using SAP R/3 software suite. The course will offer an introduction to ABAP/4 development workbench, data warehouse reporting, data dictionary, data interfaces, data modeling and data warehouse dialogue programming. (YR)

**IMSE 5655 Supply Chain Management**  
3.000 Credits

This course will address theories, concepts, models, methodologies and techniques for managing a supply chain. Topics include supply chain strategy, drivers and metrics of performance, designing global and regional supply chain networks using optimization models, planning demand and supply in a supply chain using forecasting, aggregate planning, and inventory optimization models, designing the transportation systems, pricing, and employing IT systems effectively in supply chains.

**IMSE 567 Reliability Analysis**  
3.000 Credits  
Prerequisites: IMSE 510

Statistics of reliability and life testing. Application of stochastic models for failure based on Poisson and related processes. Use of exponential and extreme value distribution in reliability. Use of Markov process in the areas of equipment reliability, maintenance and availability.

**IMSE 569 Sys Simulation in Auto Engin**  
3.000 Credits  
Prerequisites: IMSE 510

The modeling and simulation of discrete, continuous and combined change stochastic systems. Conducting simulation studies using contemporary software such as ARENA and WITNESS. Topics in simulation methodology include random number generation, distribution sampling, input and output analysis. Integration techniques for continuous simulation, application to design of manufacturing and automotive systems.

**IMSE 570 Enterprise Information Systems**  
3.000 Credits

The purpose of this course is to provide a foundation for the analysis, design and implementation of enterprise information systems. Topics include systems and organization theories, and information systems planning and evaluation. Students will be also introduced to various systems development life cycle phases of an enterprise information system. Students will acquire an understanding of the flow of information (forecasts, financial, accounting and operational data) within an enterprise and the factors that should be considered in designing an integrated enterprise information system. This includes all systems in the business cycle from revenue forecasts, production planning, inventory management, logistics, manufacturing, accounts payable, sales, accounts receivable, payroll, general ledger and report generation. Specifications for some of these systems will be developed utilizing ERP software such as SAP R/3 application development software suite. (YR).

**IMSE 5715 Modeling of Int Info Syst**  
3.000 Credits

A review of approaches for modeling of integrated information systems. ARIS architecture. Data, control, function, and organization views of an information system. Requirements definition, design specification, and implementation definition of the different views. Process chain diagrams. Management of ERP projects. (YR).

**IMSE 5725 Object Oriented System Design**  
3.000 Credits

Students will be introduced to fundamental concepts and methods of object oriented design and development. Topics that will be covered include object oriented database concepts, data models, schema design (conceptual schemas and physical schemas), query languages, physical storage of objects and

indexes on objects, version management, schema evolution and systems issues such as concurrent control and recovery from failure. For application programming, a programming language such as C++ will be used for database design and query language. (YR).

**IMSE 574 IS Based Prod Planning & Cont**  
3.000 Credits  
Prerequisites: IMSE 510 and IMSE 570 and IMSE 571

Students will be introduced to theories, models, methods and techniques in demand forecasting, inventory management, capacity planning, production scheduling and management components, in production planning and control for an enterprise. Application systems to model information sharing between these components will be developed using ERP software such as the SAP R/3 application development software suite. (YR).

**IMSE 577 User Interface Des & Anlsis**  
3.000 Credits  
Prerequisites: CIS 553

Current theory and design techniques concerning how user interfaces for systems should be designed to be easy to learn and use. Focus on cognitive factors, such as the amount of learning required, and the information-processing load imposed on the user. Emphasis will be on integrating multimedia in the user interface.

**IMSE 579 Software Int Mfg & Logis Mgmt**  
3.000 Credits  
Prerequisites: IMSE 510 and IMSE 570 and (IMSE 571 or IMSE 5715)

Students will be introduced to theories, models and techniques in manufacturing, logistics components and their interaction within an enterprise. Topics that will be covered include production/shop order analysis and management, capacity planning, and materials planning and inventory management. Application systems to model information sharing between these components will be developed using ERP software such as the SAP R/3 application development suite. (YR).

**IMSE 580 Prod & Oper Management I**  
3.000 Credits  
Prerequisites: IMSE 510

Production and operations management techniques including forecasting, inventory control, MRP, detailed scheduling, aggregate planning, process variability and its effects on throughput and inventory, factory physics principles, and lean methods.

**IMSE 581 Prod & Oper Management II**  
3.000 Credits  
Prerequisites: IMSE 580 or EMGT 520

Principles and techniques of planning and scheduling for production and supply chain systems. Topics include: Forecasting demand using time-series methods, ARIMA, and multivariate regression; optimizing inventories in multi-



echelon systems; aggregate planning; shop floor control, production scheduling, push and pull systems; capacity management and assembly line balancing.

**IMSE 5825 Industrial Controls**  
3.000 Credits  
Prerequisites: ECE 305

This course introduces the principle aspects of computers and their applications in systems control, principles 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. Credit cannot be given for both IMSE 482 and IMSE 5825. This class may be scheduled at the same time as the undergraduate course IMSE 482. Graduate students will be required to do additional research paper and/or project.

**IMSE 583 Concurrent Design & Manufacture**  
3.000 Credits  
Prerequisites: IMSE 382

This course will cover topics in manufacturing design and analysis with emphasis on the parallel design of product and processes. Topics include principles of design theory, concurrent engineering, group technology, cost estimating, assembly systems, and design for assembly and manufacture. Design projects using computer tools are required on a team-oriented basis.

**IMSE 584 Logistical Systems**  
3.000 Credits  
Prerequisites: IMSE 580

Introduction to concepts of physical distribution and logistics management. Quantitative treatment of topics in materials management, transportation, forecasting, warehouse location. Logistical system design techniques which synthesize the above topics in order to design a fundamental system.

**IMSE 585 Material Handling Systems**  
3.000 Credits  
Prerequisites: IMSE 500

Studies of material handling methods and equipment, study of techniques used in the analysis and design of material handling systems, study of storage and warehousing systems.

**IMSE 587 Facilities Planning**  
3.000 Credits  
Prerequisites: IMSE 500

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. Credit may not be given for both IMSE 474 and IMSE 587. This class may be scheduled at the same time as the undergraduate course IMSE 474. Graduate students will be

required to do additional research paper and/or project.

**IMSE 588 Bldg High Perf Learning Org**  
3.000 Credits

The purpose of this course is to develop students' knowledge and skills to explore and experience how the disciplines of systems thinking, personal mastery, mental models, team learning and shared vision impact on organizational learning and influence management practices for building highly performing organizations.

**IMSE 590 Grad Study in Sel Topics I**  
1.000 TO 3.000 Credits

Individual or group of selected topics in industrial and systems engineering.

**IMSE 591 Grad Study in Sel Topics II**  
1.000 TO 3.000 Credits

Continuation of IMSE 590.

**IMSE 593 Vehicle Package Engineering**  
3.000 Credits  
Prerequisites: IMSE 442

Vehicle package specifications related to exterior and interior design reference points, dimensions and curb loadings. Benchmarking package studies, ergonomic tools and design practices used in the automobile industry. Driver positioning considerations; seat height, heel points, hip points, steering wheel location, seat pan, and back angles. Pedal design issues, gear shift positioning. Visibility of instrument panel space. Armrest and console design considerations. Principles and considerations in selecting and location types and characteristics of controls and displays on instrument panels, doors, consoles, and headers. Engine compartment packaging issues. Perception of interior spaciousness and visibility of the road over cowl and hood.

**IMSE 600 Research in IMSE**  
1.000 TO 3.000 Credits

Individual or group study or research in a field of interest to the student. Topics may be chosen from any of the areas of industrial and systems engineering. The student will submit a project report and give an oral presentation at the close of the term.

**IMSE 605 Advanced Optimization**  
3.000 Credits  
Prerequisites: IMSE 500

This course will cover selected advanced optimization methods for engineering disciplines and information systems. Topics include nonlinear programming, network optimization, dynamic programming and optimal control. Theories related to optimality and convergence, population-based optimization, etc. will be covered. Students will be expected to write computer program code to implement optimization methodologies.

**IMSE 606 Advanced Stochastic Processes**

3.000 Credits  
Prerequisites: IMSE 510

This course introduces the theory and applications of discrete and continuous stochastic processes and models. The topics include Poisson process, renewal theory, discrete-time and continuous-time Markov chains, martingales, random walks, and Brownian motion. Other Markov processes with applications to queuing, simulation, and operations research in manufacturing and service systems will also be covered.

**IMSE 610 Adv Top Enterprise Info Sys**  
3.000 Credits  
Prerequisites: IMSE 5715

This course introduces advanced topics in the development, management and improvement of information systems in the context of supporting large enterprises. It covers emerging issues and solutions in modeling, IT infrastructure and technologies, critical enterprise functions, knowledge engineering, security and governance of enterprise information systems. It focuses on the changing requirements posed by the dynamics of their residing environment and information technology.

**IMSE 659 Advanced System Simulation**  
3.000 Credits  
Prerequisites: IMSE 459 and IMSE 559

Simulation with animation packages using contemporary software such as SIMAN/CINEMA or SLAM/TESS. Topics in simulation methodology: random number generation and testing, distribution sampling, validation are reviewed. Emphasis on output analysis, design of simulation experiments, variance reduction techniques, expert systems in simulation.

**IMSE 682 Seminar in Comp Proc Contl**  
3.000 Credits  
Prerequisites: IMSE 582

Advanced treatment of the design of process control systems with emphasis on the modeling of a process of computer control and the design and analysis of a control strategy. Each student is expected to select a project and design and program the control strategy or support software on a mini-computer.

**IMSE 699 Master's Thesis Project**  
1.000 TO 6.000 Credits

Graduate students electing this course, while working under the general supervision of a member of the department faculty, are expected to plan and conduct the work themselves, to submit a thesis for review and approval, and to present an oral defense of the thesis.

## INFORMATION SYSTEMS ENGINEERING (ISE)

**ISE 798 Doctoral Seminar**  
.000 Credits  
Co-requisites: ISE 990

After attaining candidacy every Ph.D. student is required to attend and actively participate in seminars each semester until graduation. In addition, each Ph.D. student is required to present a one hour seminar about his/her research or an a pre assigned research topic, and lead a follow-up discussion on the future trends in his/her field.

**ISE 990 Doctoral Dissertation**  
1.000 TO 9.000 Credits

Dissertation work by a Ph.D. student who has been admitted to the candidacy status. The student must be registered during the semester of the dissertation defense. (1 to 9 credit hours per semester)

## MECHANICAL ENGINEERING (ME)

**ME 510 Finite Element Methods**  
3.000 Credits

Overview and applications of FE theory in linear static and dynamic systems. Review of matrices, strain and stress tensors. Variational and energy principles in FEA. Applications in linear stress analysis; 1D, 2D and 3D. Transient solutions; modal analysis. Modeling concepts. Use of general purpose codes like ANSYS, NISA, ARIES. Project work. Graduate standing or special permission. (YR).

**ME 512 Structural Analysis**  
3.000 Credits

Advanced treatment of dynamic structural theories. Topics covered include: Rayleigh and Timoshenko beams and plates; free and forced vibration response of structural components; static and dynamic stability; and impact.

**ME 514 Advanced Stress Analysis**  
3.000 Credits

Stresses and deformations in mechanical and structural elements and systems; theory, analysis and applications. Topics selected from among the following in applied elasticity and advanced mechanics of materials: stress and strain transformation; plane theory of elasticity and stress functions; energy methods; thick-walled cylinders and spinning disks; torsion of non-circular and hollow sections; unsymmetric bending and shear center; curved beams; beams on elastic foundations; plates and shells; elastic stability. Graduate standing or permission of instructor. (YR).

**ME 515 Advanced Mechanics of Solids**  
3.000 Credits

A comprehensive treatment of the theory of the mechanics of deformable media. Analysis of stress and strain, stress-strain relations, and the general equations of elasticity. Formulations for large strains; small strain linearization. Applications to boundary value problems. Graduate standing or special permission. (YR).

**ME 516 Special Topics in Mech Eng**  
1.000 TO 3.000 Credits

Selected topics pertinent to mechanical engineering. Graduate

standing or special permission. (YR).

**ME 518      Advanced Engineering Analysis**  
3.000 Credits

The course emphasizes the exact methods used in the solution of the partial differential equations that arise in advanced engineering problems. Examples are taken from heat transfer, fluid dynamics, solid mechanics, electromagnetic theory, vibrations, etc. Linear integral equations, time dependent boundary conditions, nonlinear boundary conditions, and other topics. Graduate standing or special permission. (YR).

**ME 519      Basic Comp Methods in Eng**  
3.000 Credits

An introduction to basic numerical methods in engineering. Topics covered include solutions of linear and nonlinear algebraic equations, solution of initial and boundary value problems in engineering by shooting, finite-difference and transformation techniques, computer-aided perturbation, numerical inversion of Laplace transformation. Finite-element methods. Solutions of partial differential equations. Graduate standing or special permission. (YR).

**ME 521      Dyn and Therm of Comp Flow**  
3.000 Credits

Review of basic equations of fluid mechanics and thermodynamics in control volume form. One-dimensional, compressible flow involving area change, normal shocks, friction, heat transfer, and combined effects. Two-dimensional supersonic flow including linearization, method of characteristics, and oblique shocks. One-dimensional, constant area, unsteady flow. Graduate standing or special permission. (YR).

**ME 522      Advanced Fluid Mechanics**  
3.000 Credits  
Prerequisites: ME 230 and ME 430

Graduate level course of fluid mechanics. Review of fluid flow phenomena based on common principles of transfer of mass, momentum, and energy. Introduction of the fundamental concepts and methods of analysis of fluid flows in industrial and environmental settings. Navier Stokes equations; viscous and in viscid flows; laminar and turbulent flows; boundary layers; drag; thermal convection. Prerequisite: Full course of undergraduate thermodynamics, fluid dynamics, and heat transfer. Course is the equivalent of ME 520. Students who have already taken ME 520 with a grade of B or better will not receive additional credit for ME 522. (W,YR)

**ME 525      Computational Thermo-Fluids**  
3.000 Credits  
Prerequisites: ME 518

The course introduces students to the fundamentals of computational fluid dynamics and heat transfer. Classification of partial differential equations and formulation of well-posed problems. Spatial and temporal approximation techniques for partial differential equations: stability, consistency and convergence. Finite volume formulations. Survey of methods for solving hyperbolic, elliptic, and parabolic problems.

Formulation of discrete boundary conditions. Application of methods to one- and two-dimensional flow and heat transfer problems. (AY).

**ME 528      Fund of Boiling and Condensatn**  
3.000 Credits

An introduction to the basic elements of condensation and vaporization processes. Topics cover fundamentals such as gas-liquid interfacial phenomena; phase stability and nucleation; two phase flow regimes, and critical heat flux. The course also includes special topics and applications such as convective vaporization and condensation in heat transfer equipment. Three Lecture hours per week.

**ME 531      Statistical Thermodynamics**  
3.000 Credits

Introduction to statistical methods of evaluating thermodynamic and transport properties. Elements of quantum mechanics, statistical mechanics, and kinetic theory, as applied to engineering thermodynamics. Graduate standing or special permission. (YR).

**ME 532      Combustion Processes**  
3.000 Credits

Introduction to combustion processes, equilibrium and reaction kinetics. Combustion of premixed gases, detonation and deflagration flames. Laminar and turbulent flames. Ignition, flammability, and flame quenching. Application to spark, diesel and gas turbine engines. Combustion-generated pollution. Graduate standing or special permission. (YR).

**ME 535      Advanced Thermodynamics**  
3.000 Credits

Advanced treatment of engineering thermodynamics as applied to producing mechanical power and refrigeration. Involves rigorous application of the first and second laws. Topics to be discussed are energy/entropy generation, thermodynamics relations, nonreacting mixtures, and reacting mixtures. Graduate standing or special permission. (YR).

**ME 537      Automotive Air Conditioning**  
3.000 Credits  
Prerequisites: AENG 534

Applications of HVAC fundamentals to analysis and design of automotive air conditioning systems. Topics include psychometrics, thermal comfort, refrigeration cycles and system design, heating system design, air flow circuits, air space diffusion, compact heat exchanger design, and instrumentation/controls.

**ME 538      Vehicle Thermal Management**  
3.000 Credits

This course covers fundamental thermo-fluid principles and advanced topics in thermal management of conventional and electric drive vehicles (EDVs). The topics include: principles of energy conservation, heat transfer, and fluid mechanics; vehicle thermal management system and components; electrification of vehicle thermal management system; EDV

thermal management; battery thermal management in EDVs; and waste energy recovery.

**ME 540 Mechanical Vibrations**  
3.000 Credits

A study of the linear vibrations of discrete multi-degree-of-freedom systems. Generation of equations of motion using the unit displacement, unit force, and Lagrange methods. Generalized eigenvalue problem. Modal analysis. Effects of damping. Synthesis of forced response by the unit step, unit impulse, and Fourier series methods; response to shock excitation. Numerical techniques. Graduate standing or special permission. (YR).

**ME 542 Advanced Dynamics**  
3.000 Credits

An advanced treatment of analytical mechanics for particles, systems of particles and rigid body motions with special emphasis on three-dimensional motion. Lagrange's equation of motion will be introduced and utilized in the analysis of multiple-mass systems. Computer methods will be covered. Graduate standing or special permission. (YR).

**ME 543 Vehicle Dynamics**  
3.000 Credits

A treatment of the response, ride, and maneuvering of motor vehicles. Road loads, suspension systems, mechanics of pneumatic tires.

**ME 545 Acoustics and Noise Control**  
3.000 Credits

Fundamentals of acoustical waves, sound propagation and intensity, instruments for vibration and noise, HVAC system noise, automobile and aircraft noise, noise control techniques. Graduate standing or special permission. (YR).

**ME 547 Powertrains I**  
3.000 Credits

Topics in vehicle powertrain kinematics and dynamics, engine output characteristics, vehicle road load analysis, engine-transmission matching, design and analysis of gears and gear systems, planetary gear trains, design of powertrain components, clutch design and analysis, transmission design and analysis, torque and ratio analysis of automatic transmissions. (YR).

**ME 548 Automotive Powertrains II**  
3.000 Credits  
Prerequisites: AENG 547 or ME 547

Simulation of vehicle performance; dynamics in gear shifting; engine balance, fuel economy, and performance related to powertrains; powertrain arrangements, manual and automatic transmissions, automotive axles, four-wheel-drive systems; design and manufacturing of gearing systems.

**ME 552 Sustainable Energy Systems**  
3.000 Credits

The course provides an overview of energy technology from a broad perspective that encompasses technical and environmental aspects. It covers a wide range of traditional and alternative energy sources and presents assessments of their availability, sustainability, and environmental impacts as well as evaluation of their potential role in solving the global energy problem. Course work includes project.

**ME 554 Theory of Gearing and Applicat**  
3.000 Credits

The course emphasizes the theory and methodology for the design, manufacturing and analysis of gears and other engineering surfaces. Topics include differential geometry, kinematics of conjugate motions, surface enveloping, curvatures, cutter design, machine tool settings, simulation of machining process, tooth contact analysis, geometry modeling and design of power transmissions. Graduate standing or special permission. (YR).

**ME 556 Stress and Stren Cons in Desgn**  
3.000 Credits

Treatment of stress and strength aspects of machine design. Analytic and experimental determination of stresses in machine members. Evaluation of strength under steady and fatigue loadings. Post-yield behavior, residual stress, temperature and corrosion effects. Graduate standing or special permission. (YR).

**ME 558 Fracture and Fatig Cons in Des**  
3.000 Credits

A comprehensive review of fracture and fatigue processes in engineering material with emphasis on mechanics instead of mechanisms of failure. Design methodology based on fracture toughness and fatigue crack propagation is presented. Laboratory test methods and data interpretations are also presented. Graduate standing or permission of instructor. (YR).

**ME 560 Experimental Methods in Design**  
3.000 Credits

Planned experiments and their statistical analysis. Emphasis on application in life and strength testing. Graduate standing or special permission. (YR).

**ME 563 Advanced Instrum and Control**  
3.000 Credits

Analysis of design techniques in modern control theory are presented. State space concepts, digital control, and adaptive control methods are covered, along with information on practical implementation problems experienced with these control techniques. Graduate standing or special permission. (YR).

**ME 565 Mechatronics**  
3.000 Credits

Mechatronics, as an engineering discipline, is the synergistic combination of mechanical engineering, electrical engineering,

control engineering, and computer science, all integrated through the design process. The course is to establish a working familiarity with the key engineering elements in the design and control of electro-mechanical systems in general and automotive systems in particular. The key engineering elements include microprocessor technology, electronics, sensors and actuators, data communication and interface, control algorithms, and mechanisms of machine elements. The course is to introduce a design methodology in an integrated system environment through case studies and design projects. (AY).

**ME 567 Reliability Consid in Design**  
3.000 Credits

Theory and application of common statistical distributions to the analysis of both life and strength data for components. Introduction to system reliability. Emphasis on use of digital computer in reliability simulation and analysis. Graduate standing or special permission. (YR).

**ME 571 Conduction Heat Transfer**  
3.000 Credits

Conduction heat transfer in steady and transient state, including heat sources. Analytical, numerical, graphical, and analog methods of solution for steady and fluctuating boundary conditions. Thermal stresses. Dynamics of thermal instrumentation and heat exchangers. Graduate standing or special permission. (YR).

**ME 572 Convection Heat Transfer**  
3.000 Credits

The course is primarily concerned with the determination of the rate of heat transfer due to the transport of energy to or from surfaces by both molecular conduction processes and gross fluid movement inside channels and over external surfaces. Emphasis will be placed on basic understanding of the convection heat transfer phenomena and the necessary mathematical techniques for the solution of such problems along with engineering applications. Graduate standing or special permission. (YR).

**ME 573 Radiative Transport of Heat**  
3.000 Credits

Thermal radiation processes. Physics of monochromatic and total radiation. Emission and absorption. Exchange factors for black and gray surfaces and enclosures. Radiant exchange involving: absorbing and emitting media, including gases and flames. Properties of solar radiation. Significance of coatings on radiative interchange. Emphasis on basic understanding of the radiation heat transfer phenomena along with engineering applications and methods of solution of such problems. Graduate standing or special permission. (YR).

**ME 575 Energy: Sources,Cnvrision,Util**  
3.000 Credits

This course is intended to give the overall knowledge of energy sources, their conversion and utilization in the most efficient way. The course will stress both the theoretical and practical applications of efficient conversion mechanisms of

conventional and alternate energy systems.

**ME 577 Energy Conversion**  
3.000 Credits

This course covers fundamental engineering principles for converting available energy sources, renewable and nonrenewable, into other energy forms of direct utility. It may include such topics as steam and gas based power plants as well as devices for solar, wind, and hydraulic energy conversion.

**ME 580 Advanced Engineering Materials**  
3.000 Credits

A second course in materials which expands the philosophy that all materials possess common traits which allow: (1) interchange of classes of materials to perform the same function, e.g., metals, polymers, ceramics, composites, etc.; and (2) understanding of the mechanisms of property controls in new materials. There is an attempt to provide equal representation of the science and the phenomena of engineering materials. Greater emphasis is placed on thermodynamics, stress-strain relations, multicomponent phase equilibria, and such other areas as received minimal exposure in the first course in materials. As a result of present technology trends, more time is spent on composites and achievement of design specifications through synthesis. Graduate standing or special permission. (YR).

**ME 581 Materials for Manufacturing**  
3.000 Credits  
Prerequisites: ME 381

Life cycles of materials. Selecting engineering materials for use in product parts, for protecting products, and for use in factory. Processing ceramic and polymeric materials. Controlling quality of materials. Using preformed and decorative materials. Operations with hazardous materials. Computer-aided material selection. Graduate standing or special permission. (YR).

**ME 582 Injection Molding**  
3.000 Credits

This is an in-depth course on injection molding processes, which include the conventional injection molding process, low pressure injection molding, structural sandwich molding, gas assisted injection molding etc. Material, process and tool design parameters are emphasized. The roles of rheology and flow modeling are discussed. Design issues for injection molded products are also discussed. Injection molding applied to other materials, such as ceramics, is also described. (YR).

**ME 583 Mechanical Behav of Materials**  
3.000 Credits

Mechanical behavior of materials are covered in relation to their structures, deformation characteristics and failure mechanisms. Means of improving strength, fracture toughness and other mechanical properties are discussed. Environmental effects on mechanical behavior are also included. The emphasis is on metals; however, polymers and ceramics are also covered. Graduate standing or special permission. (YR).

**ME 584 Mechanical Behavior of Polymer**  
3.000 Credits

Mechanical behavior of polymers and ceramics are considered in relation to their structures, processing and applications. Emphasis is given on their deformation, fatigue and fracture characteristics. Strengthening mechanisms for both materials are discussed. Graduate standing or special permission. (YR).

**ME 585 Cast Metals in Eng Design**  
3.000 Credits

An understanding of the properties of the most important cast metals is obtained by melting, casting, and testing. In addition to measurement of mechanical properties, resistance to heat, wear, and corrosion is discussed. The application of these properties in the design of critical parts in the aircraft, automotive, chemical, mining, and railroad industries is presented by case histories and examination of castings. Graduate standing or special permission. (YR).

**ME 586 Materials Consid in Manufactur**  
3.000 Credits

Manufacturability of materials and influence of processing variables on the properties of manufactured products are important considerations in materials selection and product design. These issues are addressed on the basis of mechanical deformation and thermal characteristics of materials during processing. Test methods to measure formability, castability, machinability, etc., are critically discussed. Defects in manufactured products including their origin and detection are also discussed. Graduate standing or special permission. (YR).

**ME 587 Automotive Composites**  
3.000 Credits

The emphasis in this course is on automotive composites, such as SMC, SRIM and RTM. In addition to properties and applications of these materials, this course covers manufacturing processes, design considerations, test methods and quality control techniques used for automotive composites. The use of continuous fiber composites in automotive applications, such as leaf springs, drive shafts and energy absorbing structures, are also discussed. (YR).

**ME 588 Production of Mech Products**  
3.000 Credits

Selecting and performing unit operations; processing metals and composites; adjusting composition and microstructure; assembling and joining; finishing and packaging. Material handling. Flexible systems. Machine and system capability studies. Maintaining plant and equipment. Safe operations. Graduate standing or special permission. (YR).

**ME 589 Composite Materials**  
3.000 Credits

This course will consider four different aspects of composite materials; namely, materials, mechanics, manufacturing and design. Recent developments on fiber reinforced plastics and metals will be covered. Fundamental analytical concepts on

micro and macro mechanics will be emphasized to create a better understanding of the design principles of composite materials. Graduate standing or special permission. (YR).

**ME 591 Degradation of Materials**  
3.000 Credits

The course will introduce students to the fundamentals of corrosion and degradation behavior of materials. The degradation of metals, polymers and composites will be discussed. Monitoring and life prediction techniques will be covered. Preventive measures such a materials selection and design, protective coating, surface treatments, inhibitors, and electrochemical techniques are applied, when they should be used, and how various techniques can be integrated to solve complex problems. (AY).

**ME 592 Fuel Cells**  
3.000 Credits

This course covers fundamentals of fuel cell systems for both automotive and distributed power applications. Detailed descriptions of the principles and component designs of various types of fuel cells including proton exchange membrane fuel cell (PEMFC), phosphoric acid fuel cell (PAFC), solid oxide fuel cell (SOFC), and molten carbonate fuel cell (MCFC). Discussions on water and thermal management, and balance of power plant. Review of hydrogen storage and safety consideration. Challenges and future opportunities.

**ME 596 Internal Combustion Engines I**  
3.000 Credits

Comparison of several forms of internal combustion engines including Otto and Diesel type piston engines; performance parameters and testing; thermodynamic cycles and fuel-air cycles; combustion in SI and Diesel engines; charge formation and handling; ignition; elements of exhaust emissions. (Not available to students with ME 496 or equivalent background.)

**ME 597 Internal Combustion Engines II**  
3.000 Credits  
Prerequisites: AENG 596 or ME 596

Fuel flow and air flow measurements and techniques; engine maps; fuel and ignition control and control strategies; combustion and burn rate considerations in engine design; intake and exhaust systems; emissions and control strategies; emission test procedures.

**ME 598 Engine Emissions**  
3.000 Credits

This course introduces students to the fundamentals of engine exhaust emissions, including their formation mechanisms and abatement techniques. The students will be familiarized with the present emission control technologies and future challenges. The topics covered include: engine emissions and air pollution; review of emission regulations; catalyst fundamentals; catalyst after treatment techniques for gasoline, diesel, and lead-burn engines; discussion of cold start emission control and breakthrough catalytic technologies. (AY).

**ME 600 Study or Res in Sel Mech Eng**  
1.000 TO 3.000 Credits

Individual or group study or design in an area of Mechanical Engineering under the supervision of a member of the graduate faculty. The student will submit a report on the project and give an oral presentation to a panel of faculty members at the close of the term. Graduate standing or special permission. (YR).

**ME 601 Exper Research in Mech Eng**  
1.000 TO 3.000 Credits

Laboratory investigation in an area of Mechanical Engineering under the supervision of a member of the graduate faculty. The student will submit a report on the project and give an oral presentation to a panel of faculty members at the close of the term. Graduate standing or special permission. (YR).

**ME 602 Guided Study in Mech Eng**  
1.000 TO 3.000 Credits

Independent Study of specified material in an area of Mechanical Engineering under the guidance of a member of the graduate faculty. The student will submit a report on the project and give an oral presentation to a panel of faculty members at the close of the term.

**ME 607 Adv Mechanical Engin Problems**  
3.000 Credits

A graduate-level analytical study of selected topics in mechanical engineering. The subjects of study in each term usually depend on student and instructor interest. Typical areas of study include vibrations of continuous or lumped systems, fluid mechanics, devices, thermodynamics, heat transfer, mechanics of solids, materials, or processing, etc. The course can be organized to meet the subject needs of a group of students with mutual interests.

**ME 610 Finite Elem Methods--Nonlinear**  
3.000 Credits  
Prerequisites: ME 510

Review of FE theory in linear static. FEA in dynamics. FEA in heat transfer. FEA in fluid mechanics. FEA in nonlinear problems; material and geometrical nonlinearities, total and updated Lagrangian formulations, solution techniques. Use of FE codes. Graduate standing or special permission. (YR).

**ME 622 Adv Topics in Fluid Mechanics**  
3.000 Credits

The course presents selected topics of contemporary advanced fluid mechanics, such as the hydrodynamic stability theory, turbulence, multi-phase flows, magneto hydrodynamics, interfacial flows, flows of non-newtonian fluids, micro- and nano-fluid mechanics, biofluid mechanics, etc.

**ME 640 Advanced Vibration Theory**  
3.000 Credits  
Prerequisites: ME 540

The course will emphasize the similarities between various types of continuous systems as well as common features of continuous and discrete systems. Variational principle will be introduced as a notion of natural modes of vibration for discrete systems is reviewed. Natural modes of vibration for continuous systems will be discussed using the boundary value formulation, the general formulation of the eigenvalue problem and orthogonality. These concepts will be applied to bars, rods, membranes, and plates. Approximate methods will be introduced to determine the natural modes of vibration for complex continuous systems. A few methods to be considered include the Rayleigh-Ritz, Galerkin, Collocation, Myklestad, and Lumped-parameter methods. All the approximate methods presented will allow expedient numerical solution by means of high-speed computers. The damped and undamped response to deterministic excitations will be considered for various systems. Graduate standing or special permission. (YR).

**ME 642 Simulation of Mechanic Systems**  
3.000 Credits  
Prerequisites: ECE 365

Analysis, synthesis, and optimization of linear, multilinear and nonlinear mechanical systems with the electronic analog computer. Graduate standing or special permission. (YR).

**ME 699 Master's Thesis**  
1.000 TO 6.000 Credits

Graduate students electing the course, while working under the general supervision of a member of the department faculty, are expected to plan and carry out the work themselves and submit a thesis for review and approval, and also present an oral defense of the thesis. Students must satisfactorily complete 6 credit hours in ME 699, but these hours may be spread over more than one term. Graduate standing or special permission. (YR).

# INDEX

Absence from Final Examination.....	16	Course Descriptions.....	168
Academic Calendar.....	vi	Faculty.....	144
Academic Standing.....	23	Grading for Master Degree Programs.....	146
Accreditation.....	2	History of the School.....	145
Adding Courses.....	<i>See</i> Change in Course Elections	Incomplete (I) Grades.....	146
Admission.....	5	Post-Degree Programs.....	146
Conditional.....	7	U.S. Department of Education Title II Reports.....	145
Non-Candidate for Degree.....	7	College of Engineering and Computer Science.....	190
Probationary.....	7	Additional Academic Information.....	210
Regular.....	7	Administration.....	190
Admission for UM-Dearborn non-Rackham Programs.....	7	Admission to the Programs at UM-Dearborn.....	211
Alcohol and Drug Prevention Program and Policy.....	31	Course Descriptions.....	211
Alcohol at Campus Events.....	30	Faculty.....	191
Attendance.....	14	Grading.....	211
Auditing.....	14	Graduate Programs.....	192
Bookstore.....	25	Computer Accounts.....	27
Campus Map.....	vii	Concurrent Undergraduate/Graduate Study.....	8
Capsule History of the University of Michigan-Dearborn.....	4	Counseling and Support Services.....	25
Change in Course Elections.....	14	Course Extends Beyond Term.....	16
Change of Degree Level within a Field.....	9	Credit by Examination.....	16
Change of Fees.....	21	Doctorate in Education.....	147
Change of Field.....	8	Admission.....	148
Change of Grades.....	16	Normative Time from Matriculation to Degree.....	149
College of Arts, Sciences, and Letters.....	45	Program of Study.....	149
Course Descriptions.....	59	Readmission.....	148
History of the College.....	48	Residency Requirements.....	149
Mission Statement.....	48	Satisfactory Progress Towards Degree.....	148
College of Business.....	109	Transfer of Credit.....	149
Accreditation.....	109	Dropping Courses.....	<i>See</i> Change in Course Elections
Academic Honors.....	130	Dual Degree Program-MBA and MSE in Industrial and	
Academic Standing of Students.....	129	Systems Engineering.....	120
Advising.....	130	Dual Degree Program-MBA/Master of Health Services	
Application and Admission Criteria.....	125	Administration.....	122
Change in Course Election.....	130	Dual Degree Program-MBA/MS-Finance.....	118
Course Descriptions.....	131	Dual Degree Program-MS in Accounting/MS in Finance..	119
Dean's Honor List.....	130	Dual Degree Program-MBA and Master of Health Services	
Faculty (Full-Time).....	109	Administration.....	
Grading System.....	129	Curriculum.....	122
Graduation "With Distinction".....	131	Dual Degree Program-MBA and MS-Finance.....	119
Graduation "With High Distinction".....	131	Dual Program for the MSE in Industrial and Systems	
Graduate Degree Programs.....	110	Engineering and the Master of Business Administration.....	203
Incomplete Coursework and Absence from Final		Education Specialist.....	149
Examinations.....	129	Electronic Communication.....	33
Maintenance of Active Degree-Seeking Status and		Engineering Professional Development.....	210
Readmission.....	130	English Language Requirements for Admission.....	6
Mission Statement.....	109	Enrollment Services/Registration & Records.....	14
Pass-Fail Option.....	129	Financial Aid.....	9
Petitions for Academic Action.....	130	Application for Financial Aid.....	9
Professors Emeriti.....	109	Cost of Attendance.....	20
Recommendation Form.....	126	Financial Assistance Available.....	9
Repeating Courses.....	129	Satisfactory Academic Progress.....	13
Right of Appeal.....	130	Food Service.....	26
Student Academic Conduct.....	130	General Admission and Readmission Information.....	6
Student Personal Conduct.....	130	General Campus Services.....	24
Taking UM-Dearborn Undergraduate Prerequisite Courses		General Information.....	1
.....	125	General Policies.....	30
Transcripts.....	126	Grade Reporting.....	24
Work Experience.....	126	Grades and Grading.....	15
Transfer Credit.....	129	Graduate Programs Offered.....	3
College of Education, Health, and Human Services.....	144	Graduate Fellowship, Teaching or Research Assistantship	
Accreditation.....	146	Support.....	10
Administration.....	144	Graduation/Application for Diploma.....	22



Incomplete Coursework.....	16	Registration Information .....	24
Information Technology Services.....	26	Repeating Courses.....	15
Institutional Equity .....	34	Residency Classification Guidelines .....	16
Institutional Equity Officer .....	27	Satisfactory Academic Progress .....	23
Instructor-Initiated Drops .....	14	Second Master's Degree .....	8
King/Chavez/Parks Future Faculty Program .....	11	Sexual Harassment by Faculty and Staff.....	35
Maintaining Good Standing.....	23	Special Cases .....	8
Mardigian Library.....	27	Special Program Admission .....	8
Master of Arts in Education.....	154	Statement of Student Rights and Code of Student Conduct .	41
Master of Arts in Education Mathematics Education Specialty .....	167	Student Activities.....	29
Master of Arts in Educational Leadership .....	158	Student Records and Student Rights .....	39
Master of Arts in Liberal Studies.....	52	Transcripts.....	22
Master of Arts in Teaching (MAT).....	157	Tuition Assessments and Fee Regulation.....	20
Master of Business Administration Program .....	110	Types of Admission .....	7
Master of Education In Special Education .....	163	University of Michigan-Dearborn, University of Windsor	
Master of Public Administration.....	56	Master of Public Policy/Master of Political Science Joint	
Master of Public Policy .....	57	Degree Program .....	59
Professional Studies Certificate in Public Policy .....	59	Veterans Affairs .....	22
Master of Science in Accounting .....	112	Visiting Scholar .....	8
Master of Science in Applied and Computational Mathematics .....	49	Withdrawal.....	<i>See Change in Course Elections</i>
Master of Science in Business Analytics .....	113	Women's Resource Center .....	30
Master of Science in Environmental Science.....	51		
Master of Science in Computer and Information Science...196			
Master of Science in Engineering Management .....	200		
Master of Science in Finance.....	115		
Master of Science in Information Systems .....	116		
Master of Science in Information Systems and Technology204			
Master of Science in Psychology .....	53		
Specialization in Clinical Health Psychology.....	55		
Specialization in Health Psychology .....	53		
Master of Science in Science Education (MSSE).....	165		
Master of Science in Software Engineering.....	208		
Master of Science in Engineering in Automotive Systems			
Engineering .....	196		
Master of Science in Engineering in ComputerEngineering198			
Master of Science in Engineering in Electrical Engineering199			
Master of Science in Engineering in Industrial and Systems			
Engineering .....	201		
Master of Science in Engineering in Manufacturing Systems			
Engineering .....	206		
Master of Science in Engineering in Mechanical Engineering			
.....	207		
Michigan Intercollegiate Graduate Study .....	8		
Mission and Values .....	2		
Modification of the Conditions of Academic Standing or			
Discipline .....	23		
Office of International Affairs .....	28		
Ombuds Services .....	28		
Organizational Chart.....	viii		
Parking and Transportation .....	28		
PhD in Automotive Systems Engineering and Information			
Systems Engineering .....	193		
Admission .....	193		
Candidacy.....	194		
Degree Requirements .....	193		
Dissertation .....	194		
Preliminary Examination.....	194		
Qualifying Examination .....	193		
Public Safety.....	29		
Readmission .....	9		
Recreation and Athletics.....	24		
Refunds.....	21		